

2001-02 ACCESSORIES & EQUIPMENT

Instrument Panels - MDX

DESCRIPTION & OPERATION

WARNING: Deactivate air bag system before performing any service operation. See **AIR BAG RESTRAINT SYSTEMS** article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

The instrument panel contains an electronic speedometer, tachometer, fuel gauge, coolant temperature gauge, gear position indicator and warning light displays. Cross-coil type gauges, in which 2 intersecting coils are wound around a permanent magnet, are used.

Speedometer and odometer receive vehicle speed signal pulses from Powertrain Control Module (PCM). The pulse rate increases with vehicle speed. The frequency and duration of pulses are measured and displayed by speedometer, odometer and trip meter.

Tachometer drive circuit receives pulses from PCM. For each 200 pulses received per minute, tachometer displays 100 RPM.

COMPONENT LOCATIONS

COMPONENT LOCATIONS

Component	Location
A/T Gear Position Switch	On Rear Of Transaxle
Brake Fluid Level Switch	In Master Cylinder Reservoir
Brake Light Failure Sensor	In Left Rear Corner Of Cargo Area
Countershaft Speed Sensor	On Top Near End Of Transaxle
Dash Lights Brightness Controller	On Instrument Panel, Left Of Steering Column
Driver's Multiplex Control Unit	Plugged into Driver's Underdash Fuse/Relay Block
Driver's Underdash Fuse/Relay Block	Behind Left Kick Panel
Engine Coolant Temp Sending Unit	On Engine, Near Thermostat
Engine Oil Pressure Switch	On Oil Pump Housing, Above Oil Filter Adaptor
Ground G501	Behind Driver's Underdash Fuse/Relay Block
Ground G601	Under Carpet, On Left Side Of Floor
Ground G602	Behind Left Rear Seat Belt Retractor
Ground G652	Behind Right Rear Seat Belt Retractor
Passenger's Underdash Fuse/Relay Block	Behind Right Kick Panel
Parking Brake Switch	On Base Of Parking Brake Lever
Powertrain Control Module (PCM)	In Center Console Behind Radio
Underhood Fuse/Relay Block	Right Side Of Engine Compartment

PROGRAMMING

ECM/PCM

ECM/PCM is part of engine immobilizer system. Replacement ECM/PCM must have immobilizer code rewritten using Honda PGM Tester. To perform rewrite procedure requires the vehicle, all master keys, all valet keys and a Honda PGM Tester with an immobilizer program card. Any key not learned during rewrite will not start vehicle. Follow Honda PGM Tester instructions.

SUBSTITUTING PCM

NOTE: When replacing PCM, program new PCM and all ignition keys using Honda PGM Tester and Immobilizer program card.

1. This procedure allows swapping PCM without having to program test vehicle's ignition key on a vehicle equipped with immobilizer system. Cut a temporary ignition key for test vehicle from a non-immobilizer key blank. Remove PCM from test vehicle. See **COMPONENT LOCATIONS** .
2. Write test vehicle's VIN on removed PCM to avoid confusion. Install known-good PCM in test vehicle. Tape head of ignition key belonging to known-good PCM to head of temporary key. This will allow known-good PCM to recognize immobilizer code and allow engine to start using temporary key. After completing test, destroy temporary key.

TROUBLE SHOOTING

NOTE: Before disconnecting battery, obtain anti-theft code for radio and write down frequencies for radio's preset buttons.

Verify customer's complaint. Before performing any testing, perform a visual inspection. Check all related circuit's fuses. See **WIRING DIAGRAMS** . Check connectors for loose, damaged or corroded terminals. Check for damaged wiring harness. Repair as necessary and retest system. If no problems were found, go to appropriate testing procedure under **SYSTEM TESTS** .

SYSTEM TESTS

WARNING: Deactivate air bag system before performing any service operation. See **AIR BAG RESTRAINT SYSTEMS** article. **DO NOT** apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

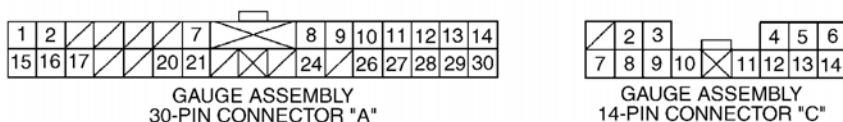
NOTE: Before disconnecting battery, obtain anti-theft code for radio and write down frequencies for radio's preset buttons.

A/T GEAR POSITION INDICATOR

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX

1. Check A/T gear position indicator switch. See **A/T GEAR POSITION SWITCH TEST** under COMPONENT TESTS. If problem exists, replace A/T gear position switch and retest system. If problem does not exist, go to next step.
2. Remove gauge assembly. See **GAUGE ASSEMBLY** under REMOVAL & INSTALLATION. Disconnect gauge assembly connectors. Check gauge assembly connectors for loose, damaged or corroded terminals. If problem exists, repair connector(s). If problem does not exist, go to next step.
3. Perform gear position indicator input test. See **Fig. 1** . If input tests are not as specified, repair appropriate wire between A/T gear position switch and gauge assembly connector or Powertrain Control Module (PCM) connector. If input tests are as specified, replace printed circuit board.



WIRE SIDE OF FEMALE TERMINALS

Cavity	Wire Color	Test Condition	Test: Desired Result	Possible Cause (If result is not obtained)
A7	BLK/BLU	Shift lever in P	Check for continuity to ground: There should be continuity and no continuity in any other shift lever position.	- Faulty A/T gear position switch - An open in the wire
A8	WHT	Ignition switch ON (II) and shift lever in R	Check for voltage to ground: There should be 1 V or less. NOTE: There should be battery voltage in any other shift lever position.	
A9	RED/BLK	Ignition switch ON (II) and shift lever in N	Check for voltage to ground: There should be 1 V or less. NOTE: There should be about 5 V in any other position.	
A10	BLU	Ignition switch ON (II) and shift lever in 2		
A11	PNK	Ignition switch ON (II) and shift lever in D		
A12	BRN	Ignition switch ON (II) and shift lever in 1		- Faulty 1st-hold switch - An open in the wire
A27	YEL	Ignition switch ON (II) and shift lever in D		- Faulty A/T gear position switch - An open in the wire
A28	GRN/BLK	Ignition switch ON (II) and shift lever in D	Check for voltage to ground: There should be battery voltage.	- Faulty A/T gear position switch - Faulty PCM - An open in the wire
C7	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	- Blown No. 9 (10A) fuse in the driver's underdash fuse/relay block - An open in the wire
C10	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	- Poor ground (G501) - An open in the wire

