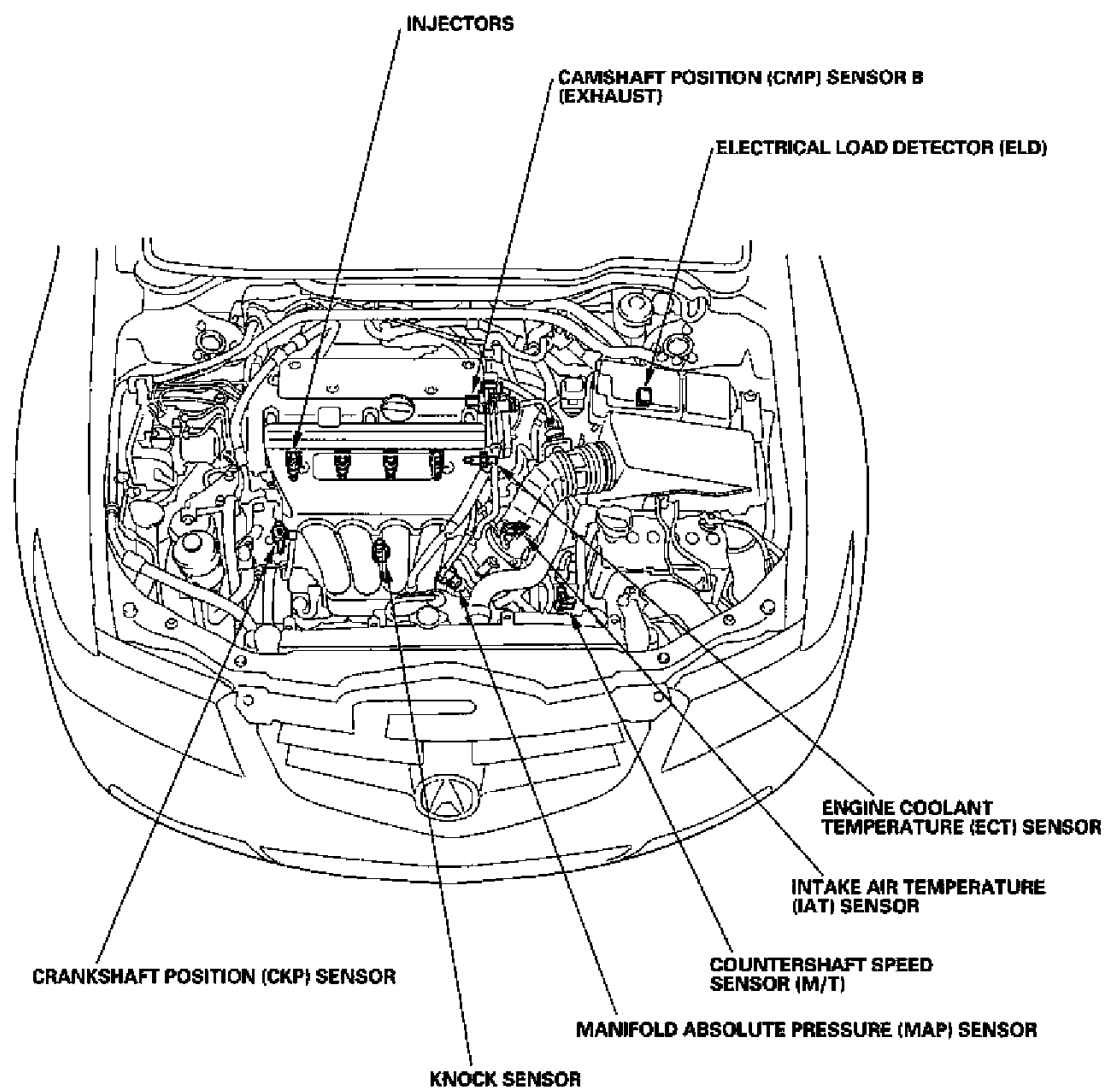


2004 ENGINE PERFORMANCE

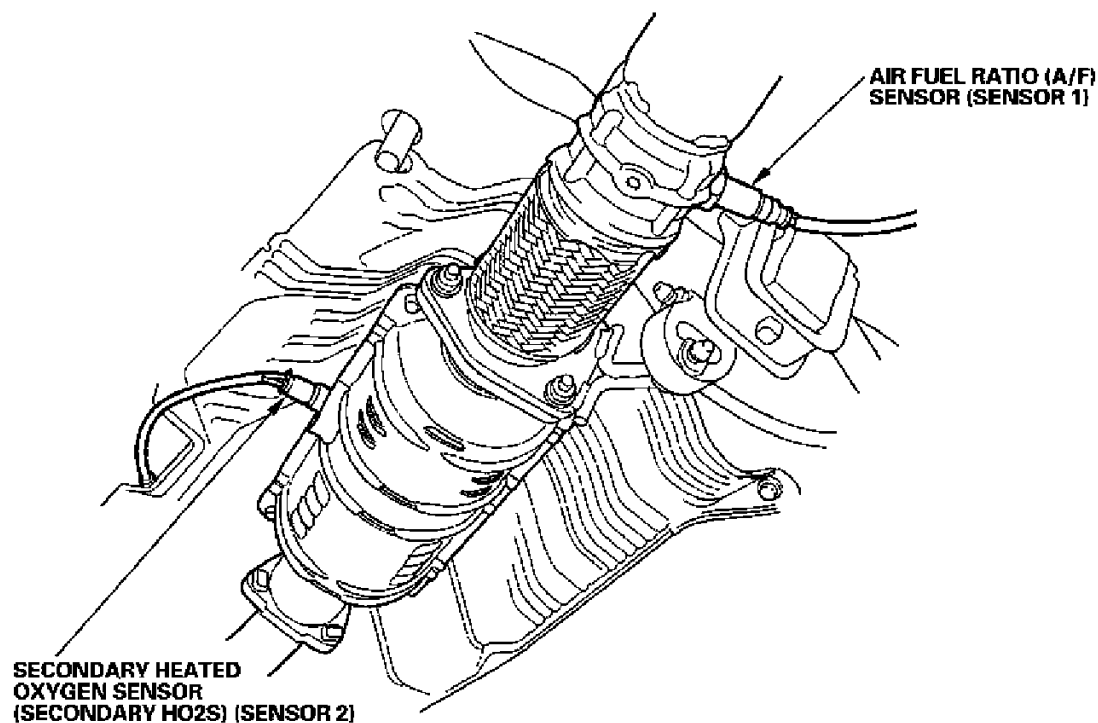
PGM-FI System - TSX

COMPONENT LOCATION INDEX



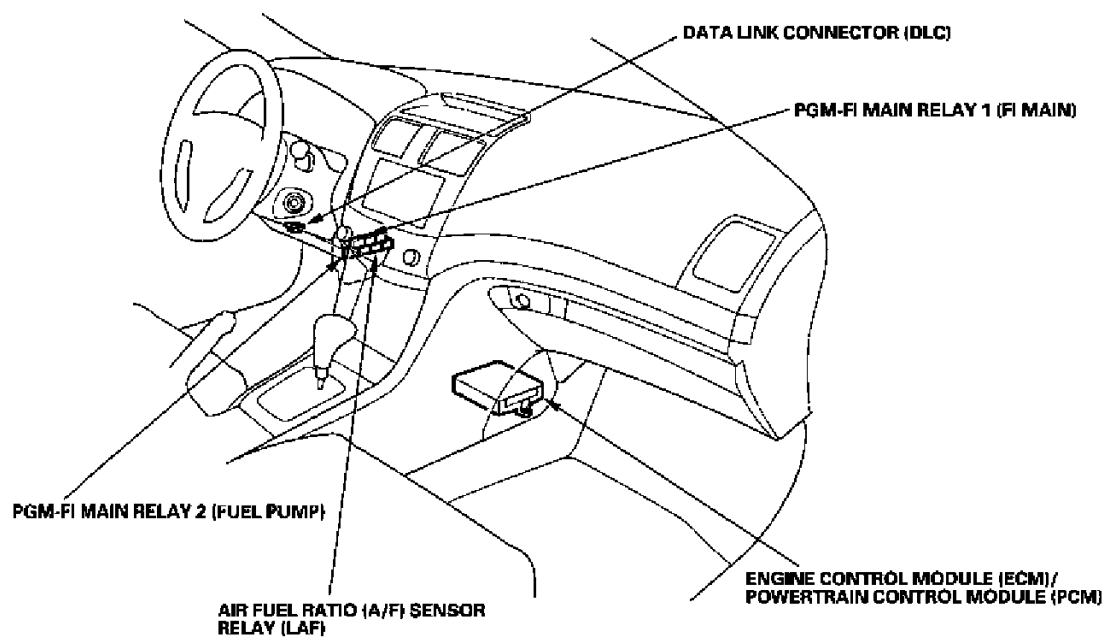
G01822040

Fig. 1: Locating PGM-FI System Components (1 Of 3)



G01822041

Fig. 2: Locating PGM-FI System Components (2 Of 3)



G01822042

Fig. 3: Locating PGM-FI System Components (3 Of 3)

DTC TROUBLESHOOTING

DTC TROUBLESHOOTING INDEX

DTC	Description
DTC P0107	MAP Sensor Circuit Low Voltage
DTC P0108	MAP Sensor Circuit High Voltage
DTC P1128	MAP Sensor Signal Lower Than Expected
DTC P1129	MAP Sensor Signal Higher Than Expected
DTC P0112	IAT Sensor Circuit Low Voltage
DTC P0113	IAT Sensor Circuit High Voltage
DTC P0116	ECT Sensor Circuit Range/Performance Problem
DTC P0117	ECT Sensor Circuit Low Voltage
DTC P0118	ECT Sensor Circuit High Voltage
DTC P0125	ECT Sensor Malfunction/Slow Response
DTC P0128	Cooling System Malfunction
DTC P0133	A/F Sensor (Sensor 1) Response Malfunction/Slow Response in Circuit
DTC P0134	A/F Sensor (Sensor 1) Heater System Malfunction
DTC P0135	A/F Sensor (Sensor 1) Heater Circuit Malfunction
DTC P1157	A/F Sensor (Sensor 1) AFS Line High Voltage
DTC P2195	A/F Sensor (Sensor 1) Signal Stuck Lean
DTC P2238	A/F Sensor (Sensor 1) AFS+ Line Low Voltage
DTC P2252	A/F Sensor (Sensor 1) AFS- Line Low Voltage
DTC P2A00	A/F Sensor (Sensor 1) Range/Performance Problem
DTC P0137	Secondary HO2S (Sensor 2) Circuit Low Voltage

2004 Acura TSX

2004 ENGINE PERFORMANCE PGM-FI System - TSX

<u>DTC</u> <u>P0138</u>	Secondary HO2S (Sensor 2) Circuit High Voltage
<u>DTC</u> <u>P0139</u>	Slow Response in Secondary HO2S (Sensor 2) Circuit
<u>DTC</u> <u>P0141</u>	Secondary HO2S (Sensor 2) Heater Circuit Malfunction
<u>DTC</u> <u>P0171</u>	Fuel System Too Lean
<u>DTC</u> <u>P0172</u>	Fuel System Too Rich
<u>DTC</u> <u>P0300</u>	Random Misfire and Any Combination of the Following: DTC P0301: No. 1 Cylinder Misfire; DTC P0302: No. 2 Cylinder Misfire; DTC P0303: No. 3 Cylinder Misfire; DTC P0304: No. 4 Cylinder Misfire
<u>DTC</u> <u>P0301</u>	No. 1 Cylinder Misfire
<u>DTC</u> <u>P0302</u>	No. 2 Cylinder Misfire
<u>DTC</u> <u>P0303</u>	No. 3 Cylinder Misfire
<u>DTC</u> <u>P0304</u>	No. 4 Cylinder Misfire
<u>DTC</u> <u>P0325</u>	Knock Sensor Circuit Malfunction
<u>DTC</u> <u>P0335</u>	CKP Sensor No Signal
<u>DTC</u> <u>P0339</u>	CKP Sensor Intermittent Interruption
<u>DTC</u> <u>P0365</u>	CMP Sensor B No Signal
<u>DTC</u> <u>P0369</u>	CMP Sensor B Intermittent Interruption
<u>DTC</u> <u>P0563</u>	ECM/PCM Power Source Circuit Unexpected Voltage
<u>DTC</u> <u>P0603</u>	ECM/PCM Internal Control Module Keep Alive Memory (KAM) Error
<u>DTC</u> <u>P0606</u>	ECM/PCM Processer Malfunction
<u>DTC</u> <u>P0685</u>	ECM/PCM Power Control Circuit Malfunction
<u>DTC</u> <u>P0720</u>	Countershaft Speed Sensor Circuit Malfunction
<u>DTC</u> <u>P1297</u>	ELD Circuit Low Voltage
<u>DTC</u>	ELD Circuit High Voltage

P1298	
DTC P2227	BARO Sensor Range/Performance Problem
DTC P2228	BARO Sensor Circuit Low Voltage
DTC P2229	BARO Sensor Circuit High Voltage
DTC U0073	FCAN Malfunction (Bus-Off)
DTC U0122	FCAN Malfunction (VSA - ECM/PCM)
DTC U0155	FCAN Malfunction (Gauge Control Module - ECM/PCM)

DTC P0107: MAP SENSOR CIRCUIT LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 3 kPa (26 mm Hg, 1.0 in. Hg), or 0.23 V or less indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the MAP sensor 3P connector.
5. Turn the ignition switch ON (II).
6. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 3 kPa (26 mm Hg, 1.0 in. Hg), or 0.23 V or less indicated?

YES: Go to step 9 .

NO: Go to step 7.

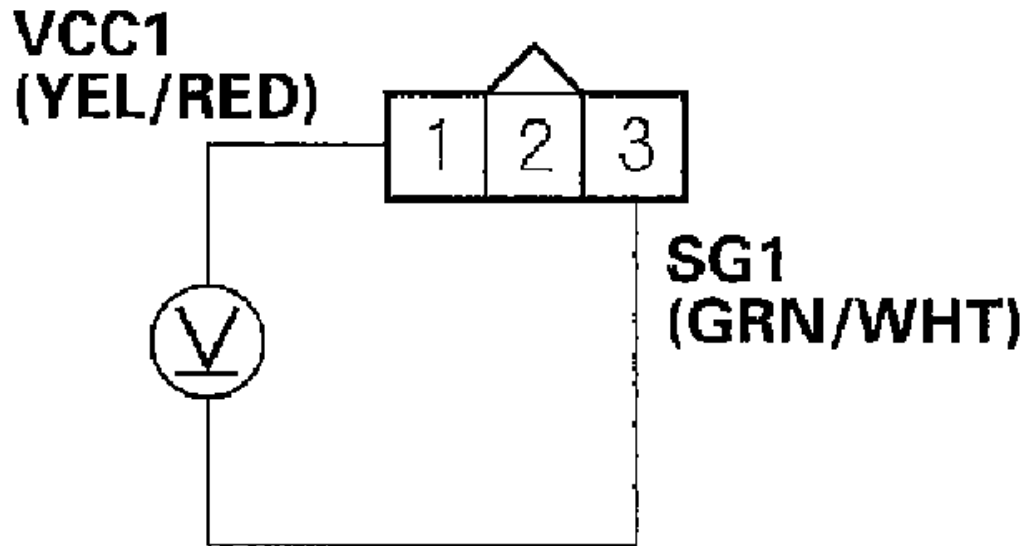
7. Measure voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

Is there about 5 V?

YES: Go to step 13 .

NO: Go to step 8.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

G01822043

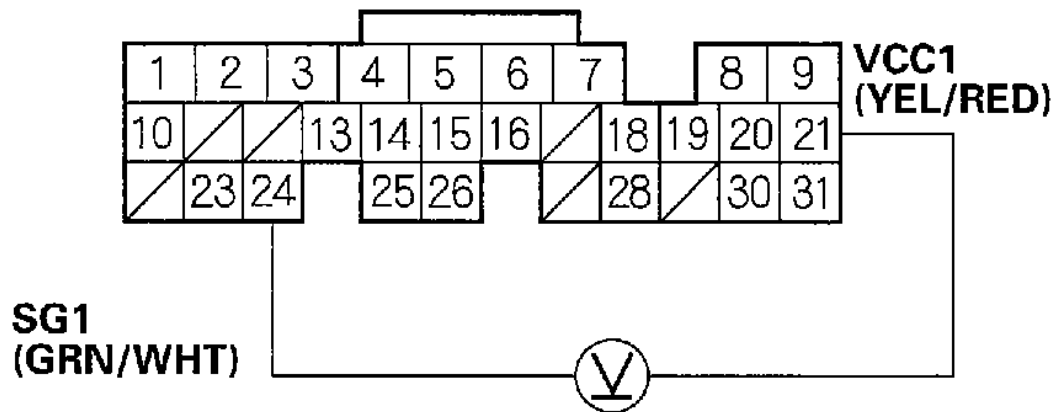
Fig. 4: Measuring Voltage Between MAP Sensor 3P Connector Terminals No. 1 & No. 3

8. Measure voltage between ECM/PCM connector terminals A21 and A24.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (A21) and the MAP sensor, then go to step 15 .

NO: Go to step 19 .

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822044

Fig. 5: Measuring Voltage Between ECM/PCM Connector Terminals A21 & A24

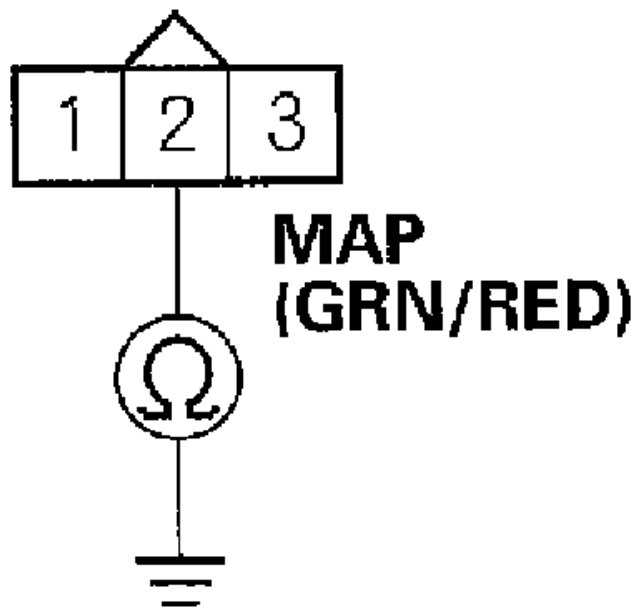
9. Turn the ignition switch OFF.
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector A (31P).
12. Check for continuity between MAP sensor 3P connector terminal No. 2 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A30) and the MAP sensor, then go to step 15 .

NO: Go to step 19 .

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

G01822045

Fig. 6: Checking For Continuity Between MAP Sensor 3P Connector Terminal No. 2 & Body Ground

13. Turn the ignition switch OFF.
14. Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
15. Turn the ignition switch ON (II).
16. Reset the ECM/PCM with the HDS.

17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0107 is indicated, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

19. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0107 is indicated, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0108: MAP SENSOR CIRCUIT HIGH VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

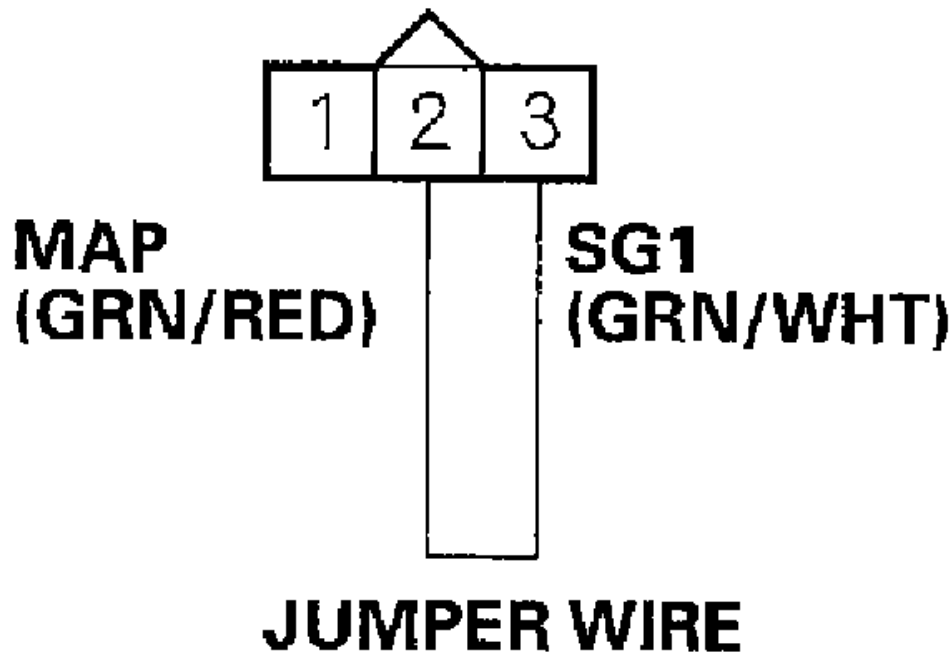
Is about 160 kPa (1,197 mm Hg, 47.1 in. Hg), 4.49 V or more indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the MAP sensor 3P connector.
5. Connect MAP sensor 3P connector terminals No. 2 and No. 3 with a jumper wire.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

G01822046

Fig. 7: Connecting MAP Sensor 3P Connector Terminals No. 2 & No. 3 With A Jumper Wire

6. Turn the ignition switch ON (II).
7. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 160 kPa (1,197 mm Hg, 47.1 in. Hg), 4.49 V or more indicated?

YES: Go to step 8.

NO: Go to step 14 .

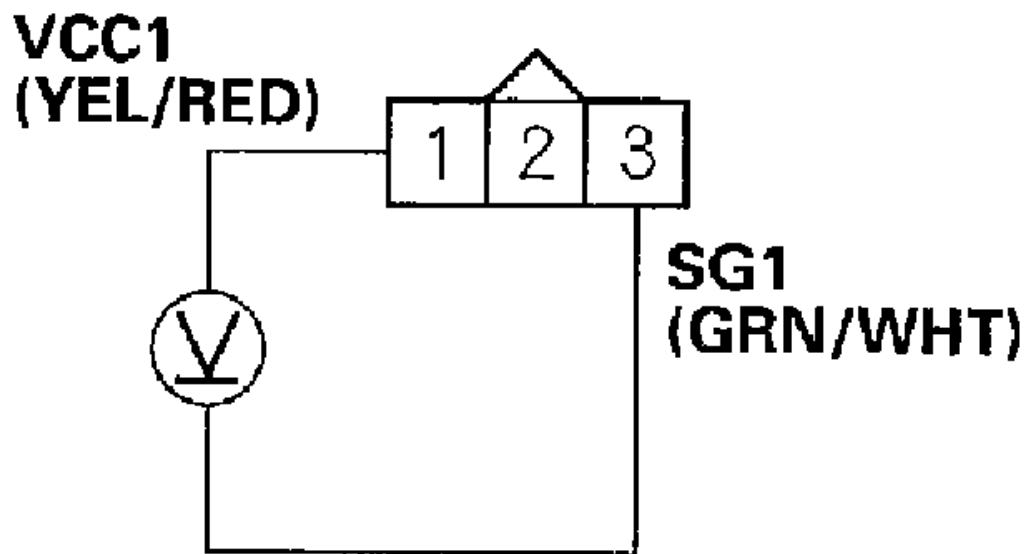
8. Remove the jumper wire.
9. Measure voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

Is there about 5 V?

YES: Go to step 10.

NO: Repair open in the wire between the ECM/PCM (A24) and the MAP sensor, then go to step 16 .

