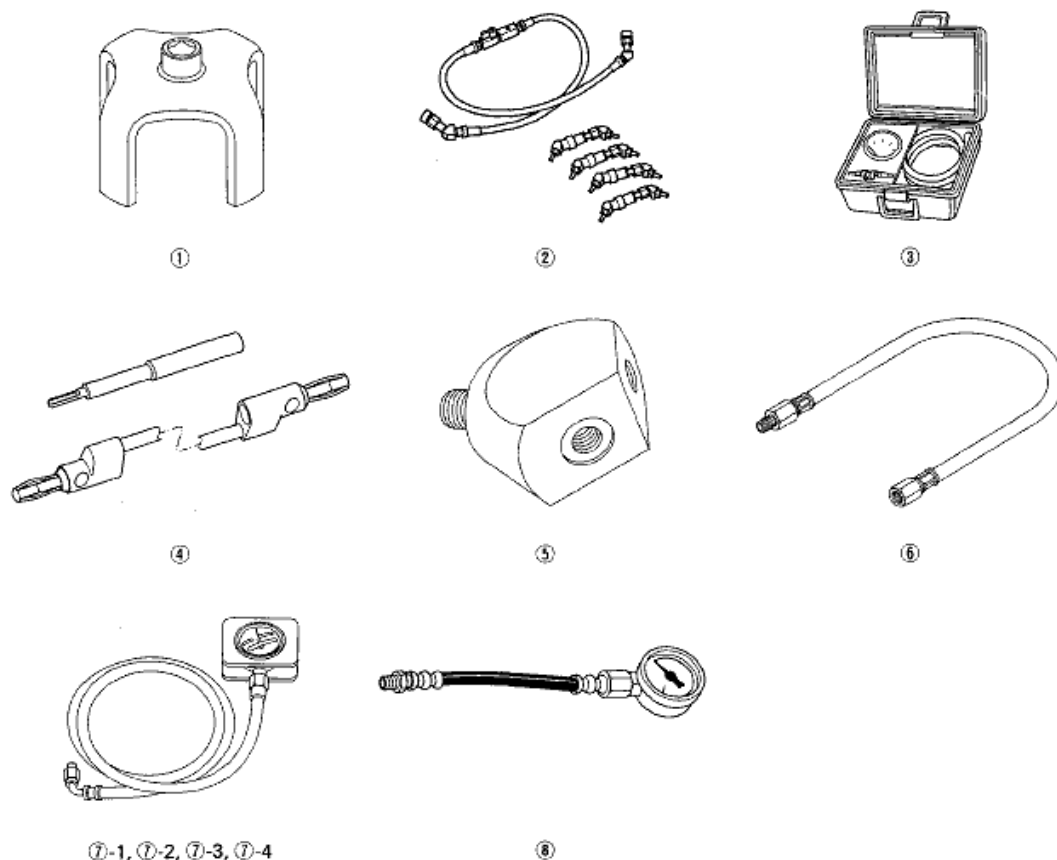


2007-08 ENGINE PERFORMANCE

Fuel and Emissions Systems - TL

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAA-S0XA100	Fuel Sender Wrench	1
②	07AAJ-S6MA150	Fuel Pressure Gauge Attachment Set	1
③	07JAZ-001000B	Vacuum/Pressure Gauge, 0—4 in.Hg	1
④	07SAZ-001000A	Backprobe Set	2
⑤	07NAJ-P07010A	Pressure Gauge Adapter	1
⑥	07ZAJ-S5AA200	Oil Pressure Hose	1
⑦-1	07406-0020201	A/T Pressure Hose	1
⑦-2	07406-0070301	A/T Low Pressure Gauge W/Panel	1
⑦-3	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	1
⑦-4	07MAJ-PY40120	A/T Pressure Hose, Adapter	1
⑧	07406-004000B	Fuel Pressure Gauge	1

**Fig. 1: Identifying Special Tools**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the malfunction indicator lamp (MIL) on the dash does not come on, check for poor connections or loose

terminals at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

OPENS AND SHORTS

"Open" and "Short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as ECMs and PCMs) this can sometimes mean something works, but not the way it's supposed to.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL (A).

NOTE: If the ignition switch is turned ON (II), and the engine is not started, the MIL stays on for 15-20 seconds (see MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)).

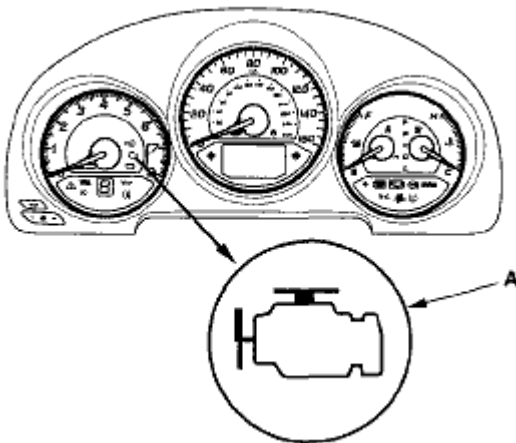


Fig. 2: Identifying Malfunction Indicator Lamp
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

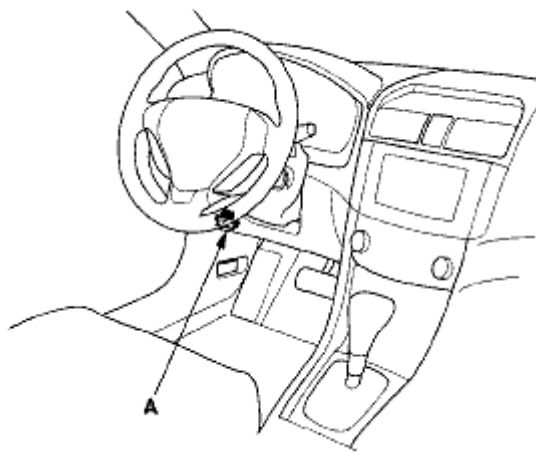


Fig. 3: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING (PART 2)**).
5. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated DTC's troubleshooting, and begin the appropriate troubleshooting procedure.

NOTE:

- Freeze data indicates the engine conditions when the first malfunction, misfire, or fuel trim malfunction was detected.
- The HDS can read the DTC, freeze data, current data, and other engine control module (ECM)/ powertrain control module (PCM) data.
- For specific operations, refer to the user's manual that came with the HDS.

6. If no DTCs are found, go to MIL circuit troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

If the MIL did not stay on

If the MIL did not stay on but there is a driveability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the ECM/PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the code, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced ECM/PCM.

HDS CLEAR COMMAND

The ECM/PCM stores various specific data to correct the system even if there is no electrical power such as when the battery negative terminal or No. 8 FI ECU (ECM/PCM) (15 A) fuse are disconnected. Stored data based on failed parts should be cleared by using the "CLEAR COMMAND" of the HDS, if parts are

replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, ECM/PCM reset, and crank (CKP) pattern clear. DTC clear command erases all stored DTC codes, freeze data, readiness codes, and the on-board snapshot. This must be done with the HDS after reproducing the DTC during troubleshooting. The ECM/PCM reset command erases all stored DTC codes, freeze data, readiness codes, on-board snapshot, and all specific data to correct the system except crank (CKP) pattern. If the crank (CKP) pattern data in the ECM/PCM was cleared, you must do the crank (CKP) pattern learn procedure. The crank (CKP) pattern clear command erases only crank (CKP) pattern data. This command is for repair of a misfire or the CKP sensor.

SCAN TOOL CLEAR COMMAND

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the ECM/PCM, and it clears all commands at the same time (crank (CKP) pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs). After you clear all commands, you then need to do these procedures, in this order: ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**); crank (CKP) pattern learn procedure; Test-drive to set readiness codes to complete (see **MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)**).

DTC CLEAR

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

ECM/PCM RESET

1. Reset the ECM/PCM with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.
5. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN

Clear/Learn Procedure (with the HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

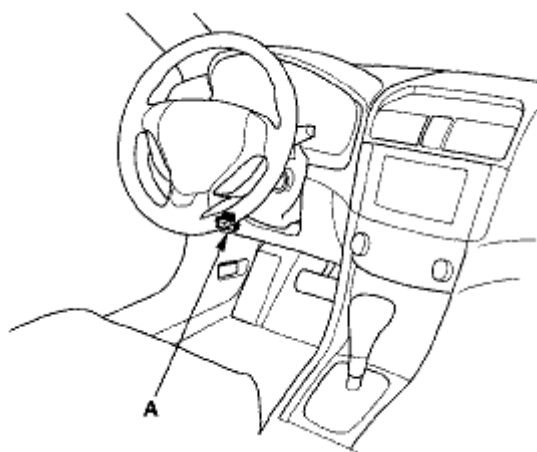


Fig. 4: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING (PART 2)**).
4. Select CRANK PATTERN in the ADJUSTMENT MENU with the HDS.
5. Select CRANK PATTERN LEARNING with the HDS, and follow the screen prompts.

Learn Procedure (without the HDS)

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 2,500 rpm down to 1,000 rpm with the A/T in L position, or M/T in 1st gear.
3. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 5,000 rpm down to 3,000 rpm with the A/T in L position, or M/T in 1st gear.
4. Repeat step 2 and 3 several times.
5. Turn the ignition switch OFF.
6. Turn the ignition switch ON (II), and wait 30 seconds.

How to End a Troubleshooting Session (required after any troubleshooting)

1. Reset the ECM/PCM with the HDS.
2. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
3. Turn the ignition switch OFF.
4. Disconnect the HDS from the DLC.

NOTE: The ECM/PCM is part of the immobilizer system. If you replace the ECM/PCM, it will have a different immobilizer code. In order for the engine to start, you must rewrite the immobilizer code with the HDS.

Special Tools Required

- Digital multimeter KS-AHM-32-003 (1) or a commercially available digital multimeter
 - Backprobe set 07SAZ-001000A (2)
1. Connect the backprobe adapters (A) to the stacking patch cords (B), and connect the cords to a digital multimeter.

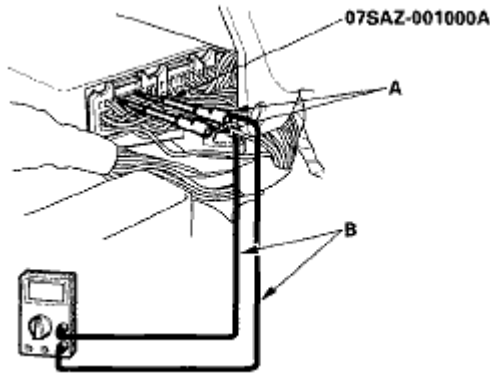


Fig. 5: Connecting Backprobe Adapters To Stacking Patch Cords And Connect Cords To Digital Multimeter

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Using the wire insulation as a guide for the contoured tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it touches the end of the wire terminal.
3. If you cannot get to the wire side of the connector or the wire side is sealed (A), disconnect the connector, and probe the terminals (B) from the terminal side. Do not force the probe into the connector.

NOTE: Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

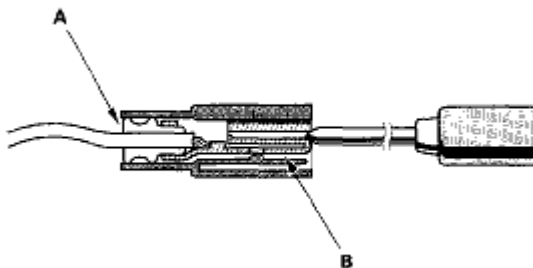


Fig. 6: Disconnecting Connector And Probe Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

UPDATING THE ECM/PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an in workstation with HDS and CM update software

- HDS pocket tester
- GNA-600 and an in workstation with HDS and CM update software

NOTE:

- Use this procedure when you need to update the ECM/PCM during troubleshooting procedures.
- Make sure the HDS/HIM has the latest software version downloaded from the in (interactive network).
- Before you update the ECM/PCM, make sure the battery in the vehicle is fully charged, and connect a jumper battery (not a battery charger) to maintain system voltage.
- Never turn the ignition switch OFF during the update. If there is a problem with the update, leave the ignition switch ON.
- To prevent ECM/PCM damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.
- To ensure the latest program is installed, do an ECM/PCM update whenever the ECM/PCM is substituted or replaced.
- You cannot update an ECM/PCM with a program it already has. It will only accept a new program.
- If you need to diagnose the Honda interface module (HIM) because the HIM's red (# 3) light came on or was flashed during the update, leave the ignition switch in the ON (II) position when you disconnect the HIM from the data link connector (DLC). This will prevent ECM/PCM damage.

1. Turn the ignition switch ON (II), but do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

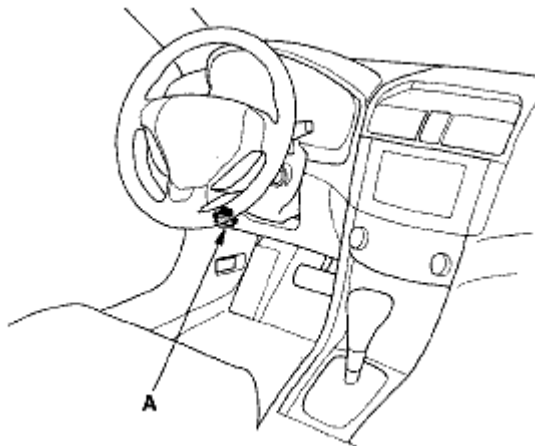


Fig. 7: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING (PART 2)**). If you are returning from the DLC circuit troubleshooting, skip steps 4 and 5, then clean the throttle body

after updating the ECM/PCM (see **THROTTLE BODY CLEANING**).

4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts with the HDS.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Exit the HDS diagnostic system, then select the update mode, and follow the screen prompts to update the ECM/PCM.
7. If the software in the ECM/PCM is the latest, disconnect the HDS/HIM from the DLC, and go back to the procedure that you were doing. If the software in the ECM/PCM is not the latest, follow the instructions on the screen. If prompted to choose the PGM-FI system or the A/T system, make sure you update both.

NOTE: If the ECM/PCM update system requires you to cool the ECM/PCM, follow the screen prompts. If you run into a problem (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer indicator flashes, HDS tablet freezes, etc.) during the update procedure, follow these steps to minimize the chance of damaging the ECM/PCM:

- Leave the ignition switch in the "ON (II)" position.
- Connect a jumper battery (do not connect a battery charger).
- Shut down the HDS.
- Disconnect the HDS from the DLC.
- Reboot the HDS.
- Reconnect the HDS to the DLC, and try the update procedure again.

8. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Do the crank (CKP) pattern learn procedure.

SUBSTITUTING THE ECM/PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an in workstation with HDS and CM update software
- HDS pocket tester
- GNA-600 and an in workstation with HDS and CM update software

NOTE: Use this procedure when you need to substitute a known-good ECM/PCM during troubleshooting procedures.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the

dashboard.

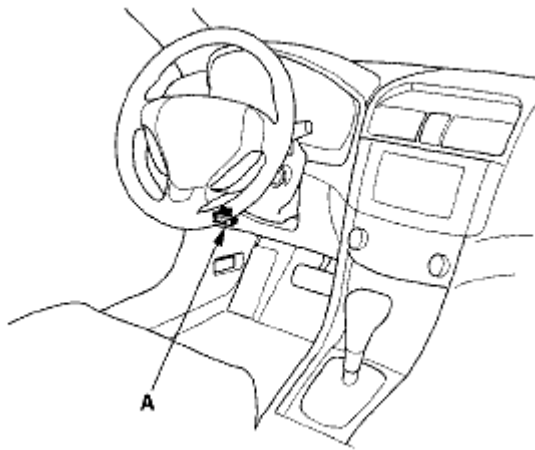


Fig. 8: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING (PART 2)**). If you are returning from DLC circuit troubleshooting, skip steps 4 thru 10, then clean the throttle body after substituting the ECM/PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK and follow the screen prompts.

NOTE: **If the TP POSITION CHECK indicates FAILED, continue this procedure.**

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Remove the ducts (A).

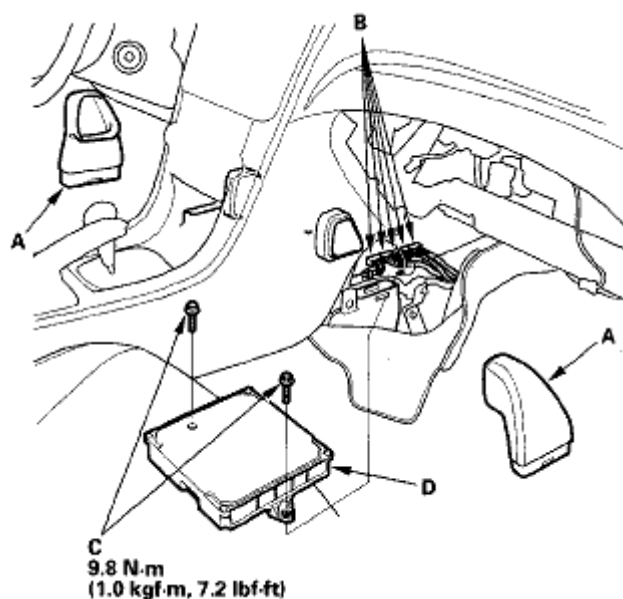


Fig. 9: Identifying Ducts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the ECM/PCM connectors (B).
10. Remove the bolts (C), then remove the ECM/PCM (D).
11. Install the parts in the reverse order of removal.
12. Open the SCS with the HDS.
13. Turn the ignition switch ON (II).

NOTE: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the ECM/PCM; ignore it, and continue this procedure.

14. Manually input the VIN to the ECM/PCM with the HDS.
15. Update the ECM/PCM if it does not have the latest software.
16. Select the IMMOBI SYSTEM with the HDS.
17. Enter the immobilizer code with the ECM/PCM replacement procedure in the HDS; it allows you to start the engine.
18. Reset the ECM/PCM with the HDS.
19. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
20. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
21. Do the crank (CKP) pattern learn procedure.

OBD STATUS

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- **PASSED:** The on board diagnosis is successfully finished.
- **FAILED:** The on board diagnosis has finished but failed.
- **EXECUTING:** The vehicle is in enable criteria conditions for the DTC and the on board diagnosis is running.
- **NOT COMPLETED:** The on board diagnosis was running but is out of the enable conditions of the DTC.
- **OUT OF CONDITION:** The vehicle has stayed out of the enable conditions for the DTC.

DTC TROUBLESHOOTING INDEX

DTC TROUBLESHOOTING CHART

DTC (MIL indication (1))	Two Drive Cycle Detection	Detection Item	MIL
P0107 (3)	-	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage	ON
P0108 (3)	-	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage	ON
P0111 (10)	o	Intake Air Temperature (IAT) Sensor Circuit Range/Performance Problem	ON
P0112 (10)	-	Intake Air Temperature (IAT) Sensor Circuit Low Voltage	ON
P0113 (10)	-	Intake Air Temperature (IAT) Sensor Circuit High Voltage	ON
P0116 (86)	o	Engine Coolant Temperature (ECT) Sensor 1 Circuit Range/Performance Problem	ON
P0117 (6)	-	Engine Coolant Temperature (ECT) Sensor 1 Circuit Low Voltage	ON
P0118 (6)	-	Engine Coolant Temperature (ECT) Sensor 1 Circuit High Voltage	ON
P0122 (7)	-	Throttle Position (TP) Sensor A Circuit Low Voltage	ON
P0123 (7)	-	Throttle Position (TP) Sensor A Circuit High Voltage	ON
P0125 (86)	o	Engine Coolant	ON

		Temperature (ECT) Sensor 1 Malfunction/Slow Response	
P0128 (87)	o	Cooling System Malfunction	ON
P0133 (157)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Malfunction/Slow Response	ON
P0134 (151)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater System Malfunction	ON
P0135 (151)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater Circuit Malfunction	ON
P0137 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Low Voltage	ON
P0138 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit High Voltage	ON
P0139 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Slow Response	ON
P0141 (163)	-	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Heater Circuit Malfunction	ON
P0153 (158)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Malfunction/Slow Response	ON
P0154 (152)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater System Malfunction	ON
P0155 (152)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater Circuit Malfunction	ON
P0157 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Low Voltage	ON
P0158 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit High Voltage	ON

P0159 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Slow Response	ON
P0161 (164)	-	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Heater Circuit Malfunction	ON
P0171 (153)	o	Rear Bank (Bank 1) Fuel System Too Lean	ON
P0172 (153)	o	Rear Bank (Bank 1) Fuel System Too Rich	ON
P0174 (154)	o	Front Bank (Bank 2) Fuel System Too Lean	ON
P0175 (154)	o	Front Bank (Bank 2) Fuel System Too Rich	ON
P0222 (7)	-	Throttle Position (TP) Sensor B Circuit Low Voltage	ON
P0223 (7)	-	Throttle Position (TP) Sensor B Circuit High Voltage	ON
P0300 (77) and any combination of P0301 (71) P0302 (72) P0303 (73) P0304 (74) P0305 (75) P0306 (76)	o	Random Misfire Detected	ON
P0301 (71)	o	No. 1 Cylinder Misfire Detected	ON
P0302 (72)	o	No. 2 Cylinder Misfire Detected	ON
P0303 (73)	o	No. 3 Cylinder Misfire Detected	ON
P0304 (74)	o	No. 4 Cylinder Misfire Detected	ON
P0305 (75)	o	No. 5 Cylinder Misfire Detected	ON
P0306 (76)	o	No. 6 Cylinder Misfire Detected	ON

NOTE:

The above DTCs are indicated when the PGM-FI system is selected in the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system, and check automatic transmission DTCs.

(1) These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.