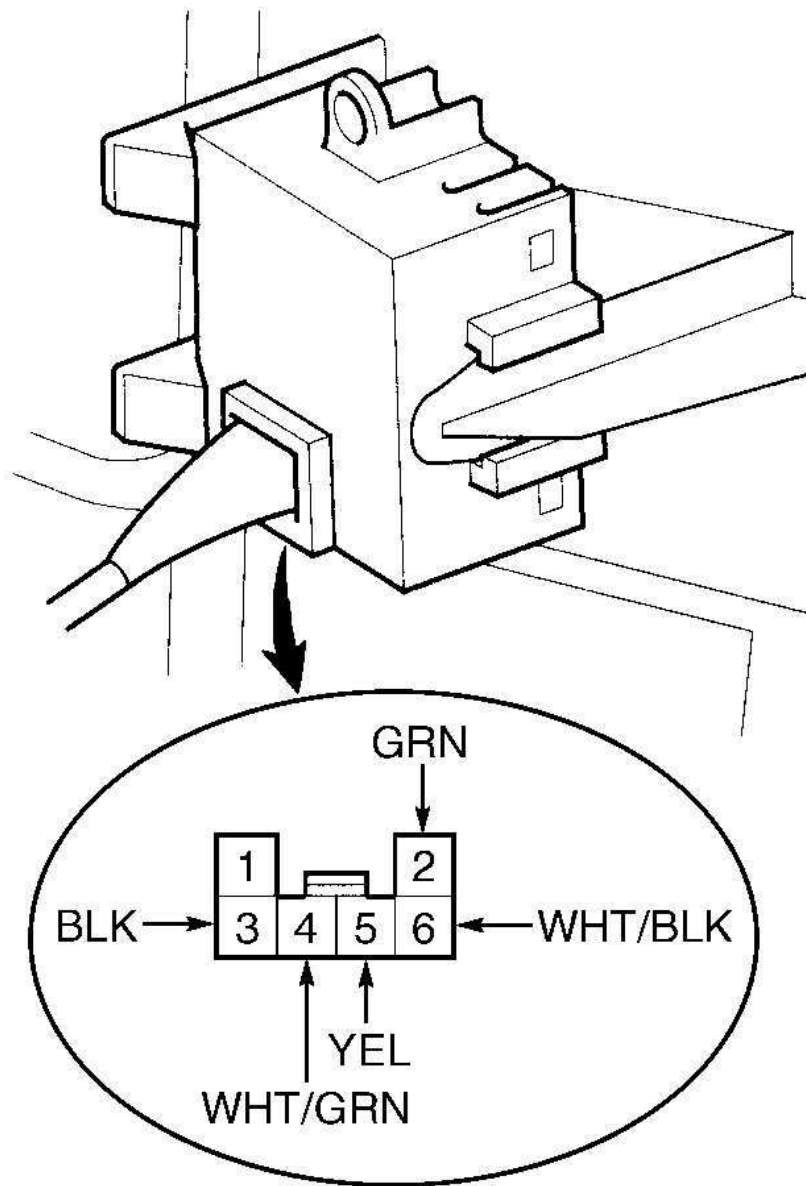
G00032335

Fig. 1: A/T Gear Position Indicator Input Test
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX

1. Ensure brakelights come on when brake pedal is depressed. If all brakelights come on, go to next step. If one brakelight does not come on, check for faulty brakelight bulb or poor ground connections. See **COMPONENT LOCATIONS** . If all brakelights do not come on, check brakelight circuit. See **WIRING DIAGRAMS** . Repair as necessary.
2. Remove left rear side trim panel. Disconnect brakelight failure sensor 6-pin connector. See **Fig. 2** . Ensure ignition switch is in OFF position. While observing BRAKE LAMP light, turn ignition switch to RUN position. If BRAKE LAMP light does not come on and stay on, go to next step. If BRAKE LAMP light comes on and stays on, check for short to ground in White/Green wire between gauge assembly and brakelight failure sensor, or a defective safety indicator circuit printed circuit board. See **WIRING DIAGRAMS** .
3. Turn ignition switch to OFF position. Reconnect brakelight failure sensor connector. Connect a jumper wire between ground and brakelight failure sensor connector terminal No. 3 (Black wire) by backprobing. Turn ignition switch to RUN position and depress brake pedal. BRAKE LAMP light should come on, then turn off. If BRAKE LAMP light does not turn off, replace brakelight failure sensor. If BRAKE LAMP light turns off, repair open in White/Green wire or in Black wire between brakelight failure sensor connector terminal No. 3 and ground G601. See **COMPONENT LOCATIONS** .



WIRE SIDE OF FEMALE TERMINALS

G99G05128

Fig. 2: Brakelight Failure Sensor Connector Terminals (Typical)
 Courtesy of AMERICAN HONDA MOTOR CO.

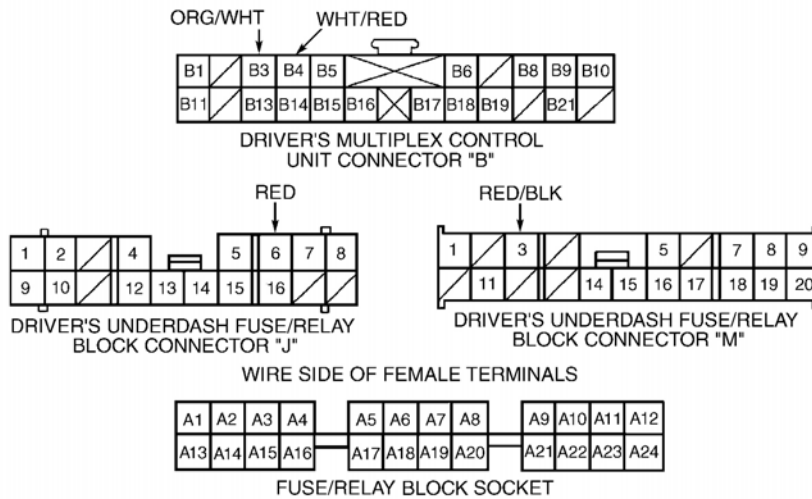
2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX

1. Before attempting to diagnose dash light brightness controller, ensure multiplex control system is functioning properly. See MULTIPLEX CONTROL SYSTEMS - MDX. If multiplex control system is okay, go to next step.
2. Check driver's multiplex control unit connectors for loose, damaged or corroded terminals. If problem exists, repair connector(s) as necessary and retest system. If problem does not exist, go to next step.
3. Perform dash lights brightness controller circuit input tests. See **Fig. 3** . If any test indicates a problem, repair as necessary and retest system. If all tests are okay, a control unit is probably faulty. Replace control unit most likely at fault and retest system. If system is okay, original control unit was faulty. If system still has fault, replace next most likely control unit and retest until faulty control unit is found.

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX



Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
A12	Fuse/relay block socket	Under all conditions	Check for voltage to ground: There should be battery voltage.	- Blown No. 13 (7.5A) fuse in the passenger's underdash fuse/relay block - Faulty driver's underdash fuse/relay block - An open in the wire
A14		Under all conditions	Check for continuity to ground: There should be continuity.	- Poor ground (G401) - Faulty driver's underdash fuse/relay block - An open in the wire
B3 B4	ORG/WHT and WHT/RED	Adjusting dial rotated	Check for resistance between the B3 and B4 terminals: There should be 0-20 k Ω .	- Faulty dash lights brightness controller - An open in the wire

Reconnect driver's multiplex control unit to driver's underdash fuse/relay block.
Perform following input tests at appropriate connectors on fuse/relay block.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
M3	RED/BLK	Ignition switch ON (II) and combination light switch ON (⌂) or (⌂)	Check for voltage to ground: There should be battery voltage.	- Blown No. 54 (40A) fuse in the underhood fuse/relay block - Blown No. 10 (15A) fuse in the passenger's underdash fuse/relay block - Faulty taillight relay block - Faulty combination light switch - An open in the wire
J6	RED	Ignition switch ON (II) and combination light switch ON (⌂) or (⌂), set dash lights brightness controller to minimum setting	Attach to ground: Dash lights should come on full bright.	An open in the wire

G00032332

Fig. 3: Dash Light Brightness Controller Input Test
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL GAUGE

CAUTION: In the following tests, **DO NOT** apply battery voltage to wire terminals, or fuel gauge will be damaged. Turn ignition off before fuel gauge pointer reaches "F" mark, or fuel gauge will be damaged.

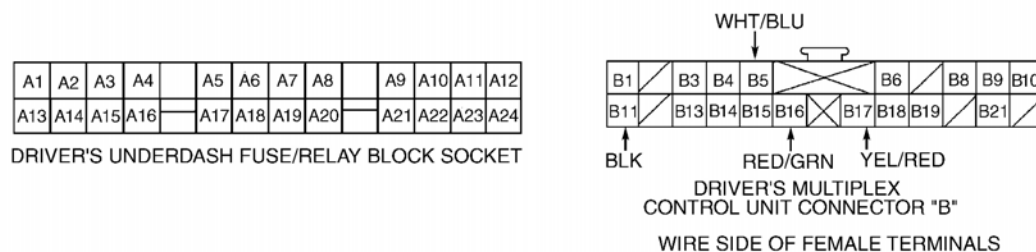
1. Turn ignition off. Check fuse No. 9 (10-amp) in driver's underdash fuse/relay block. If fuse is okay, install fuse and go to next step. If fuse is blown, replace fuse and retest system. If fuse blows again, locate and repair short to ground. See **WIRING DIAGRAMS** .
2. Remove driver's side second row seat. Cut carpet along dotted line. Lift carpet and remove fuel tank access panel. Disconnect fuel tank unit 5-pin connector. Turn ignition on.
3. Measure voltage between fuel tank unit connector terminals No. 1 (Black wire) and No. 2 (Yellow/Blue wire). About 5-8 volts should exist. If voltage is as specified, go to next step. If voltage is not as specified, check for open in Yellow/Blue wire between fuel tank unit and gauge assembly or Black wire between fuel tank unit and ground G501. See **COMPONENT LOCATIONS** . See **WIRING DIAGRAMS** . If circuits and connections are okay, replace fuel gauge.
4. Turn ignition off. Install 2-ohm resistor between fuel tank unit connector terminals No. 1 (Black wire) and No. 2 (Yellow/Blue wire). Turn ignition on. Fuel gauge pointer should start to move toward "F" mark on gauge. If fuel gauge pointer does not move, replace fuel gauge. If fuel gauge pointer moves as indicated, check fuel gauge sending unit. See **FUEL GAUGE SENDING UNIT TEST** under COMPONENT TESTS.