MAP SENSOR 3P CONNECTOR



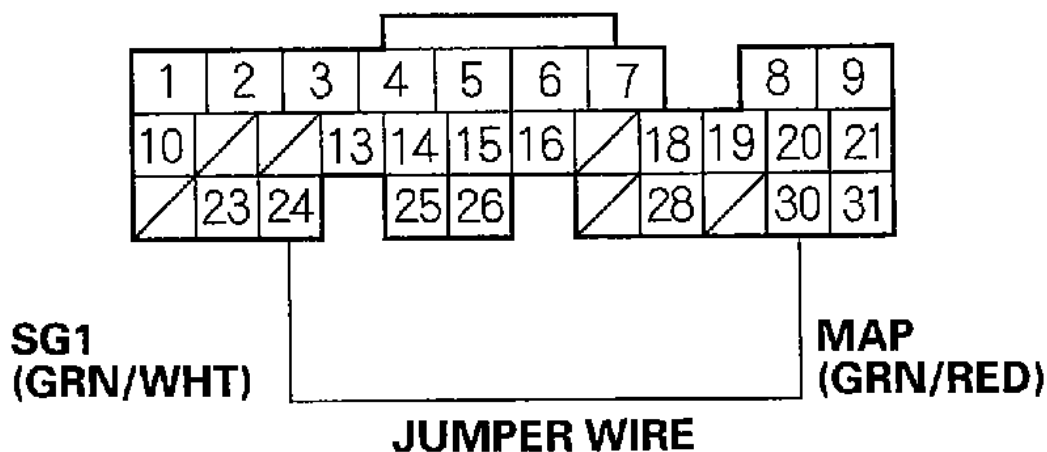
Wire side of female terminals

G01822047

Fig. 8: Measuring Voltage Between MAP Sensor 3P Connector Terminals No. 1 & No. 3

10. Turn the ignition switch OFF.
11. Connect ECM/PCM connector terminals A30 and A24 with a jumper wire.

ECM/PCM CONNECTOR A (31P)



G01822048

Fig. 9: Connecting ECM/PCM Connector Terminals A30 & A24 With A Jumper Wire

12. Turn the ignition switch ON (II).
13. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 160 kPa (1,197 mm Hg, 47.1 in. Hg), 4.49 V or more indicated?

YES: Go to step 20 .

NO: Repair open in the wire between the ECM/PCM (A30) and the MAP sensor, then go to step 16 .
14. Turn the ignition switch OFF.
15. Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
16. Turn the ignition switch ON (II).
17. Reset the ECM/PCM with the HDS.
18. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
19. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0108 is indicated, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

20. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
21. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0108 is indicated, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P1128: MAP SENSOR SIGNAL LOWER THAN EXPECTED

1. Turn the ignition switch ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

Is less than 54.1 kPa (406 mm Hg, 16.0 in. Hg) or 1.61 V held for more than 5 seconds?

YES: Go to step 7 .

NO: Go to step 3.

3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - Engine speed between 1,400 and 6,500 RPM
 - A/T in D position (M/T in 3rd gear)
 - Vehicle speed accelerated from 16 MPH (25 km/h) to 31 MPH (50 km/h) under half throttle
6. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 7.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates NOT COMPLETED, go to step 4 and recheck.

7. Turn the ignition switch OFF.
8. Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
9. Turn the ignition switch ON (II).
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

12. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
13. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - Engine speed between 1,400 and 6,500 RPM
 - A/T in D position (M/T in 3rd gear)
 - Vehicle speed accelerated from 16 MPH (25 km/h) to 31 MPH (50 km/h) under half throttle
14. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P1128 is indicated, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 15.

15. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 12 and recheck.

DTC P1129: MAP SENSOR SIGNAL HIGHER THAN EXPECTED

1. Check for vacuum leaks in these parts:

- PCV valve
- PCV hose
- EVAP canister purge valve
- Throttle body
- Brake booster hose

Are the parts OK?

YES: Go to step 2.

NO: Repair or replace leaking parts, then go to step 9 .

2. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
3. Check the MAP SENSOR in the DATA LIST with the HDS.

Is more than 36.9 kPa (277 mm Hg, 11.0 in. Hg) or 1.1 V held for more than for 5 seconds?

YES: Go to step 7 .

NO: Go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)

- Engine speed between 1,400 and 6,500 RPM
- A/T in D position (M/T in 5th gear)
- Vehicle speed decelerated from more than 50 MPH (80 km/h) with the throttle fully closed for at least 5 seconds

6. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 7.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

- Turn the ignition switch OFF.
- Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
- Turn the ignition switch ON (II).
- Reset the ECM/PCM with the HDS.
- Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
- Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
- Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - Engine speed between 1,400 and 6,500 RPM
 - A/T in D position (M/T in 5th gear)
 - Vehicle speed decelerated from more than 50 MPH (80 km/h) with the throttle fully closed for at least 5 seconds
- Check for Temporary DTCs or DTC in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P1129 is indicated, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 15.

15. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 12 and recheck.

DTC P0112: IAT SENSOR CIRCUIT LOW VOLTAGE

- Turn the ignition switch ON (II).
- Check the IAT SENSOR in the DATA LIST with the HDS.

Is about 356°F (180°C) or higher, or 0.08 V or less indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the IAT sensor 2P connector.
5. Turn the ignition switch ON (II).
6. Check the IAT SENSOR in the DATA LIST with the HDS.

Is about 356°F (180°C) or higher, or 0.08 V or less indicated?

YES: Go to step 7.

NO: Go to step 11 .

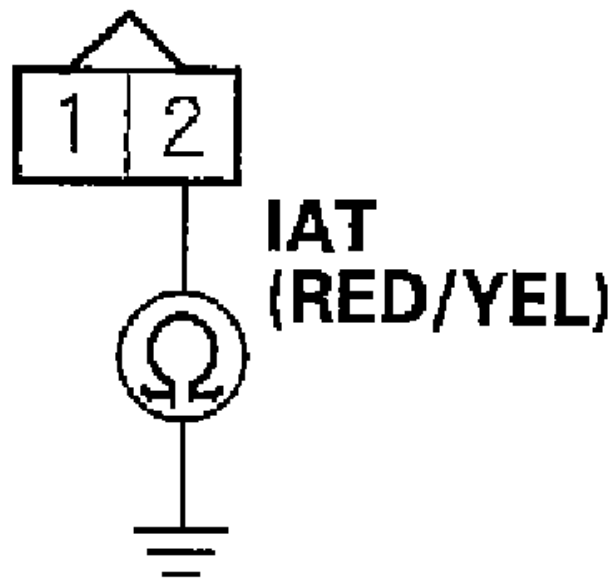
7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (24P).
10. Check for continuity between IAT sensor 2P connector terminal No. 2 and body ground.

Is there continuity?

YES: Repair short in the wire between the IAT sensor and ECM/PCM (B17), then go to step 13 .

NO: Go to step 17 .

IAT SENSOR 2P CONNECTOR



Wire side of female terminals

G01822049

Fig. 10: Checking For Continuity Between IAT Sensor 2P Connector Terminal No. 2 & Body Ground

11. Turn the ignition switch OFF.
12. Replace the IAT sensor (see **IAT SENSOR REPLACEMENT**).
13. Turn the ignition switch ON (II).

14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0112 is indicated, check for poor connections or loose terminals at the IAT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

17. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0112 is indicated, check for poor connections or loose terminals at the IAT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0113: IAT SENSOR CIRCUIT HIGH VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the IAT SENSOR in the DATA LIST with the HDS.

Is about -40°F (-40°C) or less, or 4.90 V or higher indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM.

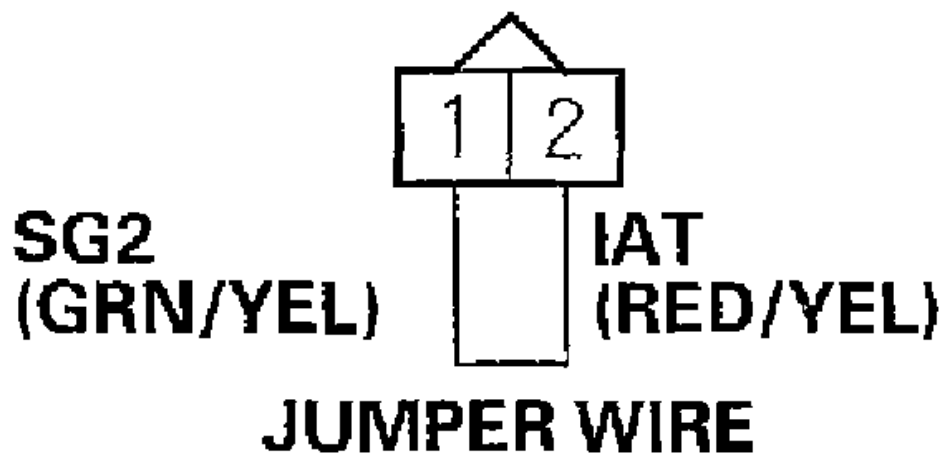
3. Turn the ignition switch OFF.
4. Disconnect the IAT sensor 2P connector.
5. Connect IAT sensor 2P connector terminals No. 1 and No. 2 with a jumper wire.
6. Turn the ignition switch ON (II).
7. Check the IAT SENSOR in the DATA LIST with the HDS.

Is about -40°F (-40°C) or less, or 4.90 V or higher indicated?

YES: Go to step 8.

NO: Go to step 13 .

IAT SENSOR 2P CONNECTOR



Wire side of female terminals

G01822050

Fig. 11: Connecting IAT Sensor 2P Connector Terminals No. 1 & No. 2 With A Jumper Wire

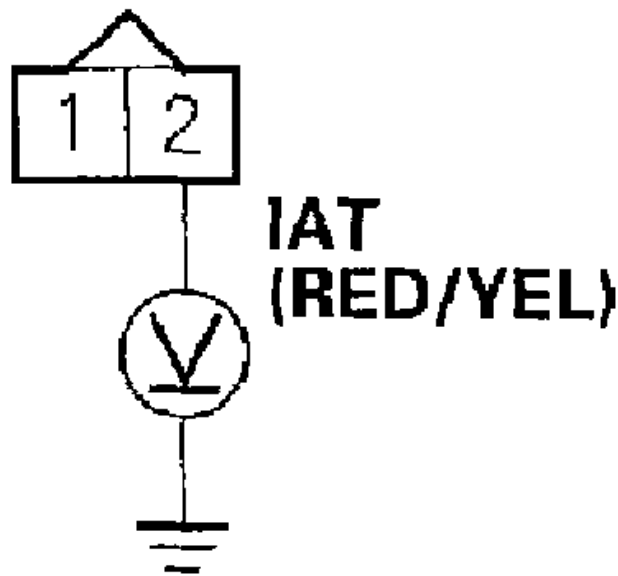
8. Turn the ignition switch OFF.
9. Remove the jumper wire.
10. Turn the ignition switch ON (II).
11. Measure voltage between IAT sensor 2P connector terminal No. 2 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (A23) and the IAT sensor, then go to step 15 .

NO: Go to step 12.

IAT SENSOR 2P CONNECTOR



Wire side of female terminals

G01822051

Fig. 12: Measuring Voltage Between IAT Sensor 2P Connector Terminal No. 2 & Body Ground

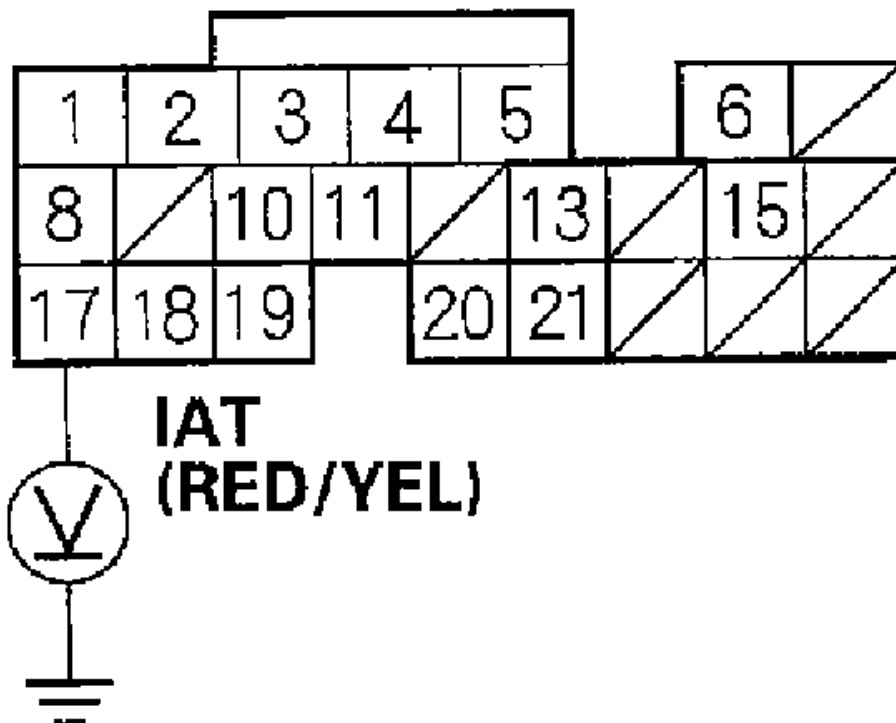
12. Measure voltage between ECM/PCM connector terminal B17 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (B17) and the IAT sensor, then go to step 15 .

NO: Go to step 19 .

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822052

Fig. 13: Measuring Voltage Between ECM/PCM Connector Terminal B17 & Body Ground

13. Turn the ignition switch OFF.
14. Replace the IAT sensor (see **IAT SENSOR REPLACEMENT**).
15. Turn the ignition switch ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0113 is indicated, check for poor connections or loose terminals at the IAT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC Troubleshooting.

NO: Troubleshooting is complete.

19. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0113 is indicated, check for poor connections or loose terminals at the IAT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0116: ECT SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

1. Turn the ignition switch ON (II).
2. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about 176°F (80°C) or higher, or 0.86 V or less indicated?

YES: Go to step 3.

NO: Go to step 7 .

3. Note the current coolant temperature from step 2.
4. Turn the ignition switch OFF.
5. Let the engine cool for 1 hour.
6. Check the ECT SENSOR in the DATA LIST with the HDS.

Did the ECT change 3.6°F (2°C) or more?

YES: Intermittent failure, system is OK at this time. Check the thermostat and the cooling system.

NO: Go to step 10 .

7. Note the current coolant temperature.
8. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.

9. Check the ECT SENSOR in the DATA LIST with the HDS.

Does the ECT change 3.6°F (2°C) or more?

YES: Intermittent failure, system is OK at this time. Check the thermostat and the cooling system.

NO: Go to step 10.

10. Turn the ignition switch OFF.
11. Replace the ECT sensor (see **ECT SENSOR REPLACEMENT**).
12. Turn the ignition switch ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Allow the engine to cool to between 23°F (-5°C) and 77°F (25°C).
16. Start the engine, and let it idle for 20 minutes.
17. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0116 is indicated, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 18.

18. Monitor the OBD STATUS for DTC P0116 in the DTCs MENU with the HDS.

Does the screen indicates PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 15 and recheck.

DTC P0117: ECT SENSOR CIRCUIT LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about 356°F (180°C) or higher, or 0.08 V or less indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECT sensor and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ECT sensor 2P connector.
5. Turn the ignition switch ON (II).
6. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about 356°F (180°C) or higher, or 0.08 V or less indicated?

YES: Go to step 7.

NO: Go to step 11 .

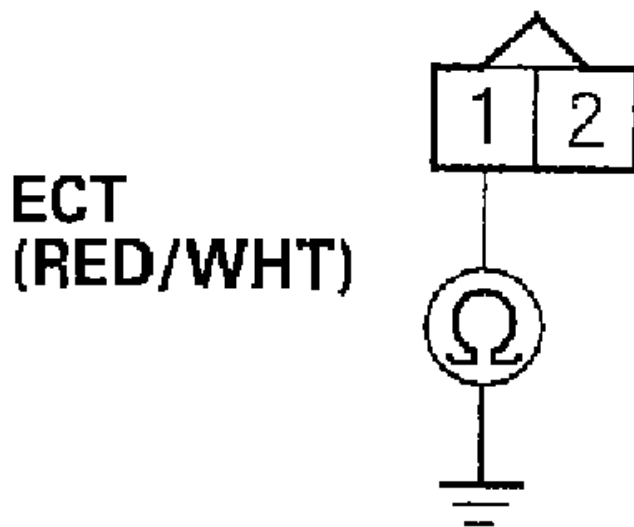
7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (24P).
10. Check for continuity between ECT sensor 2P connector terminal No. 1 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECT sensor and ECM/PCM (B8), then go to step 13 .

NO: Go to step 17 .

ECT SENSOR 2P CONNECTOR



Wire side of female terminals

G01822053

Fig. 14: Checking For Continuity Between ECT Sensor 2P Connector Terminal No. 1 & Body Ground

11. Turn the ignition switch OFF.
12. Replace the ECT sensor (see **ECT SENSOR REPLACEMENT**).
13. Turn the ignition switch ON (II).
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0117 is indicated, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

17. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0117 is indicated, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0118: ECT SENSOR CIRCUIT HIGH VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the ECT SENSOR in the DATA LIST with the HDS.

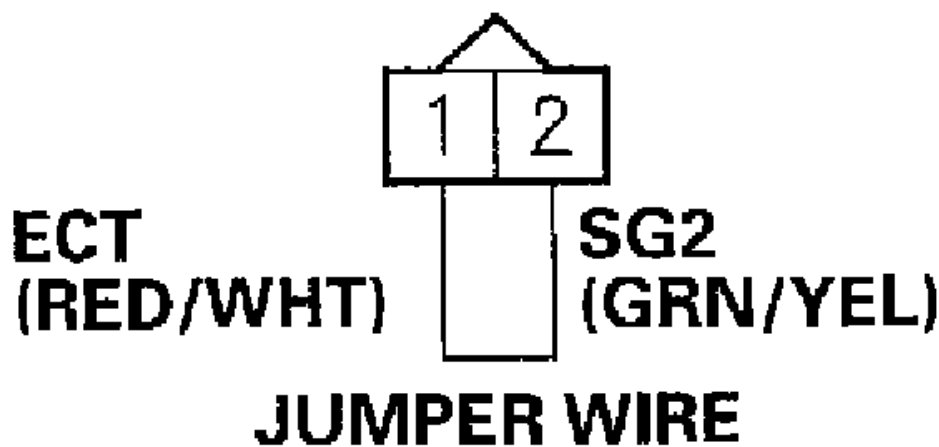
Is about -40°F (-40°C) or less, or 4.90 V or higher indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECT sensor and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ECT sensor 2P connector.
5. Connect ECT sensor 2P connector terminals No. 1 and No. 2 with a jumper wire.

ECT SENSOR 2P CONNECTOR



Wire side of female terminals

G01822054

Fig. 15: Connecting ECT Sensor 2P Connector Terminals No. 1 & No. 2 With A Jumper Wire

6. Turn the ignition switch ON (II).
7. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about -40°F (-40°C) or less, or 4.90 V or higher indicated?

YES: Go to step 8.

NO: Go to step 13 .

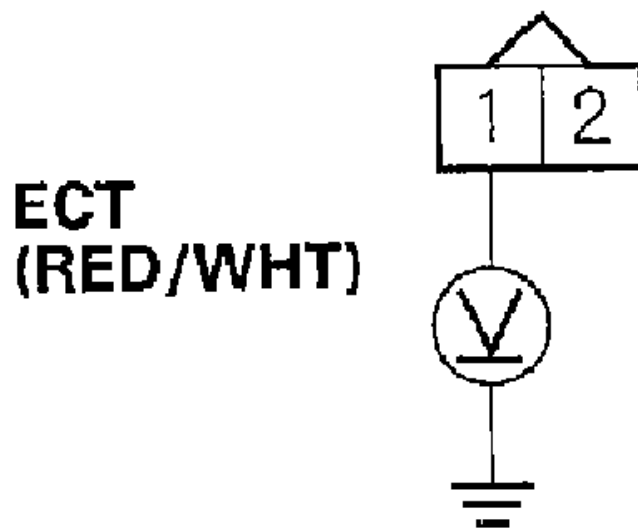
8. Turn the ignition switch OFF.
9. Remove the jumper wire.
10. Turn the ignition switch ON (II).
11. Measure voltage between ECT sensor 2P connector terminal No. 1 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (A23) and the ECT sensor, then go to step 15 .

NO: Go to step 12.

ECT SENSOR 2P CONNECTOR



Wire side of female terminals

G01822055

Fig. 16: Measuring Voltage Between ECT Sensor 2P Connector Terminal No. 1 & Body Ground

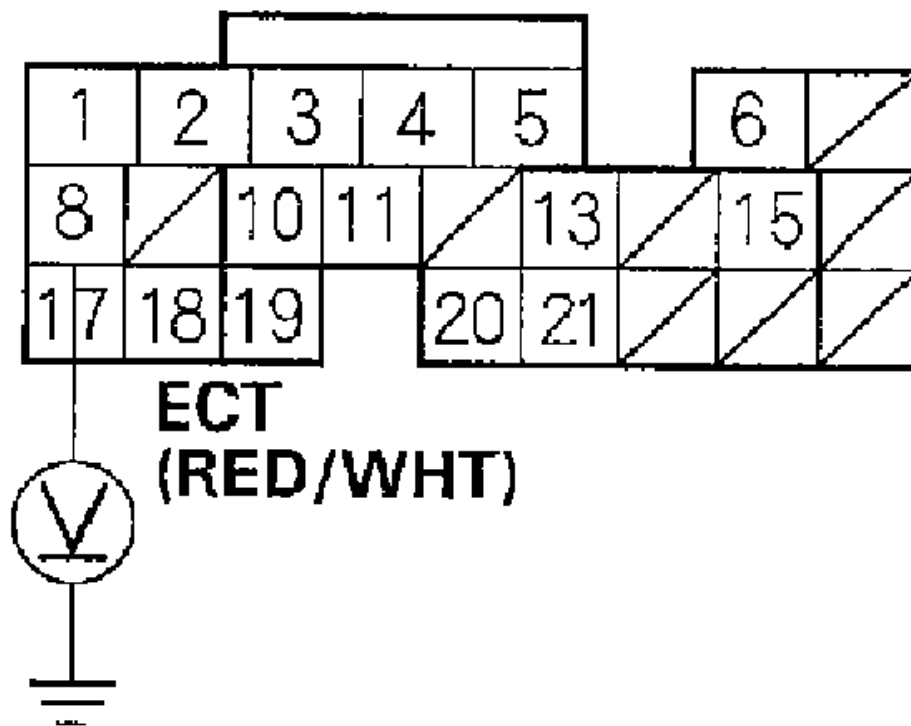
12. Measure voltage between ECM/PCM connector terminal B8 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (B8) and the ECT sensor, then go to step 15 .

NO: Go to step 19 .

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822056

Fig. 17: Measuring Voltage Between ECM/PCM Connector Terminal B8 & Body Ground

13. Turn the ignition switch OFF.
14. Replace the ECT sensor (see **ECT SENSOR REPLACEMENT**).
15. Turn the ignition switch ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0118 is indicated, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

19. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0118 is indicated, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0125: ECT SENSOR MALFUNCTION/SLOW RESPONSE

1. Start the engine, and let it idle.
2. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about 86°F (30°C) or less, or 2.61 V or higher indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check the thermostat and the cooling system.

3. Let the engine idle for 6 minutes.
4. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about 86°F (30°C) or less, or 2.61 V or higher indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check the thermostat and the cooling system.

5. Turn the ignition switch OFF.
6. Replace the ECT sensor (see **ECT SENSOR REPLACEMENT**).
7. Turn the ignition switch ON (II).
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Allow the engine to cool between 23°F (-5°C) and 77°F (25°C).
11. Start the engine, and let it idle for 20 minutes.
12. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0125 is indicated, check for poor connections or loose terminals at the ECT

sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 13.

13. Monitor the OBD STATUS for DTC P0125 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 10 and recheck.

DTC P0128: COOLING SYSTEM MALFUNCTION

NOTE: If the DTCs listed below are stored at the same time as DTC P0128, troubleshoot those DTCs first, then recheck for P0128. DTC P0128 can occasionally set when the hood is opened while the engine is running.

P0112, P0113: Intake air temperature (IAT) sensor

P0116, P0117, P0118, P0125: Engine coolant temperature (ECT) sensor

P0300: Random misfire

P0301, P0302, P0303, P0304: No. 1, No. 2, No. 3, or No. 4 cylinder misfire

P0335, P0339: Crankshaft position (CKP) sensor

P2227, P2228, P2229: Barometric pressure (BARO) sensor

P2646, P2647, P2648, P2648: VTEC system

P0506, P0507: Idle control system malfunction

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the blower switch OFF.
4. Turn the A/C switch OFF.
5. Check the FAN CTRL in the DATA LIST with the HDS.

Is it OFF?

YES: Go to step 6.

NO: Wait until the FAN CTRL is turned off, then go to step 6.

6. Check the ECT SENSOR in the DATA LIST with the HDS, then check the radiator fan operation.

Does the radiator fan keep running when the engine coolant temperature is less than 158°F (70°C)?