DTC TROUBLESHOOTING CHART

DTC (MIL indication (1))	Two Drive Cycle Detection	Detection Item	MIL
<u>P0325</u> (23)	-	Knock Sensor Circuit Malfunction	ON
<u>P0335</u> (4)	-	Crankshaft Position (CKP) Sensor A No Signal	ON
<u>P0339</u> (4)	-	Crankshaft Position (CKP) Sensor A Circuit Intermittent Interruption	ON
<u>P0340</u> (9)	-	Camshaft Position (CMP) Sensor No Signal	ON
<u>P0344</u> (9)	-	Camshaft Position (CMP) Sensor Circuit Intermittent Interruption	ON
<u>P0385</u> (54)	-	Crankshaft Position (CKP) Sensor B No Signal	ON
<u>P0389</u> (54)	-	Crankshaft Position (CKP) Sensor B Circuit Intermittent Interruption	ON
<u>P0401</u> (80)	o	Exhaust Gas Recirculation (EGR) Insufficient Flow	ON
<u>P0404</u> (12)	o	Exhaust Gas Recirculation (EGR) Valve Circuit Range/Performance Problem	ON
<u>P0406</u> (12)	-	Exhaust Gas Recirculation (EGR) Valve Position Sensor Circuit High Voltage	ON
<u>P0420</u> (165)	o	Rear Bank Catalyst System Efficiency Below Threshold (Bank 1)	ON
<u>P0430</u> (166)	o	Front Bank Catalyst System Efficiency Below Threshold (Bank 2)	ON
<u>P0443</u> (92)	-	Evaporative Emission (EVAP) Canister Purge Valve Circuit Malfunction	ON
<u>P0451</u> (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit Range/Performance Problem	ON
<u>P0452</u> (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit Low Voltage	ON
<u>P0453</u> (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit High	ON

		Voltage	
<u>P0455</u> (90)	o	Evaporative Emission (EVAP) System Large Leak Detected	ON
<u>P0456</u> (90)	o	Evaporative Emission (EVAP) System Very Small Leak Detected	ON
<u>P0457</u> (90)	-	Evaporative Emission (EVAP) System Leak Detected/Fuel Fill Cap Loose or Missing	OFF
<u>P0461</u> (121)	-	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Range/Performance Problem	OFF
<u>P0462</u> (121)	-	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage	OFF
<u>P0463</u> (121)	-	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage	OFF
<u>P0496</u> (92)	o	Evaporative Emission (EVAP) System High Purge Flow Detected	ON
<u>P0497</u> (90)	o	Evaporative Emission (EVAP) System Low Purge Flow Detected	ON
<u>P0498</u> (117)	-	Evaporative Emission (EVAP) Canister Vent Shut Valve Circuit Low Voltage	ON
<u>P0499</u> (117)	-	Evaporative Emission (EVAP) Canister Vent Shut Valve Circuit High Voltage	ON
<u>P0506</u> (14)	o	Idle Control System RPM Lower Than Expected	ON
<u>P0507</u> (14)	o	Idle Control System RPM Higher Than Expected	ON
<u>P0562</u> (34)	-	Charging System Low Voltage	OFF
<u>P0563</u> (34)	-	Engine Control Module (ECM)/Powertrain Control Module (PCM) Power Source Circuit Unexpected Voltage	OFF
<u>P0602</u> (196)	-	Engine Control Module (ECM)/Powertrain Control Module (PCM)	ON

		Programming Error	
P0615 (198) ⁽³⁾	-	Starter Cut Relay STRLD Circuit Malfunction	OFF
P0627 (169) ⁽⁴⁾	-	Fuel Pump Control Module System Malfunction	ON
P062F (131)	-	Engine Control Module (ECM)/Powertrain Control Module (PCM) Internal Control Module Keep Alive Memory (KAM) Error	ON
P0630 (139)	-	VIN Not Programmed or Mismatch	ON
P0685 (135)	o	Engine Control Module (ECM)/Powertrain Control Module (PCM) Internal Circuit Malfunction	ON
P0700 (70) ⁽³⁾	-	Automatic Transmission (A/T) Control System Malfunction	ON
P0700 (70) ⁽³⁾	-	Automatic Transmission (A/T) Control System Malfunction	OFF
P0715 (123) ⁽²⁾	-	Input Shaft (Mainshaft) Speed Sensor Circuit Malfunction	OFF
P0720 (122) ⁽²⁾	-	Output Shaft (Countershaft) Speed Sensor Circuit Malfunction	ON
P1077 (106)	o	Intake Manifold Tuning (IMT) Valve Stuck in High RPM Position	ON
P1078 (106)	o	Intake Manifold Tuning (IMT) Valve Stuck in Low RPM Position	ON
P1109 (13)	-	Barometric Pressure (BARO) Sensor Circuit Out of Range High	ON
P1116 (86)	o	Engine Coolant Temperature (ECT) Sensor 1 Range/Performance Problem	ON
P1128 (5)	o	Manifold Absolute Pressure (MAP) Sensor Signal Lower Than Expected	ON
P1129 (5)	o	Manifold Absolute Pressure (MAP) Sensor Signal Higher Than	ON

Expected

NOTE:

The above DTCs are indicated when the PGM-FI system is selected in the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system, and check automatic transmission DTCs.

(1) These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.

(2) M/T

(3) A/T

(4) J35A8 engine

DTC TROUBLESHOOTING CHART

DTC (MIL indication (1))	Two Drive Cycle Detection	Detection Item	MIL
P1172 (157)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Circuit Out of Range High	ON
P1174 (158)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Circuit Out of Range High	ON
P1297 (20)	-	Electrical Load Detector (ELD) Circuit Low Voltage	OFF
P1298 (20)	-	Electrical Load Detector (ELD) Circuit High Voltage	OFF
P1454 (91)	o	Fuel Tank Pressure (FTP) Sensor Range/Performance Problem	ON
P145C (90)	o	Evaporative Emission (EVAP) System Purge Flow Malfunction	ON
P1549 (34)	-	Charging System High Voltage	OFF
P1683 (40)	-	Throttle Valve Default Position Spring Performance Problem	ON
P1684 (40)	-	Throttle Valve Return Spring Performance Problem	ON
P16BB (116)	-	Alternator B Terminal Circuit Low Voltage	OFF
P16BC (116)	-	Alternator FR Terminal Circuit/IGP Circuit Low Voltage	OFF
P16BD (198) ⁽²⁾	-	Starter Cut Relay 2 Malfunction	OFF

P16BE (198) ⁽²⁾	-	Starter Cut Relay 1 Malfunction	OFF
P16BF (198) ⁽²⁾	-	Starter Cut Relay STRLY Circuit Malfunction	OFF
P2101 (40)	-	Throttle Actuator System Malfunction	ON
P2108 (40)	-	Throttle Actuator Control Module Problem	ON
P2118 (40)	-	Throttle Actuator Current Range/Performance Problem	ON
P2122 (37)	-	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low Voltage	ON
P2123 (37)	-	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit High Voltage	ON
P2127 (37)	-	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit Low Voltage	ON
P2128 (37)	-	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit High Voltage	ON
P2135 (7)	-	Throttle Position (TP) Sensor A/B Incorrect Voltage Correlation	ON
P2138 (37)	-	Accelerator Pedal Position (APP) Sensor A/B (Throttle Position (TP) Sensor D/E) Incorrect Voltage Correlation	ON
P2176 (40)	-	Throttle Actuator Control System Idle Position Not Learned	ON
P2183 (192)	o	Engine Coolant Temperature (ECT) Sensor 2 Circuit Range/Performance Problem	ON
P2184 (192)	-	Engine Coolant Temperature (ECT) Sensor 2 Circuit Low Voltage	ON
P2185 (192)	-	Engine Coolant Temperature (ECT) Sensor 2 Circuit High Voltage	ON

P2195 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Signal Stuck Lean	ON
P2197 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Signal Stuck Lean	ON
P2227 (13)	o	Barometric Pressure (BARO) Sensor Circuit Range/Performance Problem	ON
P2228 (13)	-	Barometric Pressure (BARO) Sensor Circuit Low Voltage	ON
P2229 (13)	-	Barometric Pressure (BARO) Sensor Circuit High Voltage	ON

NOTE:

The above DTCs are indicated when the PGM-FI system is selected in the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system, and check automatic transmission DTCs.

(1) These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.

(2) A/T

DTC TROUBLESHOOTING CHART

DTC (MIL indication (1))	Two Drive Cycle Detection	Detection Hem	MIL
P2237 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) IP Circuit High Voltage	ON
P2238 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor DIP Circuit Low Voltage	ON
P2240 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Circuit High Voltage	ON
P2241 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Circuit Low Voltage	ON
P2243 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Circuit High Voltage	ON
P2245 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Circuit Low Voltage	ON
P2247 (156)	-	Front Air Fuel Ratio (A/F)	ON

		Sensor (Bank 2, Sensor 1) VCENT Circuit High Voltage	
P2249 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Circuit Low Voltage	ON
P2251 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Circuit High Voltage	ON
P2252 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Circuit Low Voltage	ON
P2254 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Circuit High Voltage	ON
P2255 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Circuit Low Voltage	ON
P2270 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Signal Stuck Lean	ON
P2271 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Signal Stuck Rich	ON
P2272 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Signal Stuck Lean	ON
P2273 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Signal Stuck Rich	ON
P2279 (109)	o	Intake Air System Leak	ON
P2413 (12)	o	Exhaust Gas Recirculation (EGR) System Malfunction	ON
P2422 (117)	o	Evaporative Emission (EVAP) Canister Vent Shut Valve Stuck Closed Malfunction	ON
P2552 (40)	-	Throttle Actuator Control Module Relay Malfunction	ON
P2610 (132)	-	Engine Control Module (ECM)/Powertrain Control Module (PCM) Ignition OFF Internal Timer Malfunction	ON

P2627 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) LABEL Circuit Low Voltage	ON
P2628 (155)	-	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) LABEL Circuit High Voltage	ON
P2630 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) LABEL Circuit Low Voltage	ON
P2631 (156)	-	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) LABEL Circuit High Voltage	ON
P2646 (22)	-	Rocker Arm Oil Pressure Switch Circuit Low Voltage	ON
P2647 (22)	-	Rocker Arm Oil Pressure Switch Circuit High Voltage	ON
P2648 (21)	-	Rocker Arm Oil Control Solenoid Circuit Low Voltage	ON
P2649 (21)	-	Rocker Arm Oil Control Solenoid Circuit High Voltage	ON
P2A00 (157)	o	Rear Air Fuel Ratio (A/F) Sensor Circuit Range/Performance Problem (Bank 1, Sensor 1)	ON
P2A03 (158)	o	Front Air Fuel Ratio (A/F) Sensor Circuit Range/Performance Problem (Bank 2, Sensor 1)	ON
U0073 (126)	-	F-CAN Malfunction (BUS-OFF)	ON
U0107 (30)	-	Lost Communication With Throttle Actuator Control Module	ON
U0122 (126)	-	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-VSA Modulator Control Unit)	OFF
U0155 (126)	-	F-CAN Malfunction	ON

	(Engine Control Module (ECM)/Powertrain Control Module (PCM)-Gauge Control Module)	
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NOTE:

The above DTCs are indicated when the PGM-FI system is selected in the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system, and check automatic transmission DTCs.

(1) These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.

SYMPTOM TROUBLESHOOTING INDEX

When the vehicle has one of these symptoms, check for a diagnostic trouble code (DTC) with the HDS. If there is no DTC, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
Engine will not start (MIL works OK, no DTCs set)	1. Test the battery (see <u>BATTERY TEST</u>). 2. Test the starter (see <u>STARTER PERFORMANCE TEST</u>). 3. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 4. J32A3 engine: Troubleshoot the fuel pump circuit (see <u>FUEL PUMP CIRCUIT TROUBLESHOOTING</u>).	• Low compression • No ignition spark • Intake air leaks • Locked up engine • Jumped timing belt • Contaminated fuel
Engine will not start (MIL comes on and stays on, or never comes on at all, no DTCs set)	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING (PART 2)</u>).	
MIL comes on and stays on, or never comes on at all, no DTCs set	Troubleshoot the MIL circuit (see <u>MIL CIRCUIT TROUBLESHOOTING</u>).	
Engine will not start (immobilizer indicator stays on or flashes)	Check the immobilizer system.	
Engine starts but stalls immediately (MIL works OK, no DTCs set, immobilizer indicator stays on or flashes)	Check the immobilizer system.	
Engine is hard to start (MIL works OK, no DTCs set)	1. Test the battery (see <u>BATTERY TEST</u>). 2. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 3. Clean the throttle body (see <u>THROTTLE BODY CLEANING</u>).	• Low compression • Intake air leaks • Contaminated fuel • Weak spark

Cold fast idle too low (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see <u>ECM/PCM IDLE LEARN PROCEDURE</u>). 2. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 3. Clean the throttle body (see <u>THROTTLE BODY CLEANING</u>).	
Cold fast idle too high (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see <u>ECM/PCM IDLE LEARN PROCEDURE</u>). 2. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 3. Adjust the throttle cable (see <u>THROTTLE CABLE ADJUSTMENT</u>). 4. Do the throttle position learning check (see <u>THROTTLE POSITION LEARNING CHECK</u>).	
Idle speed fluctuates (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see <u>ECM/PCM IDLE LEARN PROCEDURE</u>). 2. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 3. Adjust the throttle cable (see <u>THROTTLE CABLE ADJUSTMENT</u>). 4. Do the carbon accumulation check (see <u>CARBON ACCUMULATION CHECK</u>). 5. Troubleshoot the A/C signal circuit (see <u>A/C SIGNAL CIRCUIT TROUBLESHOOTING</u>).	Intake vacuum leaks
After warming up, idle speed is below specification without load (MIL works OK, no DTCs set)	1. Troubleshoot the alternator FR signal circuit (see <u>ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING</u>). 2. Do the carbon accumulation check (see <u>CARBON ACCUMULATION CHECK</u>).	
After warming up, idle speed is above specification without load (MIL works OK, no DTCs set)	1. Adjust the throttle cable (see <u>THROTTLE CABLE ADJUSTMENT</u>). 2. Troubleshoot the alternator FR signal circuit (see <u>ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING</u>). 3. Troubleshoot the PSP switch signal circuit (see <u>PSP SWITCH SIGNAL CIRCUIT TROUBLESHOOTING</u>). 4. Inspect the APP sensor signal (see <u>APP</u>)	

	<u>SENSOR SIGNAL INSPECTION</u>).	
After warming up, idle speed drops when steering wheel is turning (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see <u>ECM/PCM IDLE LEARN PROCEDURE</u>). 2. Troubleshoot the PSP switch signal circuit (see <u>PSP SWITCH SIGNAL CIRCUIT TROUBLESHOOTING</u>). 3. Do the carbon accumulation check (see <u>CARBON ACCUMULATION CHECK</u>).	Power steering system problems
Low power (MIL works OK, no DTCs set)	1. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 2. Adjust the throttle cable (see <u>THROTTLE CABLE ADJUSTMENT</u>).	• Low compression • Incorrect camshaft timing • Incorrect engine oil level
Engine stalls (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see <u>ECM/PCM IDLE LEARN PROCEDURE</u>). 2. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 3. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 4. Troubleshoot the brake pedal position switch signal circuit (see <u>BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING</u>).	• Intake air leaks • Faulty harness and sensor connections • Fuel contamination
Difficult to refuel (MIL works OK, no DTCs set)	1. Check the fuel vent tube between the EVAP canister and the fuel tank. 2. Check the fuel tank vapor recirculation tube between the fuel pipe and the fuel tank. 3. Replace the fuel tank (see <u>FUEL TANK REPLACEMENT</u>).	• Malfunctioning gas station filling nozzle. • Filler neck restriction
Fuel overflows during refueling (No DTCs set)	Replace the fuel tank (see <u>FUEL TANK REPLACEMENT</u>).	Malfunctioning gas station filling nozzle.
Fuel cap warning message comes on and stays on (MIL works OK, no DTCs set)	Troubleshoot the fuel cap warning message system (see <u>FUEL CAP WARNING MESSAGE SYSTEM TROUBLESHOOTING</u>).	
HDS does not communicate with the ECM/PCM or the vehicle	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING (PART 2)</u>).	

SYSTEM DESCRIPTION

ELECTRONIC CONTROL SYSTEM

The functions of the fuel and emission control systems are managed by the engine control module (ECM) on vehicles with manual transmissions, or the powertrain control module (PCM) on vehicles with automatic transmissions.

Self-diagnosis

The ECM/PCM detects a failure of a signal from a sensor or from another control unit and stores a Temporary DTC or a DTC. Depending on the failure, a DTC is stored in the first or the second drive cycle (for DTC P0457, the DTC is set in the beginning of the third drive cycle). When a DTC is stored, the ECM/PCM turns on the malfunction indicator lamp (MIL) by a signal sent to the gauge via F-CAN.

- **One Drive Cycle Detection Method**

When an abnormality occurs in the signal from a sensor or from another control unit, the ECM/PCM stores a DTC and turns on the MIL immediately.

- **Two Drive Cycle Detection Method**

When an abnormality occurs in the signal from a sensor or from another control unit in first drive cycle, the ECM/PCM stores a Temporary DTC. The MIL does not come on at this time. If the failure continues in the second drive cycle, the ECM/PCM stores a DTC in erasable memory and turns on the MIL.

Fail-safe Function

When an abnormality occurs in the signal from a sensor or from another control unit, the ECM/PCM ignores that signal and assumes a pre-programmed value that allows the engine to continue running. This causes a DTC to be stored and the MIL to come on.

MIL Bulb Check and Readiness Code Condition

When the ignition switch is turned ON (II), the ECM/PCM turns on the MIL via F-CAN circuit for about 15 to 20 seconds to check the bulb condition. If any readiness codes are not set to complete, the MIL flashes five times. If all readiness codes are set to complete, the MIL goes off.

Self Shut Down (SSD) Mode

After the ignition switch is turned OFF, the ECM/PCM stays on (about 30 minutes). If the ECM/PCM connector is disconnected during this time, the ECM/PCM may be damaged. To cancel this mode, disconnect the negative cable from the battery or jump the SCS line with the HDS after the ignition switch is turned OFF.

ECM/PCM Electrical Connections

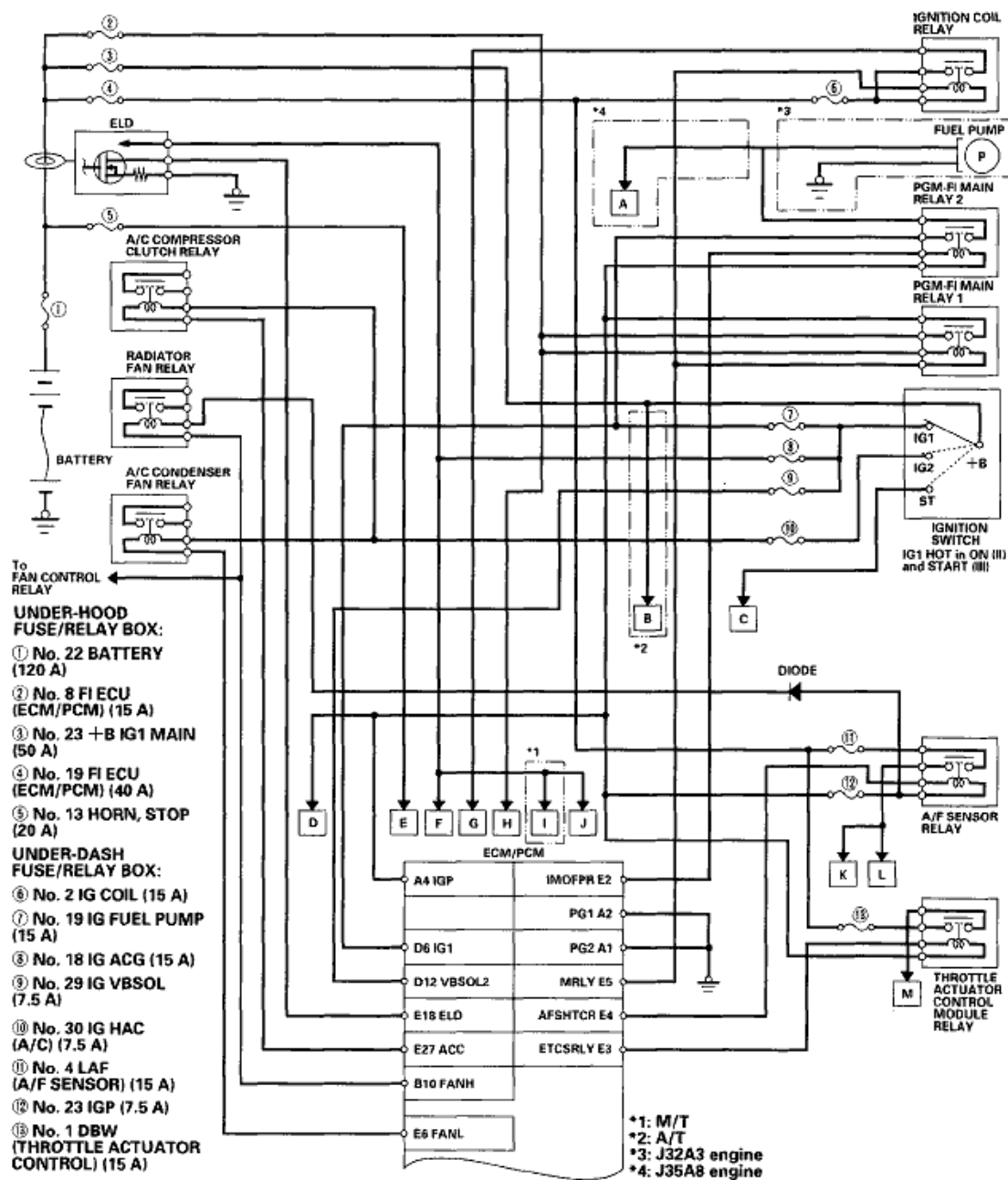


Fig. 10: ECM/PCM Electrical Connections - Circuit Diagram (1 Of 6)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