LIGHTS-ON, KEY-IN, SEAT BELT REMINDER, KEY LIGHT TIMER & ENGINE OIL PRESSURE INDICATORS (DRIVER'S MULTIPLEX CONTROL UNIT)

1. Before attempting to diagnose malfunctions, ensure multiplex control system is functioning properly. See MULTIPLEX CONTROL SYSTEMS - MDX. If multiplex control system is okay, go to next step.
2. Check driver's multiplex control unit connectors for loose, damaged or corroded terminals. If problem exists, repair connector(s) as necessary and retest system. If problem does not exist, go to next step.
3. Perform driver's multiplex control unit input tests. See **Fig. 4** . If any test indicates a problem, repair as necessary and retest system. If all input tests are okay, control unit is probably faulty. Replace control unit and retest system.

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX



Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
A12	Fuse/relay block socket	Under all conditions	Check for voltage to ground: There should be battery voltage.	- Blown No. 13 (7.5A) fuse in the passenger's underdash fuse/relay block - An open in the wire
A24		Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	- Blown No. 9 (10A) fuse in the driver's underdash fuse/relay block - An open in the wire
A6		Combination light switch ON (III) Jump 12 volts to B16 (RED/GRN) terminal	Check for voltage to ground: There should be battery voltage.	- Blown No. 10 (15A) fuse in the passenger's underdash fuse/relay block - Faulty taillight relay - Faulty combination light switch - Faulty driver's underdash fuse/relay block
A16		Driver's door open	Check for voltage to ground: There should be 1 V or less.	- Faulty driver's door switch - An open in the wire
A18		Ignition switch ON (II) Driver's seat belt is unbuckled.	Check for voltage to ground: There should be 1 V or less.	- Faulty driver's seat belt switch - Poor ground (G631) - An open in the wire
A1		Under all conditions	Attach to ground: Ignition key light should come on.	- Blown No. 47 (20A) fuse in the underhood fuse/relay block - Faulty LED - An open in the wire
A13		Ignition key is inserted into the ignition switch.	Check for continuity to ground: There should be continuity.	- Faulty ignition key switch - Poor ground (G401) - An open in the wire
B5	WHT/BLU	Engine running	Check for voltage to ground: There should be battery voltage.	- Faulty charging system - An open in the wire
B11	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	- Poor ground (G501) - An open in the wire
B17	YEL/RED	Ignition switch OFF	Check for continuity to ground: There should be continuity.	- Faulty engine oil pressure switch - An open in the wire
		Ignition switch ON (II)	Check the low engine oil indicator light operation. The indicator light should come on.	- Blown bulb - An open in the wire
		Start the engine.	Check for voltage to ground: There should be battery voltage.	- Insufficient oil - Improper lubrication - Faulty engine oil pressure switch - A short in the wire

G00032333

Fig. 4: Driver's Multiplex Control Unit Input Tests
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX

MAINTENANCE REMINDER LIGHT

Maintenance reminder light on instrument panel will blink or illuminate when scheduled maintenance mileage is reached. See **MAINTENANCE REMINDER LIGHT INTERVAL** table. If reminder light does not blink or illuminate on designated schedule, check light bulb and speedometer operation. Repair as necessary. If light bulb and speedometer are okay, check for faulty gauge printed circuit.

To reset maintenance reminder light, turn ignition off. Push the select/reset switch and turn ignition on. Hold select/reset button in for about 10 seconds, until indicator resets.

MAINTENANCE REMINDER LIGHT INTERVAL

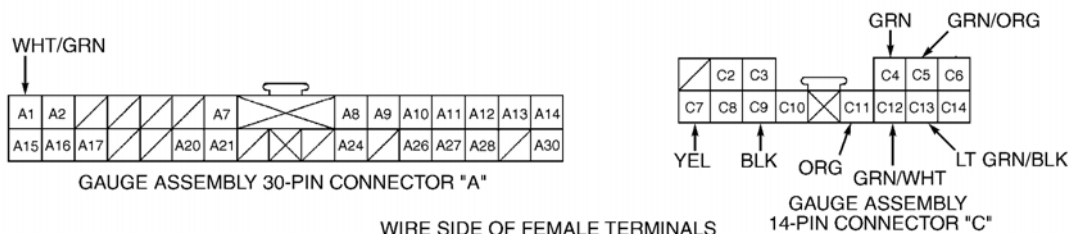
Mileage	(1) Condition
0-6000 (+/-100)	Does Not Illuminate
6000-7500 (+/-100)	Blinks For 10 Seconds
After 7500 (+/-100)	Stays On
(1) With ignition on.	

SAFETY INDICATOR LIGHTS

Remove gauge assembly. See **GAUGE ASSEMBLY** under REMOVAL & INSTALLATION. Disconnect gauge assembly connectors and check for bent, loose or corroded terminals. If problem exists, repair as necessary and retest system. If problem does not exist, perform indicator lights input test. See **Fig. 5** . If any input test indicates a problem repair as necessary. If all input tests are as specified, gauge internal circuit must be faulty.

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX



Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
C9	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	- Poor ground (G501) - An open in the wire
C7	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	- Blown No. 9 (10A) fuse in the driver's underdash fuse/relay block - An open in the wire
A1	WHT/GRN	Under all conditions	Check for continuity between the A1 terminal and the brake light failure sensor No. 4 terminal: There should be continuity.	An open in the wire

Reconnect the connectors to the gauge assembly, and perform the following input tests at the appropriate connector.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
C4	GRN	Front passenger's door open	Check for voltage to ground: There should be less than 1 V.	- Faulty front passenger's door switch - An open in the wire
		Front passenger's door closed	Check for voltage to ground: There should be 5 V or more.	- Faulty front passenger's door switch - Short to ground in the wire
C5	GRN/ORG	Driver's door open	Check for voltage to ground: There should be less than 1 V.	- Faulty driver's door switch - An open in the wire
		Driver's door closed	Check for voltage to ground: There should be 5 V or more.	- Faulty driver's door switch - Short to ground in the wire
C11	ORG	Tailgate open	Check for voltage to ground: There should be less than 1 V.	- Faulty tailgate latch switch - An open in the wire - Poor ground (G602)
		Tailgate closed	Check for voltage to ground: There should be 5 V or more.	- Faulty tailgate latch switch - Short to ground in the wire
C12	GRN/WHT	Right rear door open	Check for voltage to ground: There should be less than 1 V.	- Faulty right rear door switch - An open in the wire
		Right rear door closed	Check for voltage to ground: There should be 5 V or more.	- Faulty right rear door switch - Short to ground in the wire
C13	LT GRN/ BLK	Left rear door open	Check for voltage to ground: There should be less than 1 V.	- Faulty left rear door switch - An open in the wire
		Left rear door closed	Check for voltage to ground: There should be 5 V or more.	- Faulty left rear door switch - Short to ground in the wire