YES: Check the radiator fan circuit (see **RADIATOR FAN CIRCUIT TROUBLE SHOOTING**), the radiator fan switch circuit (see **RADIATOR FAN SWITCH CIRCUIT TROUBLE SHOOTING**), and the radiator fan switch (see **RADIATOR FAN SWITCH**). If the circuits and the switch are OK, go to step 21 .

NO: Go to step 7.

7. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
8. Turn the ignition switch OFF.
9. Turn the ignition switch ON (II).
10. Do the RADIATOR FAN TEST in the INSPECTION MENU with the HDS for 20 minutes.
11. Check the ECT SENSOR in the DATA LIST with the HDS.

Is about 151°F (66°C) or less, or 1.25 V or more indicated?

YES: Intermittent failure, system is OK at this time.

NO: Go to step 12.

12. Turn the ignition switch OFF.
13. Cool down the engine until the coolant temperature is between 23°F (-5°C) and 95°F (35°C).
14. Replace the thermostat (see **THERMOSTAT REPLACEMENT**).
15. Turn the ignition switch ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
19. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0128 is indicated, check the cooling system, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 20.

20. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check cooling system, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 18 and recheck.

21. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
22. Cool down the engine until the coolant temperature is between 23°F (-5°C) and 95°F (35°C).
23. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
24. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0128 is indicated, check for poor connections or loose terminals at the ECT sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0133: A/F SENSOR (SENSOR 1) RESPONSE MALFUNCTION/SLOW RESPONSE IN CIRCUIT

NOTE: If DTC P0139 is stored at the same time as DTC P0133, troubleshoot DTC P0139 first, then recheck for DTC P0133.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 5th gear)
 - Vehicle speed at 30 MPH (48 km/h) or more, and engine speed between 1,000 and 3,000 RPM
5. Check the AF FB AVG in the DATA LIST with the HDS.

Is the value between 0.8-1.2?

YES: Go to step 6.

NO: Go to step 4 and recheck.

6. Monitor the OBD STATUS for DTC P0133 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 7.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 2 and recheck.

7. Turn the ignition switch OFF.
8. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
9. Turn the ignition switch ON (II).
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
12. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
13. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 5th gear)
 - Vehicle speed at 30 MPH (48 km/h) or more, and engine speed between 1,000 and 3,000 RPM
14. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0133 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 15.

15. Monitor the OBD STATUS for DTC P0133 in the DTCs MENU with the HDS.

Does the screen indicates PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 12 and recheck.

DTC P0134: A/F SENSOR (SENSOR 1) HEATER SYSTEM MALFUNCTION

NOTE: If DTC P0135 is stored at the same time as DTC P0134, troubleshoot DTC P0135 first, then recheck for DTC P0134.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0134 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.

5. Turn the ignition switch OFF.
6. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
7. Turn the ignition switch ON (II).
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0134 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 12.

11. Monitor the OBD STATUS for DTC P0134 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 8 and recheck.

DTC P0135: A/F SENSOR (SENSOR 1) HEATER CIRCUIT MALFUNCTION

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0135 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.

5. Turn the ignition switch OFF.
6. Check the following fuses:
 - No. 19 OPTION (40A) fuse in under-hood fuse/relay box.
 - No. 4 A/F SENSOR (15A) fuse in under-dash fuse/relay box.
 - No. 23 IGP (7.5A) fuse in under-dash fuse/relay box.

Are any of the fuses blown?

YES: Repair short in the wire between the A/F sensor relay and the fuses, then go to step 23 .

NO: Go to step 7.

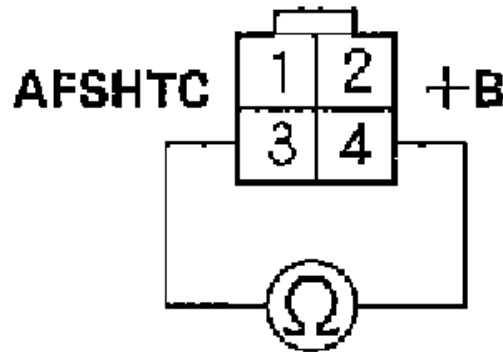
7. Disconnect the A/F sensor (Sensor 1) 4P connector.
8. Measure resistance between A/F sensor (Sensor 1) 4P connector terminals No. 3 and No. 4.

Is there 2.1-2.9 ohm at room temperature?

YES: Go to step 9.

NO: Go to step 22 .

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Wire side of female terminals

G01822057

Fig. 18: Measuring Resistance Between A/F Sensor (Sensor 1) 4P Connector Terminals No. 3 & No. 4

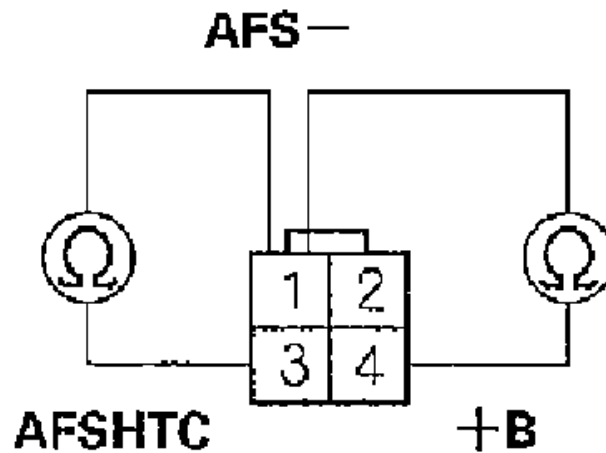
9. Check for continuity between A/F sensor (Sensor 1) 4P connector terminal No. 1 and A/F sensor (Sensor 1) 4P connector terminals No. 3 and No. 4 individually.

Is there continuity?

YES: Go to step 22 .

NO: Go to step 10.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Wire side of female terminals

G01822058

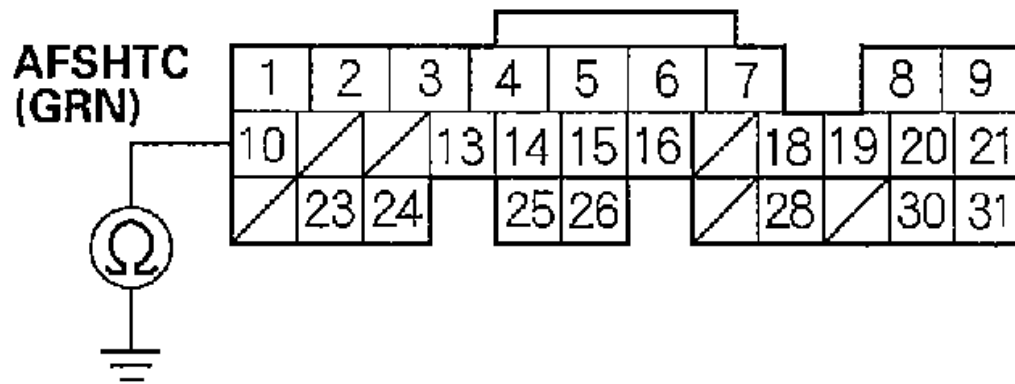
Fig. 19: Checking For Continuity Between A/F Sensor (Sensor 1) 4P Connector Terminal No. 1 & A/F Sensor (Sensor 1) 4P Connector Terminals No. 3 & No. 4

10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector A (31P).
12. Check for continuity between ECM/PCM connector terminals A10 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A10) and the A/F sensor (Sensor 1), then go to step 23 .

NO: Go to step 13.

ECM/PCM CONNECTOR A (31P)

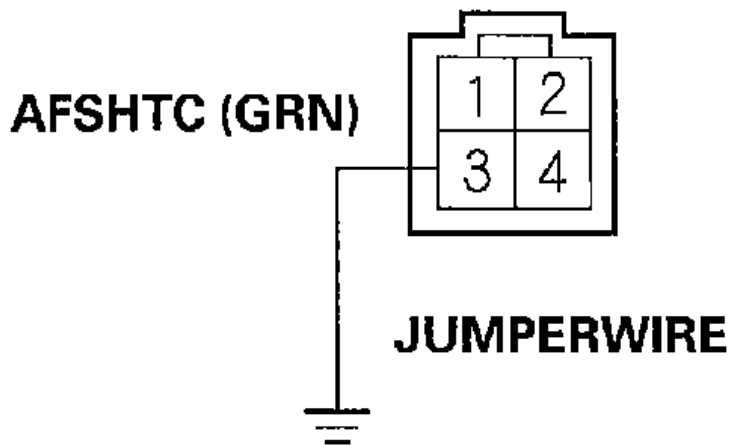
Wire side of female terminals

G01822059

Fig. 20: Checking For Continuity Between ECM/PCM Connector Terminals A10 & Body Ground

13. Connect the A/F sensor (Sensor 1) 4P connector terminal No. 3 to body ground with a jumper wire.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Terminal side of male terminals

G01822060

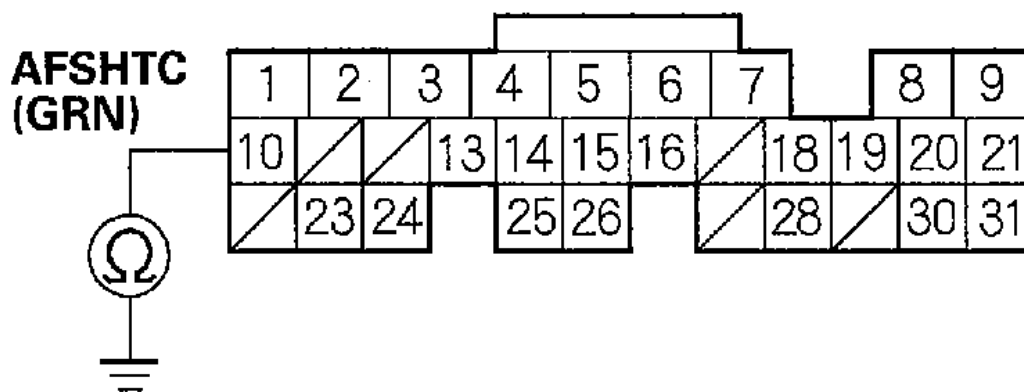
Fig. 21: Connecting The A/F Sensor (Sensor 1) 4P Connector Terminal No. 3 To Body Ground With A Jumper Wire

14. Check for continuity between ECM/PCM connector terminal A10 and body ground.

Is there continuity?

YES: Go to step 15.

NO: Repair open in the wire between the ECM/PCM (A10) and the A/F sensor (Sensor 1), then go to step 23 .

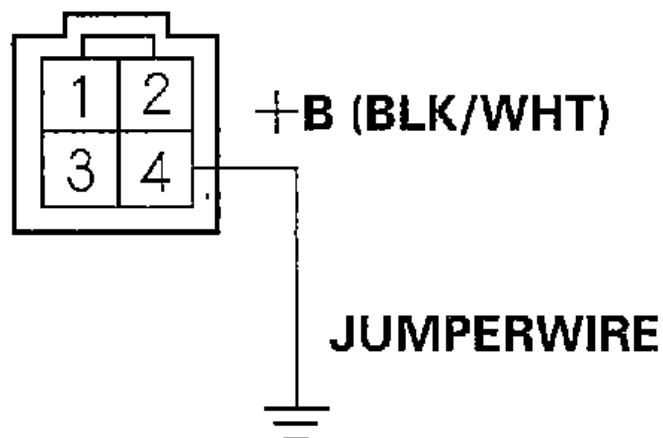
ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822061

Fig. 22: Checking For Continuity Between ECM/PCM Connector Terminal A10 & Body Ground

15. Connect A/F sensor (Sensor 1) 4P connector terminal No. 4 to body ground with a jumper wire.

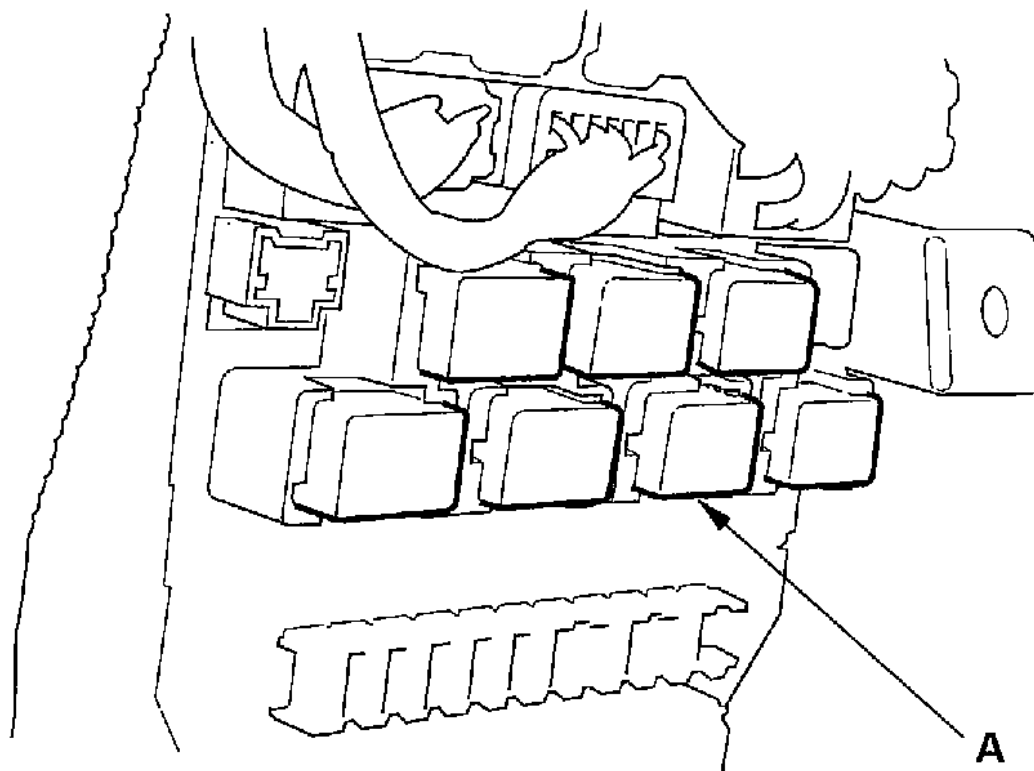
A/F SENSOR (SENSOR 1) 4P CONNECTOR

Terminal side of male terminals

G01822062

Fig. 23: Connecting A/F Sensor (Sensor 1) 4P Connector Terminal No. 4 To Body Ground With A Jumper Wire

16. Remove the A/F sensor relay (A).



G01822063

Fig. 24: Removing The A/F Sensor Relay

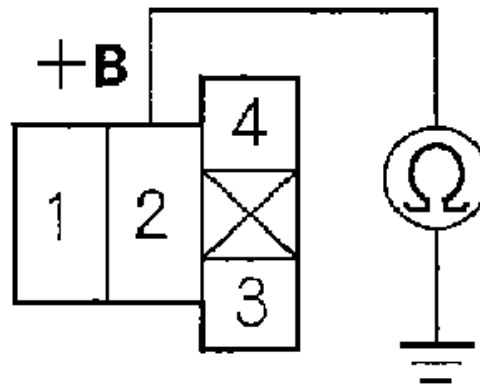
17. Check for continuity between A/F sensor relay terminal No. 2 and body ground.

Is there continuity?

YES: Go to step 18.

NO: Repair open in the wire between the A/F sensor (Sensor 1) and the A/F sensor relay, then go to step 23 .

A/F SENSOR RELAY 4P CONNECTOR



Terminal side of female terminals

G01822064

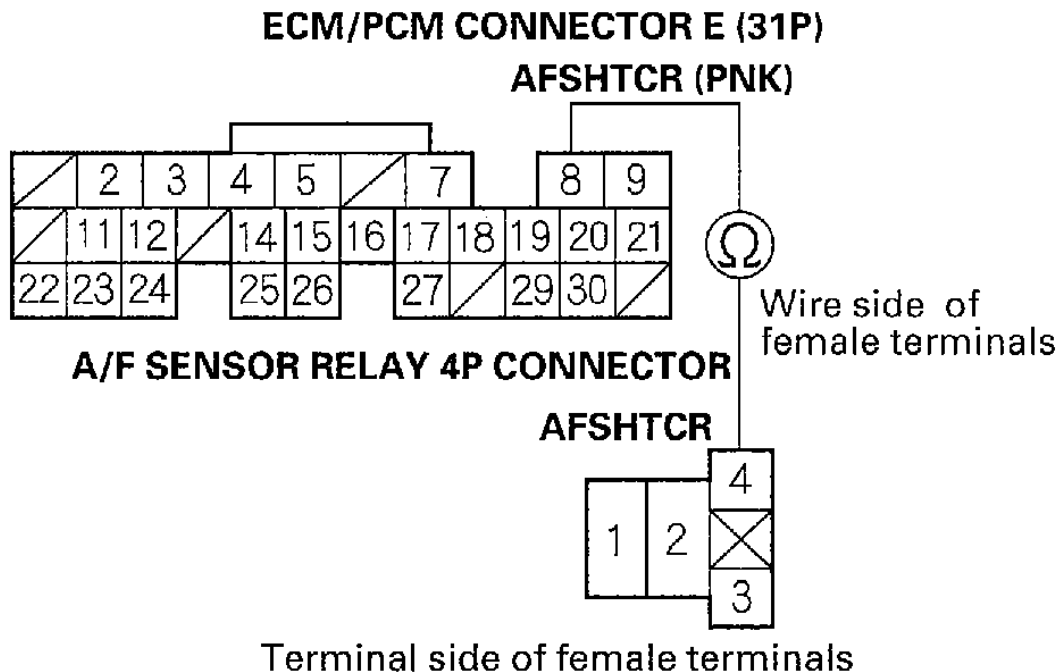
Fig. 25: Checking For Continuity Between A/F Sensor Relay Terminal No. 2 & Body Ground

18. Disconnect ECM/PCM connector E (31P).
19. Check for continuity between ECM/PCM connector terminal E8 and the A/F sensor relay terminal No. 4.

Is there continuity?

YES: Go to step 20.

NO: Repair open in the wire between the ECM/PCM (E8) and the A/F sensor relay, then go to step 22 .



G01822065

Fig. 26: Checking For Continuity Between ECM/PCM Connector Terminal E8 & The A/F Sensor Relay Terminal No. 4

20. Check the A/F sensor relay (see **RELAYS**).

Is the A/F sensor relay OK?

YES: Go to step 27 .

NO: Replace the A/F sensor relay, then go to step 22 .

21. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
22. Turn the ignition switch ON (II).
23. Reset the ECM/PCM with the HDS.
24. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
25. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0135 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 26.

26. Monitor the OBD STATUS for DTC P0135 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 24 and recheck.

27. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
28. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0135 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1), and the A/F sensor relay and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P1157: A/F SENSOR (SENSOR 1) AFS LINE HIGH VOLTAGE

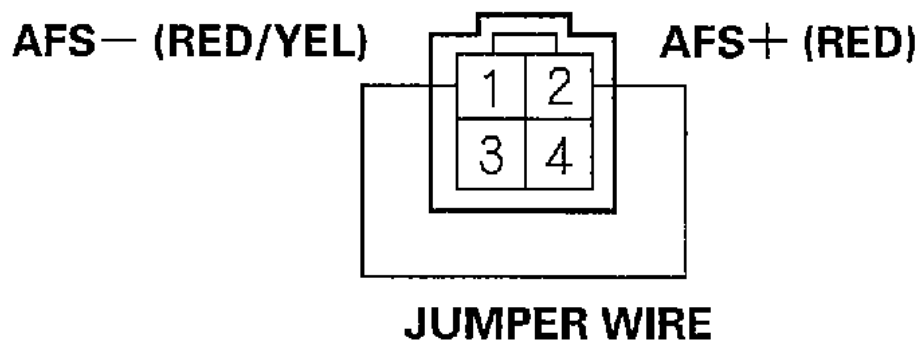
1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P1157 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 4P connector.
8. Disconnect ECM/PCM connector A (31P).
9. Connect A/F sensor (Sensor 1) 4P connector terminals No. 1 and No. 2 with a jumper wire.

A/F SENSOR (SENSOR 1) 4P CONNECTOR

Terminal side of male terminals

G01822066

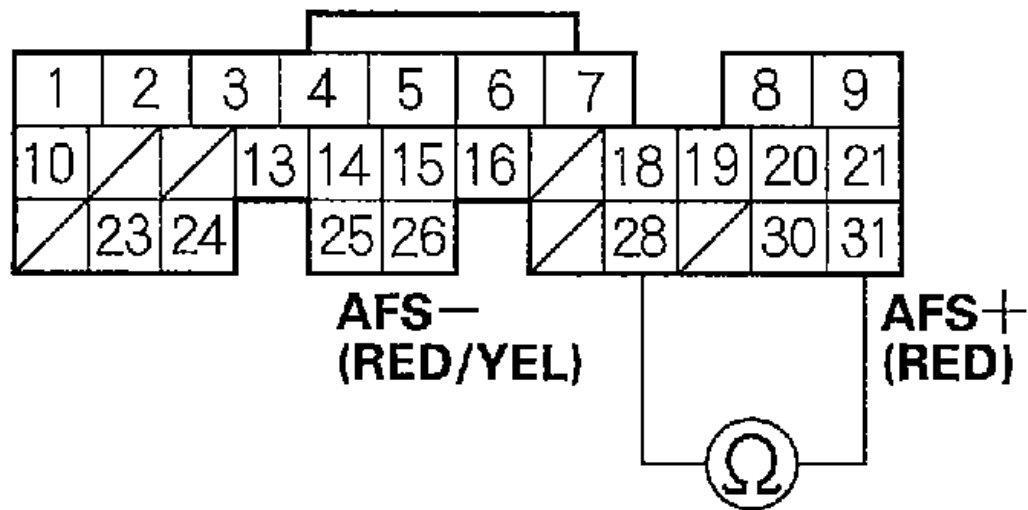
Fig. 27: Connecting A/F Sensor (Sensor 1) 4P Connector Terminals No. 1 & No. 2 With A Jumper Wire

10. Check for continuity between ECM/PCM connector terminals A28 and A31.

Is there continuity?

YES: Go to step 14 .

NO: Go to step 11.

ECM/PCM CONNECTOR A (31P)

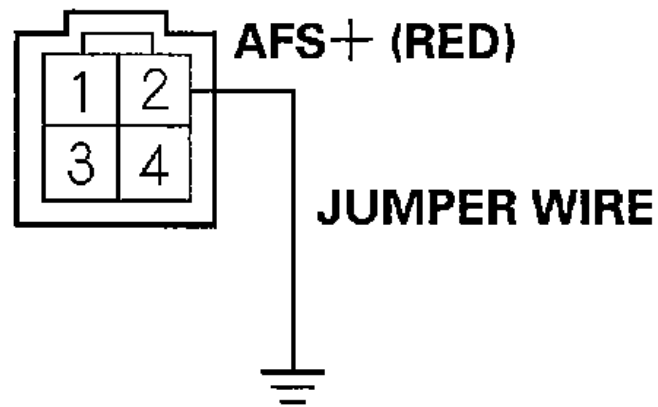
Wire side of female terminals

G01822067

Fig. 28: Checking For Continuity Between ECM/PCM Connector Terminals A28 & A31

11. Remove the jumper wire from the A/F sensor (Sensor 1) 4P connector.
12. Connect A/F sensor (Sensor 1) 4P connector terminal No. 2 to body ground with a jumper wire.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Terminal side of male terminals

G01822068

Fig. 29: Connecting A/F Sensor (Sensor 1) 4P Connector Terminal No. 2 To Body Ground With A Jumper Wire

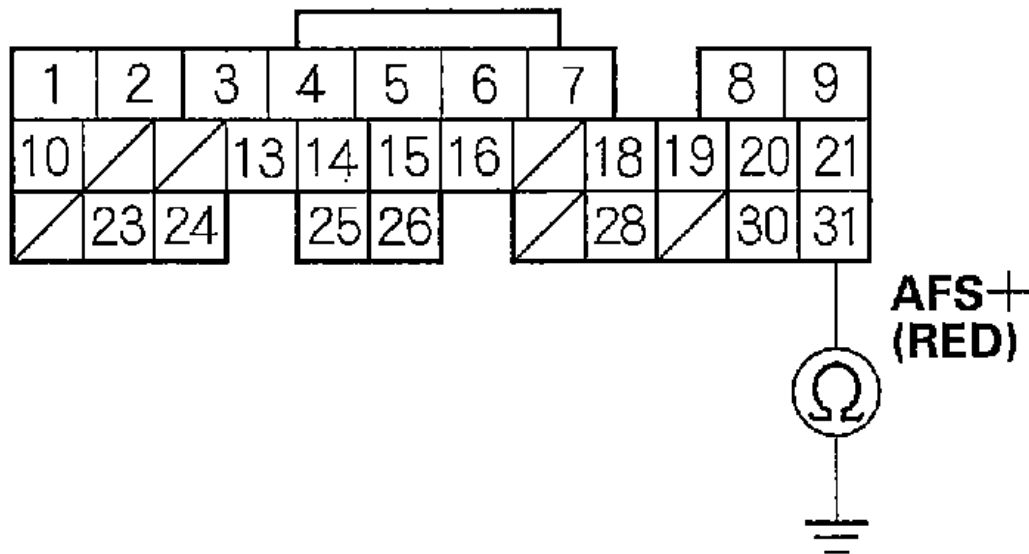
13. Check for continuity between ECM/PCM connector terminal A31 and body ground.