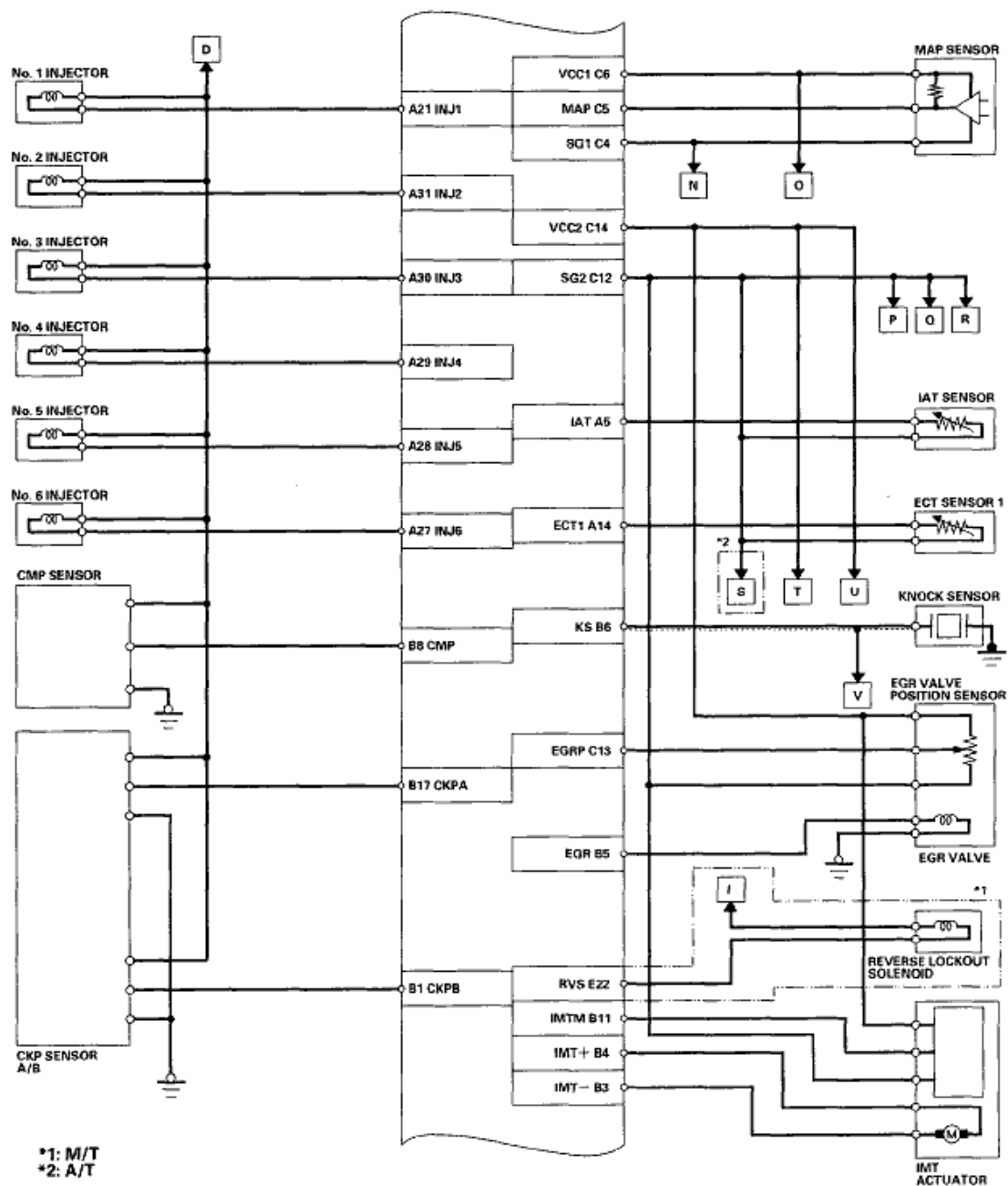


Fig. 11: ECM/PCM Electrical Connections - Circuit Diagram (2 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

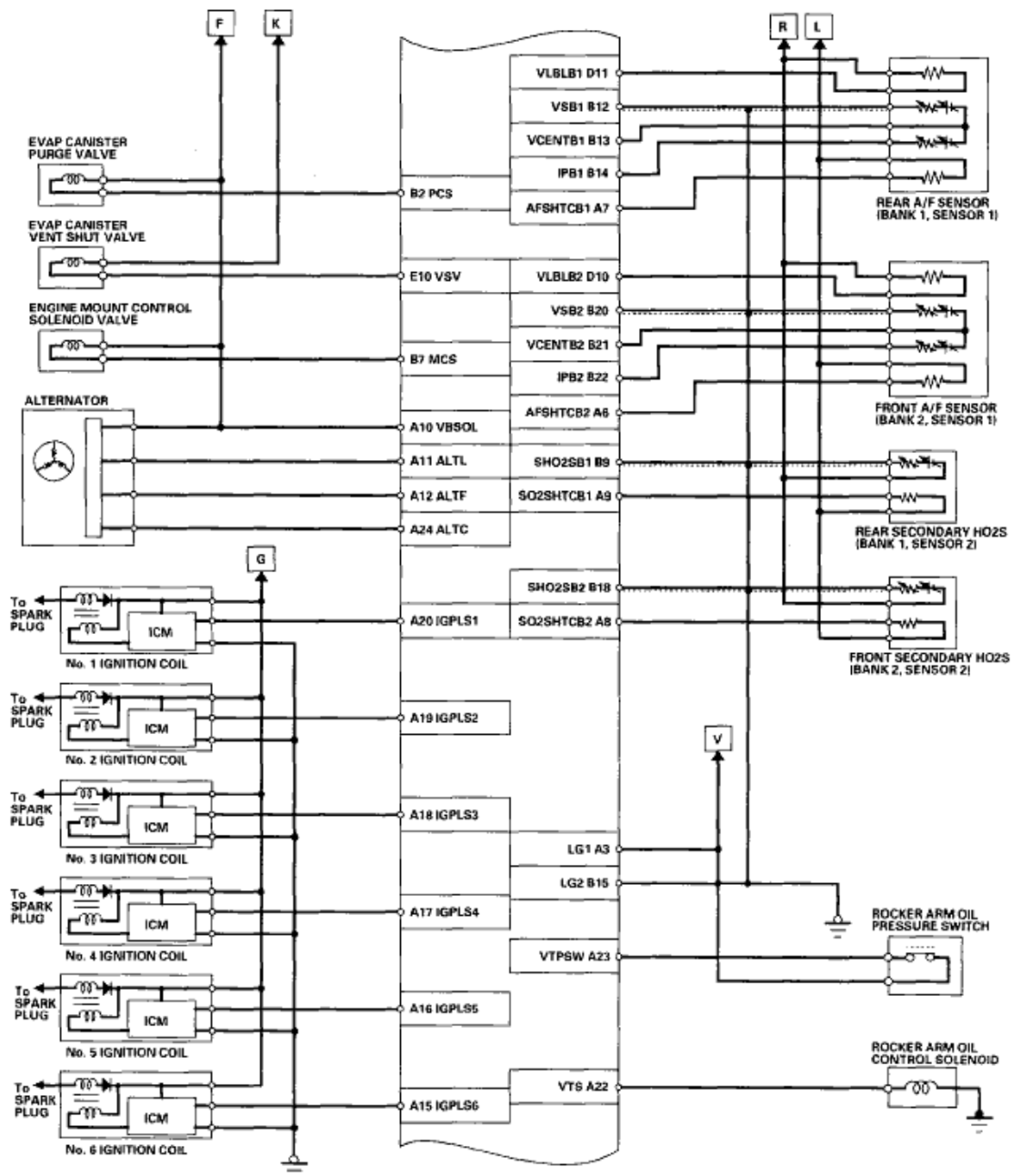


Fig. 12: ECM/PCM Electrical Connections - Circuit Diagram (3 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

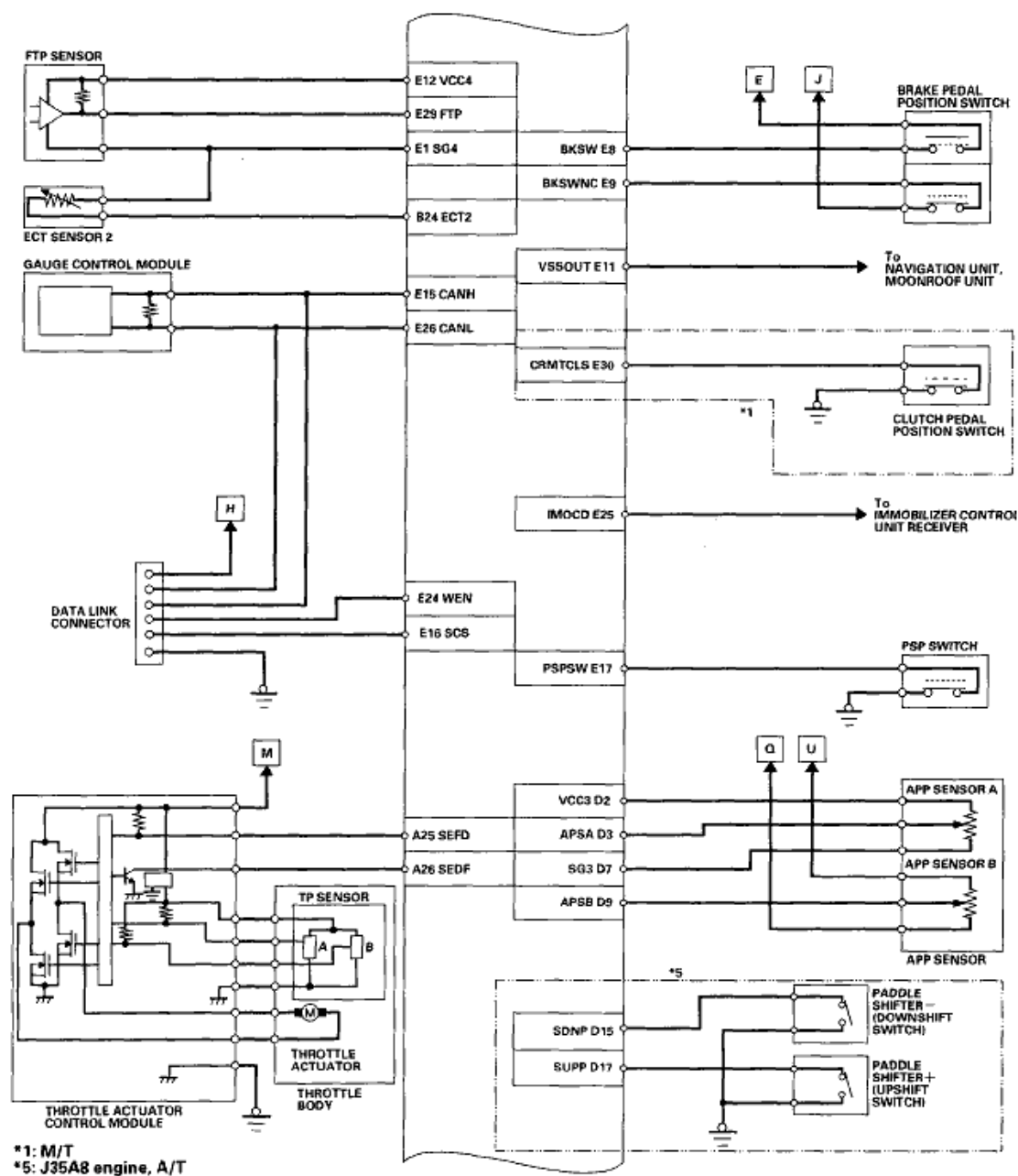


Fig. 13: ECM/PCM Electrical Connections - Circuit Diagram (4 Of 6)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

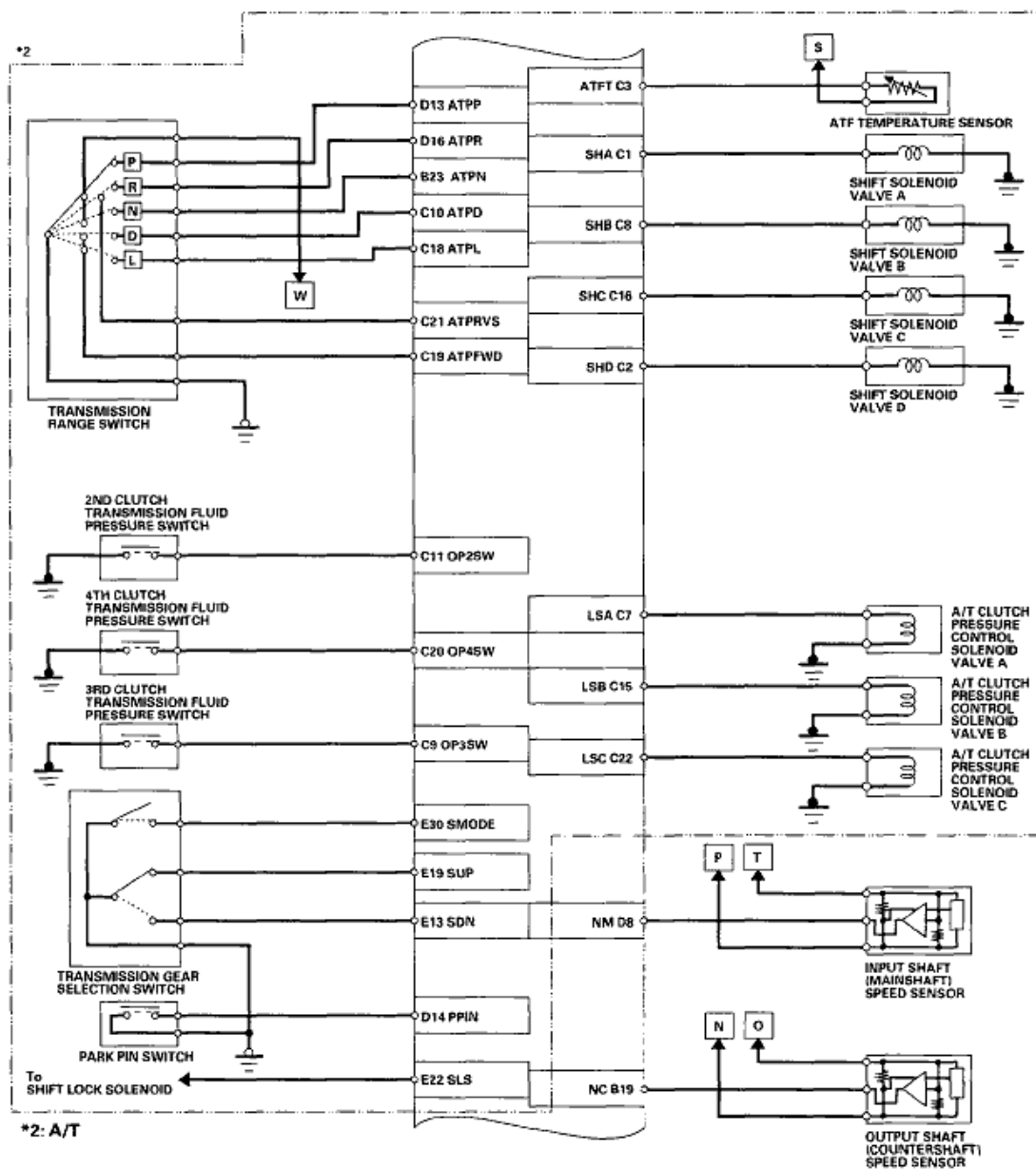
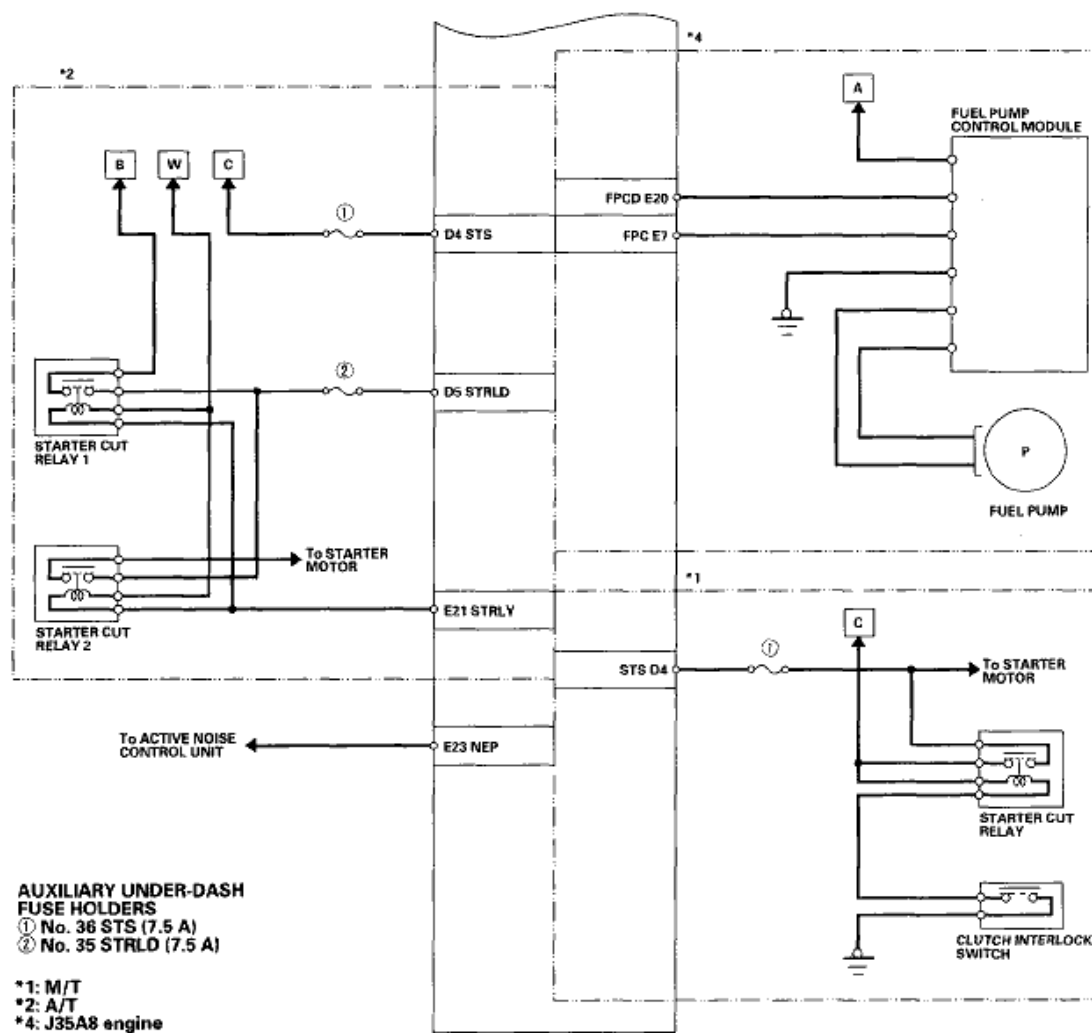


Fig. 14: ECM/PCM Electrical Connections - Circuit Diagram (5 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



ECM/PCM A (31P)									ECM/PCM B (24P)							ECM/PCM C (22P)							ECM/PCM D (17P)							ECM/PCM E (31P)																	
1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9									
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	8	9	10	11	12	13	14	15	7	8	9	10	11	12	10	11	12	13	14	15	16	17	18	19	20	21
22	23	24	25	26	27	28	29	30	31	17	18	19	20	21	22	16	17	18	19	20	21	22	13	14	15	16	17	22	23	24	25	26	27	28	29	30	31										

TERMINAL LOCATIONS

Fig. 15: ECM/PCM Electrical Connections - Circuit Diagram (6 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM HOSE ROUTING

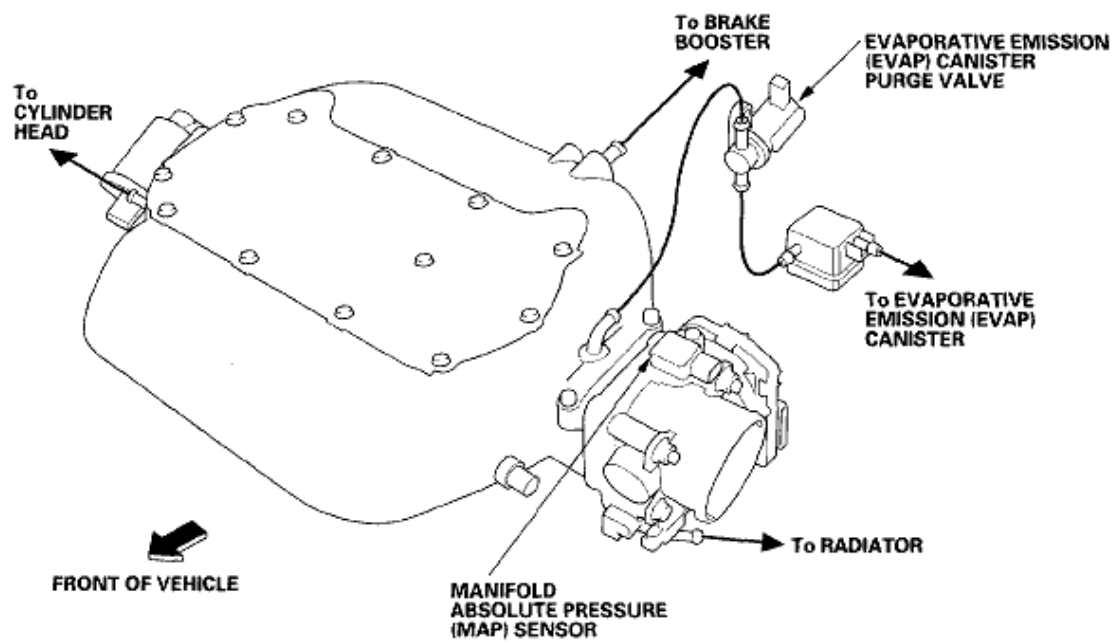
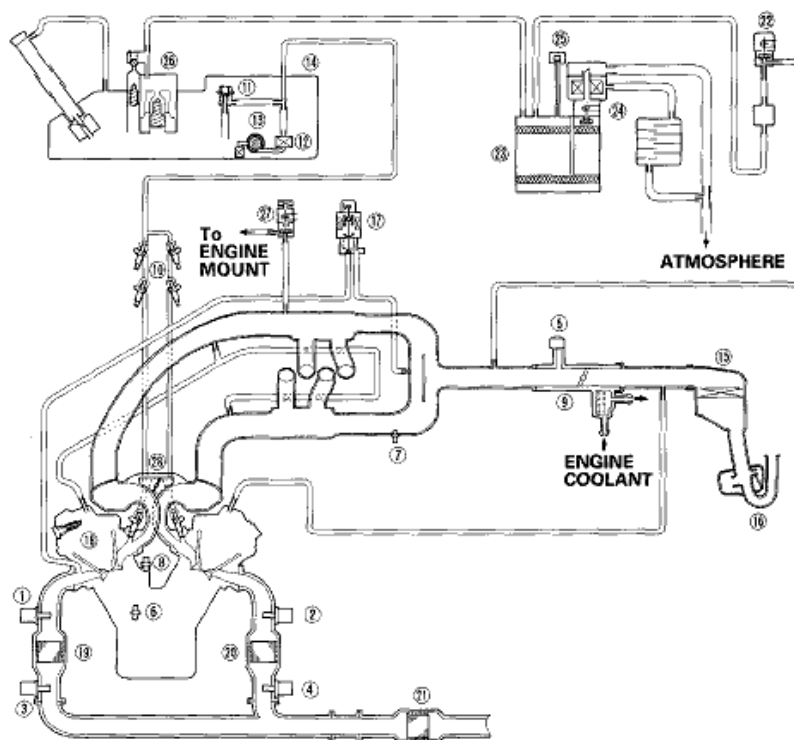


Fig. 16: Vacuum Hose Routing Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM DISTRIBUTION



- | | |
|---|---|
| ① FRONT AIR FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) | ⑪ EXHAUST GAS RECIRCULATION (EGR) VALVE and POSITION SENSOR |
| ② REAR AIR FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) | ⑫ POSITIVE CRANKCASE VENTILATION (PCV) VALVE |
| ③ FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO ₂ S) (BANK 2, SENSOR 2) | ⑬ FRONT WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC) (BANK 2) |
| ④ REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO ₂ S) (BANK 1, SENSOR 2) | ⑭ REAR WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC) (BANK 1) |
| ⑤ MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR | ⑮ UNDER-FLOOR THREE WAY CATALYTIC CONVERTER (TWC) |
| ⑥ ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 | ⑯ EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE |
| ⑦ INTAKE AIR TEMPERATURE (IAT) SENSOR | ⑰ EVAPORATIVE EMISSION (EVAP) CANISTER |
| ⑧ KNOCK SENSOR | ⑱ EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE |
| ⑨ THROTTLE BODY | ⑲ FUEL TANK PRESSURE (FTP) SENSOR |
| ⑩ INJECTOR | ⑳ FUEL TANK VAPOR CONTROL VALVE |
| ⑪ FUEL PRESSURE REGULATOR | ㉑ ENGINE MOUNT CONTROL SOLENOID VALVE |
| ⑫ FUEL FILTER | ㉒ INTAKE MANIFOLD TUNING (IMT) VALVE |
| ⑬ FUEL PUMP | |
| ⑭ FUEL TANK | |
| ⑮ AIR CLEANER | |
| ⑯ RESONATOR | |

Fig. 17: Vacuum Distribution Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR A (31P)

1 PG2	2 PG1	3 LG1	4 IGP	5 IAT	6 AFSHTC B2	7 AFSHTC B1	8 SO2S HTCB2	9 SO2S HTCB1
10 VBSOL	11 ALTL	12 ALTF	14 ECT1	15 IGPLS6	16 IGPLS5	17 IGPLS4	18 IGPLS3	19 IGPLS2
22 VTS	23 VTPSW	24 ALTC	25 SEPD	26 SEDF	27 INJ6	28 INJ5	29 INJ4	30 INJ3
								31 INJ2

Wire side of female terminals

Fig. 18: Identifying ECM/PCM Inputs And Outputs At Connector (31P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

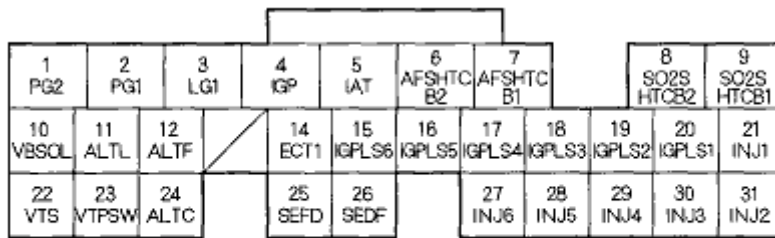
NOTE: Standard battery voltage is about 12 V.

TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
1	BLK	PG2 (POWER GROUND)	Ground circuit for ECM/PCM circuit	Less than 1.0 V at all times
2	BLK	PG1 (POWER GROUND)	Ground circuit for ECM/PCM circuit	Less than 1.0 V at all times
3	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for ECM/PCM circuit	Less than 1.0 V at all times
4	YEL/BLK	IGP (POWER SOURCE)	Power source for ECM/PCM circuit	With ignition switch ON (II): battery voltage With ignition switch OFF: about 0 V
5	RED/YEL	IAT (INTAKE AIR TEMPERATURE (IAT) SENSOR)	Detects IAT sensor signal	With ignition switch ON (II): about 0.1 - 4.8 V (depending on intake air temperature)
6	GRN/WHT	AFS HTCB2 (AIR FUEL RATIO (A/F) SENSOR HEATER CONTROL BANK 2)	Drives front A/F sensor heater (Bank 2, sensor 1)	With ignition switch ON (II): battery voltage With fully warmed up engine running: about 0 V or pulses
7	BLK/WHT	AFS HTCB1 (AIR FUEL RATIO (A/F) SENSOR HEATER CONTROL BANK1)	Drives rear A/F sensor heater (Bank 1, sensor 1)	With ignition switch ON (II): battery voltage With fully warmed up engine running: about 0 V or pulses
8	GRN/RED	SO2SHTCB2 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) HEATER CONTROL BANK 2)	Drives front secondary HO2S heater (Bank 2, sensor 2)	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled
9	BLK/WHT	SO2SHTCB1 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) HEATER CONTROL BANK1)	Drives rear secondary HO2S heater (Bank 1, sensor 2)	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled
10	BLK/YEL	VBSOL (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid	With ignition switch ON (II): battery voltage With ignition switch OFF: about 0 V
11	WHT/BLU	ALTAL (ALTERNATOR L SIGNAL)	Detects alternator L signal	With ignition switch ON (II): about 0 V With engine running: battery voltage
				With engine running:

12	WHT/RED	ALTF (ALTERNATOR FR SIGNAL)	Detects alternator FR signal	about 0-5.0 V (depending on electrical load)
14	RED/WHT	ECT1 (ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1)	Detects ECT sensor 1 signal	With ignition switch ON (II): about 0.1 - 4.8 V (depending on engine coolant temperature)

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR A (31P)



Wire side of female terminals

Fig. 19: Identifying ECM/PCM Inputs And Outputs At Connector (31P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

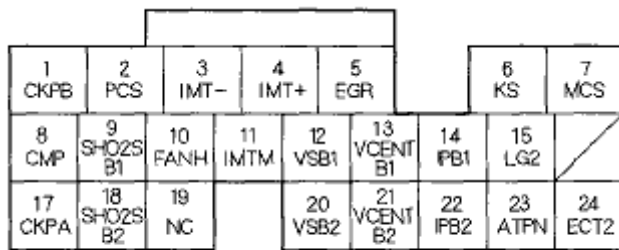
NOTE: Standard battery voltage is about 12 V.

TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
15	BRN/WHT	IGPLS6 (No. 6 IGNITION COIL PULSE)	Drives No. 6 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
16	BLK/RED	IGPLS5 (No. 5 IGNITION COIL PULSE)	Drives No. 5 ignition coil	
17	BRN	IGPLS4 (No. 4 IGNITION COIL PULSE)	Drives No. 4 ignition coil	
18	WHT/BLU	IGPLS3 (No. 3 IGNITION COIL PULSE)	Drives No. 3 ignition coil	
19	BLU/RED	IGPLS2 (No. 2 IGNITION COIL PULSE)	Drives No. 2 ignition coil	
20	YEL/GRN	IGPLS1 (No. 1 IGNITION COIL PULSE)	Drives No. 1 ignition coil	At idle: duty controlled With ignition switch ON (II): battery voltage
21	BRN	INJ1 (No. 1 INJECTOR)	Drives No. 1 injector	
22	GRN/YEL	VTS (ROCKER ARM OIL CONTROL SOLENOID)	Drives rocker arm oil control solenoid	At idle: about 0 V
23	BLU/BLK	VTP SW (ROCKER ARM OIL PRESSURE SWITCH)	Detects rocker arm oil pressure switch signal	With engine at low speed: about 0 V With engine at high speed: battery voltage

24	WHT/GRN	ALTC (ALTERNATOR CONTROL)	Sends alternator control signal	With engine running and fully warmed up: battery voltage (depending on electrical load)
25	GRN	SEFD (THROTTLE ACTUATOR CONTROL SERIAL SIGNAL)	Sends throttle actuator control serial signal	
26	BLU	SEDF (THROTTLE ACTUATOR CONTROL SERIAL SIGNAL)	Detects throttle actuator control serial signal	
27	WHT/BLU	INJ6 (No. 6 INJECTOR)	Drives No. 6 injector	At idle: duty controlled With ignition switch ON (II): battery voltage
28	BLK/RED	INJ5 (No. 5 INJECTOR)	Drives No. 5 injector	
29	YEL	INJ4 (No. 4 INJECTOR)	Drives No. 4 injector	
30	BLU	INJ3 (No. 3 INJECTOR)	Drives No. 3 injector	
31	RED	INJ2 (No. 2 INJECTOR)	Drives No. 2 injector	

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR B (24P)



Wire side of female terminals

Fig. 20: Identifying ECM/PCM Inputs And Outputs At Connector B (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
1	BLU/RED	CKPB (CRANKSHAFT POSITION (CKP) SENSOR B)	Drives CKP sensor B signal	With engine running: pulses
2	RED/YEL	PCS (EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE)	Drives EVAP canister purge valve	With engine running, engine coolant below 149°F (65°C): battery voltage With engine running, engine coolant above

				149°F (65°C): duty controlled
3	WHT/RED	IMT- (INTAKE MANIFOLD TUNING (IMT) ACTUATOR - SIDE)	Ground for IMT actuator	With ignition switch ON (II): battery voltage
4	WHT/BLU	IMT+ (INTAKE MANIFOLD TUNING (IMT) ACTUATOR +SIDE)	Drives IMT actuator	With ignition switch ON (II): battery voltage
5	BLU/RED	EGR (EXHAUST GAS RECIRCULATION(EGR) VALVE)	Drives EGR valve	With EGR operating: duty controlled With EGR not operating: about 0 V
6	RED/BLU	KS (KNOCK SENSOR)	Detects knock sensor signal	With engine knocking: pulses
7	BLU/YEL	MCS (ENGINE MOUNT CONTROL SOLENOID VALVE)	Drives engine mount control solenoid valve	At idle: about 0 V Above idle: battery voltage
8	YEL	CMP (CAMSHAFT POSITION (CMP) SENSOR)	Detects CMP sensor signal	With engine running: pulses
9	GRN	SHO2SB1 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) BANK 1, SENSOR 2)	Detects rear secondary HO2S (Bank 1, sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
10	GRN	FANH (RADIATOR FAN RELAY, FAN CONTROL RELAY HIGH)	Drives radiator fan relay and fan control relay	With ignition switch ON (II): battery voltage
11	WHT/BLK	IMTM (INTAKE MANIFOLD TUNING (IMT) ACTUATOR MONITOR)	Detects IMT actuator position	With engine running: about 0 V With engine speed above 4,000 rpm: about 5.0 V

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR B (24P)

1 CKPB	2 PCS	3 IMT-	4 IMT+	5 EGR	6 KS	7 MCS
8 CMP	9 SHO2S B1	10 FANH	11 IMTM	12 VSB1	13 VCENT B1	14 PB1
15 LG2	16	17 CKPA	18 SHO2S B2	19 NC	20 VSB2	21 VCENT B2
22 PB2	23 ATPN	24 ECT2				

Wire side of female terminals

Fig. 21: Identifying ECM/PCM Inputs And Outputs At Connector B (24P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
12	BLU	VSB1 (VSCELL+BANK1)	Detects rear A/F sensor (Bank 1, sensor DVS CELL signal)	With engine running: about 3.4-4.8 V
13	RED	VCENTB1 (VIRTUAL GROUND BANK 1)	Reference voltage supply for rear A/F sensor (Bank 1, sensor 1)	With fully warmed up engine at idle: about 3.4-3.8 V
14	GRN	IPB1 (IPCELL+BANK1)	Detects rear A/F sensor (Bank 1, sensor 1) pump cell	With engine running: about 2.0-5.6 V
15	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for ECM/PCM	Less than 1.0 V at all times
17	BLU	CKPA (CRANKSHAFT POSITION (CKP) SENSOR A)	Detects CKP sensor A signal	With engine running: pulses
18	WHT	SHO2SB2 (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) BANK 2, SENSOR 2)	Detects front secondary HO2S (Bank 2, sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
19	BLU	NC (OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signals	With ignition switch ON (II) and front wheels rotated by hand: pulses
20	RED/BLU	VSB2 (VSCELL+BANK2)	Reference voltage supply for front A/F sensor (Bank 2, sensor 1)	With fully warmed up engine at idle: about 3.4-4.8 V
21	RED/WHT	VCENTB2 (VIRTUAL GROUND BANK 2)	Detects front A/F sensor (Bank 2, sensor DVS CELL signal)	With engine running with fully warmed up engine: about 3.4-4.8 V
22	GRN/RED	IPB2 (IPCELL+BANK2)	Detects front A/F sensor (Bank 2, sensor 1) pump cell	With engine running: about 2.0-5.6 V
23 ⁽¹⁾	RED/BLK	ATPN (TRANSMISSION RANGE SWITCH N)	Detects transmission range switch N position signal	In N position: about 0 V In any position other than N: battery voltage
24	GRN/RED	ECT2 (ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2)	Detects ECT sensor 2 signal	With ignition switch ON (II): about 0.1-4.8V (depending on engine coolant

				speed)
6	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V With ignition switch OFF: about 0 V
7 ⁽¹⁾	RED	LSA (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A)	Drives A/T clutch pressure control solenoid valve A	With ignition switch ON (II): current control
8 ⁽¹⁾	GRN/WHT	SHB (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	With engine running in L or D (in 1st, 2nd, 5th gears), or N, P, or M positions: battery voltage With engine running in D (in 3rd, 4th gears), L, and M positions: about 0 V
9 ⁽¹⁾	BLU/WHT	OP3SW (3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 3rd clutch transmission fluid pressure switch input	With ignition switch ON (II): Without 3rd clutch pressure: about 5.0 V With 3rd clutch pressure: about 0 V
10 ⁽¹⁾	YEL/GRN	ATPD (TRANSMISSION RANGE SWITCH D POSITION)	Detects transmission range switch D position signal input	In D position: about 0 V In any position other than D: battery voltage
11 ⁽¹⁾	BLU/BLK	OP2SW (2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 2nd clutch transmission fluid pressure switch input	With ignition switch ON (II): Without 2nd clutch pressure: about 5.0 V With 2nd clutch pressure: about 0 V
12	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
13	WHT/BLK	EGRP (EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR)	Detects EGR valve position sensor signal	With engine running: about 1.2-3.0 V (depending on EGR valve lift)
(1) A/T				

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR C (22P)

1 SHA	2 SHD		3 ATFT	4 SGI	5 MAP	6 VCC1	7 LSA
8 SHB	9 OP3 SW	10 ATPD	11 OP2 SW	12 SG2	13 EGRP	14 VCC2	15 LSB
16 SHC		18 ATPL	19 ATP FWD	20 OP4 SW		21 ATP RVS	22 LSC

Wire side of female terminals

Fig. 23: Identifying ECM/PCM Inputs And Outputs At Connector C (22P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
14	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V With ignition switch OFF: about 0 V
15 ⁽¹⁾	BRN/WHT	LSB (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B)	Drives A/T clutch pressure control solenoid valve B	With ignition switch ON (II): current control
16 ⁽¹⁾	GRN	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	With engine running in D, L, and M positions (in 1st, 3rd, 5th gears): battery voltage With engine running in neutral, N, P, R, D (in 2nd, 4th gears), and M positions: about 0 V
18 ⁽¹⁾	RED	ATPL (TRANSMISSION RANGE SWITCH L)	Detects transmission range switch L position signal	In L position: about 0 V In any position other than L: battery voltage
19 ⁽¹⁾	BLU/YEL	ATPFWD (TRANSMISSION RANGE SWITCH D/L)	Detects transmission range switch D/L position signal	In D, L positions: about 0 V In any position other than D, L: battery voltage
20 ⁽¹⁾	BLU/YEL	OP4SW (4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 4th clutch transmission fluid pressure switch input	With ignition switch ON (II): Without 4th clutch pressure: about 5.0 V With 4th clutch pressure: about 0 V
				In P, R, N positions:

21 ⁽¹⁾	RED/WHT	ATPRVS (TRANSMISSION RANGE SWITCH P/R/N)	Detects transmission range switch P, R, N positions signal input	about 0 V In any position other than P, R, N: battery voltage
22 ⁽¹⁾	GRN/RED	LSC (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C)	Drives A/T clutch pressure control solenoid valve C	With ignition switch ON (II): current control
(1) A/T				

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR (17P)

NOTE: Standard battery voltage is about 12 V.

	2	3	4	5	6
	VCC3	APSA	STS	STRLD	IG1
7	8	9	10	11	12
SG3	NM	APSB	VLBL B2	VLBL B1	VB SOL2
13	14		15	16	17
ATPP	PPIN		SDNP	ATPR	SUPP

Wire side of female terminals

Fig. 24: Identifying ECM/PCM Inputs And Outputs At Connector (17P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

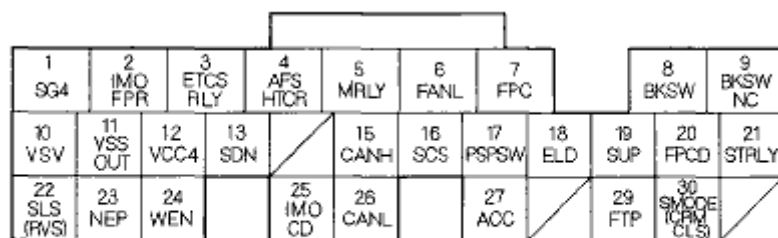
TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
2	YEL/GRN	VCC3 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V With ignition switch OFF: about 0 V
3	LT BLU	APSA (ACCELERATOR PEDAL POSITION (APP) SENSOR A)	Detects APP sensor A signal	With ignition switch ON (II) and accelerator pedal pressed: about 4.7 V With ignition switch ON (II) and accelerator pedal released: about 0.5 V
4	LT BLU	STS (STARTER SWITCH SIGNAL)	Detects starter switch signal	With ignition switch in START (III): battery voltage In any position other than START (III): about 0 V
5 ⁽¹⁾	PNK	STRLD	Detects starter cut relay 1	With starter ON: battery voltage

6	BLK/GRN	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II): battery voltage With ignition switch OFF: about 0 V
7	GRN	SG3 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
8	LT GRN	NM (INPUT SHAFT (MAINSHAFT) SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signals	With ignition switch ON (II): about 0 V or about 5.0 V With engine at idling in N position: about 2.5 V (pulse)
9	BLK	APSB (ACCELERATOR PEDAL POSITION (APP) SENSOR B)	Detects APP sensor B signal	With ignition switch ON (II) and accelerator pedal pressed: about 2.3 V With ignition switch ON (II) and accelerator pedal released: about 0.2 V
10	YEL	VLBLB2 (LABEL RESISTER BANK 2)	Detects front A/F sensor (Bank 2, sensor 1) LABEL signal	With engine running: about 0.4-4.6 V
11	BRN	VLBLB1 (LABEL RESISTER BANK1)	Detects rear A/F sensor (Bank 1, sensor 1) LABEL signal	With engine running: about 0.4-4.6 V
12	ORN	VBSOL2 (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II): battery voltage With ignition switch OFF: about 0 V
13 ⁽¹⁾	BLU/BLK	ATPP (TRANSMISSION RANGE SWITCH P)	Detects transmission range switch P position signal	In P position: about 0 V In any position other than P: battery voltage
14 ⁽¹⁾	YEL/BLU	PPIN (PARK PIN SWITCH)	Detects park pin switch signal	With ignition switch ON (II) in P position: battery voltage With ignition switch ON (II) in any position other than P: about 0 V
15 ⁽¹⁾	PUR	SDNP (PADDLE SHIFTER- (DOWNSHIFT SWITCH))	Detects paddle shifter- (downshift switch) signal	In M position, paddle shifter- (downshift switch) pressed: about 0 V In M position, paddle shifter- (downshift switch) released: battery voltage
16 ⁽¹⁾	WHT	ATPR (TRANSMISSION RANGE SWITCH R)	Detects transmission range switch R	In R position: about 0 V In any position other

			position signal input	than R: battery voltage
17 ⁽²⁾	BLU	SUPP (PADDLE SHIFTER+ (UPSHIFT SWITCH))	Detects paddle shifter+ (upshift switch) signal	In M position, paddle shifter+ (upshift switch) pressed: about 0 V In M position, paddle shifter+ (upshift switch) released: battery voltage
(1) A/T				
(2) J35A8 engine, A/T				

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR E (31P)



Wire side of female terminals

Fig. 25: Identifying ECM/PCM Inputs And Outputs At Connector E (31P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

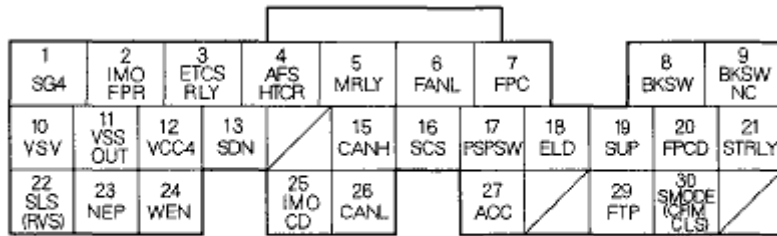
TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
1	GRN/BLK	SG4 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
2	BLK	IMOFPR (IMMOBILIZER FUEL PUMP RELAY)	Drives PGM-FI main relay 2	0 V for 2 seconds after turning ignition switch ON (II), then battery voltage
3	WHT/RED	ETCSRLY (THROTTLE ACTUATOR CONTROL MODULE RELAY)	Drives throttle actuator control module relay	With ignition switch ON (II): about 0 V
4	GRN	AFSHTCR (AIR FUEL RATIO (A/F) SENSOR RELAY)	Drives A/F sensor relay	With ignition switch ON (II): about 0 V
5	PNK	MRLY (PGM-FI MAIN RELAY)	Drives PGM-FI main relay 1 Power source for DTC memory	With ignition switch ON (II): about 0 V With ignition switch OFF: battery voltage
6	PUR	FANL (RADIATOR FAN)	Drives A/C condenser	With ignition switch ON (II): battery