G00032334

Fig. 5: Safety Indicator Input Test

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SPEEDOMETER

Vehicle Speed Signal (VSS) Circuit Test

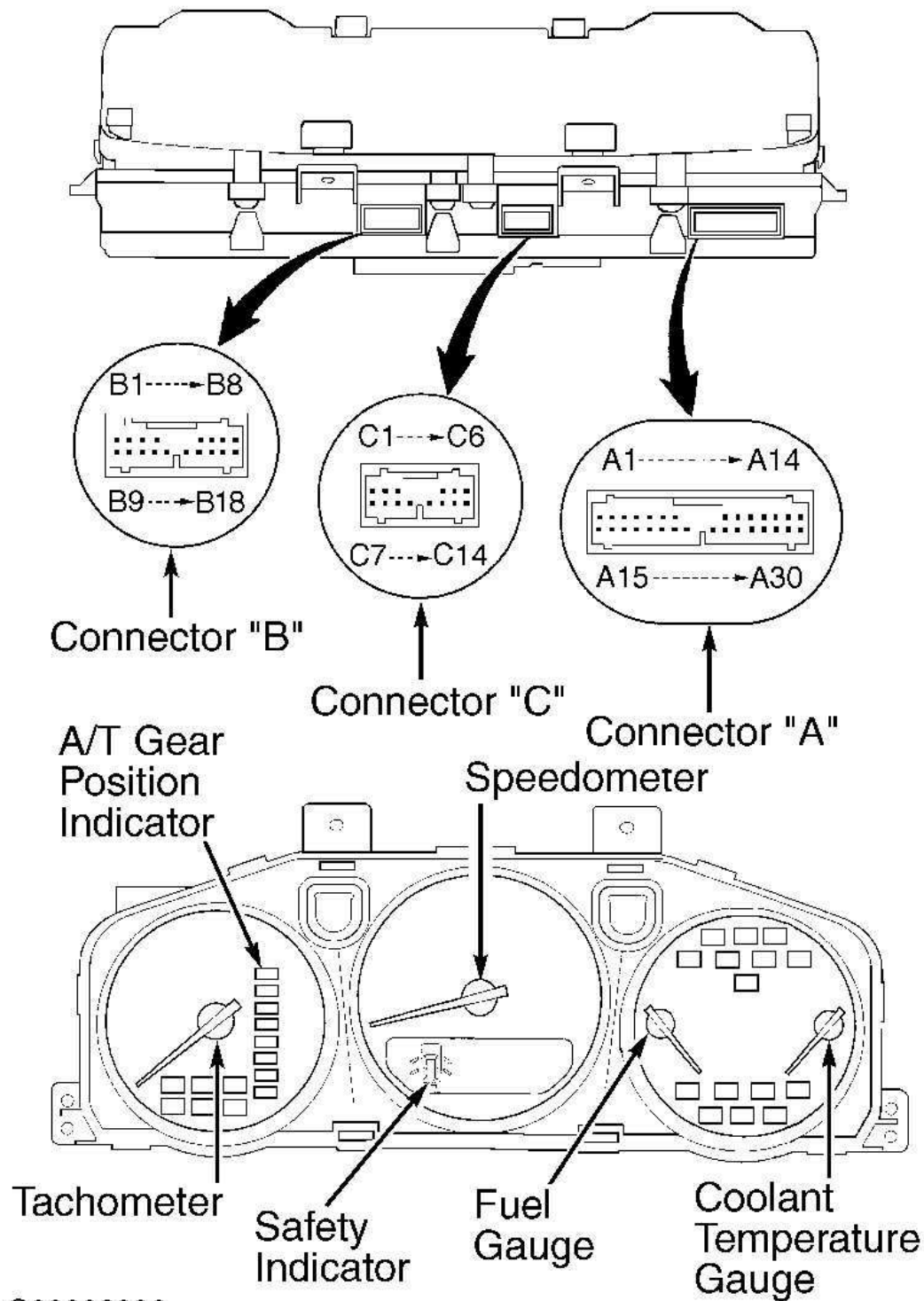
- Using scan tool, check if DTC P0720 is set. If DTC P0720 is present, go to **DTC P0720 (COUNTERSHAFT SPEED SENSOR)**. If DTC P0720 is not present, check fuse No. 9 (10-amp) in driver's underdash fuse/relay block. If problem exists, replace fuse and retest system. If problem does not exist, go to next step.
- Remove gauge assembly from dashboard. See **GAUGE ASSEMBLY** under REMOVAL &

INSTALLATION. Leave connectors connected. Check continuity between gauge assembly harness connector terminals C9, C10 and ground G501. See **Fig. 6** . See **WIRING DIAGRAMS** . If problem exists, repair as necessary. If problem does not exist, go to next step.

3. Raise and support front of vehicle. Disconnect gauge assembly 14-pin connector "C". Connect Digital Volt-Ohm Meter (DVOM) negative lead to ground and positive lead to gauge assembly connector terminal C2 (Blue/White wire). Turn ignition on. Place transaxle in Neutral. Block one of the front wheels. Slowly rotate other wheel to more than 3 MPH. If voltage pulses between zero volts and 5 volts or more, replace gauge assembly. If voltage does not pulse between zero volts and 5 volts or more, go to next step.
4. Locate PCM 32-pin connector "A". See **COMPONENT LOCATIONS** table. See **Fig. 7** . Backprobing, connect DVOM positive lead to PCM connector "A" terminal No. 9 (Blue/White wire) and negative lead to ground. Turn ignition on. Place transaxle in Neutral. Block one of the front wheels. Slowly rotate other wheel to more than 3 MPH. If voltage pulses between zero volts and 5 volts or more, repair open in Blue/White wire between gauge assembly, cruise control unit, driver's multiplex control unit or PCM. See **WIRING DIAGRAMS** . If voltage does not pulse between zero volts and 5 volts or more, go to next step.
5. Turn ignition off. Disconnect PCM 32-pin connector "A". Check for continuity between ground and PCM connector "A" terminal No. 9 (Blue/White wire). If continuity exists, repair short in Blue/White wire between gauge assembly and PCM, driver's multiplex control unit, or cruise control unit. Recheck system operation. If continuity does not exist, check for loose, damaged or corroded PCM connector terminals. If problem exists, repair as necessary. If problem does not exist, replace faulty PCM.

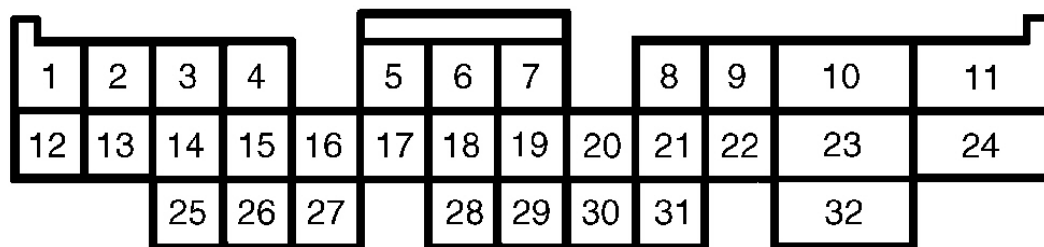
2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX



G00032336

Fig. 6: Exploded View Of Gauge Assembly & Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



WIRE SIDE OF FEMALE TERMINALS

G98A04116

Fig. 7: Identifying PCM 32-Pin Harness Connector "A"
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC P0720 (Countershaft Speed Sensor)