Is there continuity?

YES: Repair open in the wire between the ECM/PCM (A28) and the A/F sensor (Sensor 1), then go to step 15 .

NO: Repair open in the wire between the ECM/PCM (A31) and the A/F sensor (Sensor 1), then go to step 15 .

ECM/PCM CONNECTOR A (31P)



Wire side of female terminals

G01822069

Fig. 30: Checking For Continuity Between ECM/PCM Connector Terminal A31 & Body Ground

14. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
15. Reconnect ECM/PCM connector A (31P).
16. Turn the ignition switch ON (II).
17. Reset the ECM/PCM with the HDS.
18. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
19. Check for Temporary DTCs or DTCs in the DTC MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P1157 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the connector and terminal fits are OK, go to step 21 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 20.

20. Monitor the OBD STATUS for DTC P1157 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step and recheck.

21. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
22. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P1157 indicated?

YES: Go to step 20 and recheck.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P2195: A/F SENSOR (SENSOR 1) SIGNAL STUCK LEAN

1. Inspect the condition of the A/F sensor (Sensor 1).

Is it loose in the exhaust pipe?

YES: Go to step 2.

NO: Go to step 4 .

2. Turn the ignition switch OFF.
3. Reinstall the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
4. Turn the ignition switch ON (II).
5. Reset the ECM/PCM with the HDS.
6. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
7. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2195 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the connection and terminal fits are OK, go to step 8. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.

8. Monitor the OBD STATUS for DTC P2195 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 2 . If the screen indicates NOT COMPLETED, go to step 5 and recheck.

DTC P2238: A/F SENSOR (SENSOR 1) AFS+ LINE LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P2238 indicated?

YES: Go to step 4.

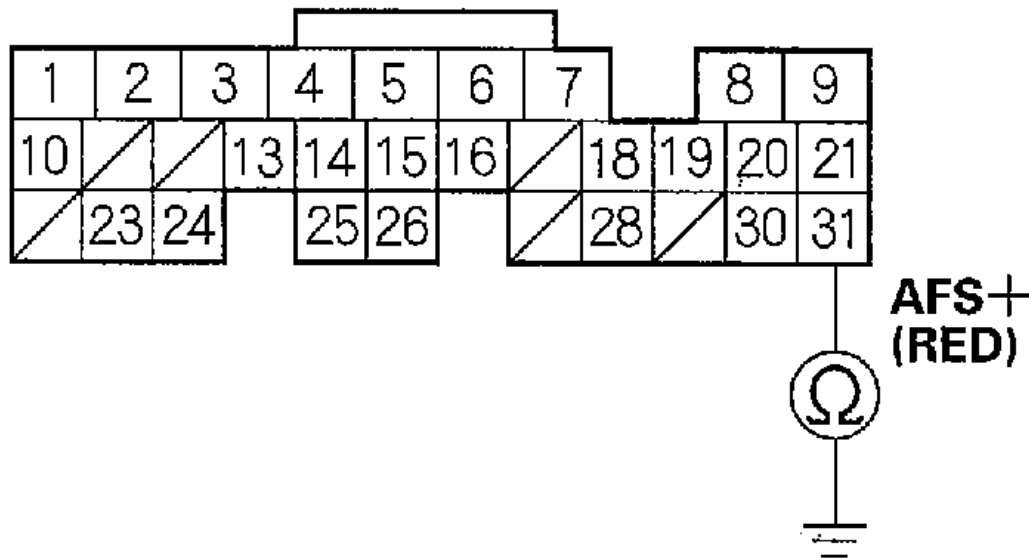
NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.

4. Turn the ignition switch OFF.
5. Jump the SCS line with the HDS.
6. Disconnect the A/F sensor (Sensor 1) 4P connector.
7. Disconnect ECM/PCM connector A(31P).
8. Check for continuity between ECM/PCM connector terminal A31 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A31) and the A/F sensor (Sensor 1), then go to step 11 .

NO: Go to step 9.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822070

Fig. 31: Checking For Continuity Between ECM/PCM Connector Terminal A31 And Body Ground

9. Reconnect ECM/PCM connector A (31P).
10. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
11. Turn the ignition switch ON (II).
12. Reset the ECM/PCM with the HDS.
13. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
14. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2238 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the connector and terminal fits are OK, go to step 16 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 15.

15. Monitor the OBD STATUS for DTC P2238 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 13 and recheck.

16. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
17. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P2238 indicated?

YES: Go to step 15 and recheck.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P2252: A/F SENSOR (SENSOR 1) AFS- LINE LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P2252 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.

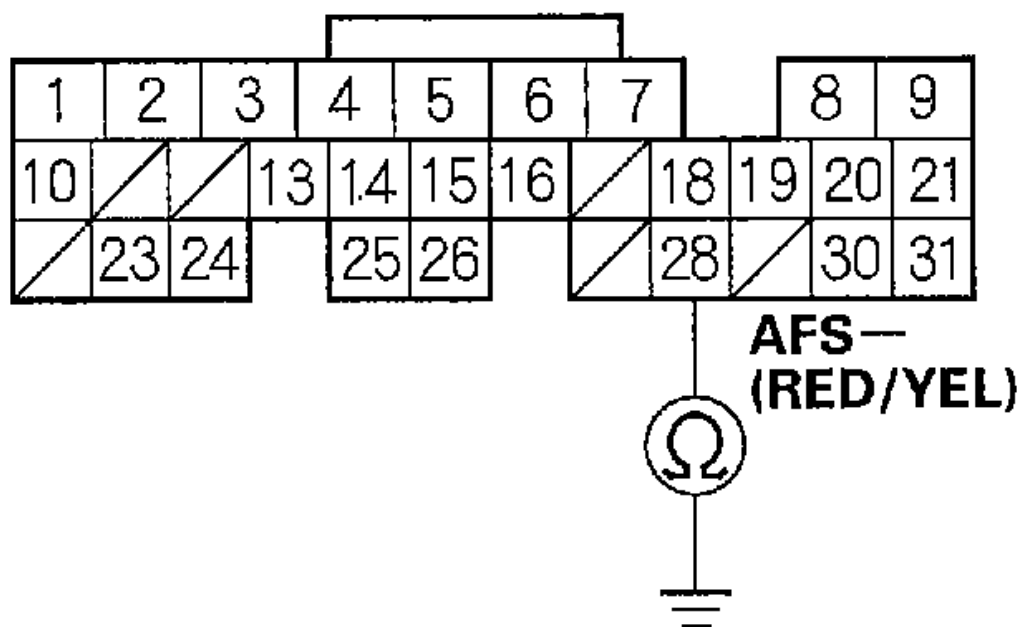
5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 4P connector.
8. Disconnect ECM/PCM connector A (31P).
9. Check for continuity between ECM/PCM connector terminal A28 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A28) and the A/F sensor (Sensor 1), then go to step 12 .

NO: Go to step 10.

ECM/PCM CONNECTOR A (31P)



Wire side of female terminals

G01822071

Fig. 32: Checking For Continuity Between ECM/PCM Connector Terminal A28 & Body Ground

10. Reconnect ECM/PCM connector A (31P).
11. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
12. Turn the ignition switch ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2252 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the connector and terminal fits are OK, go to step 17 . If any other Temporary DTCs or DTCs are indicated, go to the indicated

DTC troubleshooting.

NO: Go to step 16.

16. Monitor the OBD STATUS for DTC P2252 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 14 and recheck.

17. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P2252 indicated?

YES: Go to step 16 and recheck.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P2A00: A/F SENSOR (SENSOR 1) RANGE/PERFORMANCE PROBLEM

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check the AF FB AVG in the DATA LIST with the HDS.

Is the value between 0.8-1.2?

YES: Go to step 5.

NO: Go to step 2 and recheck.

5. Test-drive under the following conditions:
- Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 3rd gear)
 - Vehicle speed at 26 MPH (41 km/h) or more, and engine speed at 3,250 RPM or less
 - Drive with the throttle fully opened for 5 seconds at an engine speed of 1,600 RPM, then slow down with the throttle completely closed.
6. Monitor the OBD STATUS for DTC P2A00 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 7.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates out of CONDITION, go to step 3 and recheck.

7. Turn the ignition switch OFF.

8. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
9. Turn the ignition switch ON (II).
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
12. Check the AF FB AVG in the DATA LIST with the HDS.

Is the value between 0.8-1.2?

YES: Go to step 13.

NO: Go to step 11 and recheck.

13. Test-drive under the following conditions:

- Engine coolant temperature more than 158°F (70°C)
- A/T in D position (M/T in 3rd gear)
- Vehicle speed at 26 MPH (41 km/h) or more, and engine speed at 3,250 RPM or less
- Drive with the throttle fully opened for 5 seconds at an engine speed of 1,600 RPM, then slow down with the throttle completely closed.

14. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2A00 is indicated, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 15.

15. Monitor the OBD STATUS for DTC P2A00 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1 . If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 11 and recheck.

DTC P0137: SECONDARY HO2S (SENSOR 2) CIRCUIT LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 0.29 V or less?

YES: Go to step 5.

NO: Go to step 9 .

5. Turn the ignition switch OFF.
6. Disconnect the secondary HO2S (Sensor 2) 4P connector (see **SECONDARY HO2S**

REPLACEMENT).

7. Turn the ignition switch ON (II).
8. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 0.29 V or less?

YES: Go to step 11 .

NO: Go to step 15 .

9. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 4th gear)
 - Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds
10. Monitor the OBD STATUS for DTC P0137 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 16 .

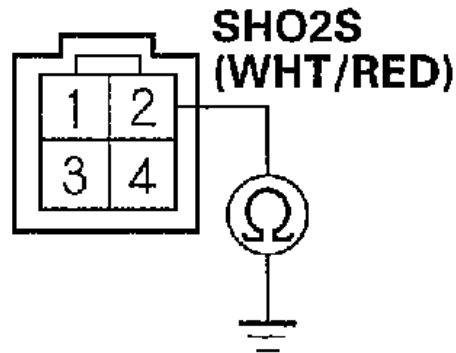
NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step and recheck.

11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector E (31P).
14. Check for continuity between Secondary HO2S (Sensor 2) 4P connector terminal No. 2 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (E20) and the secondary HO2S (Sensor 2), then go to step 17 .

NO: Go to step 24 .

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Terminal side of male terminals

G01822072

Fig. 33: Checking For Continuity Between Secondary HO2S (Sensor 2) 4P Connector Terminal No. 2 & Body Ground

15. Turn the ignition switch OFF.
16. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
17. Turn the ignition switch ON (II).
18. Reset the ECM/PCM with the HDS.
19. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
20. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
21. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 5th gear)
 - Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds
22. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0137 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 23.

23. Monitor the OBD STATUS for DTC P0137 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 20 and recheck.

24. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
25. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
26. Test-drive under the following conditions:
- Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 5th gear)
 - Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds
27. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0137 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0138: SECONDARY HO2S (SENSOR 2) CIRCUIT HIGH VOLTAGE

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 0.75 V or higher?

YES: Go to step 7 .

NO: Go to step 5.

5. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)

- A/T in D position (M/T in 5th gear)
 - Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds
6. Monitor the OBD STATUS for DTC P0138 in the DTCs MENU with the HDS.

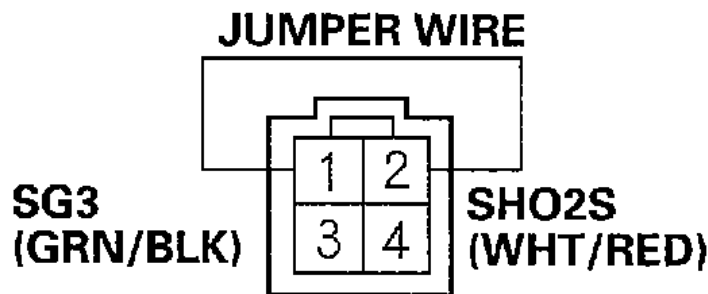
Does the screen indicate FAILED?

YES: Go to step 19 .

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 5 and recheck.

7. Turn the ignition switch OFF.
8. Disconnect the Secondary HO2S (Sensor 2) 4P connector.
9. Connect Secondary HO2S (Sensor 2) 4P connector terminals No. 1 and No. 2 with a jumper wire.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

G01822073

Fig. 34: Connecting Secondary HO2S (Sensor 2) 4P Connector Terminals No. 1 & No. 2 With A Jumper Wire

10. Turn the ignition switch ON (II).
11. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 0.75 V or higher?

YES: Go to step 12.

NO: Go to step 19 .

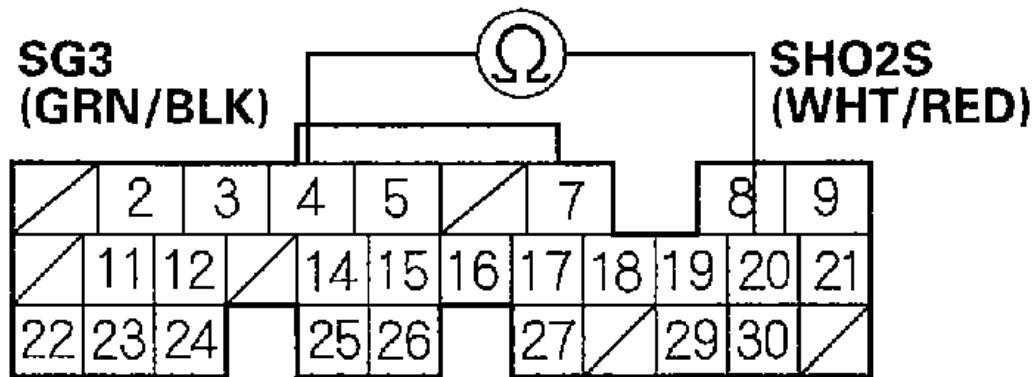
12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector E (31P).
15. Check for continuity between ECM/PCM connector terminals E4 and E20.

Is there continuity?

YES: Go to step 28 .

NO: Go to step 16.

ECM/PCM CONNECTOR E (31P)

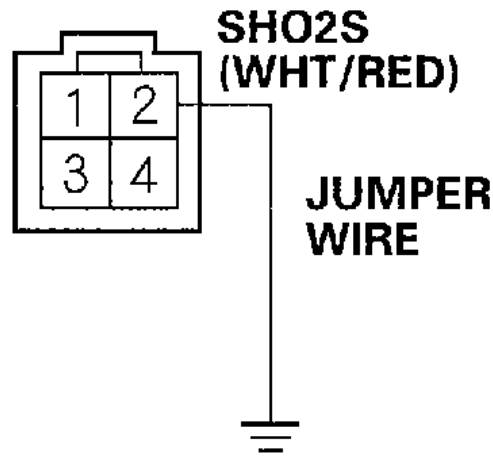


Wire side of female terminals

G01822074

Fig. 35: Checking For Continuity Between ECM/PCM Connector Terminals E4 & E20

16. Remove the jumper wire from the secondary HO2S (Sensor 2) 4P connector.
17. Connect secondary HO2S (Sensor 2) 4P connector terminal No. 2 to body ground with a jumper wire.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Terminal side of male terminals

G01822075

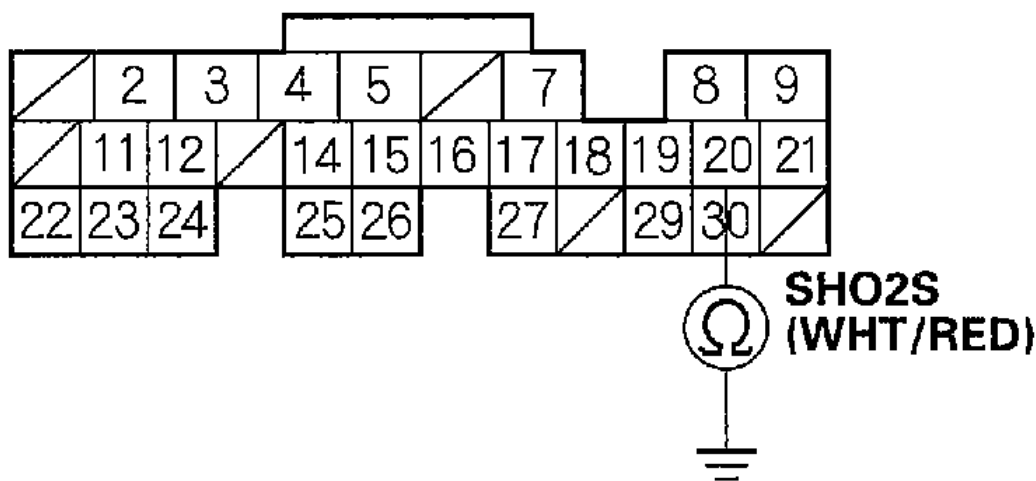
Fig. 36: Connecting Secondary HO2S (Sensor 2) 4P Connector Terminal No. 2 To Body Ground With A Jumper Wire

18. Check for continuity between ECM/PCM connector terminal E20 and body ground.

Is there continuity?

YES: Repair open in the wire between the ECM/PCM (E4) and the secondary HO2S (Sensor 2), then go to step 21 .

NO: Repair open in the wire between the ECM/PCM (E20) and the secondary HO2S (Sensor 2), then go to step 21 .

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822076

Fig. 37: Checking For Continuity Between ECM/PCM Connector Terminal E20 & Body Ground

19. Turn the ignition switch OFF.
20. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
21. Turn the ignition switch ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
25. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 5th gear)
 - Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds
26. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0138 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 27.

27. Monitor the OBD STATUS for DTC P0138 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 24 and recheck.

28. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
29. With engine at operating temperature, (the radiator fans come on) let the engine idle for 10 minutes.

NOTE: The engine must idle for 10 minutes in addition to the idle learn procedure.

30. Test-drive under the following conditions:

- Engine coolant temperature more than 158°F (70°C)
- A/T in D position (M/T in 5th gear)
- Engine speed at 2,000-3,000 RPM
- Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds

31. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0138 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0139: SLOW RESPONSE IN SECONDARY HO2S (SENSOR 2) CIRCUIT

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 4th gear)

- Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds
5. Monitor the OBD STATUS for DTC P0139 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 6.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 3 and recheck.

6. Turn the ignition switch OFF.
7. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
8. Turn the ignition switch ON (II).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under the following conditions:
- Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 4th gear)
 - Engine speed at 2,000-3,000 RPM
 - Drive about 10 minutes, then decelerate (with the throttle fully closed) for 5 seconds.
13. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0139 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 14.

14. Monitor the OBD STATUS for DTC P0139 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 11 and recheck.

DTC P0141: SECONDARY HO2S (SENSOR 2) HEATER CIRCUIT MALFUNCTION

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

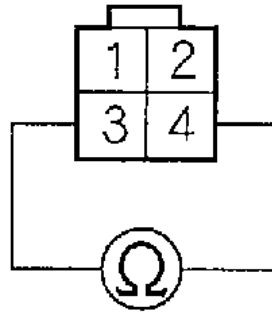
Is DTC P0141 indicated?**YES:** Go to step 5.**NO:** Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM.

5. Check the No. 18 ACG (15A) fuse in the under-dash fuse/relay box.

Is the fuse OK?**YES:** Go to step 6.**NO:** Repair short in the wire between the secondary HO2S (Sensor 2) and the No. 4 ACG (10A) fuse, then go to step 24 .

6. Turn the ignition switch OFF.
7. Disconnect the secondary HO2S (Sensor 2) 4P connector (see **SECONDARY HO2S REPLACEMENT**).
8. At the secondary HO2S (Sensor 2), measure resistance between secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4.

Is there 5.0-6.4 ohm at room temperature?**YES:** Go to step 9.**NO:** Go to step 23 .

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Wire side of female terminals

G01822077

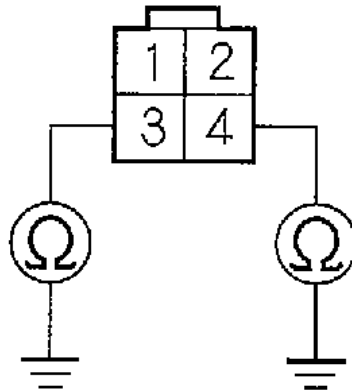
Fig. 38: Measuring Resistance Between Secondary HO2S (Sensor 2) 4P Connector Terminals No. 3 & No. 4

9. At the secondary HO2S (Sensor 2), check for continuity between body ground and secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4 individually.

Is there continuity?

YES: Go to step 23 .

NO: Go to step 10.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Wire side of female terminals

G01822078

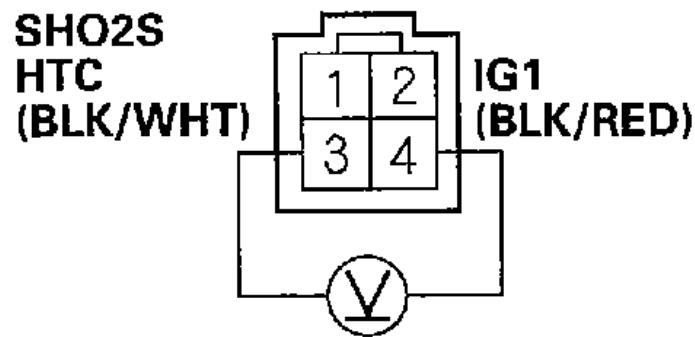
Fig. 39: Checking For Continuity Between Body Ground & Secondary HO2S (Sensor 2) 4P Connector Terminals No. 3 & No. 4

10. Turn the ignition switch ON (II).
11. On the harness side, measure voltage between secondary HO2S 4P connector terminals No. 3 and No. 4.

Is there battery voltage?

YES: Go to step 12.

NO: Go to step 16 .

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Terminal side of male terminals

G01822079

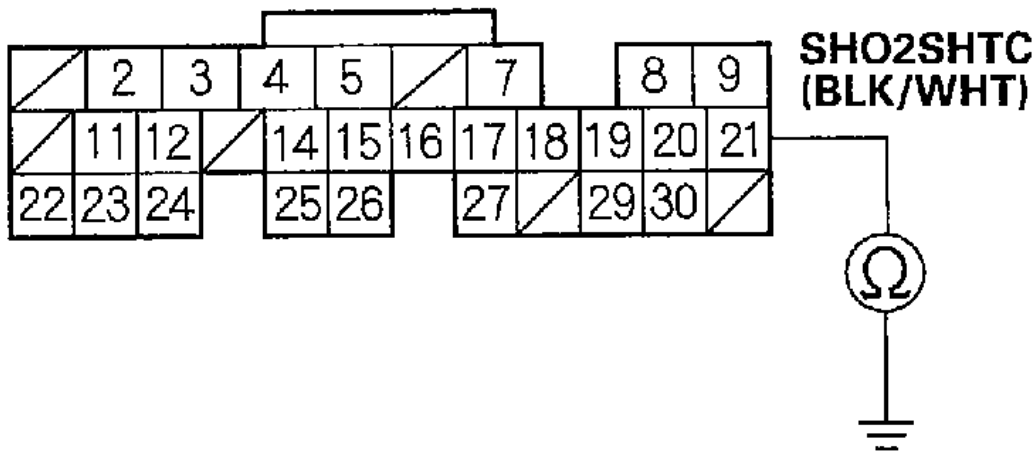
Fig. 40: Measuring Voltage Between Secondary HO2S 4P Connector Terminals No. 3 & No. 4

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector E (31P).
15. Check for continuity between ECM/PCM connector terminal E21 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (E21) and the secondary HO2S (Sensor 2), then go to step 24 .

NO: Go to step 29 .