		CONTROL)	fan relay	voltage
7(2)	PNK	FPC (FUEL PUMP CONTROL)	Detects fuel pump control signal	With ignition switch ON (II): pulses With ignition switch OFF: about 0 V
8	WHT/BLK	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: about 0 V With brake pedal pressed: battery voltage
9	BRN/YEL	BKSWNC (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With ignition switch ON (II) and brake pedal released: battery voltage With ignition switch ON (II) and brake pedal pressed: about 0 V
10	LT GRN/RED	VSV (EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE)	Drives EVAP canister vent shut valve	With ignition switch ON (II): battery voltage
11	LT BLU	VSSOUT (VEHICLE SPEED SENSOR OUTPUT SIGNAL)	Sends vehicle speed signal	Depending on vehicle speed: pulses
12	YEL/WHT	VCC4 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V With ignition switch OFF: about 0 V
13(1)	WHT/BLU	SDN (DOWNSHIFT SWITCH)	Detects downshift switch signal	In M position and shift lever pushed toward downshift position: about 0 V In M position and shift lever in neutral position: battery voltage
15	WHT	CANH (CAN COMMUNICATION SIGNAL HIGH)	Sends communication signal	With ignition switch ON (II): pulses
16	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With the service check signal shorted with the HDS: about 0 V With the service check signal opened: about 5.0 V
		PSPSW (POWER STEERING	Detects PSP switch	At idle with steering wheel in straight ahead position: about

17	GRY	PRESSURE SWITCH SIGNAL)	signal	0 V At idle with steering wheel at full lock: battery voltage
(1) A/T				
(2) J35A8 engine				

ECM/PCM INPUTS AND OUTPUTS AT CONNECTOR E (31P)



Wire side of female terminals

Fig. 26: Identifying ECM/PCM Inputs And Outputs At Connector E (31P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

TERMINALS REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
18	WHT	ELD (ELECTRICAL LOAD DETECTOR (ELD))	Detects ELD signal	With ignition switch ON (II): about 0.1-4.8 V (depending on electrical load)
19 ⁽¹⁾	BRN/WHT	SUP (UPSHIFT SWITCH)	Detects upshift switch signal	In M position and shift lever pushed toward upshift position: about 0 V In M position and shift lever in neutral position: battery voltage
20 ⁽³⁾	LT BLU	FPCD (FUEL PUMP CONTROL MODULE DIAGNOSIS)	Detect fuel pump control module diagnosis	With ignition switch ON (II): about 0 V At idle: about 10.0 V
21 ⁽¹⁾	BLU/GRN	STRLY (STARTER CUT RELAY)	Drives starter cut relay 2	With ignition switch ON (II): about 0 V
22 ⁽¹⁾	YEL/BLK	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II), in P position, brake Pedal pressed, and accelerator released: about 0 V
				With vehicle speed below

22 ⁽²⁾	WHT	RVS (REVERSE LOCKOUT SOLENOID)	Drives reverse lockout solenoid	9 mph (15 km/h): battery voltage With vehicle speed above 12 mph (20 km/h): about 0 V
23	WHT/GRN	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse	With engine running: pulses
24	RED/WHT	WEN (WRITE ENABLE SIGNAL)	Detects write enable signal	With ignition switch ON (II): about 0 V
25	YEL	IM OCD (IMMOBILIZER CODE)	Detects immobilizer signal	
26	RED	CANL (CAN COMMUNICATION SIGNAL LOW)	Sends communication signal	With ignition switch ON (II): pulses
27	RED	ACC (A/C COMPRESSOR CLUTCH RELAY)	Drives A/C compressor clutch relay	With compressor ON: about 0 V With compressor OFF: battery voltage
29	LT GRN	FTP (FUEL TANK PRESSURE (FTP) SENSOR)	Detects FTP sensor signal	With ignition switch ON (II) and fuel fill cap removed: about 2.5 V
30 ⁽¹⁾	ORN	SMODE (SEQUENTIAL SPORT SHIFT MODE)	Detects sequential sport shift mode switch signal	In M position: about 0 V In any other than M: battery voltage
30 ⁽²⁾	LT BLU	CRMCLS (CRUISE CLUTCH PEDAL POSITION SIGNAL)	Detects clutch pedal position switch signal	With ignition switch ON (II) and clutch pedal pressed: about 0 V With ignition switch ON (II) and clutch pedal released: battery voltage
(1) A/T (2) M/T (3) J35A8 engine				

PGM-FI SYSTEM

The programmed fuel injection (PGM-FI) system is a sequential multiport fuel injection system.

Air Conditioning (A/C) Compressor Clutch Relay

When the ECM/PCM receives a demand for cooling from the A/C system, it delays the compressor from being energized, and enriches the mixture to assure smooth transition to the A/C mode.

Alternator Control

The alternator signals the ECM/PCM during charging.

Air Fuel Ratio (A/F) Sensor

The A/F sensor operates over a wide air/fuel range. The A/F sensor is installed upstream of the WU-TWC, and sends signals to the ECM/PCM which varies the duration of fuel injection accordingly.

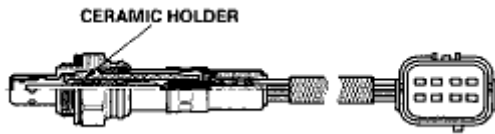


Fig. 27: Identifying Ceramic Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Barometric Pressure (BARO) Sensor

The BARO sensor is inside the ECM/PCM. It converts atmospheric pressure into a voltage signal that is used by the ECM/PCM to modify the basic duration of the fuel injection discharge.

Camshaft Position (CMP) Sensor

The CMP sensor input is used by the ECM/PCM to determine ignition timing at start up (cranking) and when crank angle is abnormal.

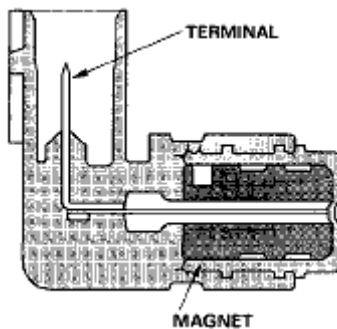


Fig. 28: Identifying Camshaft Position (CMP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Crankshaft Position (CKP) Sensor

The CKP sensor detects crankshaft speed and is used by the ECM/PCM to determine ignition timing and timing for fuel injection of each cylinder as well as detecting engine misfire.

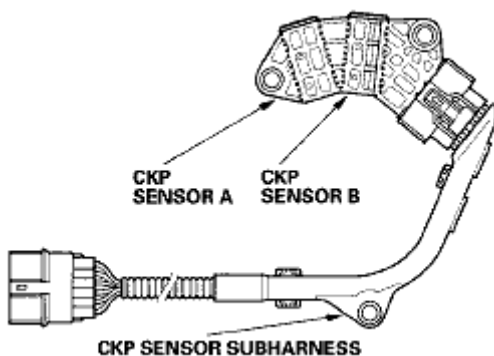


Fig. 29: Identifying Crankshaft Position (CKP) Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Engine Coolant Temperature (ECT) Sensor 1 and 2

ECT sensors 1 and 2 are temperature dependent resistors (thermistors). The resistance of the thermistor decreases as the engine coolant temperature increases.

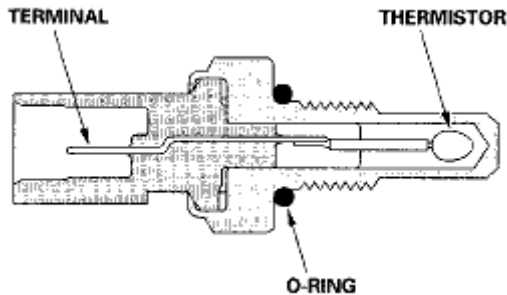


Fig. 30: Identifying Engine Coolant Temperature (ECT) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ignition Timing Control

The ECM/PCM contains the memory for basic ignition timing at various engine speeds and manifold absolute pressures. It also adjusts the timing according to engine coolant temperature.

Injector Timing and Duration

The ECM/PCM contains the memory for basic discharge duration at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

By monitoring long term fuel trim, the ECM/PCM detects long term malfunctions in the fuel system and sets a diagnostic trouble code (DTC).

Input Shaft (Mainshaft) Speed Sensor

This sensor detects input shaft (mainshaft) speed.

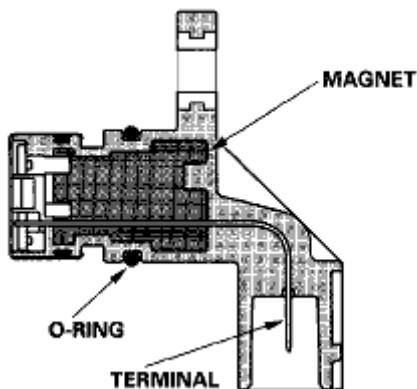


Fig. 31: Identifying Input Shaft (Mainshaft) Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Intake Air Temperature (IAT) Sensor

The IAT sensor is a temperature dependent resistor (thermistor). The resistance of the thermistor decreases as the intake air temperature increases.

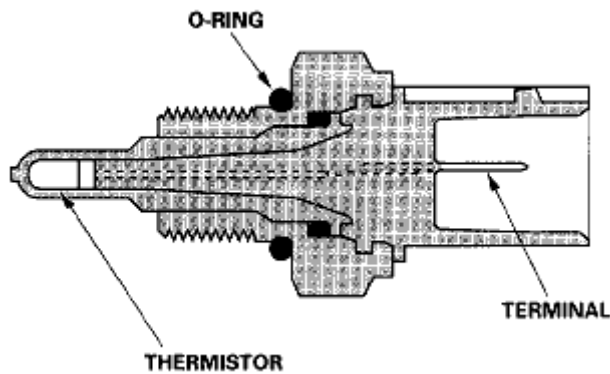


Fig. 32: Identifying Intake Air Temperature (IAT) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Knock Sensor

The knock control system adjusts the ignition timing to minimize knock.

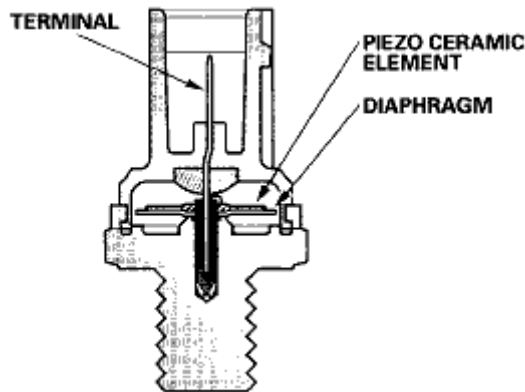


Fig. 33: Identifying Knock Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Malfunction Indicator Lamp (MIL) Indication (In relation to Readiness Codes)

The vehicle has certain "readiness codes" that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if the DTCs have been cleared, or if the ECM/PCM has been reset, these codes are reset to incomplete. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch ON (II), but do not start the engine. The MIL will come on for 15-20 seconds. If it then goes off, the readiness codes are complete. If it flashes five times, one or more readiness codes are not complete. To set each code, drive the vehicle or run the engine as described in How to Set Readiness Codes (see **MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)**).

Manifold Absolute Pressure (MAP) Sensor

The MAP sensor converts manifold absolute pressure into electrical signals to the ECM/PCM.

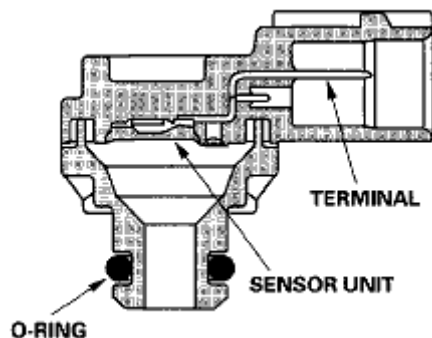


Fig. 34: Identifying Manifold Absolute Pressure (MAP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Output Shaft (Countershaft) Speed Sensor

This sensor detects output shaft (countershaft) speed.

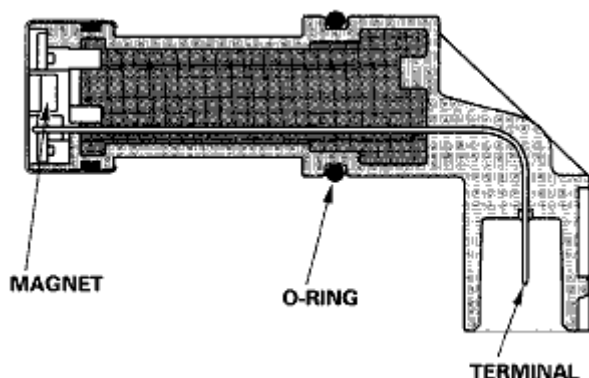


Fig. 35: Identifying Output Shaft (Countershaft) Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Heated Oxygen Sensor (Secondary HO2S)

The secondary HO2S detects the oxygen content in the exhaust gas downstream of the warm up three way catalytic converter (WU-TWC), and sends signals to the ECM/PCM. To stabilize its output, the sensor has an internal heater. The ECM/PCM compares the HO2S output with the A/F sensor output to determine catalyst efficiency. The secondary HO2S is located on the WU-TWC.

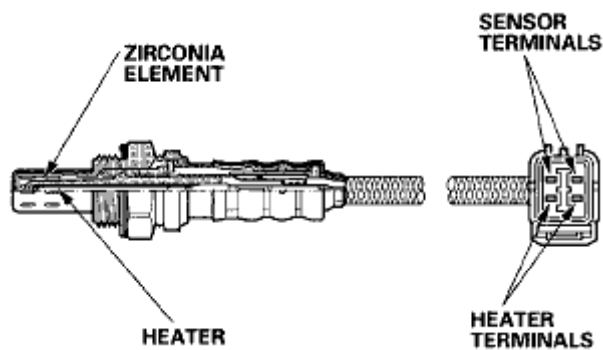


Fig. 36: Identifying Secondary Heated Oxygen Sensor (Secondary HO2S)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC THROTTLE CONTROL SYSTEM

The throttle is electronically controlled by the electronic throttle control system. Refer to the system diagram to see the functional layout of the system.

Idle control: When the engine is idling, the ECM/PCM controls the throttle actuator to maintain the proper idle speed according to engine loads.

Acceleration control: When the accelerator pedal is pressed, the ECM/PCM opens the throttle valve depending on the accelerator pedal position (APP) sensor signal.

Cruise control: The ECM/PCM controls the throttle actuator to maintain set speed when the cruise control is operating. The throttle actuator takes the place of the cruise control actuator.

Accelerator Pedal Position (APP) Sensor

As the accelerator pedal position changes, the sensor varies the signal voltage to the ECM/PCM.

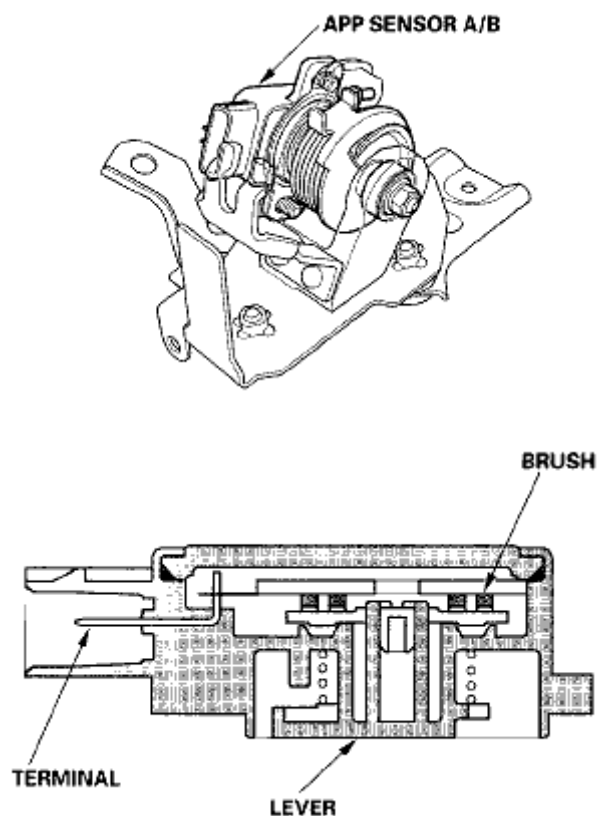


Fig. 37: Identifying Accelerator Pedal Position (APP) Sensor
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Throttle Body

The throttle body is a single-barrel side draft type. The lower portion of the throttle valve is heated by engine coolant from the cylinder head to prevent icing of the throttle plate.

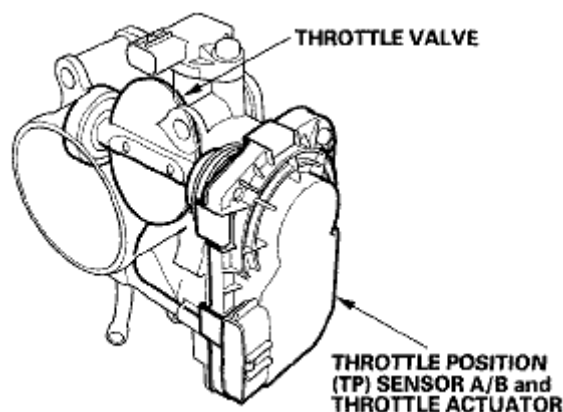


Fig. 38: Identifying Throttle Valve And Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDLE CONTROL SYSTEM

When the engine is cold, the A/C compressor is on, the transmission is in gear, the brake pedal is pressed, the power steering load is high, or the alternator is charging, the ECM/PCM controls current to the throttle

actuator to maintain the correct idle speed.

Brake Pedal Position Switch

The brake pedal position switch signals the ECM/PCM when the brake pedal is pressed.

Power Steering Pressure (PSP) Switch

The PSP switch signals the ECM/PCM when the power steering load is high.

FUEL SUPPLY SYSTEM

Fuel Cutoff Control

During deceleration with the throttle valve closed, current to the injectors is cutoff to improve fuel economy at engine speeds over 850 rpm (M/T: 950 rpm). Fuel cutoff control also occurs when the engine speed exceeds 6,900 rpm, regardless of the position of the throttle valve, to protect the engine from over-revving. When the vehicle is stopped, the ECM/PCM cuts the fuel at engine speeds over 5,000 rpm (M/T: 5,550 rpm). On a cold engine, fuel cut occurs at a lower engine speed.

Fuel Pump Control (J32A3 engine)

When the ignition is turned on, the ECM/PCM grounds PGM-FI main relay 2 which feeds current to the fuel pump for 2 seconds to pressurize the fuel system. With the engine running, the ECM/PCM grounds PGM-FI main relay 2 and feeds current to the fuel pump. When the engine is not running and the ignition is on, the ECM/PCM cuts ground to PGM-FI main relay 2 which cuts current to the fuel pump.

Fuel Pump Control (J35A8 engine)

When the ignition switch is turned on, the ECM/PCM grounds PGM-FI main relay 2 which feeds current to the fuel pump control module. The ECM/PCM sends a signal to the fuel pump control module to operate the fuel pump for 2 seconds to pressurize the fuel system. With the engine running, the fuel pump speed is controlled in four levels by the fuel pump control module. The ECM/PCM decides the fuel pump speed by the calculation of the injector activation time and engine speed and sends an operation command signal to the fuel pump control module. This operation makes it possible to decrease fuel pump noise at low engine speed.

PGM-FI Main Relay 1 and 2

PGM-FI main relay 1 is energized whenever the ignition switch is ON (II) to supply battery voltage to the ECM/PCM, power to the injectors, and power for PGM-FI main relay 2. PGM-FI main relay 2 is energized to supply power to the fuel pump for 2 seconds when the ignition switch is turned ON (II), and when the engine is cranking or running.

CATALYTIC CONVERTER SYSTEM

Warm Up Three Way Catalytic Converter (WU-TWC) and Three Way Catalytic Converter (TWO)

The WU-TWC/TWC converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NO_x) in the exhaust gas to carbon dioxide (CO₂), nitrogen (N₂), and water vapor.

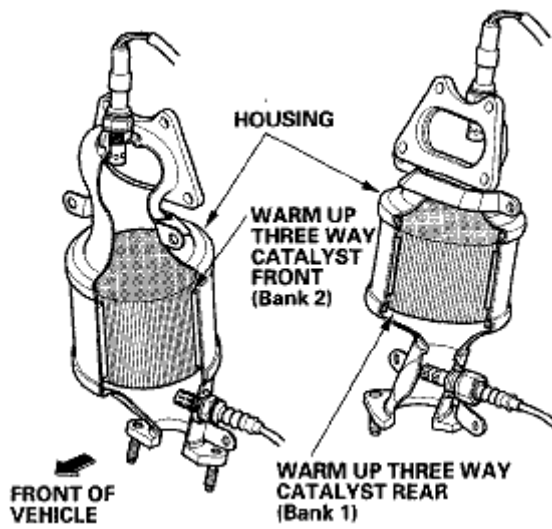
WU-TWC

Fig. 39: Identifying Catalytic Converter System - WU-TWC
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

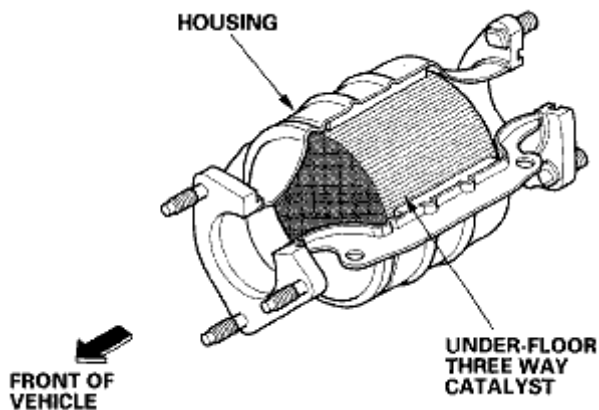
TWC

Fig. 40: Identifying Catalytic Converter System - TWC
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM

Refer to the system diagram to see a functional layout of the system.

EGR Valve

The EGR valve lowers peak combustion temperatures and reduces oxides of nitrogen emissions (NO_x) by recirculating exhaust gas through the intake manifold and into the combustion chambers.

POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM

The PCV valve prevents blow-by gasses from escaping into the atmosphere by venting them into the intake manifold.

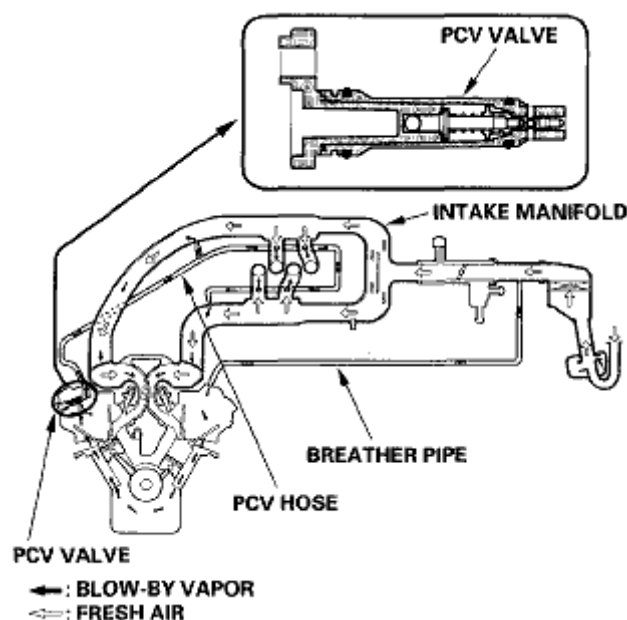


Fig. 41: Positive Crankcase Ventilation (PCV) System Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM

Refer to the system diagram to see the functional layout of the system.