1. Using Honda PGM tester or OBD-II compliant scan tool connected to Data Link Connector 3 (DLC3), retrieve Diagnostic Trouble Codes (DTCs). If any MAP sensor codes are stored (P0107, P0108, P1128 or P1129), go to appropriate diagnostic test procedure in SELF-DIAGNOSTICS - MDX article in ENGINE PERFORMANCE before attempting to check speed sensor circuit. If no MAP sensor DTCs are stored, go to next step.
2. Turn ignition off. Locate countershaft speed sensor on top of transaxle. Disconnect speed sensor 3-pin harness connector. Turn ignition on. Using DVOM, measure voltage between ground and speed sensor harness connector terminal No. 1 (Yellow/Red wire). If voltage reading is about 5 volts, go to next step. If voltage reading is not about 5 volts, go to step 5 .
3. Turn ignition off. Disconnect PCM 16-pin connector "D". See **Fig. 8** . Using DVOM, check for continuity between ground and countershaft speed sensor harness connector terminal No. 2 (Blue wire). If continuity exists, repair short to ground in Blue wire between countershaft speed sensor and PCM. See **WIRING DIAGRAMS** . If continuity does not exist, go to next step.
4. Reconnect PCM 16-pin connector "D". Using DVOM, check for continuity between ground and countershaft speed sensor harness connector terminal No. 3 (Green wire). If continuity exists, go to next step. If continuity does not exist, repair open in Green wire between countershaft speed sensor and PCM. See **WIRING DIAGRAMS** .
5. Turn ignition on. Using DVOM, measure voltage between countershaft speed sensor harness connector terminals No. 2 (Blue wire) and No. 3 (Green wire). If voltage reading is about 5 volts, go to step 8 . If voltage reading is not about 5 volts, go to next step.
6. Backprobing, measure voltage between PCM 16-pin connector "D" terminals No. 10 (Blue wire) and No. 16 (Green wire). See **Fig. 8** . If voltage reading is about 5 volts, repair open in Blue wire between countershaft speed sensor and PCM. See **WIRING DIAGRAMS** . If voltage is not about 5 volts, check for poor connections at PCM. Repair as necessary. If all connections are okay, replace PCM and retest

system.

7. Backprobing, measure voltage between PCM 31-pin connector "C" terminal No. 19 (Yellow/Red wire) and ground. See **Fig. 9** . If voltage reading is 4.75-5.25 volts, repair open circuit in Yellow/Red wire between PCM and speed sensor. If voltage is not 4.75-5.25 volts, check for poor connections at PCM. Repair as necessary. If all connections are okay, replace PCM and retest system.
8. Reconnect countershaft speed sensor harness connector. Backprobing, measure voltage between PCM 16-pin connector "D" terminals No. 10 (Blue wire) and No. 16 (Green wire). See **Fig. 8** . If voltage reading is about 0-5 volts, go to next step. If voltage is not about 0-5 volts, replace countershaft speed sensor.
9. Raise and support vehicle. Start engine and shift transmission to D5 position. Allow wheels to turn. Backprobing, measure voltage between PCM 16-pin connector "D" terminals No. 10 (Blue wire) and No. 16 (Green wire). If voltage reading is about 1.5-3.5 volts, check for poor connections at PCM. Repair as necessary. If all connections are okay, replace PCM and retest system. If voltage is not about 1.5-3.5 volts, replace countershaft speed sensor.

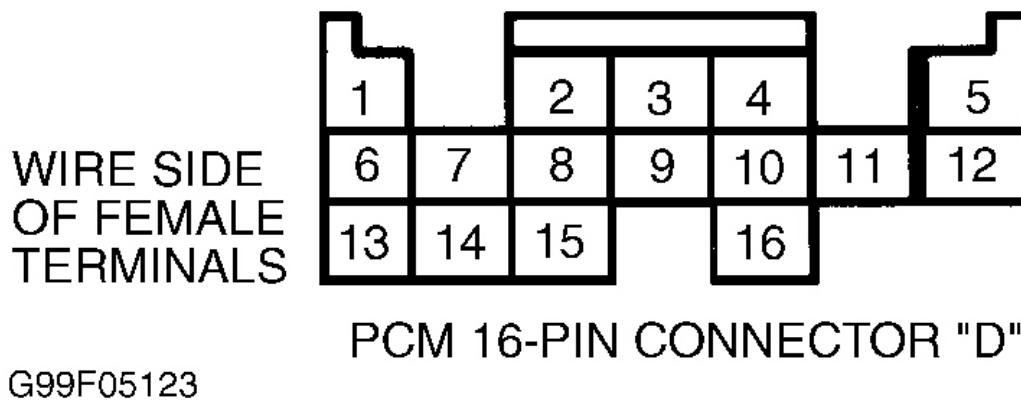
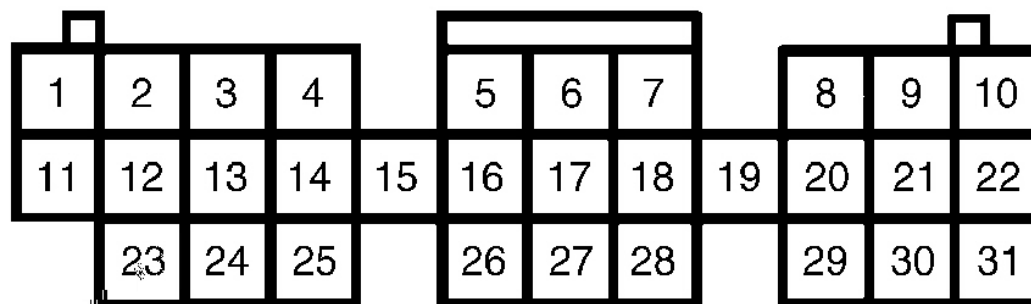


Fig. 8: Identifying PCM 16-Pin Connector "D" Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



WIRE SIDE OF FEMALE TERMINALS

G08F04118

Fig. 9: Identifying PCM 31-Pin Connector "C" Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TEMPERATURE GAUGE

Temperature Gauge Needle Does Not Move

1. Turn ignition off. Locate PCM 32-pin connector "A". See **COMPONENT LOCATIONS** . See **Fig. 7** . Using fused jumper wire, backprobing, connect PCM 32-pin connector "A" terminal No. 31 (Yellow/Green wire) to ground. Turn ignition on. Temperature gauge needle should move to HOT within about 30 seconds. If temperature gauge operates as specified, substitute known-good PCM and retest system. See **SUBSTITUTING PCM** under PROGRAMMING. If temperature gauge does not operate as specified, go to next step.
2. Turn ignition off. Disconnect PCM 32-pin connector "A". Turn ignition on. Using DVOM, measure voltage between ground and PCM 32-pin connector "A" terminal No. 31 (Yellow/Green wire). If about 5 volts are present, replace fuel/temperature gauge assembly. See **GAUGE ASSEMBLY** under REMOVAL & INSTALLATION. If about 5 volts are not present, go to next step.
3. Turn ignition off. Using DVOM, check for continuity between PCM 32-pin connector "A" terminal No. 31 and gauge assembly connector "B" terminal No. 3 (Yellow/Green wire). See **Fig. 6** and **Fig. 7** . If continuity exists, replace fuel/temperature gauge assembly. See **GAUGE ASSEMBLY** under REMOVAL & INSTALLATION. If continuity does not exist, repair open circuit in Yellow/Green wire between PCM and gauge assembly.

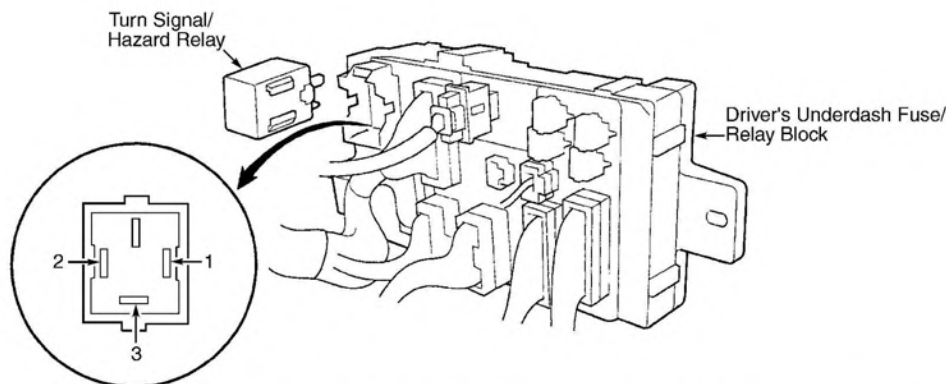
Temperature Gauge Needle Goes Past HOT Mark

1. Locate PCM 32-pin connector "A". See **COMPONENT LOCATIONS** . See **Fig. 7** . Turn ignition off. Disconnect PCM 32-pin connector "A". Turn ignition on. If temperature gauge needle moves to COLD mark within about 30 seconds, substitute known-good PCM and retest system. See **SUBSTITUTING PCM** under PROGRAMMING. If temperature gauge does not move to COLD mark, go to next step.
2. Turn ignition off. Remove gauge assembly from dashboard and disconnect 18-pin gauge assembly

connector "B". See **Fig. 6**. See **GAUGE ASSEMBLY** under REMOVAL & INSTALLATION. Using DVOM, check for continuity between PCM 32-pin connector "A" terminal No. 31 (Yellow/Green wire) and ground. If continuity exists, repair short circuit to ground in Yellow/Green wire. If continuity does not exist, replace fuel/temperature gauge assembly.