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

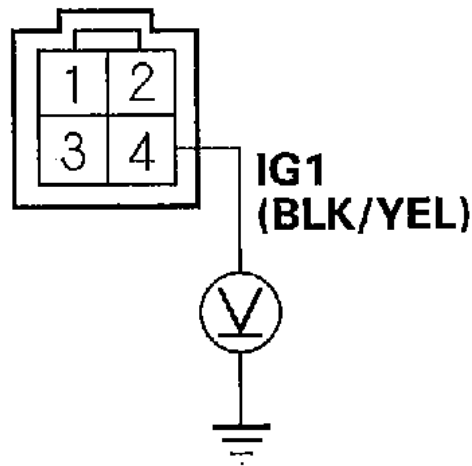
G01822080

Fig. 41: Checking For Continuity Between ECM/PCM Connector Terminal E21 & Body Ground

16. Measure voltage between secondary HO2S (Sensor 2) 4P connector terminal No. 4 and body ground.

Is there battery voltage?**YES:** Go to step 17.

NO: Check the No. 18 ACG (10A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between the secondary HO2S (Sensor 2) and No. 4 ACG (10A) fuse, then go to step 24 .

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Terminal side of male terminals

G01822081

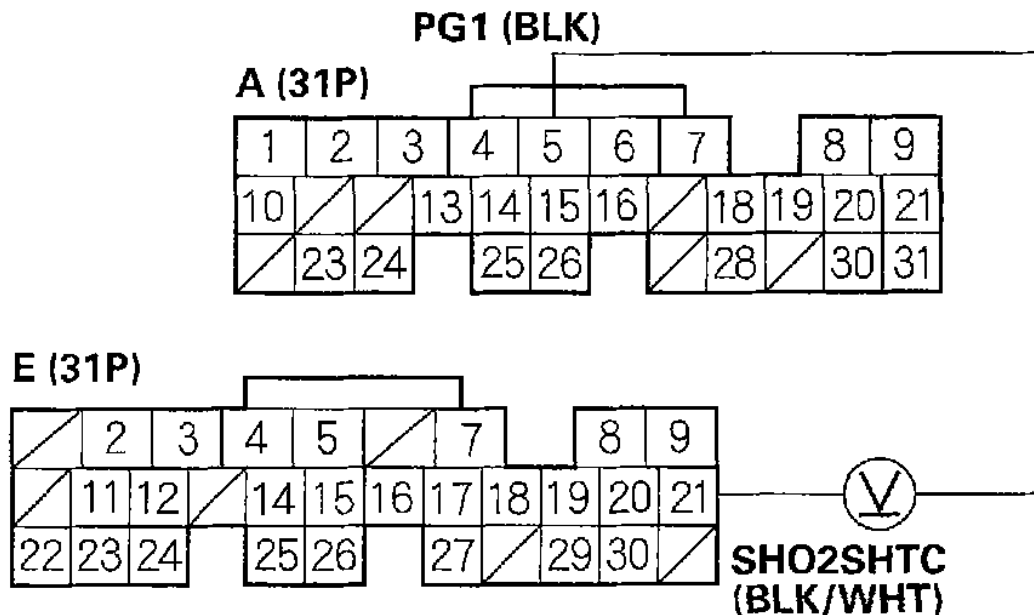
Fig. 42: Measuring Voltage Between Secondary HO2S (Sensor 2) 4P Connector Terminal No. 4 & Body Ground

17. Turn the ignition switch OFF.
18. Jump the SCS line with the HDS.
19. Reconnect the secondary HO2S (Sensor 2) 4P connector.
20. Disconnect ECM/PCM connector E (31P).
21. Turn the ignition switch ON (II).
22. Measure voltage between ECM/PCM connector terminals A5 and E21.

Is there 0.1 V or less?

YES: Repair open in the wire between the ECM/PCM (E21) and the secondary HO2S (Sensor 2), then go to step 25 .

NO: Go to step 29 .

ECM/PCM CONNECTORS

Wire side of female terminals

G01822082

Fig. 43: Measuring Voltage Between ECM/PCM Connector Terminals A5 & E21

23. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
24. Turn the ignition switch ON (II).
25. Reset the ECM/PCM with the HDS.
26. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
27. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0141 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 28.

28. Monitor the OBD STATUS for DTC P0141 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If the screen indicates

NOT COMPLETED, go to step 26 and recheck.

29. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
30. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0141 is indicated, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0171: FUEL SYSTEM TOO LEAN; DTC P0172: FUEL SYSTEM TOO RICH

NOTE: If some of the DTCs listed below are stored at the same time as DTC P0171 and/or P0172, troubleshoot those DTCs first, then recheck for P0171 and/or P0172.

P0107, P0108, P1128, P1129: Manifold absolute pressure (MAP) sensor
P0133, P1157, P2195, P2238, P2252, P2A00: Air fuel ratio (A/F) sensor (Sensor 1)

P0134, P0135: Air fuel ratio (A/F) sensor (Sensor 1) heater

P0137, P0138, P0139: Secondary HO2S (Sensor 2)

P0141: Secondary HO2S (Sensor 2) heater

P2646, P2647, P2648, P2649: VTEC system

P2279: Intake air leakage

1. Check the fuel pressure (see **FUEL PRESSURE TEST**).

Is the fuel pressure OK?

YES: Check the engine valve clearances and adjust if necessary. If the valve clearances are OK, replace the injectors (see **INJECTOR REPLACEMENT**), then go to step 2.

NO: Check the fuel pressure (see **FUEL PRESSURE TEST**).

- If the pressure is too high, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 2.
- If the pressure is too low, check the fuel pump and the fuel feed line, then go to step 2.

2. Turn the ignition switch ON (II).
3. Reset the ECM/PCM with the HDS.
4. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
5. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
6. Test-drive under the following conditions:

- Engine coolant temperature more than 158°F (70°C)
- Transmission in 5th gear (A/T in D position)
- Drive at a steady speed between 15-75 MPH (24-120 km/h)

NOTE: DTC P0171 and/or P0172 may take up to 40 minutes of test driving to set. Using the HDS, monitor the long term fuel trim (LT FUEL TRIM) or air fuel feed back AVE (AF FB AVG) for 15 minutes of driving. If the fuel trim/AF AVG stays within 10% of 1.0 (0.0%), there is no problem at this time.

7. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0171 or P0172 is indicated, go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

DTC P0300: RANDOM MISFIRE AND ANY COMBINATION OF THE FOLLOWING: DTC P0301: NO. 1 CYLINDER MISFIRE; DTC P0302: NO. 2 CYLINDER MISFIRE; DTC P0303: NO. 3 CYLINDER MISFIRE; DTC P0304: NO. 4 CYLINDER MISFIRE

Special Tools Required:

- Pressure gauge adaptor 07NAJ-P07010A
- A/T low pressure gauge w/panel 07406-0070300
- A/T pressure hose 07406-0020201
- A/T pressure hose, 2,210 mm 07MAJ-PY4011A
- A/T pressure adaptor 07MAJ-PY40120
- Oil pressure hose 07ZAJ-S5A0200

NOTE:

- If the misfire is frequent enough to trigger detection of increased emissions during 2 consecutive driving cycles, the MIL will come on, and DTC P0300 (and some combination of P0301 through P0304) will be stored.
- If the misfire is frequent enough to damage the catalyst, the MIL will flash whenever the misfire occurs, and DTC P0300 (and some combination of P0301 through P0304) will be stored. When the misfire stops, the MIL will remain on.
- Troubleshoot the following DTCs first, if any of them were stored along with the random misfire DTC(s):
 - P0107, P0108, P1128, P1129: Manifold absolute pressure (MAP) sensor
 - P0171, P0172: Fuel system
 - P0335, P0339: Crankshaft position (CKP) sensor
 - P0365, P0369: Camshaft position (CMP) sensor B

P0506, P0507: Idle control system

1. Note the following freeze data:

- Engine speed
- Vehicle speed
- Throttle position
- CLV
- Gear position

2. Clear the DTC with the HDS.

3. Start the engine with no load (in Park or neutral), then let it idle.

4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?**YES:** Go to step 9 .**NO:** If the screen indicates PASSED, go to step 5. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, wait for several minutes, and recheck.

5. Check the CYL 1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?**YES:** Go to step 9 .**NO:** Go to step 6.

6. Test-drive the vehicle for several minutes in the range of the recorded freeze data.

7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?**YES:** Go to step 9 .**NO:** If the screen indicates PASSED, go to step 8. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 6 and recheck.

8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?**YES:** Go to step 9.**NO:** Intermittent failure, system is OK at this time.

9. Turn the ignition switch OFF.

10. Check the fuel quality.

Is the quality good?**YES:** Go to step 11.

NO: Drain the tank and fill it with known-good fuel, then go to step 20 .

11. Inspect the spark plugs (see **SPARK PLUG INSPECTION**). If the spark plugs are fouled or worn, replace them.
12. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
13. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

YES: Go to step 14.

NO: Go to step 20 .

14. Check the fuel pressure (see **FUEL PRESSURE TEST**).

Is the fuel pressure OK?

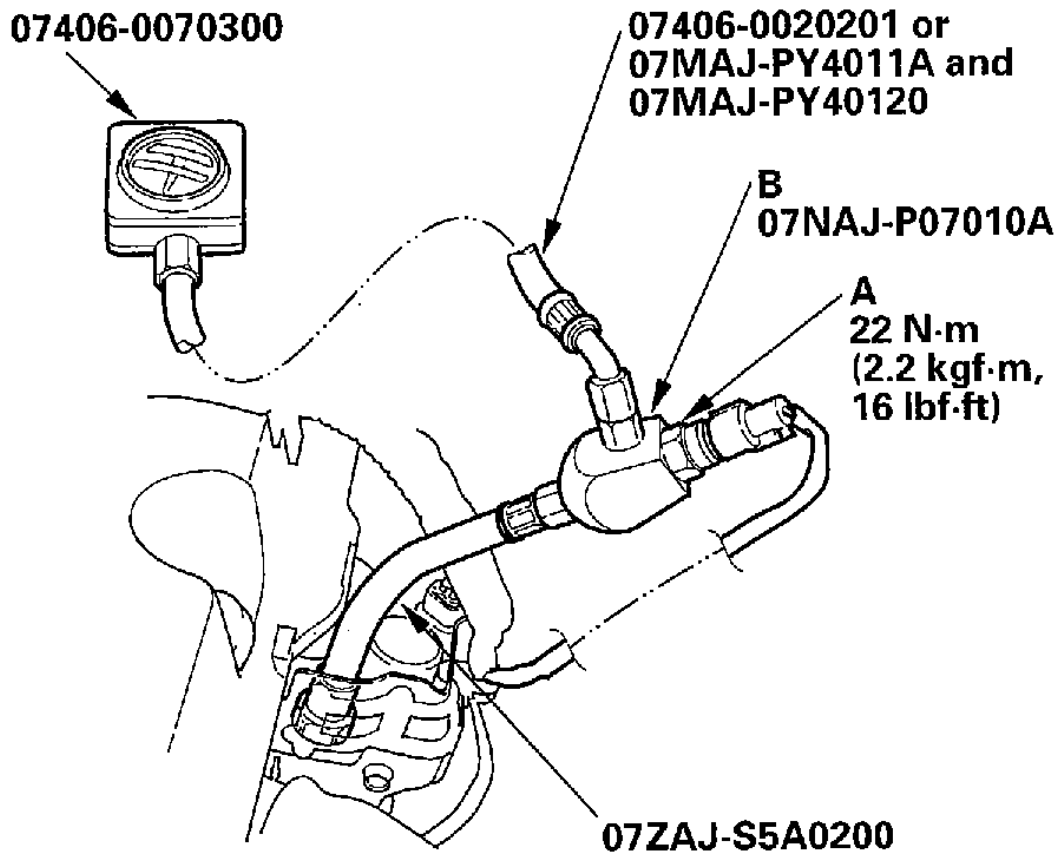
YES: Go to step 15.

NO:

- If the pressure is too high, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 20 .
- If the pressure is too low, check the fuel pump, the fuel feed pipe, and the fuel filter. If they are OK, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 20 .

15. Turn the ignition switch OFF.
16. Remove the VTEC oil pressure switch (A), and install the special tools as shown, then install the VTEC oil pressure switch (A) in the pressure gauge adapter (B).

NOTE: **Install the switch in the reverse order of removal with a new O-ring.**



G01822083

Fig. 44: Installing The Special Tools, Then Installing The VTEC Oil Pressure Switch In The Pressure Gauge Adapter

17. Reconnect the VTEC oil pressure switch 2P connector.
18. Start the engine. Hold the engine at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on.
19. Check the oil pressure at engine speeds of 1,000 and 2,000 RPM. Keep the test time as short as possible (less than 1 minute) because the engine is running with no load.

Is the oil pressure below 49 kPa (0.5 kgf/cm², 7 psi)?

YES: Check the fuel pressure (see **FUEL PRESSURE TEST**), and repair as needed, then go to step 20.

NO: Inspect the VTEC system, then go to step 20.

20. Turn the ignition switch ON (II).
21. Reset the ECM/PCM with the HDS.
22. Clear the CKP pattern with the HDS.

23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Do the CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN PROCEDURE**).
25. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
26. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0300, P0301, P0302, P0303, or P0304 are indicated, check for poor connections or loose terminals at the ignition coil, the injector, and the ECM/PCM, then go to troubleshooting DTC P0301, P0302, P0303, or P0304 (see [DTC P0301: NO. 1 CYLINDER MISFIRE; DTC P0302: NO. 2 CYLINDER MISFIRE; DTC P0303: NO. 3 CYLINDER MISFIRE; DTC P0304: NO. 4 CYLINDER MISFIRE](#)). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 27.

27. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, go to step 1 and recheck. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 25 and recheck.

DTC P0301: NO. 1 CYLINDER MISFIRE; DTC P0302: NO. 2 CYLINDER MISFIRE; DTC P0303: NO. 3 CYLINDER MISFIRE; DTC P0304: NO. 4 CYLINDER MISFIRE

1. Note the following freeze data:
 - Engine speed
 - Vehicle speed
 - Throttle position
 - CLV
 - Gear position
2. Clear the DTC with the HDS.
3. Start the engine with no load (in Park or neutral), then let it idle.
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 9 .

NO: If the screen indicates PASSED, go to step 5. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, wait for several minutes, and recheck.

5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

YES: Go to step 9 .

NO: Go to step 6.

6. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 9 .

NO: If the screen indicates PASSED, go to step 8. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 6 and recheck.

8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

YES: Go to step 9.

NO: Intermittent failure, system is OK at this time.

9. Turn the ignition switch OFF.
10. Remove the intake manifold cover (see step 3 of **REMOVAL**).
11. Start the engine, and listen for a clicking sound at the injector of the problem cylinder.

Does the injector click?

YES: Go to step 12.

NO: Go to step 43 .

12. Turn the ignition switch OFF.
13. Exchange the ignition coil from the problem cylinder with one from another cylinder.
14. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
15. Check the CYL 1 MISFIRE, CYL 2 MISFIRE, CYL 3 MISFIRE, and/or CYL 4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL 1 MISFIRE, CYL 2 MISFIRE, CYL 3 MISFIRE, and/or CYL 4 MISFIRE show misfire counts?

YES: Go to step 16.

NO: Intermittent misfire due to poor contact at the ignition coil connector (no misfire at this time). Make sure the coil connections are secure.

16. Determine which cylinder had the misfire.

Does the misfire occur in the cylinder where the ignition coil was moved?

YES: Replace the faulty ignition coil (see **IGNITION COIL REMOVAL/INSTALLATION**), then go to step 63 .

NO: Go to step 17.

17. Turn the ignition switch OFF.
18. Exchange the spark plug from the problem cylinder with one from another cylinder.
19. Test-drive the vehicle for several minutes in the range of the recorded freeze data.

20. Check the CYL 1 MISFIRE, CYL 2 MISFIRE, CYL 3 MISFIRE, and/or CYL 4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL 1 MISFIRE, CYL 2 MISFIRE, CYL 3 MISFIRE, and/or CYL 4 MISFIRE show misfire counts?

YES: Go to step 21.

NO: Intermittent misfire due to spark plug fouling (no misfire at this time).

21. Determine which cylinder had the misfire.

Does the misfire occur in the cylinder where the spark plug was moved?

YES: Replace the faulty spark plug, then go to step 63 .

NO: Go to step 22.

22. Turn the ignition switch OFF.

23. Exchange the injector from the problem cylinder with one from another cylinder.

24. Start the engine, and let it idle for 2 minutes.

25. Test-drive the vehicle for several minutes in the range of the recorded freeze data.

26. Check the CYL 1 MISFIRE, CYL 2 MISFIRE, CYL 3 MISFIRE, and/or CYL 4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL 1 MISFIRE, CYL 2 MISFIRE, CYL 3 MISFIRE, and/or CYL 4 MISFIRE show misfire counts?

YES: Go to step 27.

NO: Intermittent misfire due to bad contact in the injector connector (no misfire at this time).
Check for poor connections or loose terminals at the injector.

27. Determine which cylinder had the misfire.

Does the misfire occur in the cylinder where the injector was moved?

YES: Replace the faulty injector (see **INJECTOR REPLACEMENT**), then go to step 63 .

NO: Go to step 28.

28. Turn the ignition switch OFF.

29. Disconnect the ignition coil 3P connector from the problem cylinder.

30. Turn the ignition switch ON (II).

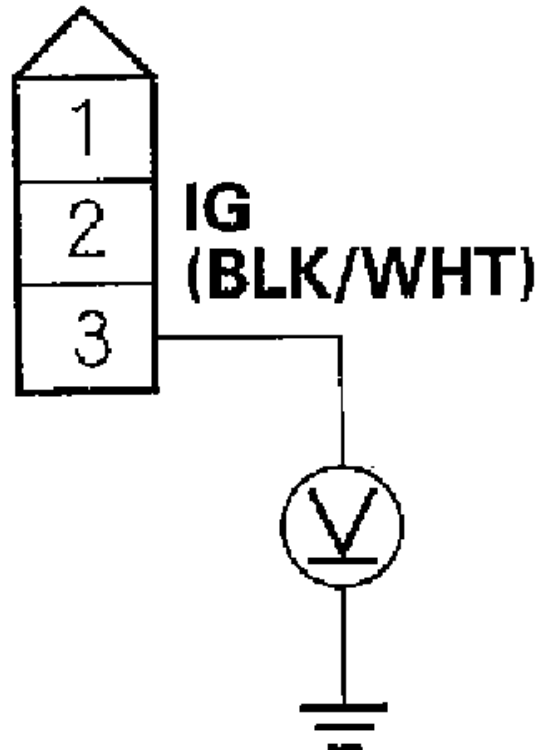
31. Measure voltage between ignition coil 3P connector terminal No. 3 and body ground.

Is there battery voltage?

YES: Go to step 32.

NO: Repair open in the wire between the ignition coil and the No. 1 ignition coil (15A) fuse relay, then go to step 63 .

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

G01822084

Fig. 45: Measuring Voltage Between Ignition Coil 3P Connector Terminal No. 3 & Body Ground

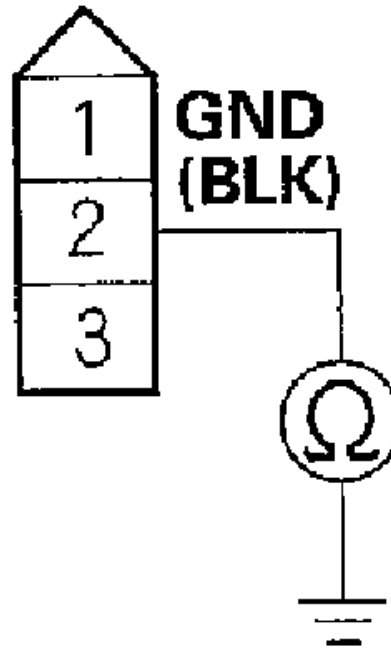
32. Turn the ignition switch OFF.
33. Check for continuity between ignition coil 3P connector terminal No. 2 and body ground.

Is there continuity?

YES: Go to step 34.

NO: Repair open in the wire between the ignition coil and G 101, then go to step 63 .

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

G01822085

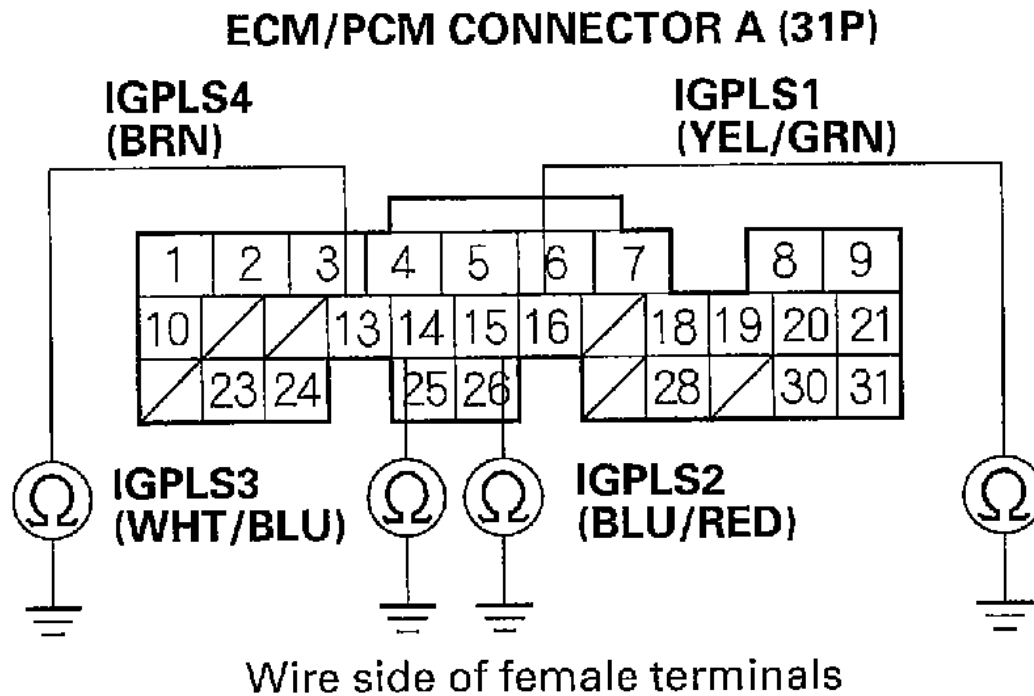
Fig. 46: Checking For Continuity Between Ignition Coil 3P Connector Terminal No. 2 & Body Ground

34. Turn the ignition switch OFF.
35. Jump the SCS line with the HDS.
36. Disconnect ECM/PCM connector A (31P).
37. Check for continuity between body ground and the appropriate ECM/PCM connector terminal (see **Fig. 47** and **Fig. 48**).

Is there continuity?

YES: Repair short in the wire between the ECM/PCM and the ignition coil, then go to step 63 .

NO: Go to step 63 .



G01822086

Fig. 47: Checking For Continuity Between Body Ground & The Appropriate ECM/PCM Connector Terminals

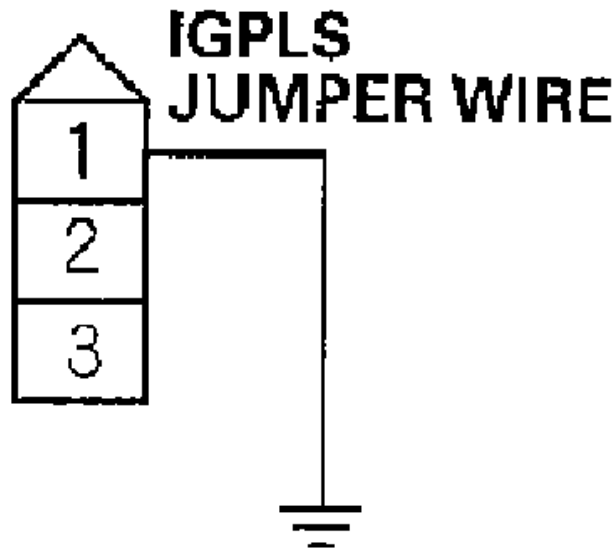
PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	A16	YEL/GRN
No. 2	P0302	A15	BLU/RED
No. 3	P0303	A14	WHT/BLU
No. 4	P0304	A13	BRN

G01822087

Fig. 48: DTC/Terminal Identification Table

38. Connect the appropriate ignition coil 3P connector terminal No. 1 to body ground with a jumper wire (see **Fig. 49** and **Fig. 50**).