EVAP Canister

The EVAP canister temporarily stores fuel vapor from the fuel tank until it can be purged from the EVAP canister into the engine and burned.

EVAP Canister Purge Valve

When the engine coolant temperature is below 149°F (65°C), the ECM/PCM turns off the EVAP canister purge valve which cuts vacuum to the EVAP canister.

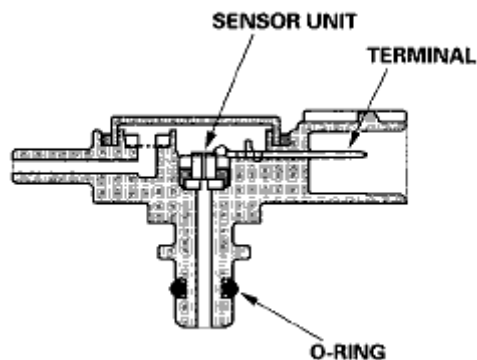


Fig. 42: Identifying Fuel Tank Pressure (FTP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Fuel Tank Pressure (FTP) Sensor

The FTP sensor converts fuel tank absolute pressure into an electrical input to the ECM/PCM.

EVAP Canister Vent Shut Valve

The EVAP canister vent shut valve is on the EVAP canister.

The EVAP canister vent shut valve controls the venting of the EVAP canister.

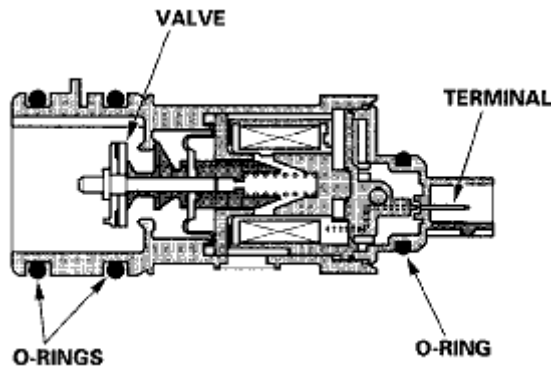


Fig. 43: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL CAP WARNING MESSAGE

The ECM/PCM will detect a loose or missing fuel fill cap as an evaporative system leak and alerts the driver by showing a warning message in the gauge display.

First drive cycle

The first time a leak is detected a "TIGHTEN FUEL CAP" message in the gauge display (A). To scroll to another message, press the select/reset button. The "TIGHTEN FUEL CAP" message will appear each time you restart the engine until the system turns the message off. Turn the engine off then replace or tighten the fuel fill cap until it clicks at least once. The message should go off after several days of normal driving after the fuel fill cap has been tightened or replaced.

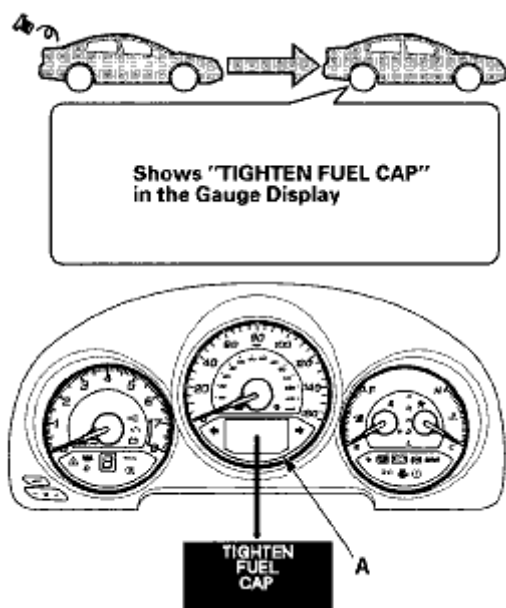


Fig. 44: Identifying Fuel Cap Warning Message
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TO MAKE THE MESSAGE GO OFF (WITH THE HDS)

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Clear the Temporary DTC with the HDS.
3. Verify there is no leak by doing the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

TO MAKE THE MESSAGE GO OFF (WITHOUT THE HDS)

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Turn the ignition switch ON (II), then turn the ignition switch OFF.
3. Do step 2 two more times.

ELECTRONIC THROTTLE CONTROL SYSTEM DIAGRAM

The electronic throttle control system consists of the throttle actuator, throttle position (TP) sensor A/B, accelerator pedal position (APP) sensor A/B, the throttle actuator control module, and the ECM/PCM. The throttle is electronically controlled by this system.

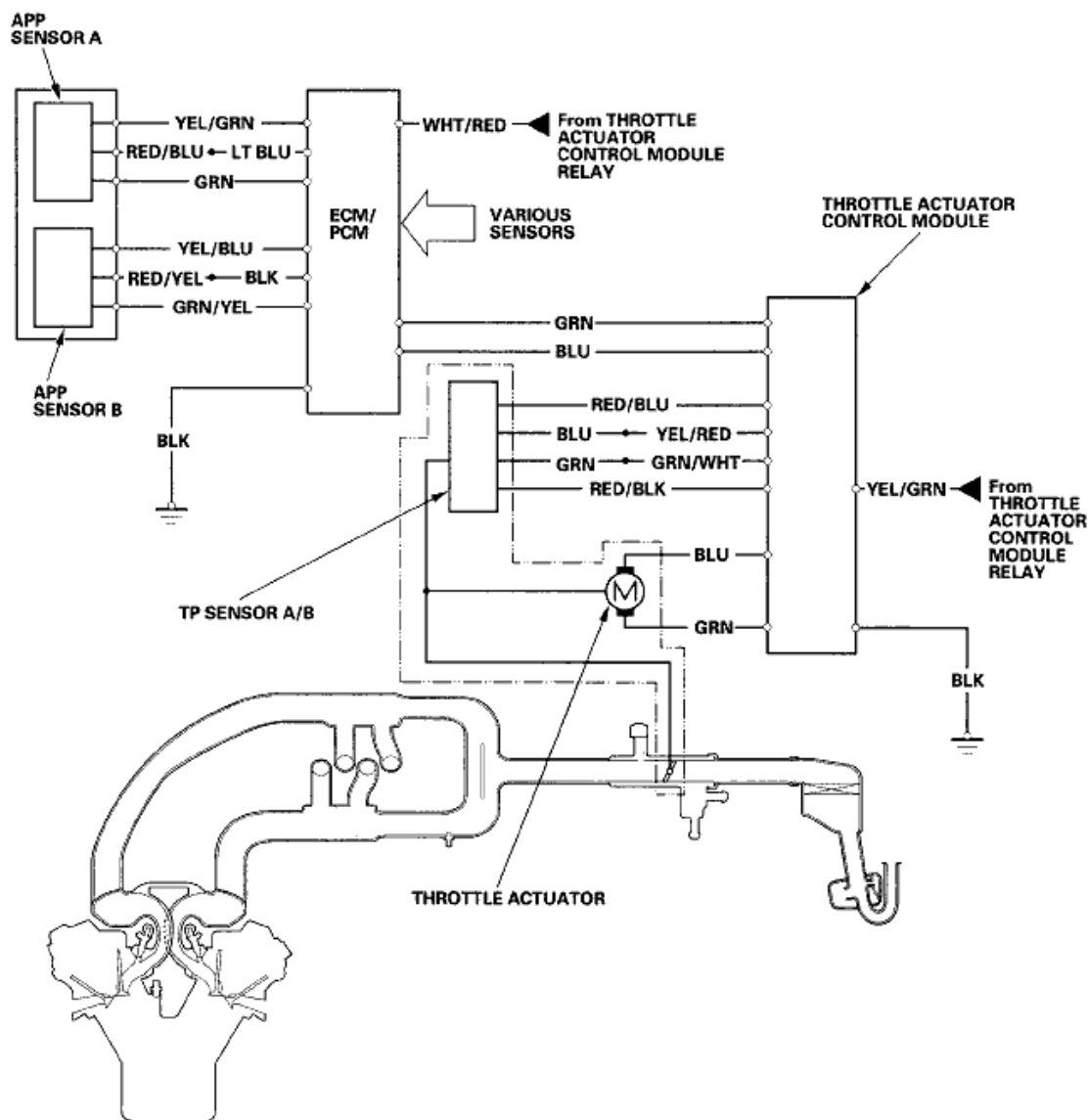


Fig. 45: Electronic Throttle Control System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTAKE MANIFOLD TUNING (IMT) VALVE SYSTEM

Engine power is adjusted by opening and closing the intake manifold tuning (IMT) actuator. When the valve is closed, there is high torque at low engine speed. When the valve is open, there is high torque at high engine speed. The intake manifold tuning (IMT) valve actuator has a sensor that detects the IMT valve position and sends the position signal to the ECM/PCM.

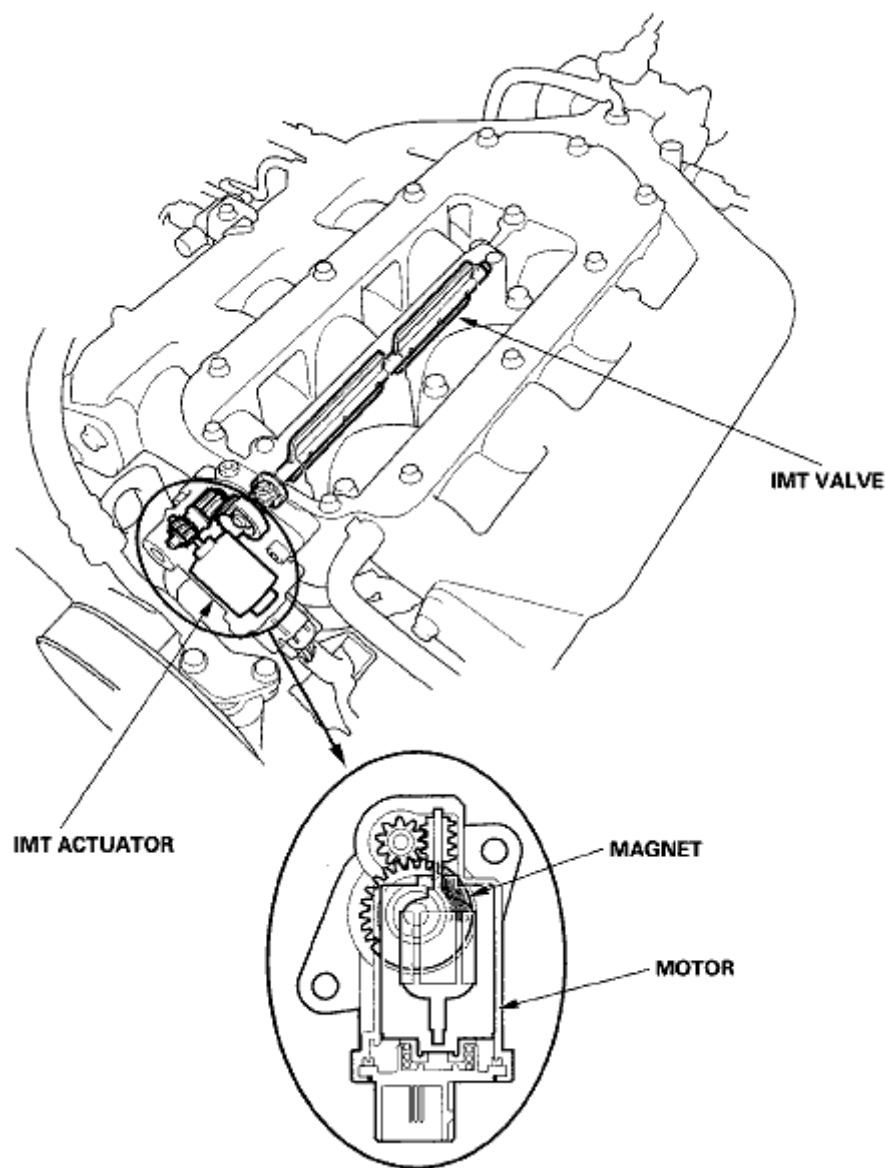


Fig. 46: Identifying Intake Manifold Tuning (IMT) Valve System
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM DIAGRAM

The EGR system reduces oxides of nitrogen (NO_x) emissions by recirculating exhaust gas through the EGR valve and the intake manifold into the combustion chambers. The ECM/PCM memory contains the ideal EGR valve position for various operating conditions.

The EGR valve position sensor detects the amount of EGR valve lift and sends it to the ECM/PCM. The ECM/PCM then compares it with the ideal lift in its memory (based on signals sent from other sensors). If there is any difference between the two, the ECM/PCM cuts current to the EGR valve.

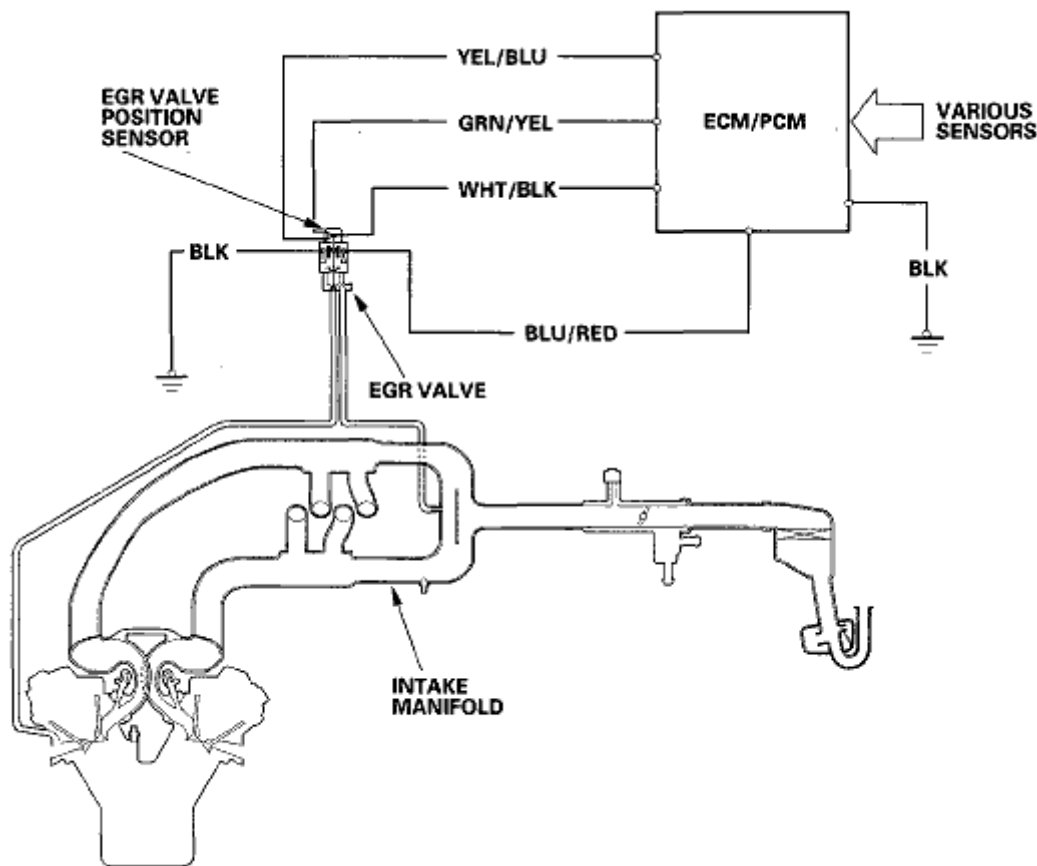


Fig. 47: Exhaust Gas Recirculation (EGR) System Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL DIAGRAM

The EVAP controls minimize the amount of fuel vapor escaping to the atmosphere. Vapor from the fuel tank is temporarily stored in the EVAP canister until it can be purged from the canister into the engine and burned.

- The EVAP canister is purged by drawing fresh air through it and into a port on the intake manifold.

The purging vacuum is controlled by the EVAP canister purge valve, which operates whenever engine coolant temperature is above 149°F (65°C).

- During refueling, the fuel tank vapor control valve opens with the pressure in the fuel tank, and feeds the fuel vapor to the EVAP canister.

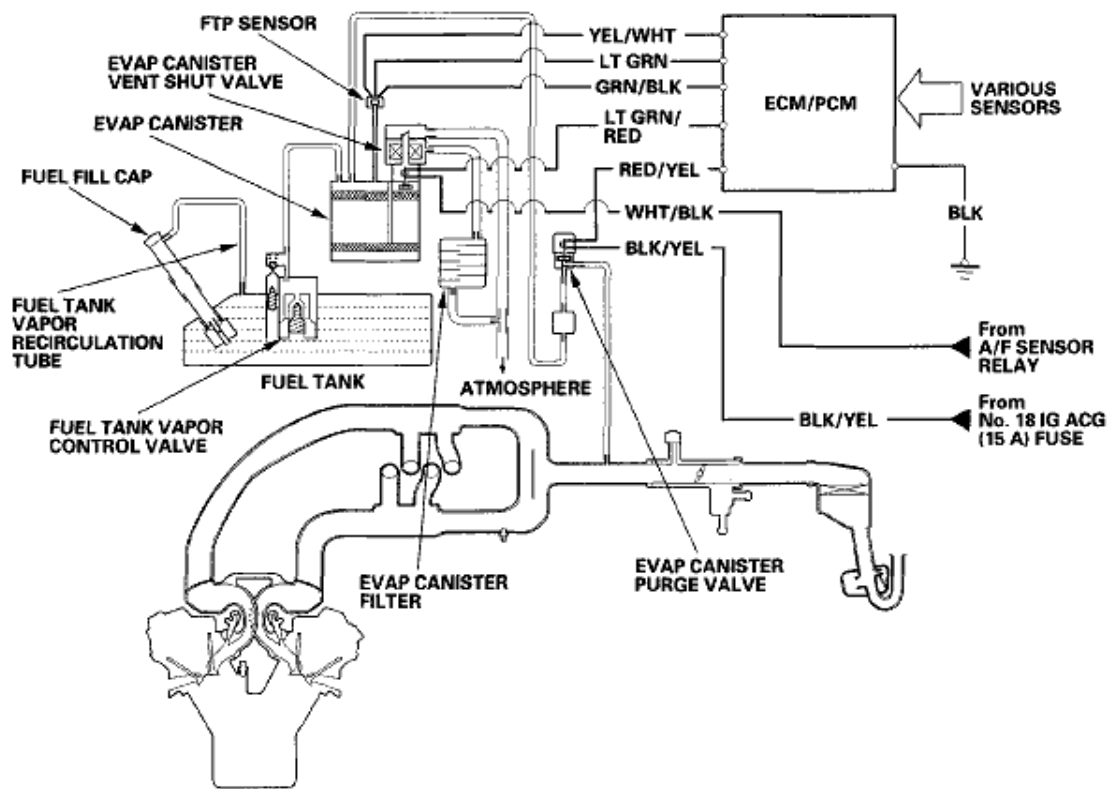
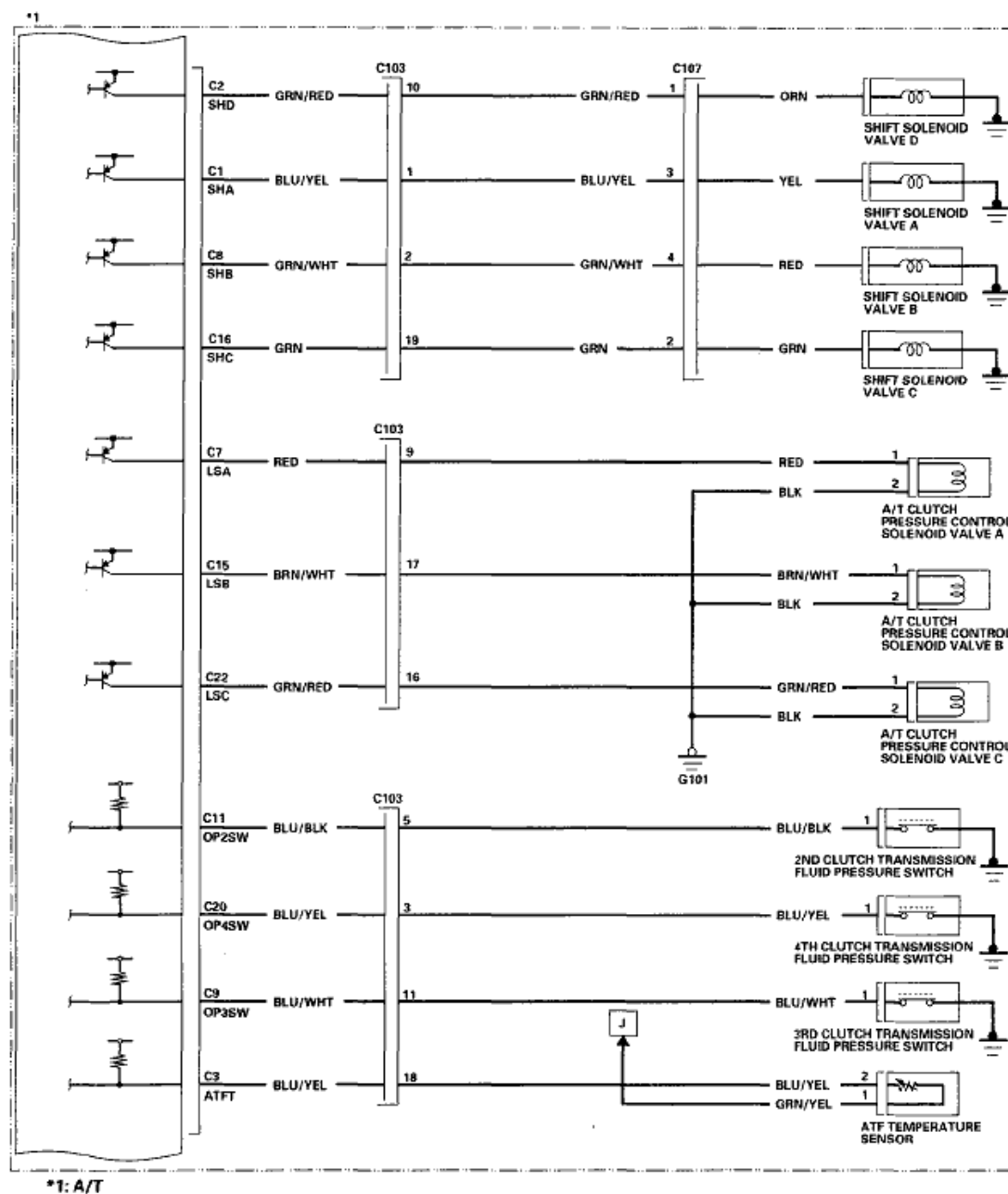