TURN SIGNAL/HAZARD RELAY

Remove driver's underdash fuse/relay block. See **DRIVER'S UNDERDASH FUSE/RELAY BLOCK** under REMOVAL & INSTALLATION. Remove turn signal/hazard relay from driver's underdash fuse/relay block. Check turn signal/hazard relay and connector for loose, damaged or corroded terminals. If problem exists, repair as necessary and retest system. If problem does not exist, perform turn signal/hazard relay input tests. See **Fig. 10**. If any input test indicates problem, repair as necessary. If input tests are as specified, replace turn signal/hazard relay.



Cavity	Test condition	Test: Desired result	Possible cause if result is not obtained
1	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G401) • An open in the wire
2	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 10 (7.5A) fuse in the driver's underdash fuse/relay block • Faulty turn signal switch • An open in the wire
	Hazard warning switch ON	Check for voltage to ground: There should be battery voltage.	• Blown No. 49 (15A) fuse in the underhood fuse/relay block • Faulty hazard warning switch • An open in the wire
3	Ignition switch ON (II) and turn signal switch in Right or Left position	Connect No. 2 terminal to No. 3 terminal: Right or left turn signal lights should come on.	• Poor ground (G201, G301, G501, G601, G652) • Faulty turn signal switch • An open in the wire
	Hazard warning switch ON	Connect No. 2 terminal to No. 3 terminal: Hazard warning lights should come on.	• Poor ground (G201, G301, G501, G601, G652) • Faulty hazard warning switch • An open in the wire

G00032337

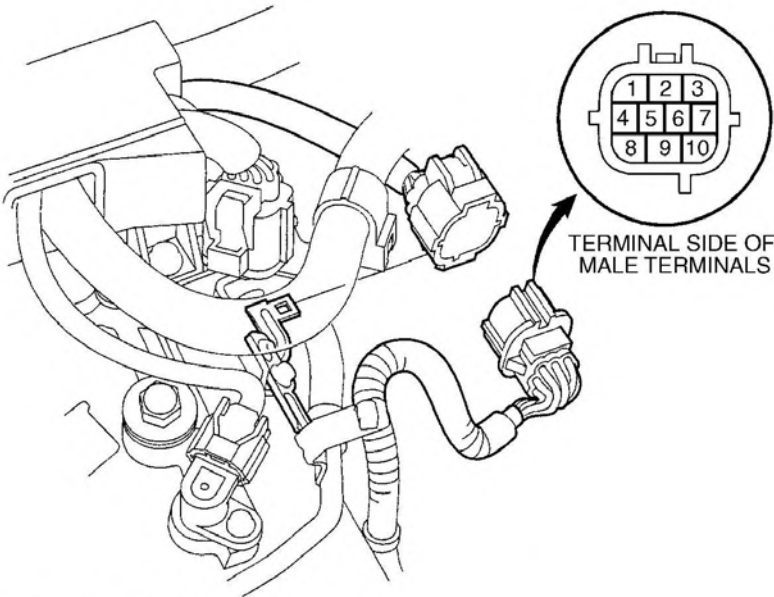
Fig. 10: Turn Signal/Hazard Relay Input Test
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT TESTS

NOTE: Before disconnecting battery, obtain anti-theft code for radio and write down frequencies for radio's preset buttons.

A/T GEAR POSITION SWITCH

Disconnect gear position switch 10-pin connector, located on side of transaxle. Check continuity between each gear position switch terminal in specified shift lever position. See **Fig. 11** . If gear position switch tests as specified, gear position switch is okay. If gear position switch does not test as specified, replace gear position switch.



A/T Gear Position Switch Continuity Check

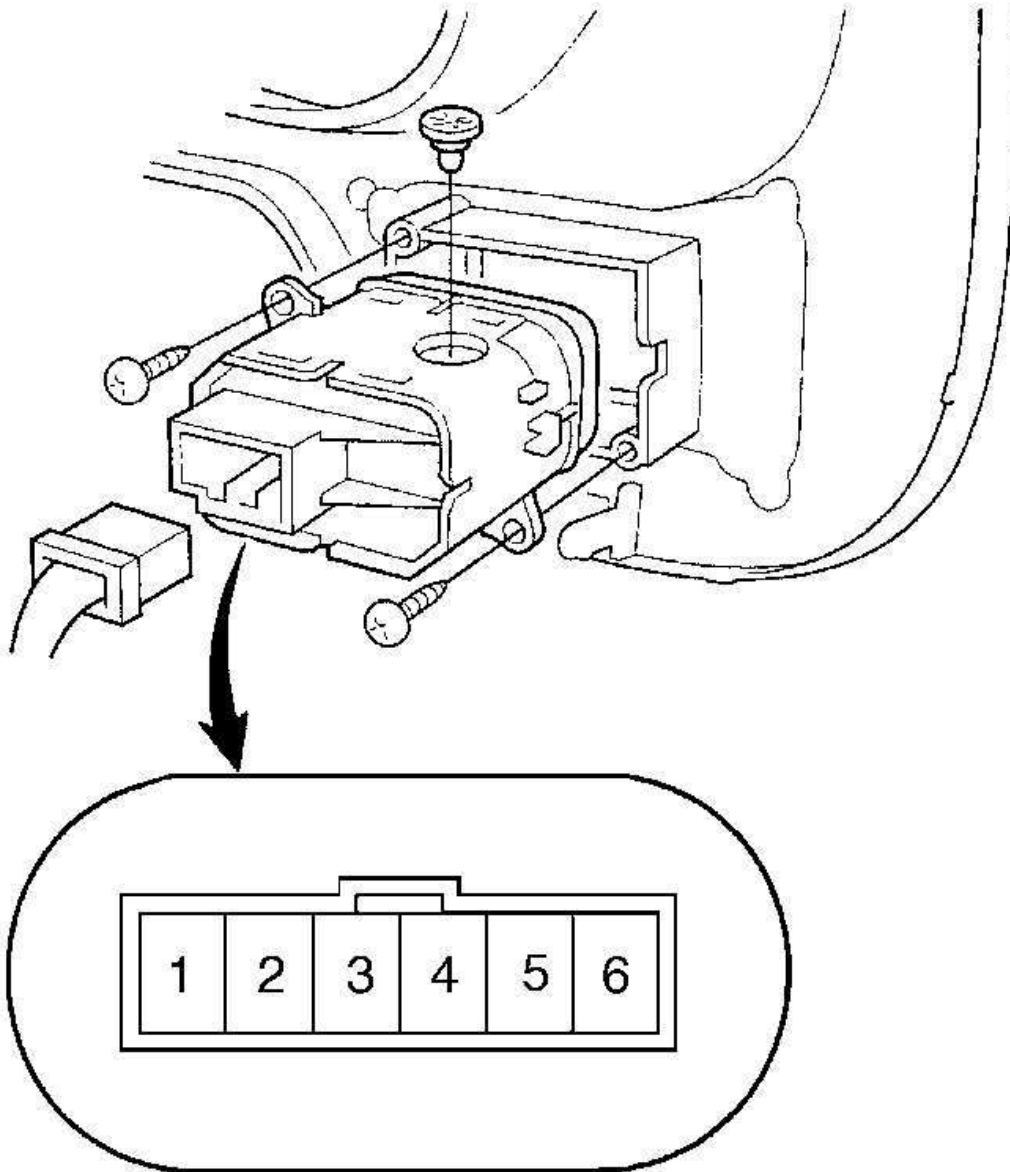
Terminal Position	1	2	3	4	5	6	7	8	9	10
P	○	—	○							○
R			○						○	
N	○	—	○					○		
D ₃		○	○	—	—	—	○			
D ₄		○	○	—	—	○				
D ₅		○	○	—	○					
2 & 1			○	○						

G00032338

Fig. 11: A/T Gear Position Switch Test & Terminal Identification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASH LIGHTS BRIGHTNESS CONTROLLER

Remove gauge assembly trim panel. See **GAUGE ASSEMBLY TRIM PANEL** under REMOVAL & INSTALLATION. Measure resistance between dash light brightness controller terminals No. 4 and 5 (component side) while rotating adjusting dial. See **Fig. 12** . As adjusting dial is turned, resistance should vary between 0-20,000 ohms. If resistance is not as specified, replace dash light brightness controller.