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

G01822088

Fig. 49: Connecting The Appropriate Ignition Coil 3P Connector Terminal No. 1 To Body Ground With A Jumper Wire

PROBLEM CYLINDER	DTC	WIRE COLOR
No. 1	P0301	YEL/GRN
No. 2	P0302	BLU/RED
No. 3	P0303	WHT/BLU
No. 4	P0304	BRN

G01822089

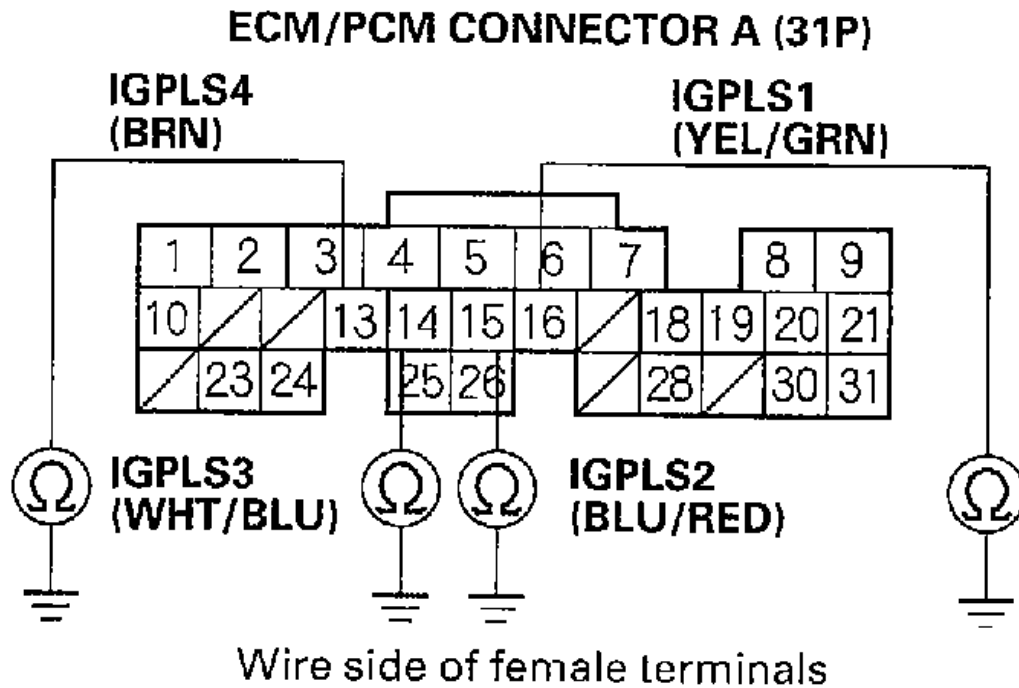
Fig. 50: DTC/Terminal Identification Table

39. Check for continuity between body ground and the appropriate ECM/PCM connector terminal (see **Fig. 51** and **Fig. 52**).

Is there continuity?

YES: Go to step 40.

NO: Repair open in the wire between the ECM/PCM and the ignition coil, then go to step 63 .



G01822090

Fig. 51: Checking For Continuity Between Body Ground & The Appropriate ECM/PCM Connector Terminals

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	A16	YEL/GRN
No. 2	P0302	A15	BLU/RED
No. 3	P0303	A14	WHT/BLU
No. 4	P0304	A13	BRN

G01822091

Fig. 52: DTC/Terminal Identification Table

40. Reconnect the ignition coil 3P connector and ECM/PCM connector A (31P).

41. Do an engine compression and a cylinder leakdown test.

Did the engine pass both tests?

YES: Go to step 42.

NO: Repair the engine, then go to step 63 .

42. Do the VTEC rocker arm test (see **VTEC ROCKER ARM TEST**).

Did the VTEC rocker arm pass the test?

YES: Go to step 71 .

NO: Repair as necessary, then go to step 63 .

43. Turn the ignition switch OFF.

44. Jump the SCS line with the HDS.

45. Disconnect ECM/PCM connector B (24P).

46. Turn the ignition switch ON (II).

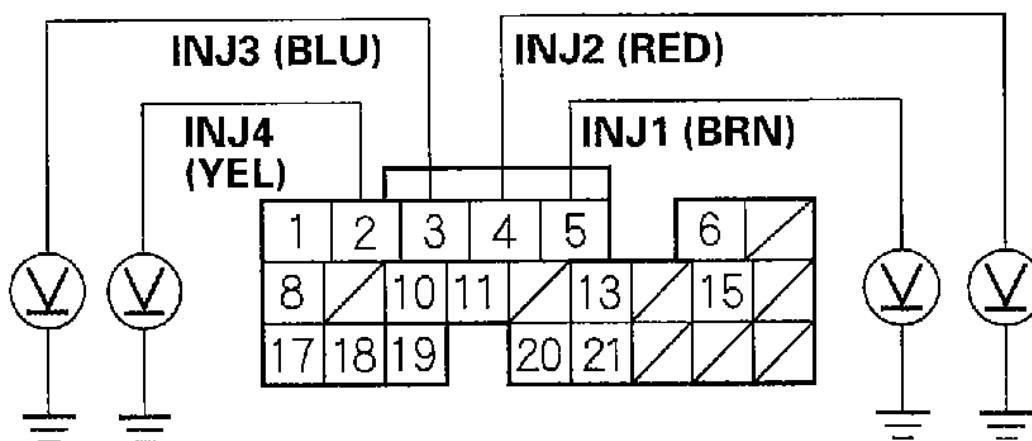
47. Measure voltage between body ground and the appropriate ECM/PCM connector terminal (see **Fig. 53** and **Fig. 54**).

Is there battery voltage?

YES: Go to step 57 .

NO: Go to step 48.

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822092

Fig. 53: Measuring Voltage Between Body Ground & The Appropriate ECM/PCM Connector Terminals

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	B5	BRN
No. 2	P0302	B4	RED
No. 3	P0303	B3	BLU
No. 4	P0304	B2	YEL

G01822093

Fig. 54: DTC/Terminal Identification Table

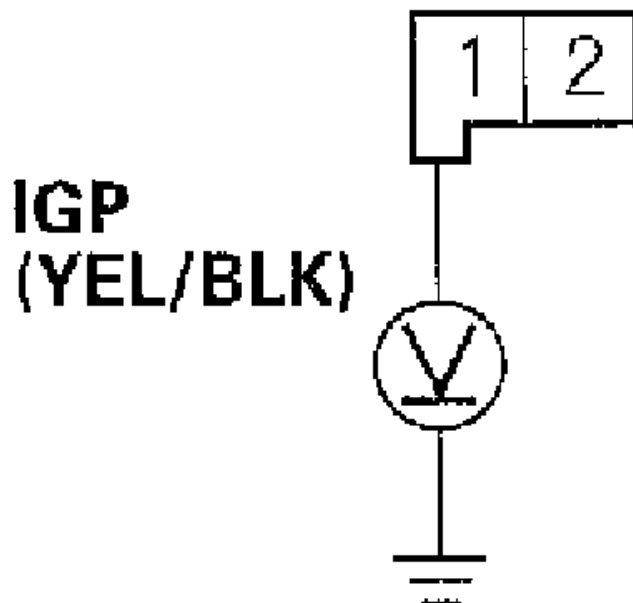
48. Turn the ignition switch OFF.
49. Remove the intake manifold cover (see step 3 of **REMOVAL**).
50. Disconnect the injector 2P connector from the problem cylinder.
51. Turn the ignition switch ON (II).
52. Measure voltage between injector 2P connector terminal No. 1 and body ground.

Is there battery voltage?

YES: Go to step 53.

NO: Repair open in the wire between the injector and the PGM-FI main relay, then go to step 63 .

INJECTOR 2P CONNECTOR



Wire side of female terminals

G01822094

Fig. 55: Measuring Voltage Between Injector 2P Connector Terminal No. 1 & Body Ground

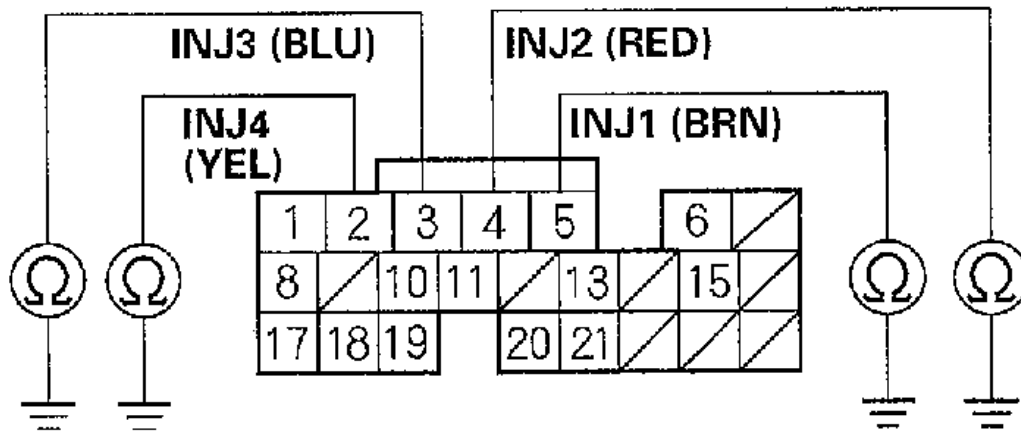
53. Turn the ignition switch OFF.
54. Check for continuity between body ground and the appropriate ECM/PCM connector terminal (see **Fig. 56** and **Fig. 57**).

Is there continuity?

YES: Repair short in the wire between the ECM/PCM and the injector, then go to step 63 .

NO: Go to step 55.

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822095

Fig. 56: Checking For Continuity Between Body Ground & The Appropriate ECM/PCM Connector Terminals

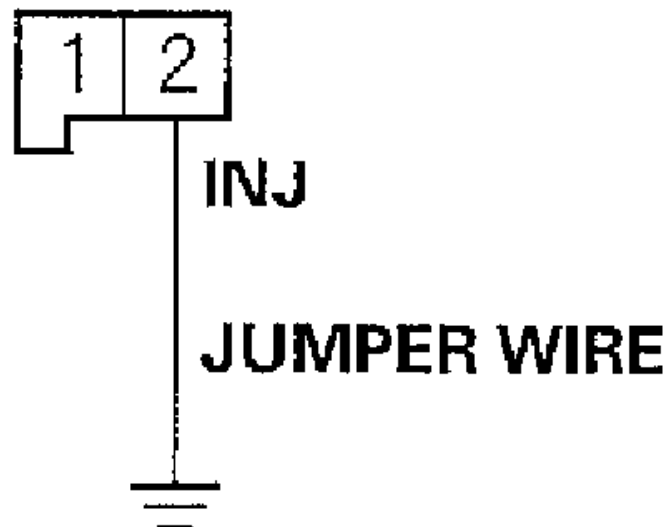
PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	B5	BRN
No. 2	P0302	B4	RED
No. 3	P0303	B3	BLU
No. 4	P0304	B2	YEL

G01822096

Fig. 57: DTC/Terminal Identification Table

55. Connect the appropriate injector 2P connector terminal No. 2 to body ground with a jumper wire (see **Fig. 58** and **Fig. 59**).

INJECTOR 2P CONNECTOR



Wire side of female terminals

G01822097

Fig. 58: Connecting The Appropriate Injector 2P Connector Terminal No. 2 To Body Ground With A Jumper Wire

PROBLEM CYLINDER	DTC	WIRE COLOR
No. 1	P0301	BRN
No. 2	P0302	RED
No. 3	P0303	BLU
No. 4	P0304	YEL

G01822098

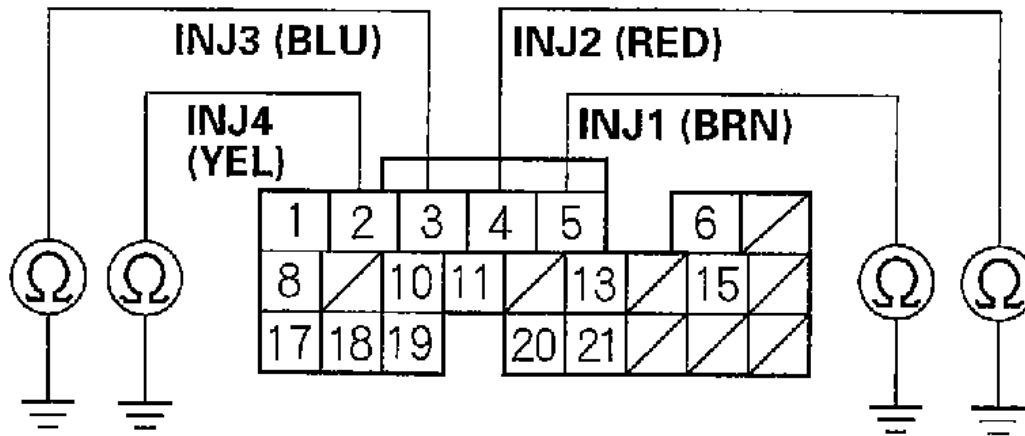
Fig. 59: DTC/Terminal Identification Table

56. Check for continuity between body ground and the appropriate ECM/PCM connector terminal (see **Fig. 60** and **Fig. 61**).

Is there continuity?

YES: Go to step 57.

NO: Repair open in the wire between the ECM/PCM and the injector, then go to step 63 .

ECM/PCM CONNECTOR B (24P)

Wire side of female terminals

G01822099

Fig. 60: Checking For Continuity Between Body Ground & The Appropriate ECM/PCM Connector Terminals

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	B5	BRN
No. 2	P0302	B4	RED
No. 3	P0303	B3	BLU
No. 4	P0304	B2	YEL

G01822100

Fig. 61: DTC/Terminal Identification Table

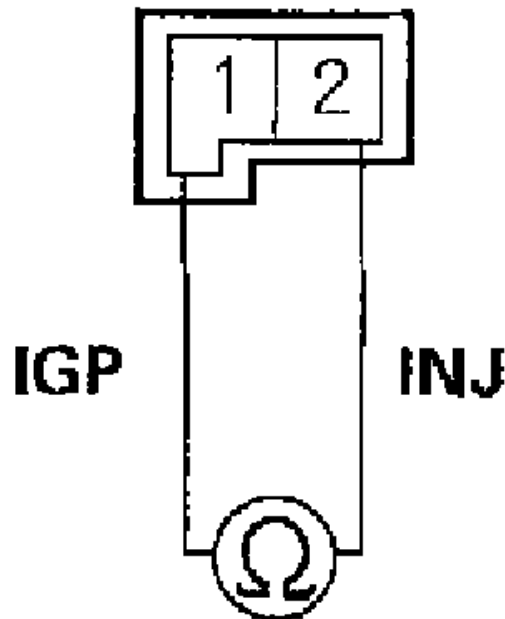
57. Measure resistance between injector 2P connector terminals No. 1 and No. 2.

Is there 10-13 ohm?

YES: Go to step 58.

NO: Replace the injector (see INJECTOR REPLACEMENT), then go to step 63 .

INJECTOR 2P CONNECTOR



Terminal side of male terminals

G01822101

Fig. 62: Measuring Resistance Between Injector 2P Connector Terminals No. 1 & No. 2

58. Substitute a known-good injector from another cylinder to the problem cylinder.
59. Reconnect ECM/PCM connector B (24P).
60. Start the engine, and let it idle for 2 minutes.

61. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
62. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

YES: Go to step 71 .

NO: Replace the original injector (see INJECTOR REPLACEMENT), then go to step 63.

63. Turn the ignition switch ON (II).
64. Reset the ECM/PCM with the HDS.
65. Clear the CKP pattern with the HDS.
66. Do the ECM/PCM idle learn procedure (see ECM/PCM IDLE LEARN PROCEDURE).
67. Do the CKP pattern learn procedure (see CKP PATTERN CLEAR/CKP PATTERN LEARN PROCEDURE).
68. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
69. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0301, P0302, P0303, or P0304 are indicated, check for poor connections or loose terminals at the ignition coil, the injector, and the ECM/PCM, then go to troubleshooting DTC P0300, P0301, P0302, P0303, or P0304 (see DTC P0300: RANDOM MISFIRE AND ANY COMBINATION OF THE FOLLOWING: DTC P0301: NO. 1 CYLINDER MISFIRE; DTC P0302: NO. 2 CYLINDER MISFIRE; DTC P0303: NO. 3 CYLINDER MISFIRE; DTC P0304: NO. 4 CYLINDER MISFIRE). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 70.

70. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, go to step 1 and recheck. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates Out of CONDITION, go to step 68 and recheck.

71. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see HOW TO SUBSTITUTE THE ECM/PCM).
72. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
73. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0301, P0302, P0303, or P0304 are indicated, check for poor connections or loose terminals at the injector, the ignition coil, and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see HOW TO REMOVE THE ECM/PCM FOR TESTING).

DTC P0325: KNOCK SENSOR CIRCUIT MALFUNCTION

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Hold the engine at 3,000-4,000 RPM for at least 60 seconds.
5. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0325 indicated?

YES: Go to step 6.

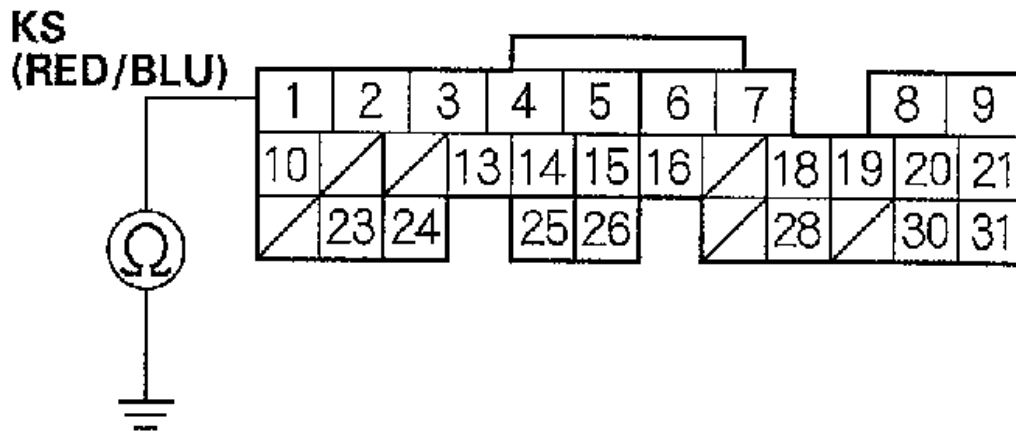
NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the knock sensor and the ECM/PCM.

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Disconnect the knock sensor 1P connector.
9. Disconnect ECM/PCM connector A (31P).
10. Check for continuity between ECM/PCM connector terminal A1 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A1) and the knock sensor, then go to step 14 .

NO: Go to step 11.

ECM/PCM CONNECTOR A (31P)

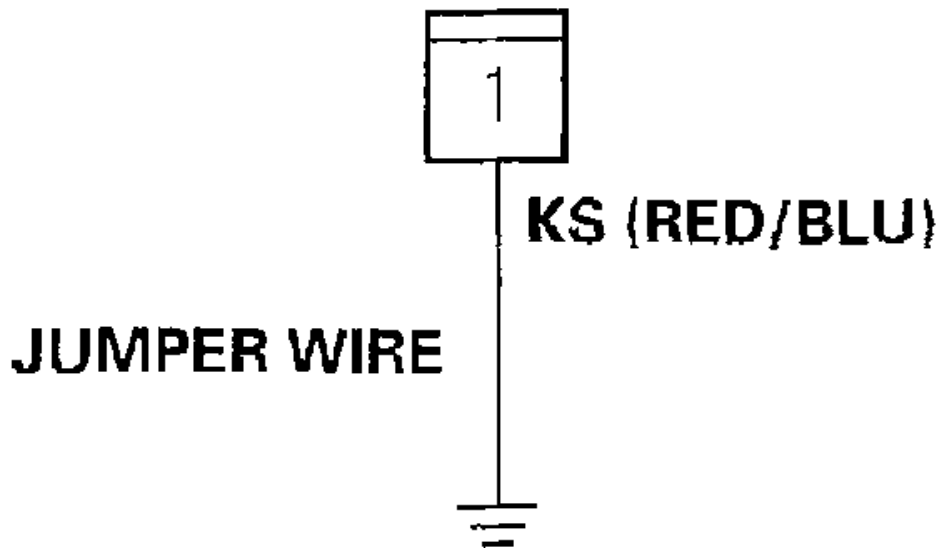
Wire side of female terminals

G01822102

Fig. 63: Checking For Continuity Between ECM/PCM Connector Terminal A1 & Body Ground

11. Connect the knock sensor 1P connector terminal to body ground with a jumper wire.

KNOCK SENSOR 1P CONNECTOR



Wire side of female terminals

G01822103

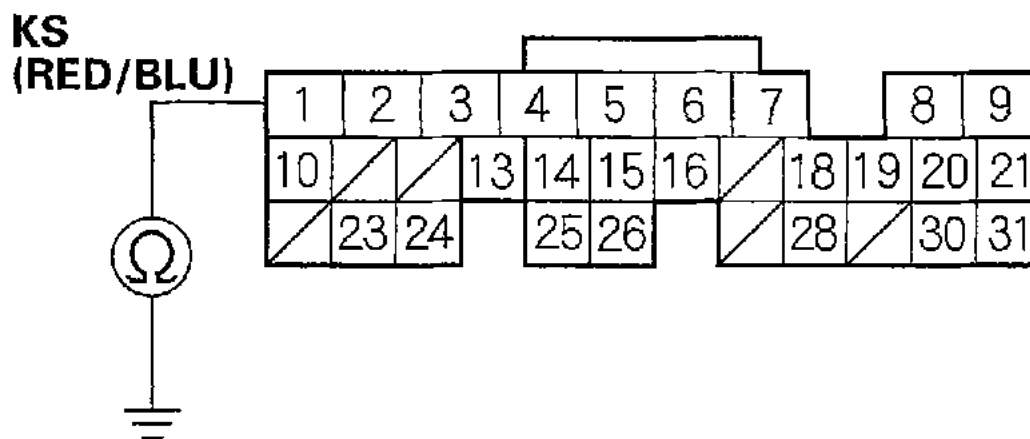
Fig. 64: Connecting The Knock Sensor 1P Connector Terminal To Body Ground With A Jumper Wire

12. Check for continuity between ECM/PCM connector terminal A1 and body ground.

Is there continuity?

YES: Go to step 13.

NO: Repair open in the wire between the ECM/PCM (A1) and the knock sensor, then go to step 14 .

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822104

Fig. 65: Checking For Continuity Between ECM/PCM Connector Terminal A1 & Body Ground

13. Replace the knock sensor (see **IAT SENSOR REPLACEMENT**).
14. Turn the ignition switch ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Hold the engine at 3,000-4,000 RPM for at least 60 seconds.
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?**YES:** Go to step 20 .**NO:** Go to step 19.

19. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?**YES:** Troubleshooting is complete.**NO:** If the screen indicates FAILED, go to step 1 and recheck. If the screen indicates NOT COMPLETED, go to step 16 and recheck.

20. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
21. Hold the engine at 3,000-4,000 RPM for at least 60 seconds.
22. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0325 is indicated, check for poor connections or loose terminals at the knock sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0335: CKP SENSOR NO SIGNAL

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0335 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM.

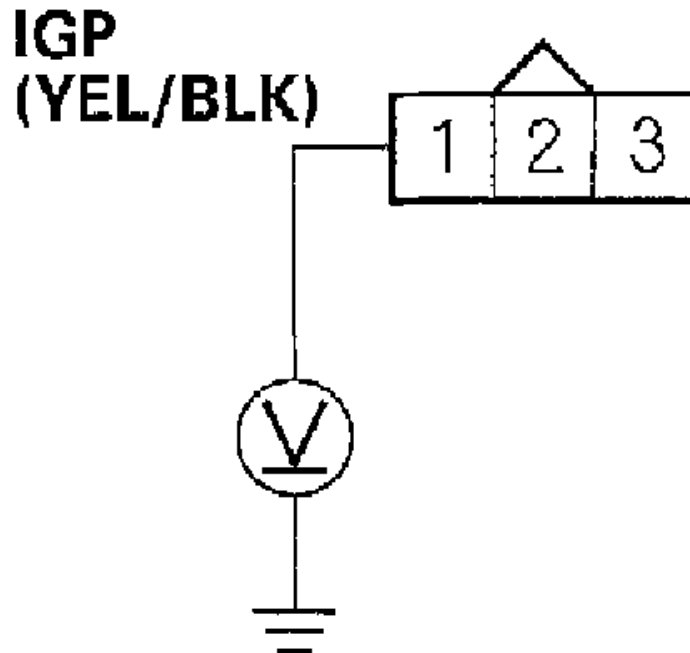
5. Turn the ignition switch OFF.
6. Disconnect the CKP sensor 3P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between CKP sensor 3P connector terminal No. 1 and body ground.