Fig. 48: Evaporative Emission (EVAP) Control Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ECM/PCM Circuit Diagram



Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Fig. 50: ECM/PCM Circuit Diagram (2 Of 13)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

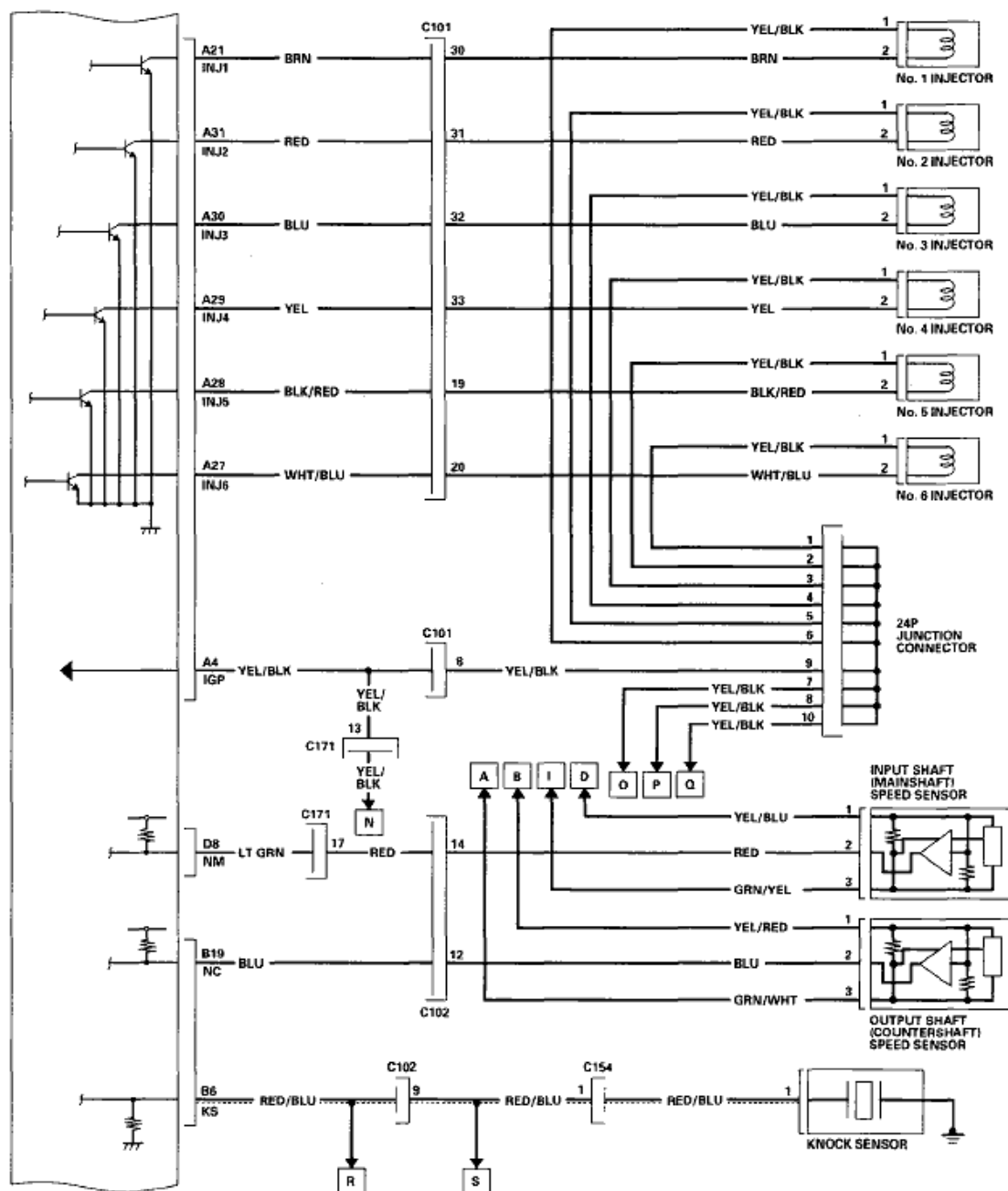


Fig. 51: ECM/PCM Circuit Diagram (3 Of 13)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

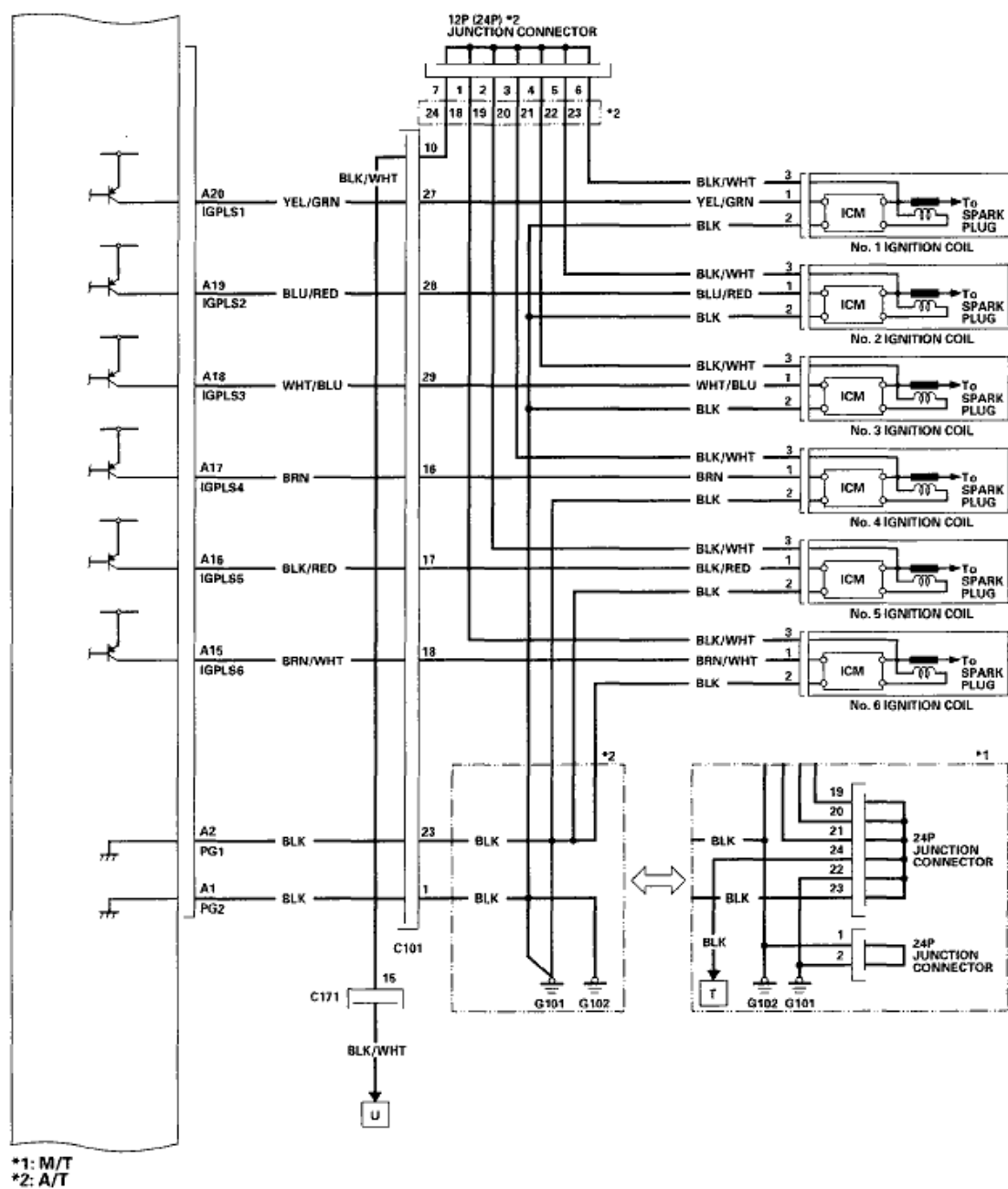
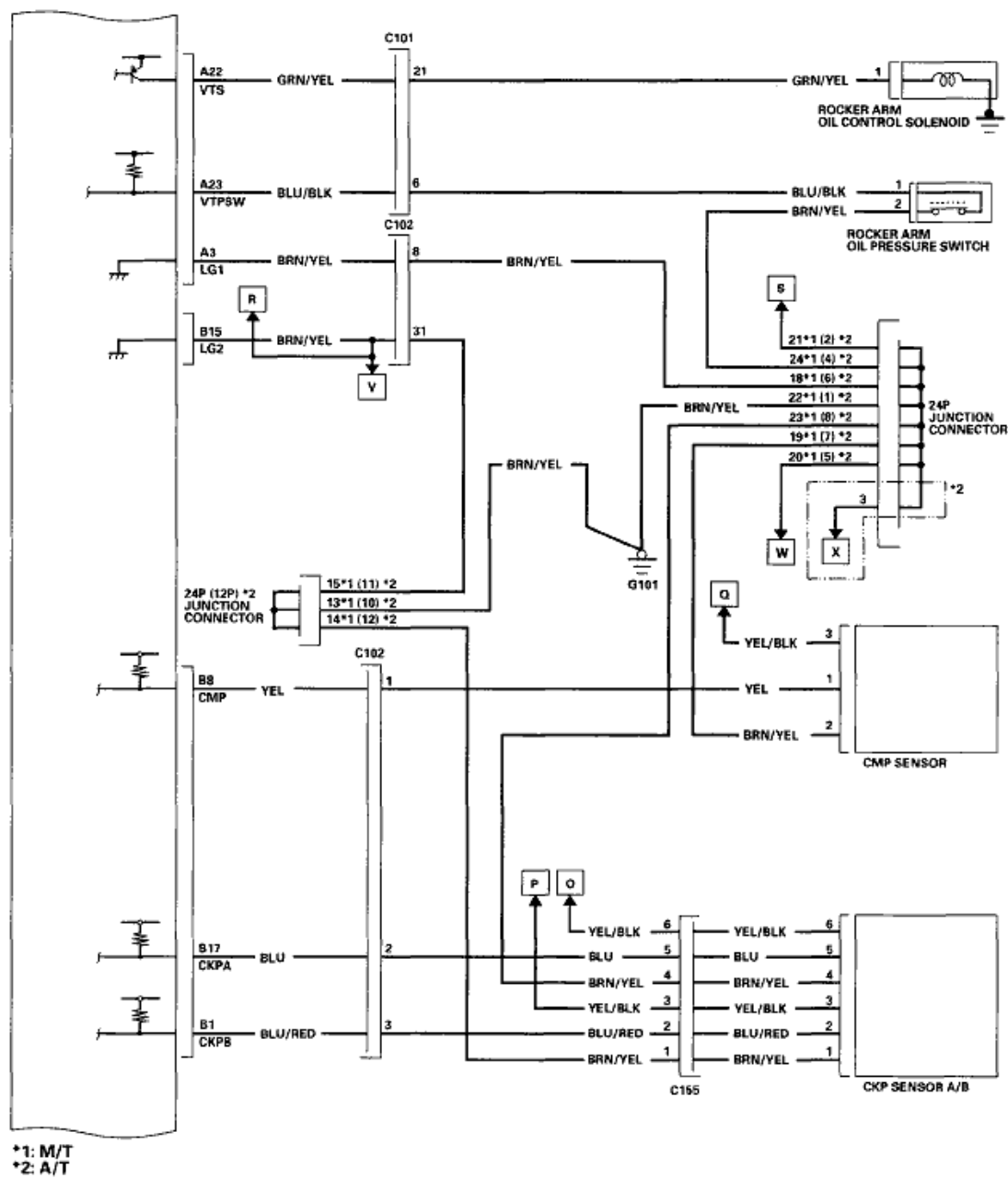


Fig. 52: ECM/PCM Circuit Diagram (4 Of 13)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Fig. 53: ECM/PCM Circuit Diagram (5 Of 13)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

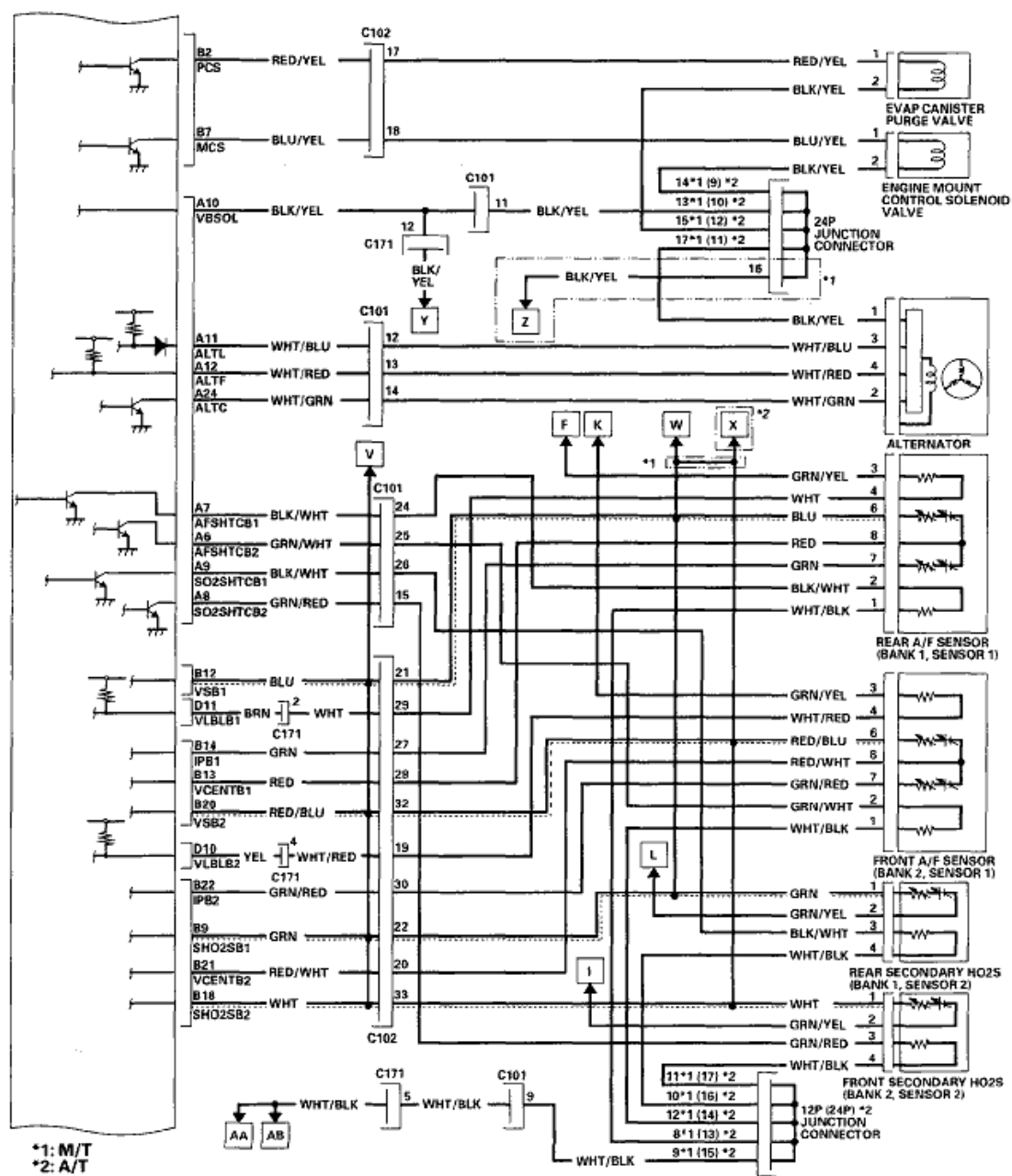


Fig. 54: ECM/PCM Circuit Diagram (6 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

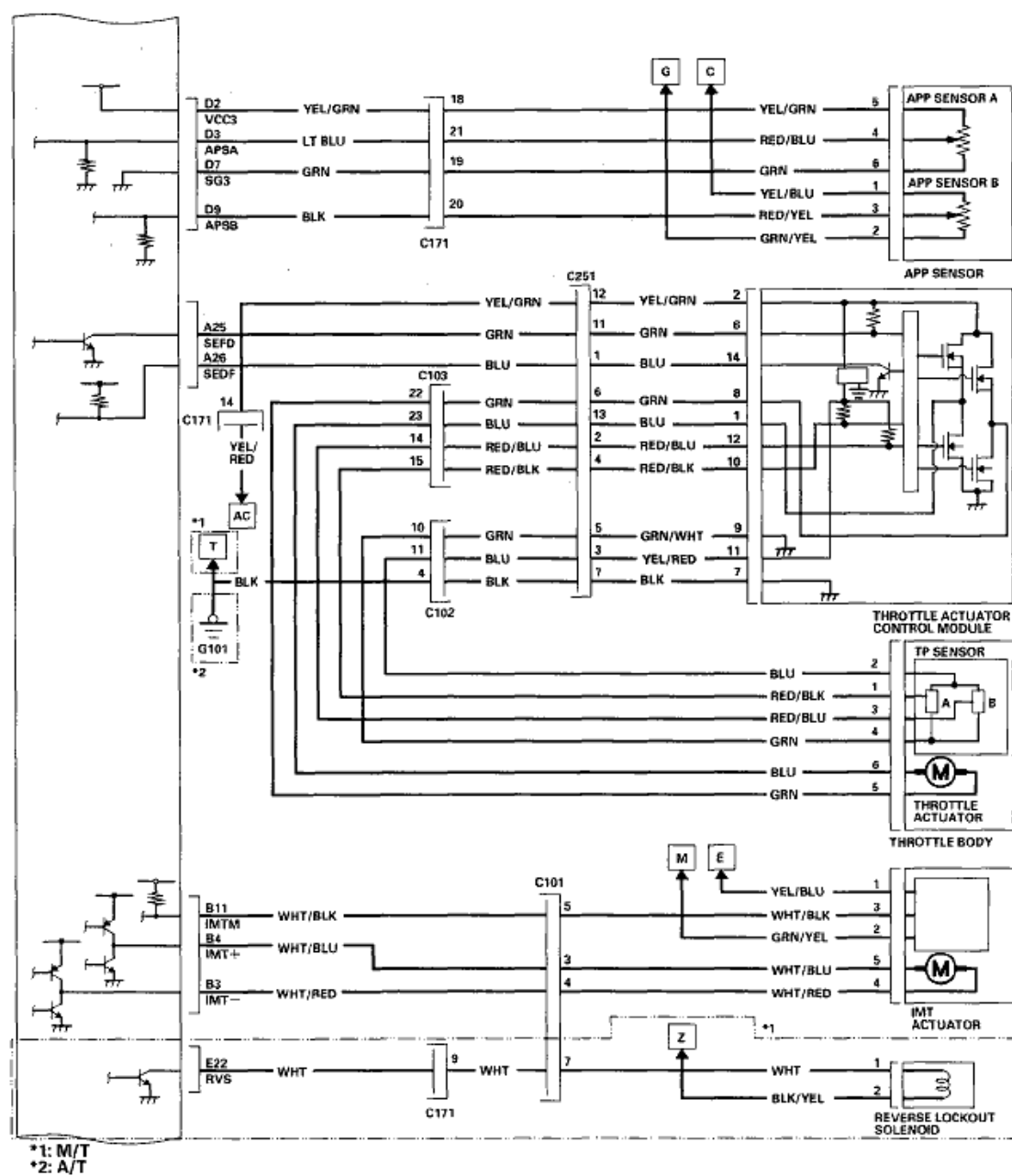


Fig. 55: ECM/PCM Circuit Diagram (7 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

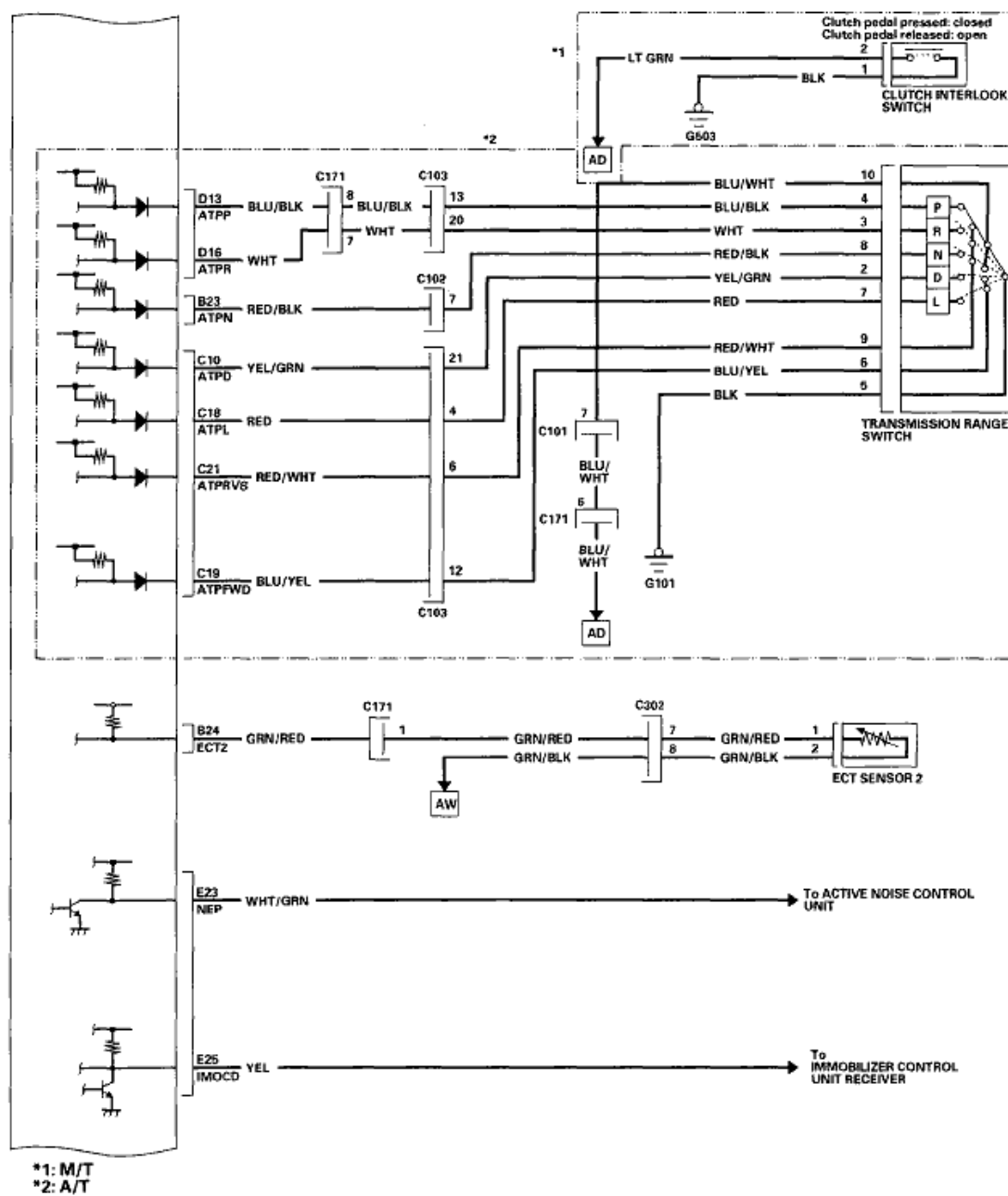


Fig. 56: ECM/PCM Circuit Diagram (8 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