G00032340

Fig. 12: Identifying Dash Lights Brightness Controller Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL GAUGE SENDING UNIT

1. Turn ignition off. Disconnect negative battery cable. Remove driver's side rear seat. Cut carpet along

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX

dotted line. Lift carpet and remove fuel tank access panel. Disconnect fuel tank unit 5-pin connector. Remove fuel cap. Go to next step.

2. Relieve fuel pressure by loosening fuel pulsation damper on fuel rail one complete turn. Disconnect quick-connect fittings from fuel tank. Using Fuel Tank Assembly Wrench (07XAA-001010A), remove fuel tank unit.
3. Measure resistance between fuel tank unit terminals No. 1 and 2 with sending unit float held at empty (down), half-full (middle) and full (up) positions. See **Fig. 13** . Compare readings with expected values. See **FUEL GAUGE SENDING UNIT RESISTANCE SPECIFICATIONS** table. If resistance values are not as specified, replace fuel tank unit. If resistance values are as specified, fuel gauge sending unit is okay. Using NEW "O" ring, install fuel tank unit.

FUEL GAUGE SENDING UNIT RESISTANCE SPECIFICATIONS

Float Position	Ohms
Full	11-13
Half-Full	52.3-58.3
Low	107-118.7
Empty	130-132

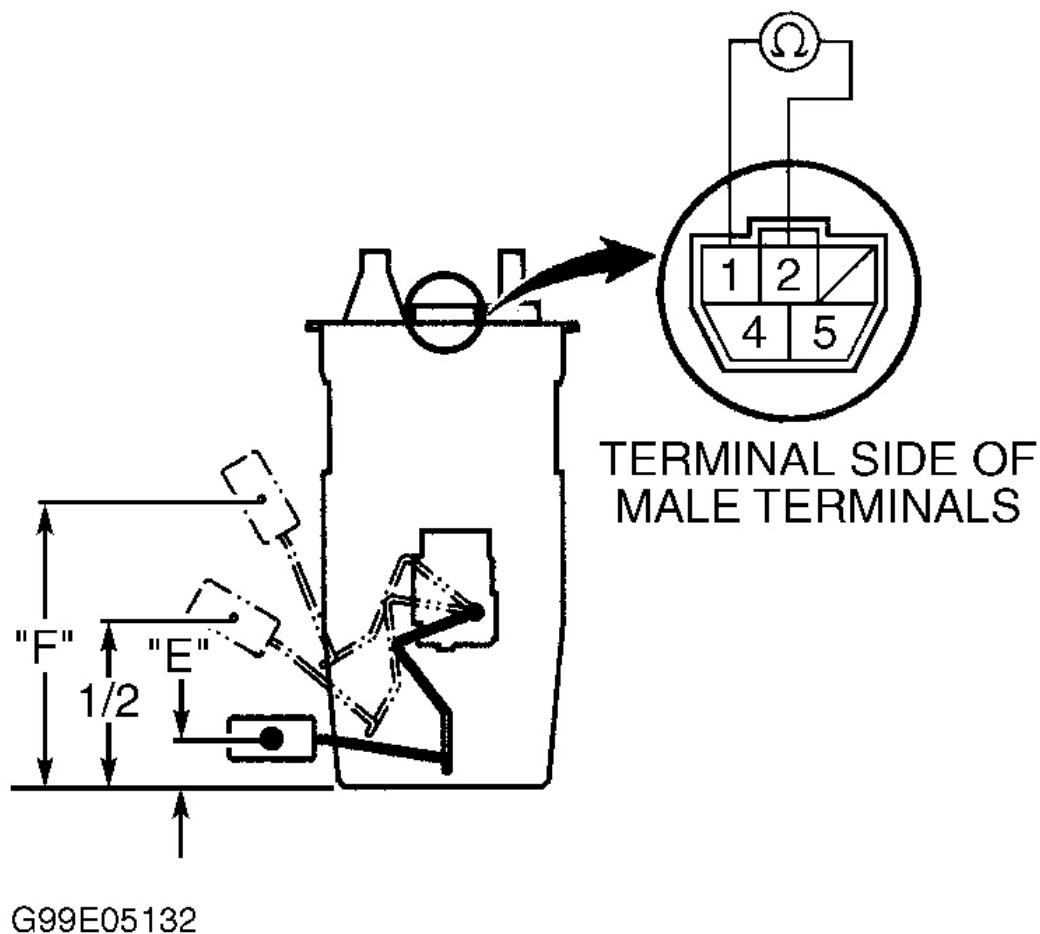


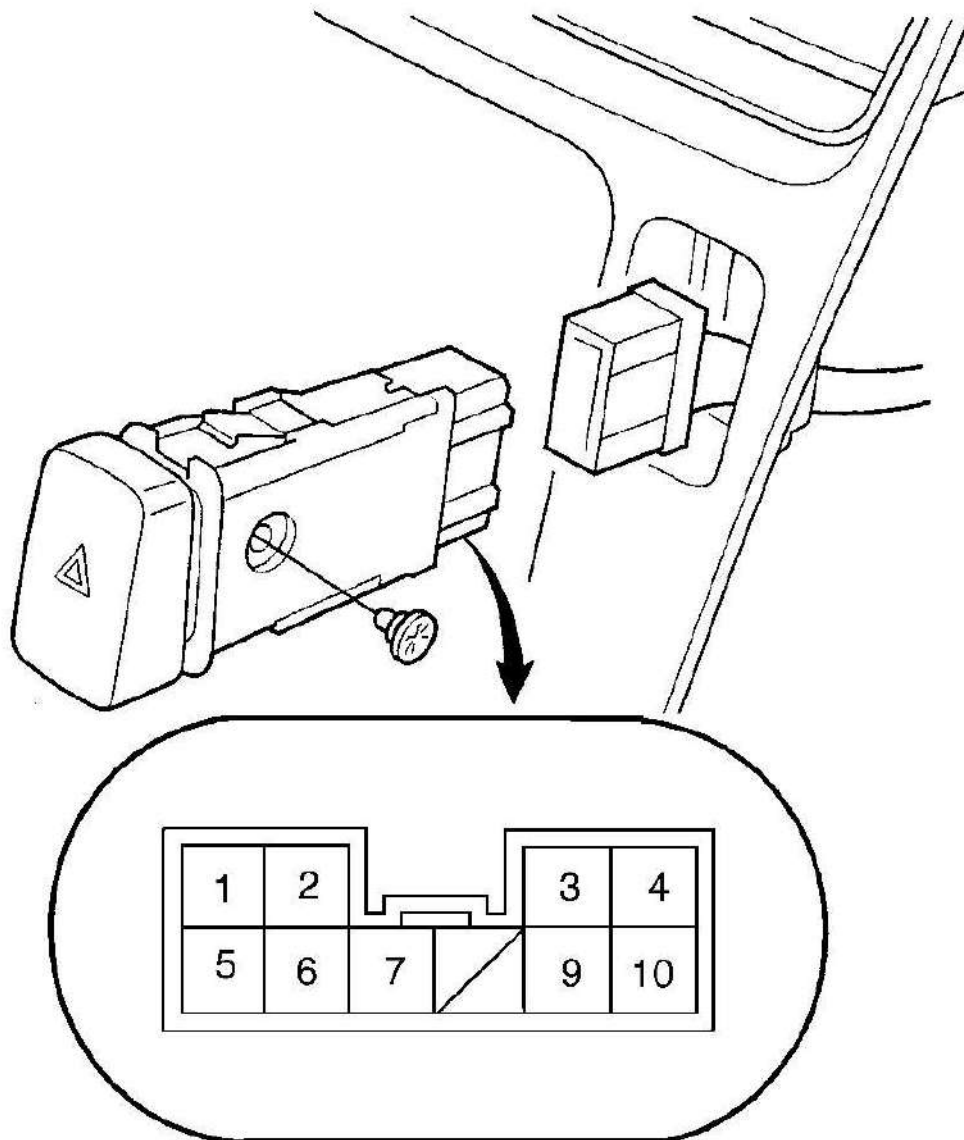
Fig. 13: Identifying Fuel Gauge Sending Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

HAZARD WARNING SWITCH

Remove center trim panel. Disconnect hazard warning switch 10-pin connector. Push out hazard warning switch from center trim panel. With hazard switch in specified position, check continuity between switch terminals. See [Fig. 14](#). If continuity is not as specified, replace hazard warning switch (or illumination bulb if continuity does not exist between terminals No. 5 and 6).