Is there battery voltage?

YES: Go to step 9.

NO: Repair open in the wire between the CKP sensor and PGM-FI main relay 1, then go to step 19 .

CKP SENSOR 3P CONNECTOR



Wire side of female terminals

G01822105

Fig. 66: Measuring Voltage Between CKP Sensor 3P Connector Terminal No. 1 & Body Ground

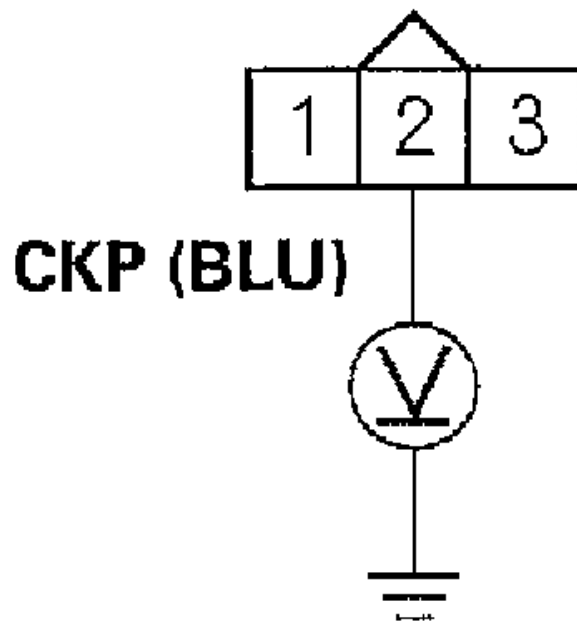
9. Measure voltage between CKP sensor 3P connector terminal No. 2 and body ground.

Is there about 5 V?

YES: Go to step 10.

NO: Go to step 11 .

CKP SENSOR 3P CONNECTOR



Wire side of female terminals

G01822106

Fig. 67: Measuring Voltage Between CKP Sensor 3P Connector Terminal No. 2 & Body Ground

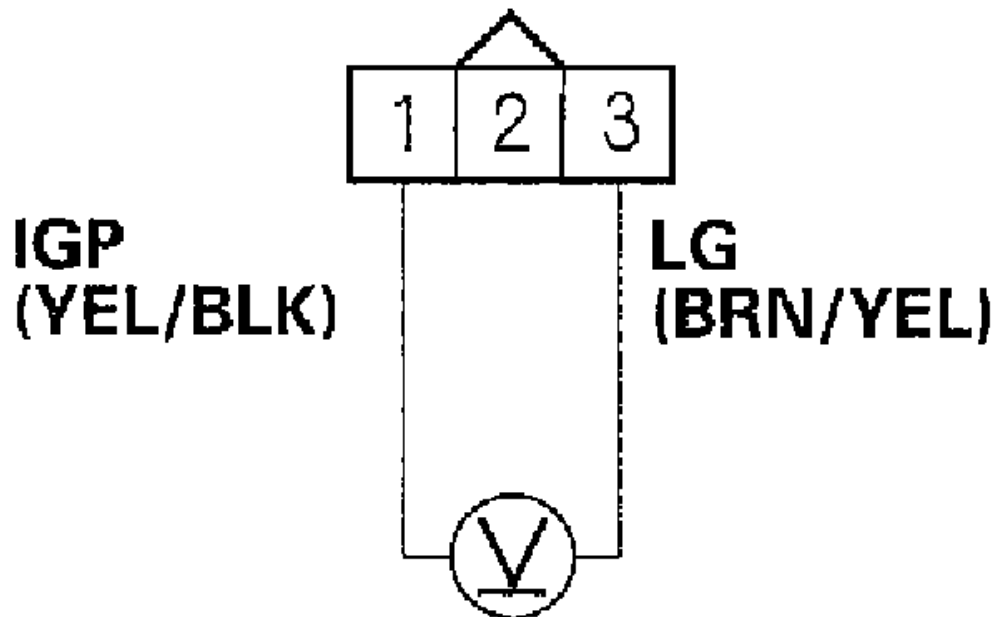
10. Measure voltage between CKP sensor 3P connector terminals No. 1 and No. 3.

Is there battery voltage?

YES: Go to step 16 .

NO: Repair open in the wire between the CKP sensor and G101, then go to step 19 .

CKP SENSOR 3P CONNECTOR



Wire side of female terminals

G01822107

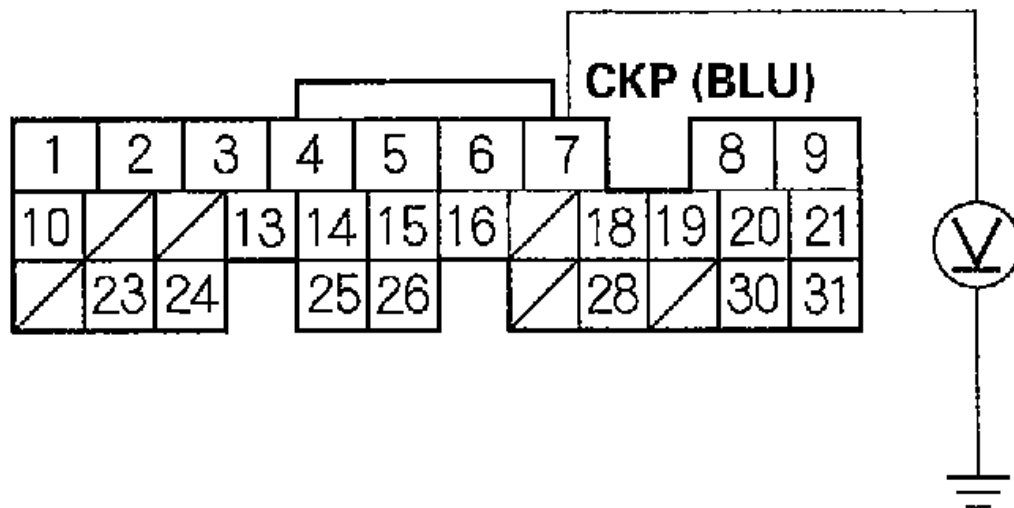
Fig. 68: Measuring Voltage Between CKP Sensor 3P Connector Terminals No. 1 & No. 3

11. Measure voltage between ECM/PCM connector terminal A7 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (A7) and the CKP sensor, then go to step 19 .

NO: Go to step 12.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822108

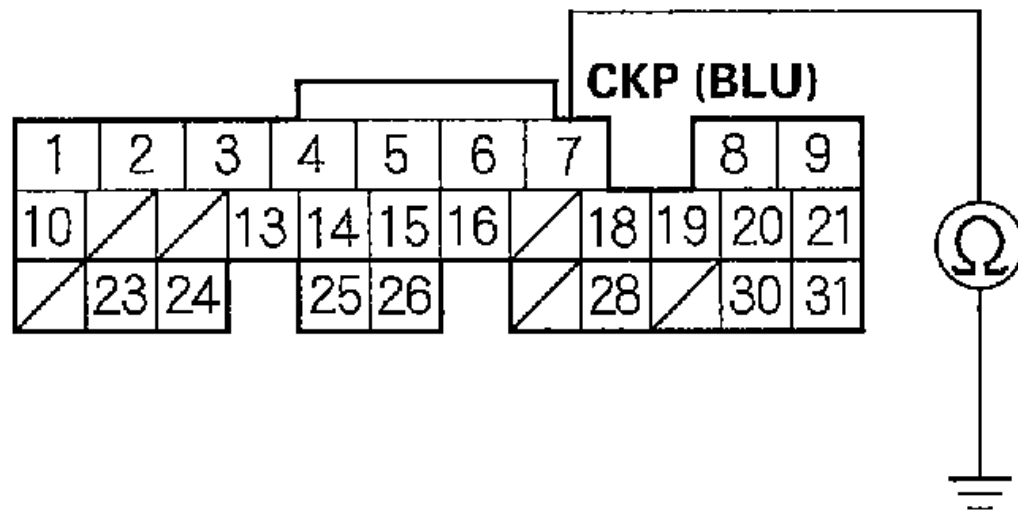
Fig. 69: Measuring Voltage Between ECM/PCM Connector Terminal A7 & Body Ground

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector A (31P).
15. Check for continuity between ECM/PCM connector terminal A7 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A7) and the CKP sensor, then go to step 18 .

NO: Go to step 24 .

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822109

Fig. 70: Checking For Continuity Between ECM/PCM Connector Terminal A7 & Body Ground

16. Turn the ignition switch OFF.
17. Replace the CKP sensor (see **CKP SENSOR REPLACEMENT**), then go to step 18.
18. Turn the ignition switch ON (II).
19. Reset the ECM/PCM with the HDS.
20. Clear the CKP pattern with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Do the CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN PROCEDURE**).
23. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0335 is indicated, check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are

indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

24. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
25. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0335 is indicated, check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0339: CKP SENSOR INTERMITTENT INTERRUPTION

1. Note the following freeze data.
 - Engine speed
 - Vehicle speed
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 10 seconds.
4. Check the CKP NOISE COUNT in the DATA LIST with the HDS.

Are 0 counts indicated?

YES: Go to step 7 .

NO: Go to step 5.

5. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
6. Check the CKP NOISE COUNT in the DATA LIST with the HDS.

Are 0 counts indicated?

YES: Go to step 7.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM.

7. Check for poor or loose connections and terminals at the following:
 - CKP sensor
 - ECM/PCM
 - Engine ground
 - Body ground

Are the connections and terminals OK?

YES: Go to step 8.

NO: Repair the connectors or terminals, then go to step 11 .

8. Remove the cam chain case (see **CAM CHAIN REMOVAL**), and check for damage on the CKP sensor pulse plate.

Is the pulse plate damaged?

YES: Replace the CKP sensor pulse plate, then go to step 11 .

NO: Go to step 9.

9. Turn the ignition switch OFF.
10. Replace the CKP sensor (see **CKP SENSOR REPLACEMENT**).
11. Turn the ignition switch ON (II).
12. Reset the ECM/PCM with the HDS.
13. Clear the CKP pattern with the HDS.
14. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Do the CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN PROCEDURE**).
16. Start the engine, and let it idle for 10 seconds.
17. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0339 is indicated, check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

DTC P0365: CMP SENSOR B NO SIGNAL

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0365 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at CKP sensor B and the ECM/PCM.

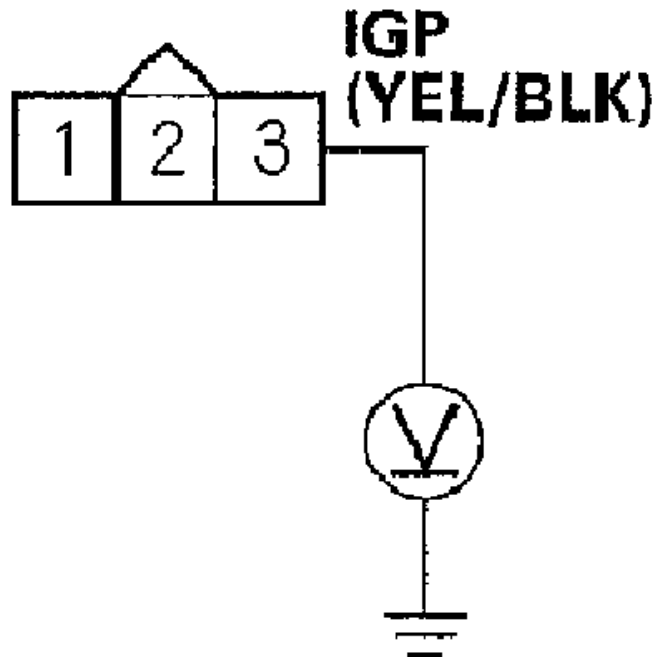
5. Turn the ignition switch OFF.
6. Disconnect the CMP sensor B 3P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between CMP sensor B 3P connector terminal No. 3 and body ground.

Is there battery voltage?

YES: Go to step 9.

NO: Repair open in the wire between CMP sensor B and PGM-FI main relay 1, then go to step 19 .

CMP SENSOR B 3P CONNECTOR



Wire side of female terminals

G01822110

Fig. 71: Measuring Voltage Between CMP Sensor B 3P Connector Terminal No. 3 & Body Ground

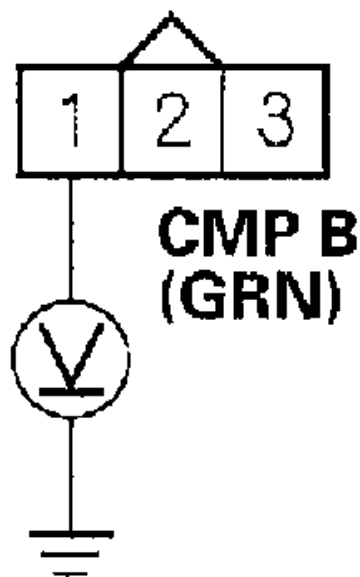
9. Measure voltage between CMP sensor B 3P connector terminal No. 1 and body ground.

Is there about 5 V?

YES: Go to step 10.

NO: Go to step 11 .

CMP SENSOR B 3P CONNECTOR



Wire side of female terminals

G01822111

Fig. 72: Measuring Voltage Between CMP Sensor B 3P Connector Terminal No. 1 & Body Ground

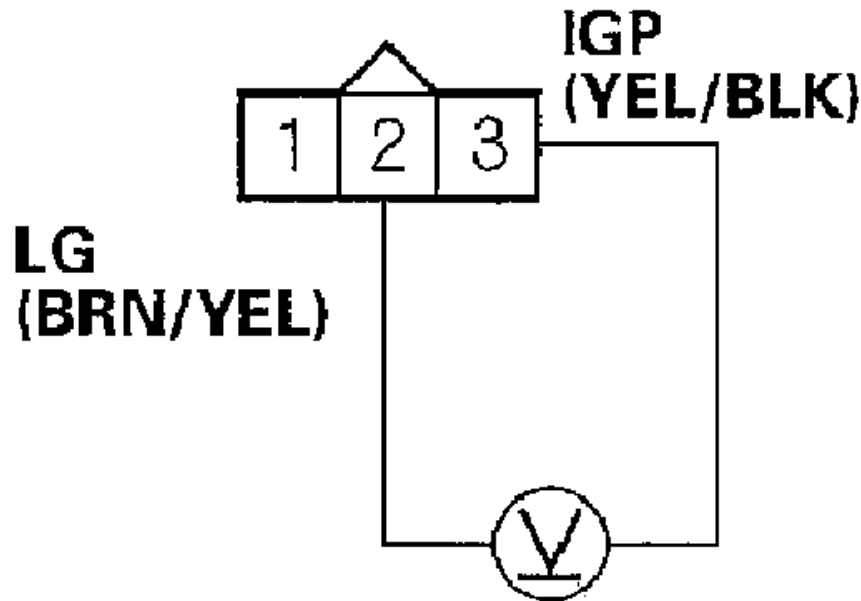
10. Measure voltage between CMP sensor B 3P connector terminals No. 2 and No. 3.

Is there battery voltage?

YES: Go to step 16 .

NO: Repair open in the wire between CMP sensor B and G101, then go to step 19 .

CMP SENSOR B 3P CONNECTOR



Wire side of female terminals

G01822112

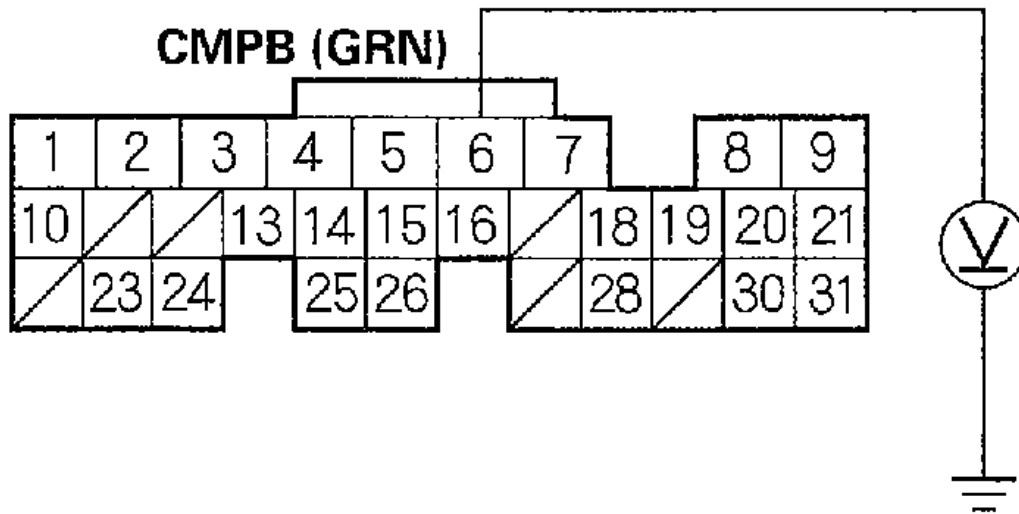
Fig. 73: Measuring Voltage Between CMP Sensor B 3P Connector Terminals No. 2 & No. 3

11. Measure voltage between ECM/PCM connector terminal A6 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (A6) and CMP sensor B, then go to step 19 .

NO: Go to step 12.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822113

Fig. 74: Measuring Voltage Between ECM/PCM Connector Terminal A6 & Body Ground

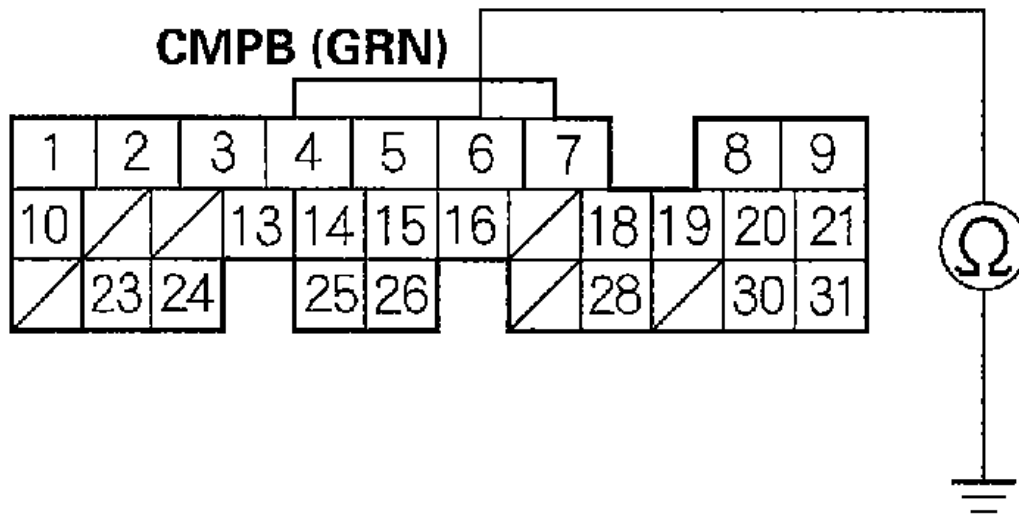
12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector A (31P).
15. Check for continuity between ECM/PCM connector terminal A6 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A6) and CMP sensor B, then go to step 19 .

NO: Go to step 23 .

ECM/PCM CONNECTOR A (31P)



Wire side of female terminals

G01822114

Fig. 75: Checking For Continuity Between ECM/PCM Connector Terminal A6 & Body Ground

16. Turn the ignition switch OFF.
17. Replace CMP sensor B (see **ECT SENSOR REPLACEMENT**).
18. Turn the ignition switch ON (II).
19. Reset the ECM/PCM with the HDS.
20. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
21. Start the engine.
22. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0365 is indicated, check for poor connections or loose terminals at CMP sensor B and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

23. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see

HOW TO SUBSTITUTE THE ECM/PCM).

24. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0365 is indicated, check for poor connections or loose terminals at CMP sensor B and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0369: CMP SENSOR B INTERMITTENT INTERRUPTION

1. Note the following freeze data.
 - Engine speed
 - Vehicle speed
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 10 seconds.
4. Check the CMP NOISE B COUNT in the DATA LIST with the HDS.

Are 0 counts indicated?

YES: Go to step 7 .

NO: Go to step 5.

5. Test-drive the vehicle for several minutes in the range of the recorded freeze data.
6. Check the CMP NOISE B COUNT in the DATA LIST with the HDS.

Are 0 counts indicated?

YES: Go to step 7.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at CMP sensor B and the ECM/PCM.

7. Check for poor or loose connections and terminals at these locations:
 - CMP sensor B
 - ECM/PCM
 - Engine ground
 - Body ground

Are the connections and terminals OK?

YES: Go to step 8.

NO: Repair the connectors or terminals, then go to step 11 .

8. Check for damage on the CMP sensor B pulse plate (see **CMP PULSE PLATE B REPLACEMENT**).

Is the pulse plate damaged?

YES: Replace the CMP sensor B pulse plate (see **CMP PULSE PLATE B REPLACEMENT**), then go to step 11 .

NO: Go to step 9.

9. Turn the ignition switch OFF.
10. Replace CMP sensor B (see **ECT SENSOR REPLACEMENT**).
11. Turn the ignition switch ON (II).
12. Reset the ECM/PCM with the HDS.
13. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
14. Start the engine, and let it idle for 10 seconds.
15. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0369 is indicated, check for poor connections or loose terminals at CMP sensor B and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

DTC P0563: ECM/PCM POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Wait 10 seconds.
5. Turn the ignition switch ON (II).
6. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0563 indicated?

YES: Go to step 7.

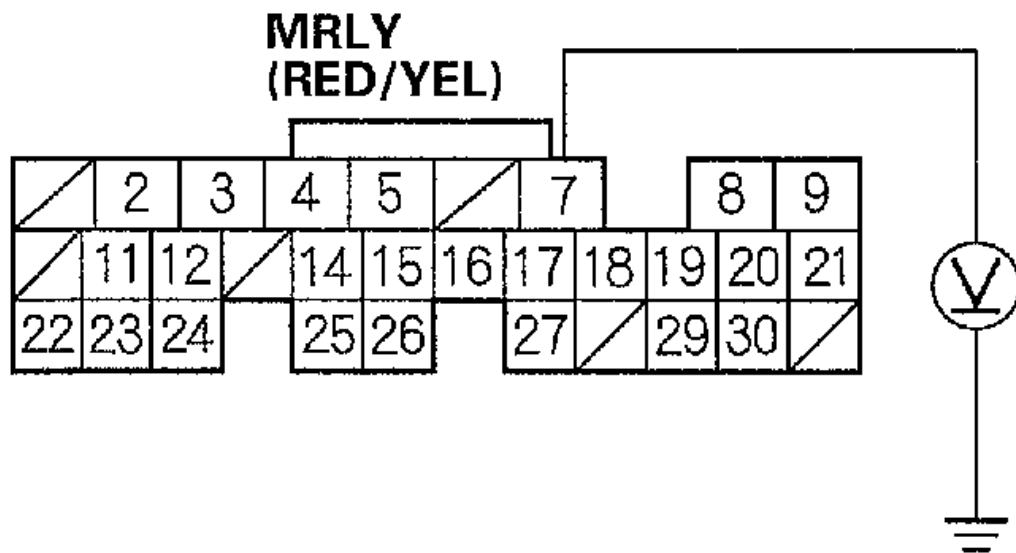
NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the No. 8 ECU (ECM/PCM) (15A) fuse in the underhood fuse/relay box, PGM-FI main relay 1, and the ECM/PCM.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector E (31P).
10. Measure voltage between ECM/PCM connector terminal E7 and body ground.

Is there battery voltage?

YES: Go to step 13 .

NO: Go to step 11.