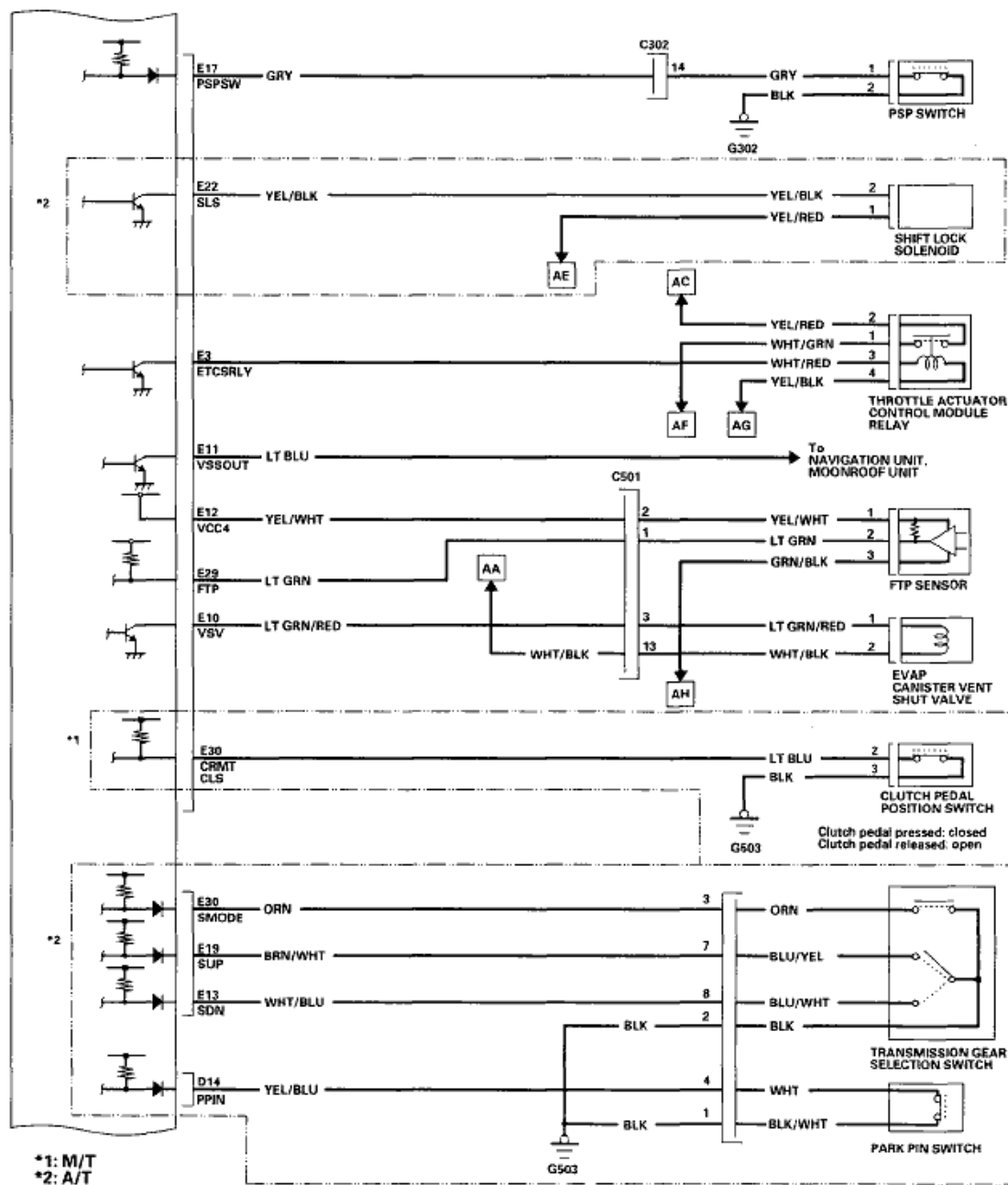


Fig. 57: ECM/PCM Circuit Diagram (9 Of 13)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

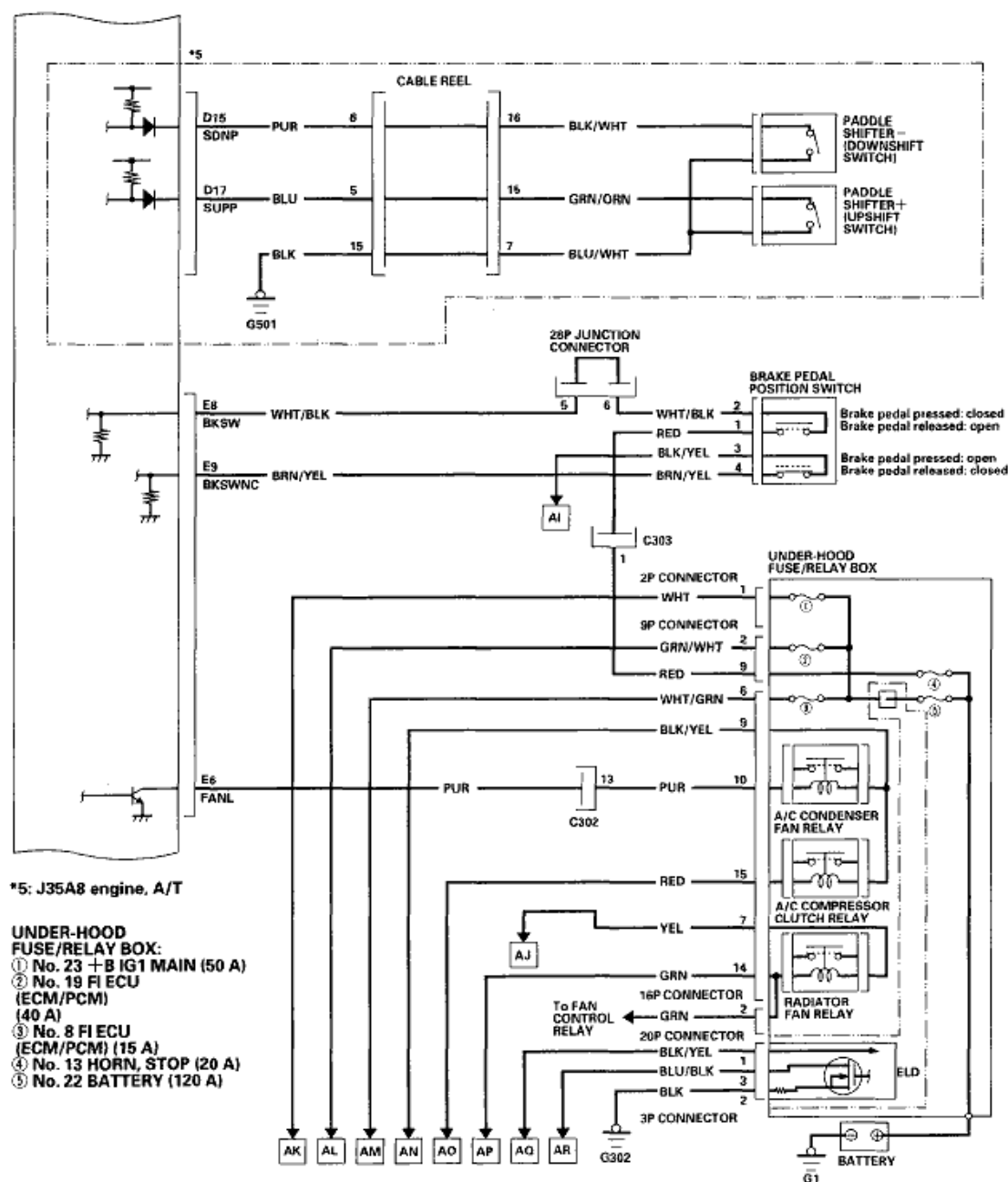
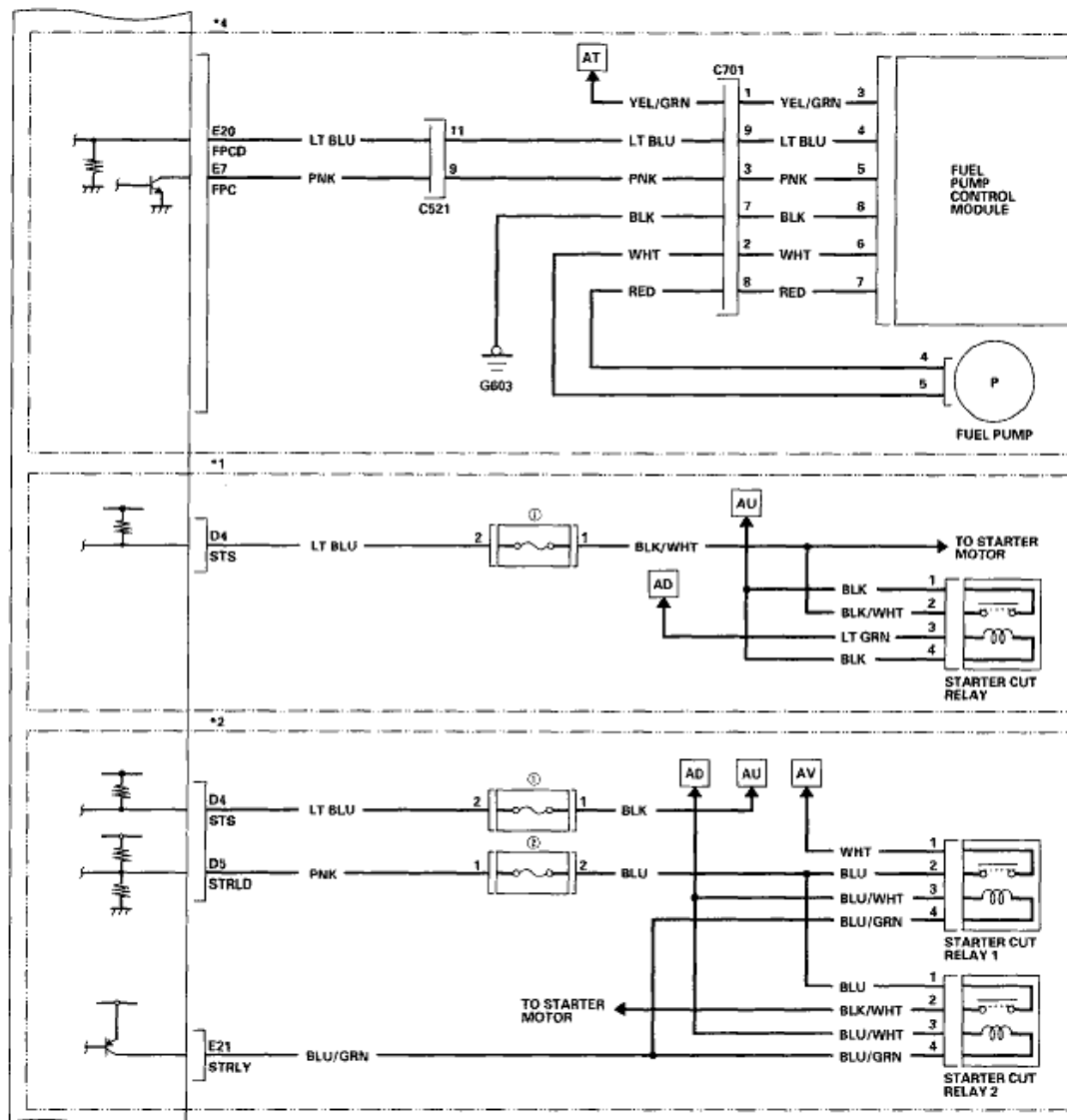


Fig. 58: ECM/PCM Circuit Diagram (10 Of 13)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



ECM/PCM Circuit Diagram



AUXILIARY UNDER-DASH
FUSE HOLDERS

① No. 36 STS (7.5 A)

② No. 35 STRLD (7.5 A)

*1: M/T

*2: A/T

*4: J35A8 engine

Fig. 60: ECM/PCM Circuit Diagram (12 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

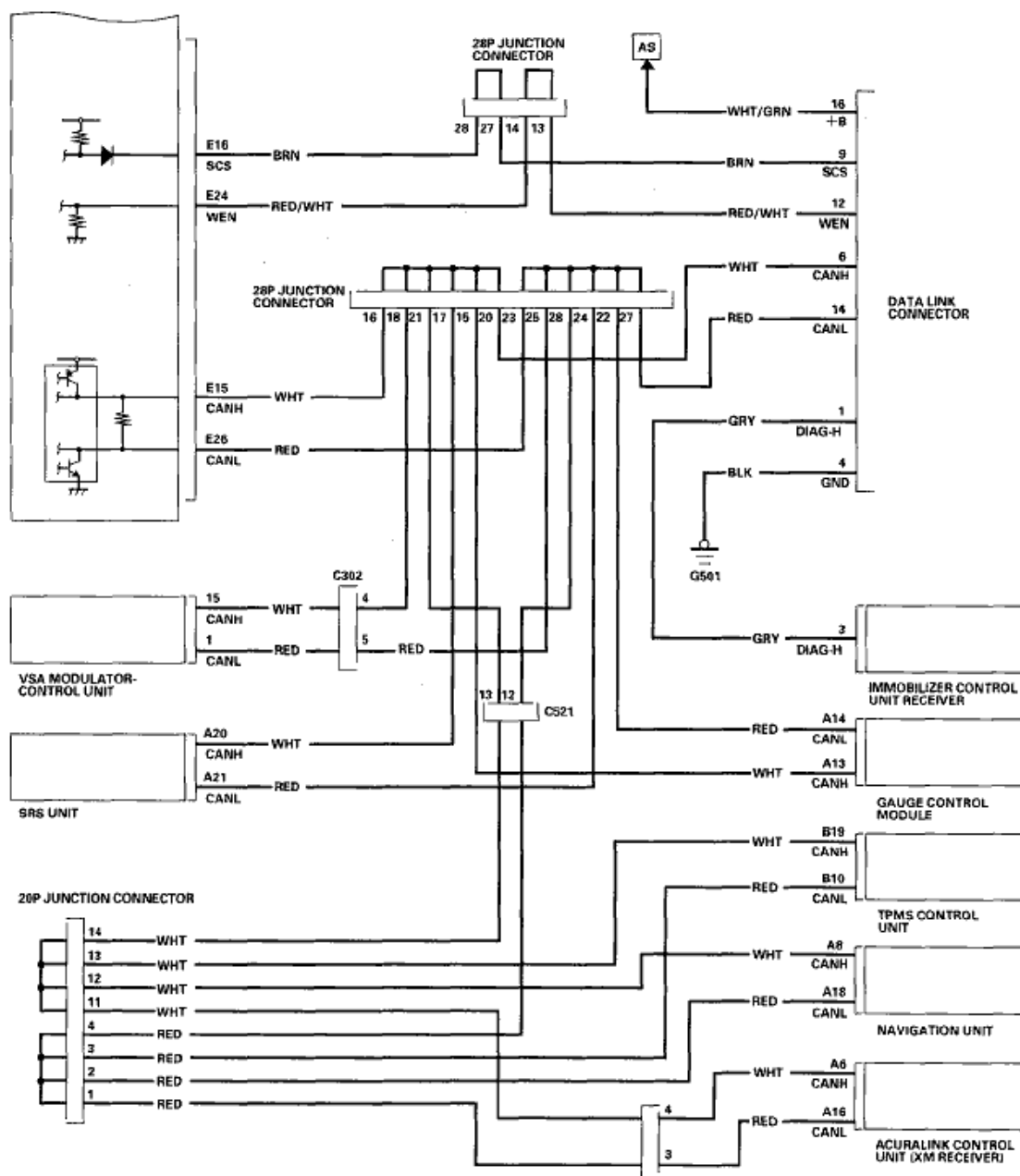


Fig. 61: ECM/PCM Circuit Diagram (13 Of 13)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO SET READINESS CODES

MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)

The vehicle has certain "readiness codes" that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if the DTCs have been cleared, or if the ECM/PCM has been reset, these readiness codes are reset to incomplete. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the emission test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch ON (II), but do not start the engine. The MIL will come on for 15-20 seconds. If it then goes off, the readiness codes are complete. If it flashes five times, one or more readiness codes are not set to complete. To set readiness codes from incomplete to complete, do the procedure for the appropriate code.

To check the status of a specific DTC system, check the OBD status in the DTC MENU with the HDS (see **OBD STATUS**). This screen displays the code, the current data list of the enable criteria, and the status of the readiness testing.

CATALYTIC CONVERTER MONITOR AND READINESS CODE

NOTE:

- Do not turn the ignition switch off during the procedure.
- All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the ECM/PCM is reset with the HDS.
- Low ambient temperatures or excessive stop-and-go traffic may increase the drive time needed to switch the readiness code from incomplete to complete.
- The readiness code will not switch to complete until all the enable criteria are met.
- If a fault in the secondary HO₂S system caused the MIL to come on, the readiness code cannot be set to complete until you correct the fault.

Enable Criteria

- ECT SENSOR 1 at 158°F (70°C) or more.
- IAT SENSOR at 20°F (-7°C) or more.
- Vehicle speed (VSS) reads more than 25 mph (40 km/h).

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC), and bring up the READINESS CODEs screen for Catalyst in the DTCs MENU.
2. Start the engine.
3. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. After about 5 miles (8 km), the readiness code should switch to complete.
4. If the readiness code is still not set to complete, check for a Temporary DTC with the HDS. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM MONITOR AND READINESS CODE

NOTE:

All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Enable Criteria

- Battery voltage is higher than 10.5 V.
- Engine at idle.

- ECT SENSOR 1 sensor between 176°F (80°C) and 212°F (100°C).
- MAP SENSOR less than 46.6 kPa (14 in.Hg, 350 mmHg).
- Vehicle speed (VSS) 0 mph (0 km/h).
- IAT SENSOR between 32°F (0°C) and 212°F (100°C).

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Select EVAP TEST in the INSPECTION MENU with the HDS, then select the FUNCTION TEST in the EVAP TEST MENU.
 - If the result is normal, readiness is complete.
 - If the result is not normal, go to the next step.
4. Check for a Temporary DTC. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR MONITOR AND READINESS CODE

NOTE:

- Do not turn the ignition switch off during the procedure.
- All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Enable Criteria

ECT SENSOR 1 at 140°F (60°C) or more.

Procedure

1. Start the engine.
2. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. During the drive, decelerate (with the throttle fully closed) for 5 seconds. After about 3.5 miles (5.6 km), the readiness code should switch from incomplete to complete.
3. Check the readiness codes screen for the AIR FUEL RATIO (A/F) SENSOR in the DTCs MENU with the HDS.
 - If the screen shows complete, readiness is complete.
 - If the screen shows not complete, go to the next step.
4. Check for a Temporary DTC. If there is no DTC, the enable criteria was probably not met. Select the DATA LIST Menu. Check ECT SENSOR 1 in the ALL DATA LIST with the HDS. If the ECT SENSOR 1 is less than 140°F (60°C), run the engine until it is more than 140°F (60°C), then repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR HEATER MONITOR READINESS CODE

NOTE:

All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Procedure

1. Start the engine, and let it idle 1 minute. The readiness code should switch from incomplete to complete.
2. If the readiness code is still not set to complete, check for a Temporary DTC. If there is no DTC, repeat the procedure.

MISFIRE MONITOR AND READINESS CODE

- This readiness code is always set to available because misfiring is continuously monitored.
- Monitoring pauses, and the misfire counter resets, if the vehicle is driven over a rough road.
- Monitoring also pauses, and the misfire counter holds at its current value, if the throttle position changes more than a predetermined value, or if driving conditions fall outside the range of any related enable criteria.

FUEL SYSTEM MONITOR AND READINESS CODE

- This readiness code is always set to available because the fuel system is continuously monitored during closed loop operation.
- Monitoring pauses when the catalytic converter, EVAP control system, and A/F sensor monitors are active.
- Monitoring also pauses when any related enable criteria are not being met. Monitoring resumes when the enable criteria is again being met.

COMPREHENSIVE COMPONENT MONITOR AND READINESS CODE

This readiness code is always set to available because the comprehensive component monitor is continuously running whenever the engine is cranking or running.

EGR MONITOR AND READINESS CODE**NOTE:**

- **Do not turn the ignition switch off during the procedure.**
- **All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the ECM/PCM is reset with the HDS.**

Enable Criteria

ECT SENSOR 1 at 176°F (80°C) or more.

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Drive at a steady speed with the A/T in D position or M/T in 4th gear, 50-62 mph (80-100 km/h) or above for more than 10 seconds.
4. With the A/T in D position or M/T in 4th gear, decelerate from 62 mph (100 km/h) or above by completely releasing the throttle for at least 5 seconds. If the engine is stopped during this procedure, go to step 3 and do the procedure again.

5. Check the OBD status screen for DTC P0401 in the DTCs MENU with the HDS.
 - If it is passed, readiness is complete.
 - If it is not passed, go to step 3 and retest.