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX



Terminal Position	5		6	1	2	3	4	7	10
OFF									
ON									

G00032339

Fig. 14: Testing Hazard Warning Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

LOW FUEL INDICATOR

1. Perform fuel gauge sending unit test. See **FUEL GAUGE SENDING UNIT TEST** . If problem exists, repair as necessary and retest system. If problem does not exist, go to next step.
2. Turn ignition switch on with fuel gauge sending unit float at empty position. If low fuel indicator light comes on, go to next step. If low fuel indicator light does not come on, check low fuel indicator light circuit. See **WIRING DIAGRAMS** .
3. Raise fuel gauge sending unit float arm so it is above low fuel position. If low fuel indicator light goes out, system is okay at this time. If low fuel indicator light does not go out, check low fuel indicator light circuit. See **WIRING DIAGRAMS** .

OIL PRESSURE SWITCH

Disconnect oil pressure switch connector (Yellow/Red wire). Check continuity between ground and oil pressure switch terminal (component side). Continuity should exist when engine is stopped. Continuity should not exist when engine is running. If continuity is as specified, oil pressure switch is okay. If continuity is not as specified, check engine oil level and oil pressure. See **OIL PRESSURE SPECIFICATIONS** table. If oil level and oil pressure are okay, replace oil pressure switch.

OIL PRESSURE SPECIFICATIONS

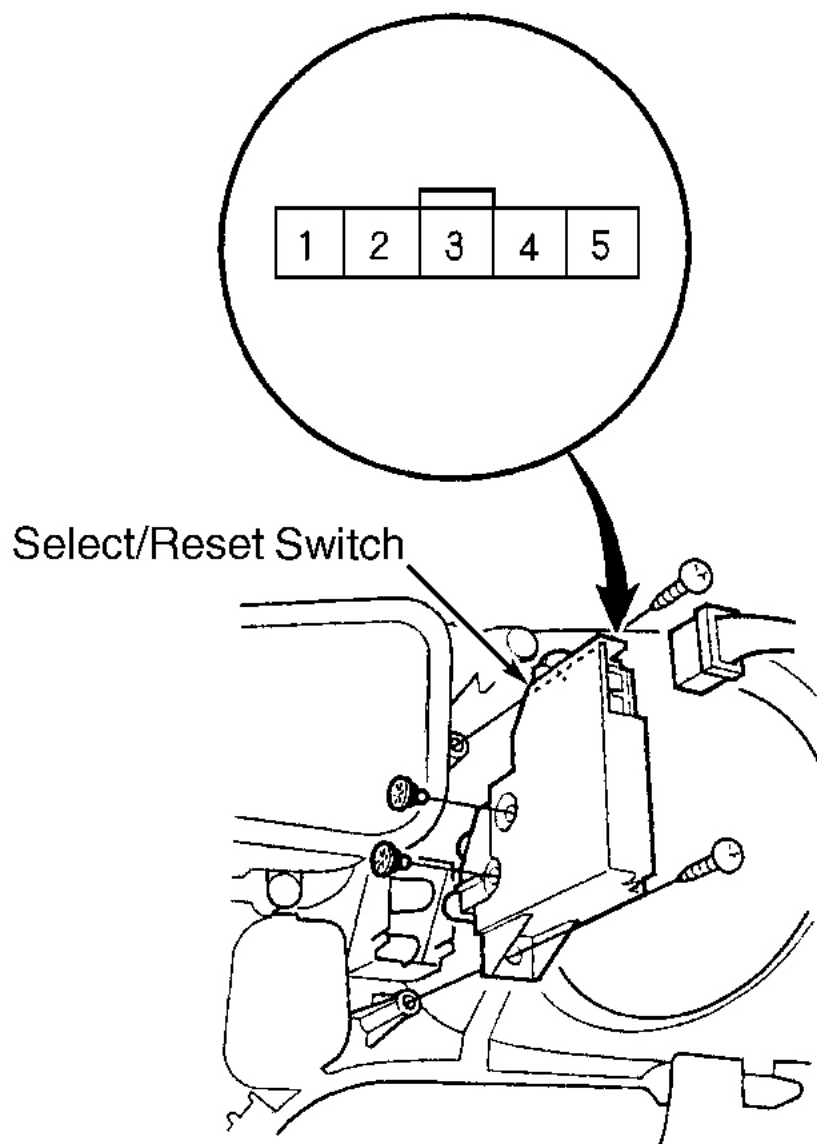
Engine Speed	Pressure - psi (kPa)
Idle	10 (70)
3000 RPM	71 (490)

SELECT/RESET SWITCH

Remove gauge assembly trim panel. See **GAUGE ASSEMBLY TRIM PANEL** under REMOVAL & INSTALLATION. Measure resistance between appropriate terminals as specified. See **Fig. 15** . If resistance is not as specified, replace select/reset switch.

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX



Terminal	1	2	3	4	5
Position					
OFF					
SELECT switch ON					
RESET switch ON					

Fig. 15: Identifying Select/Reset Switch Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REMOVAL & INSTALLATION

WARNING: Deactivate air bag system before performing any service operation. See **AIR BAG RESTRAINT SYSTEMS** article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

NOTE: Before disconnecting battery, obtain radio anti-theft code and record frequencies for radio's preset buttons.

GAUGE ASSEMBLY

Removal & Installation

Remove gauge assembly trim panel. See **GAUGE ASSEMBLY TRIM PANEL** . Remove 4 screws from gauge assembly. Place protective cloth over upper steering column. Partially pull out gauge assembly. Disconnect gauge assembly connectors. See **Fig. 6** . Remove gauge assembly. To install, reverse removal procedure.

GAUGE ASSEMBLY TRIM PANEL

Removal & Installation

Tilt steering column down. Remove 2 gauge assembly trim panel screws. Gently pull out along edge of gauge assembly trim panel to release 4 retainer clips. Disconnect electrical connectors and remove gauge assembly trim panel. To install, reverse removal procedure.

DRIVER'S UNDERDASH FUSE/RELAY BLOCK

Removal & Installation

1. Disconnect negative battery cable, then disconnect positive battery cable. Wait at least 3 minutes. Remove instrument panel lower cover screw. Gently pull down on instrument panel lower cover to release clips. Disconnect air hose and car temperature sensor connector (if equipped). Remove instrument panel lower cover.
2. Remove driver's door sill molding and left kick panel. Remove mounting bolt and pull driver's underdash fuse/relay block away from body. Disconnect driver's underdash fuse/relay block connectors and remove driver's underdash fuse/relay block.
3. To install, reverse removal procedure. Enter anti-theft code for radio and station presets. Ensure all systems operate properly.

WIRING DIAGRAMS

2002 Acura MDX

2001-02 ACCESSORIES & EQUIPMENT Instrument Panels - MDX

For wiring on 2001 models, see **INSTRUMENT CLUSTER** in SYSTEM WIRING DIAGRAMS article in ELECTRICAL.

For wiring on 2002 models, see **INSTRUMENT CLUSTER** in SYSTEM WIRING DIAGRAMS article in ELECTRICAL.