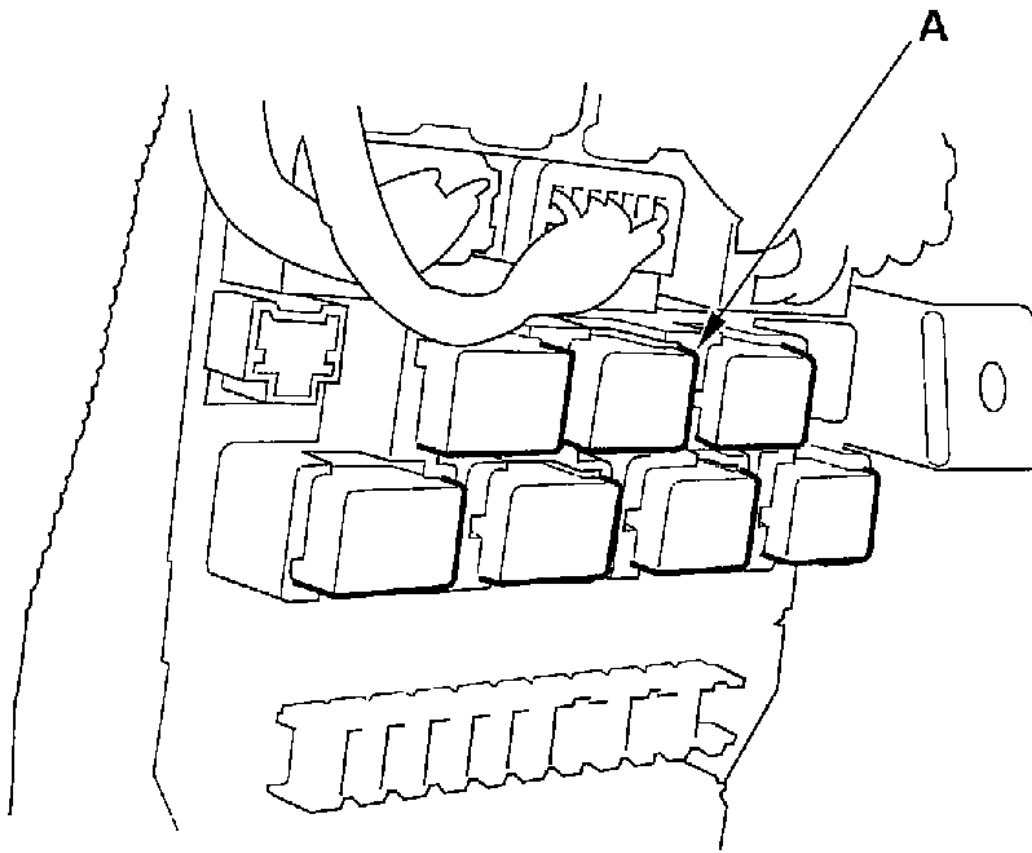
ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822115

Fig. 76: Measuring Voltage Between ECM/PCM Connector Terminal E7 & Body Ground

11. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREA**), then remove PGM-FI main relay 1 (FI MAIN) (A) from the under-dash fuse/relay box.



G01822116

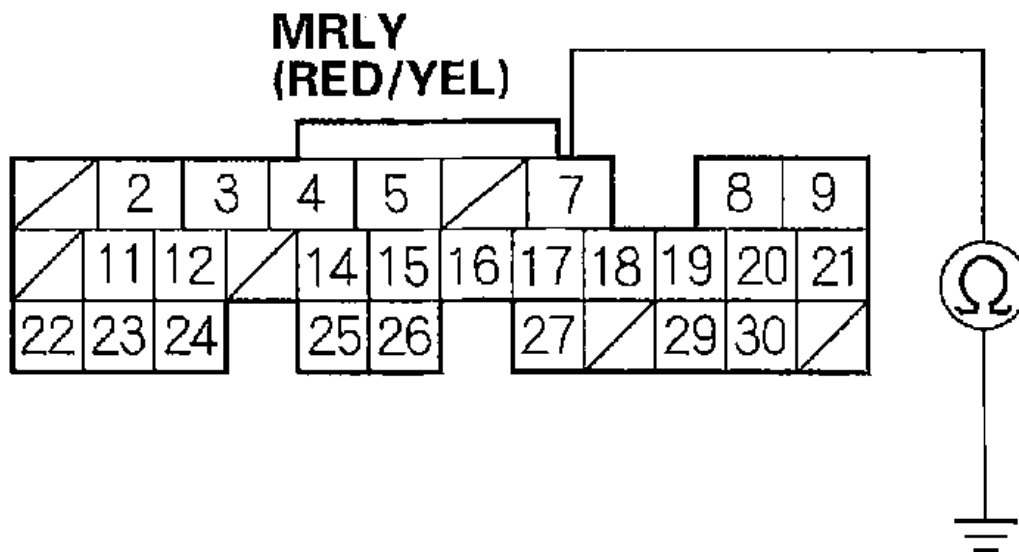
Fig. 77: Removing PGM-FI Main Relay 1 (FI MAIN) From The Under-Dash Fuse/Relay Box

12. Check for continuity between ECM/PCM connector terminal E7 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (E7) and PGM-FI main relay 1, then go to step 20 .

NO: Go to step 19 .

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822117

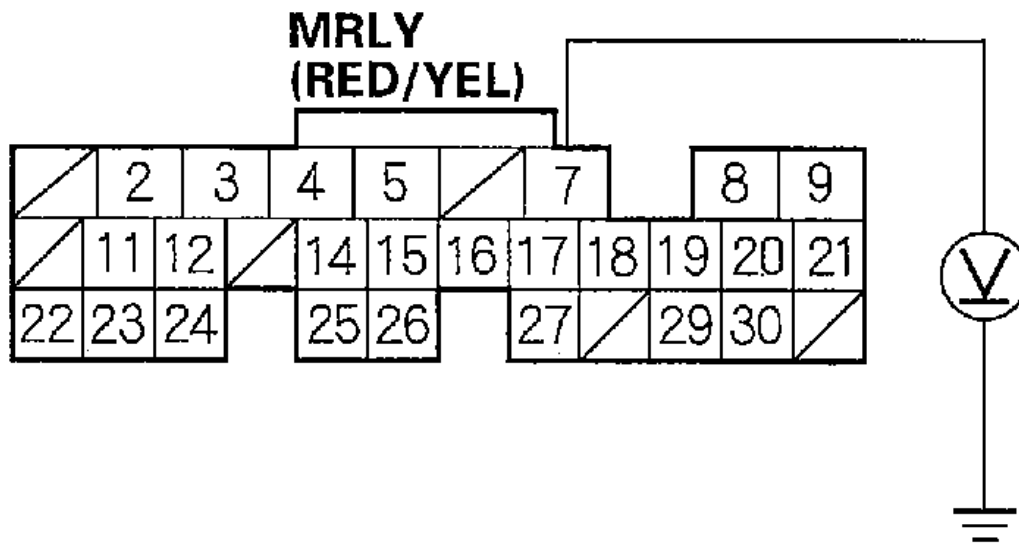
Fig. 78: Checking For Continuity Between ECM/PCM Connector Terminal E7 & Body Ground

13. Reconnect ECM/PCM connector E (31P).
14. Measure voltage between ECM/PCM connector terminal E7 and body ground.

Is there battery voltage?

YES: Go to step 15.

NO: Go to step 26 .

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822118

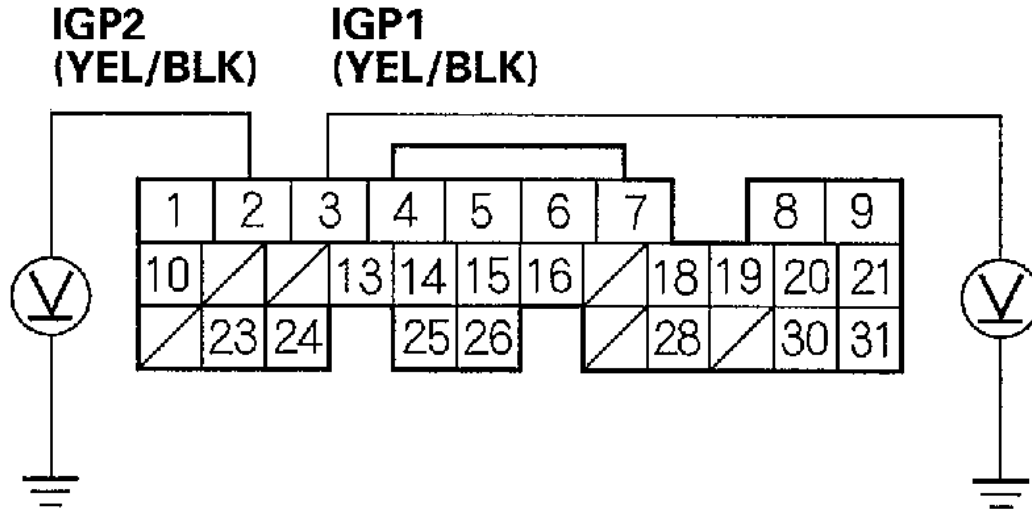
Fig. 79: Measuring Voltage Between ECM/PCM Connector Terminal E7 & Body Ground

15. Disconnect ECM/PCM connector A (31P).
16. Measure voltage between body ground and ECM/PCM connector terminals A3 and A2 individually.

Is there battery voltage?

YES: Go to step 17.

NO: Go to step 26 .

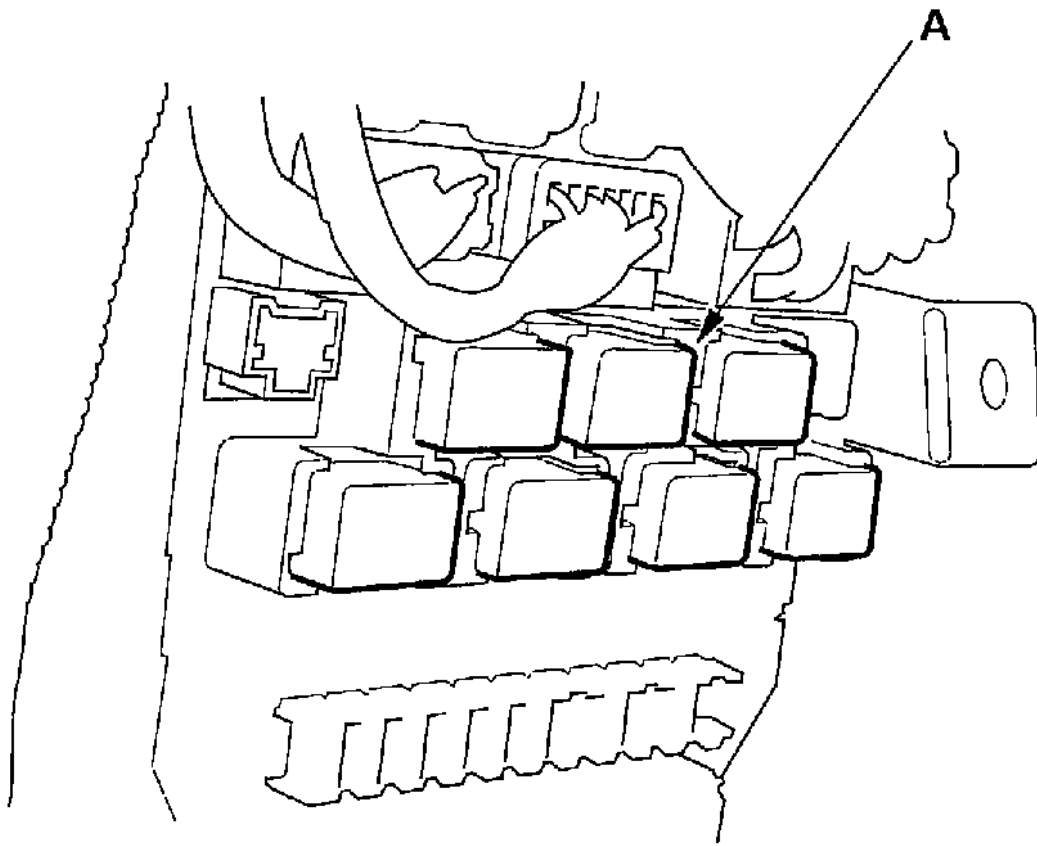
ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822119

Fig. 80: Measuring Voltage Between Body Ground And ECM/PCM Connector Terminals A3 & A2

17. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREA**), then remove PGM-FI main relay 1 (FI MAIN) (A) from the under-dash fuse/relay box.



G01822120

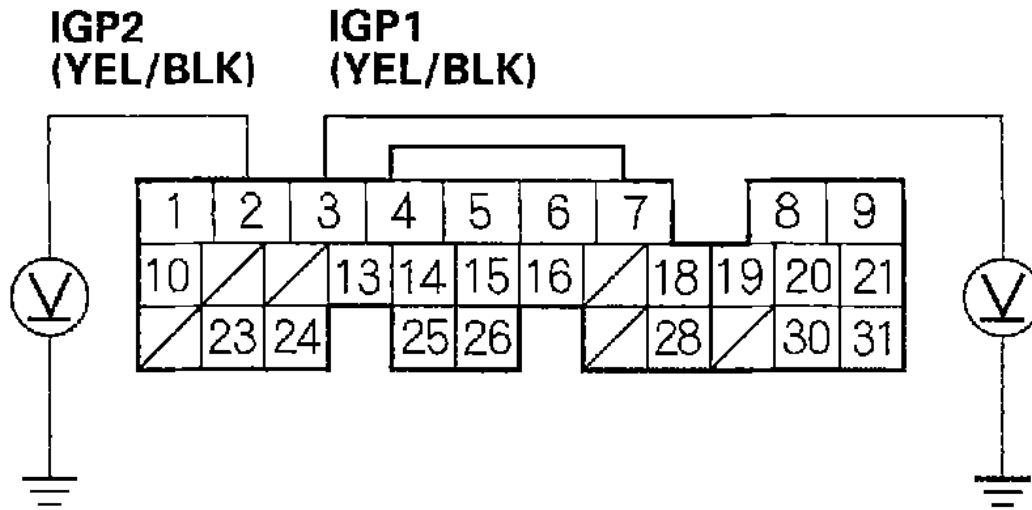
Fig. 81: Removing PGM-FI Main Relay 1 (FI MAIN) From The Under-Dash Fuse/Relay Box

18. Measure voltage between body ground and ECM/PCM connector terminals A3 and A2 individually.

Is there battery voltage?

YES: Repair short to power in the wire between the ECM/PCM (A2, A3) and PGM-FI main relay 1, then go to step 20 .

NO: Go to step 19.

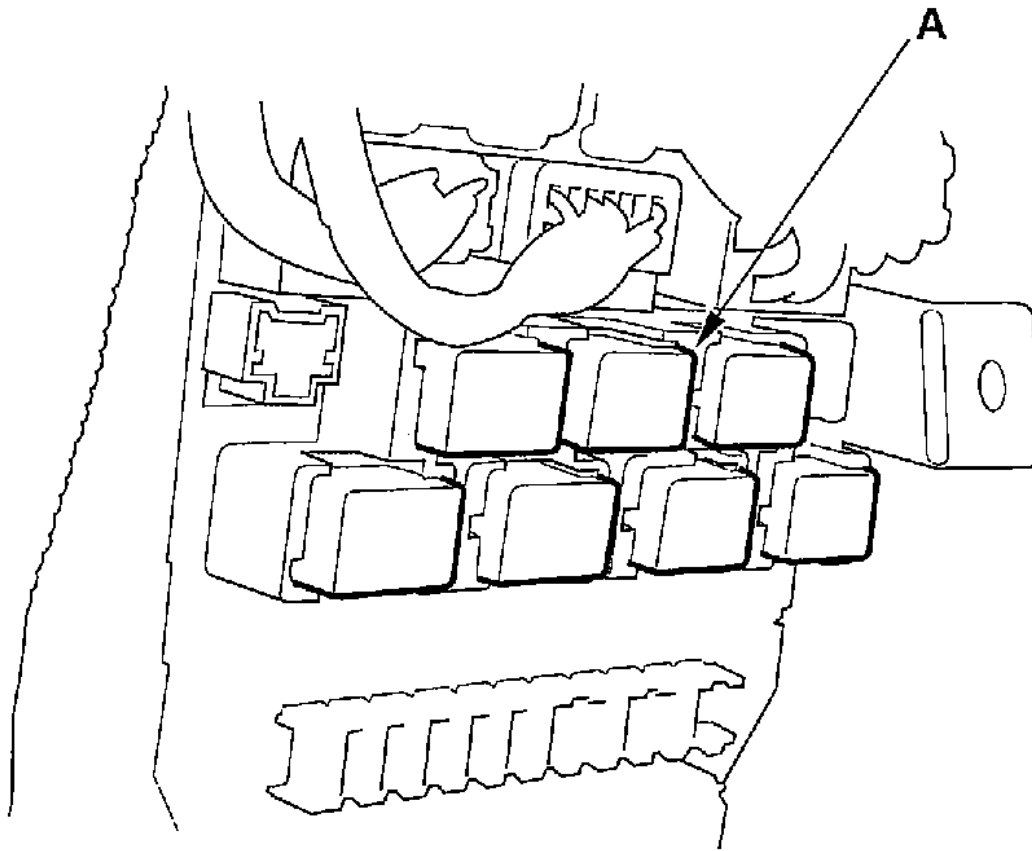
ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822121

Fig. 82: Measuring Voltage Between Body Ground And ECM/PCM Connector Terminals A3 & A2

19. Replace PGM-FI main relay 1 (A).



G01822122

Fig. 83: Replacing PGM-FI Main Relay 1

20. Turn the ignition switch ON (II).
21. Reset the ECM/PCM with the HDS.
22. Turn the ignition switch OFF.
23. Wait 10 seconds.
24. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
25. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0563 is indicated, check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

26. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).

27. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0563 is indicated, check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM, then go to step 1. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P0603: ECM/PCM INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Intermittent failure, system is OK at this time.

DTC P0606: ECM/PCM PROCESSOR MALFUNCTION

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Turn the ignition switch ON (II).
5. Wait 40 seconds.
6. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0606 indicated?

YES: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Intermittent failure, system is OK at this time.

DTC P0685: ECM/PCM POWER CONTROL CIRCUIT MALFUNCTION

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Intermittent failure, system is OK at this time.

DTC P0720: COUNTERSHAFT SPEED SENSOR CIRCUIT MALFUNCTION

NOTE: This DTC only occurs on M/T vehicles.

1. Start the engine. Hold the engine speed at 3,000 RPM with no load (in neutral) until the radiator fan comes on, then let it idle.
2. Test-drive several miles.
3. Check the C SHAFT SPD in the DATA LIST with the HDS.

Is any vehicle speed indicated?

YES: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the countershaft speed sensor and the ECM.

NO: Go to step 4.

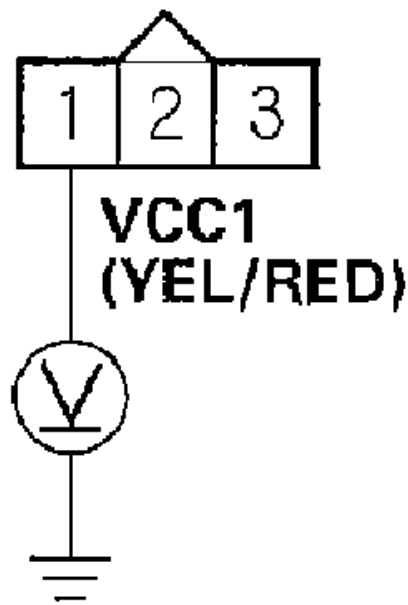
4. Turn the ignition switch OFF.
5. Disconnect the countershaft speed sensor 3P connector.
6. Turn the ignition switch ON (II).
7. Measure voltage between countershaft speed sensor 3P connector terminal No. 1 and body ground.

Is there about 5 V?

YES: Go to step 8.

NO: Repair open in the wire between the ECM (A21) and the countershaft speed sensor, then go to step 18 .

COUNTERSHAFT SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

G01822123

Fig. 84: Measuring Voltage Between Countershaft Speed Sensor 3P Connector Terminal No. 1 & Body Ground

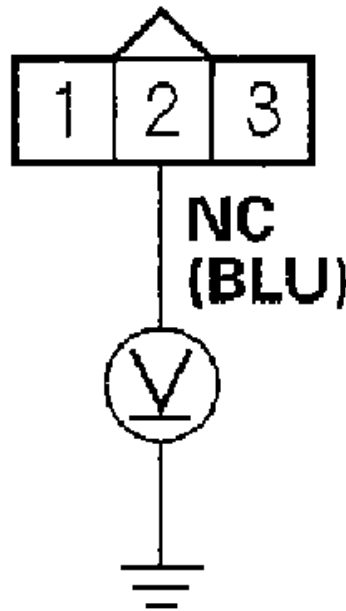
8. Measure voltage between countershaft speed sensor 3P connector terminal No. 2 and body ground.

Is there about 5 V?

YES: Go to step 9.

NO: Go to step 10 .

COUNTERSHAFT SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

G01822124

Fig. 85: Measuring Voltage Between Countershaft Speed Sensor 3P Connector Terminal No. 2 & Body Ground

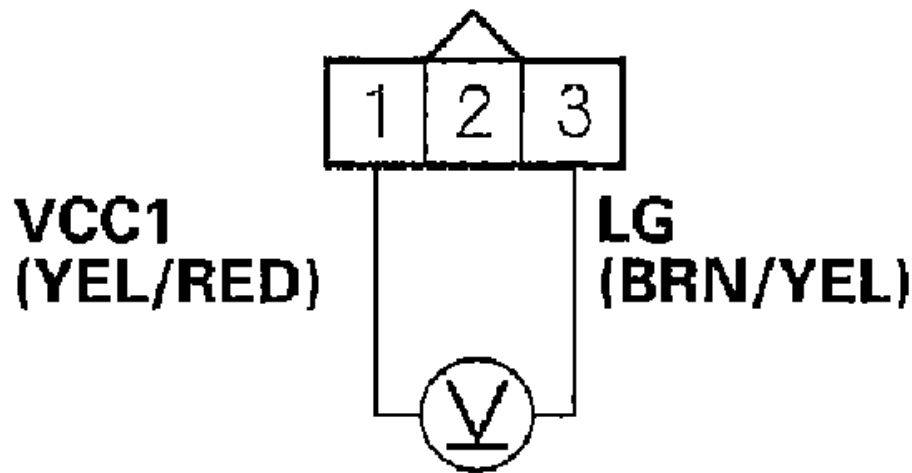
9. Measure voltage between countershaft speed sensor 3P connector terminals No. 1 and No. 3.

Is there about 5 V?

YES: Go to step 15 .

NO: Repair open in the wire between the countershaft speed sensor and G101, then go to step 18 .

COUNTERSHAFT SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

G01822125

Fig. 86: Measuring Voltage Between Countershaft Speed Sensor 3P Connector Terminals No. 1 & No. 3

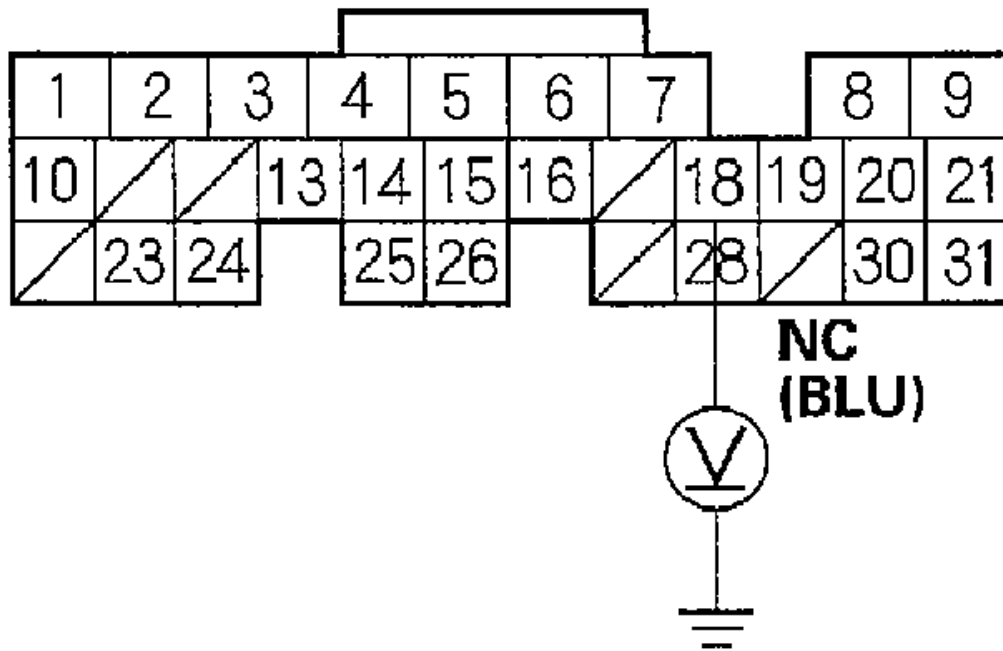
10. Measure voltage between ECM connector terminal A18 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM (A18) and the countershaft speed sensor, then go to step 18 .

NO: Go to step 11.

ECM CONNECTOR A (31P)



Wire side of female terminals

G01822126

Fig. 87: Measuring Voltage Between ECM Connector Terminal A18 & Body Ground

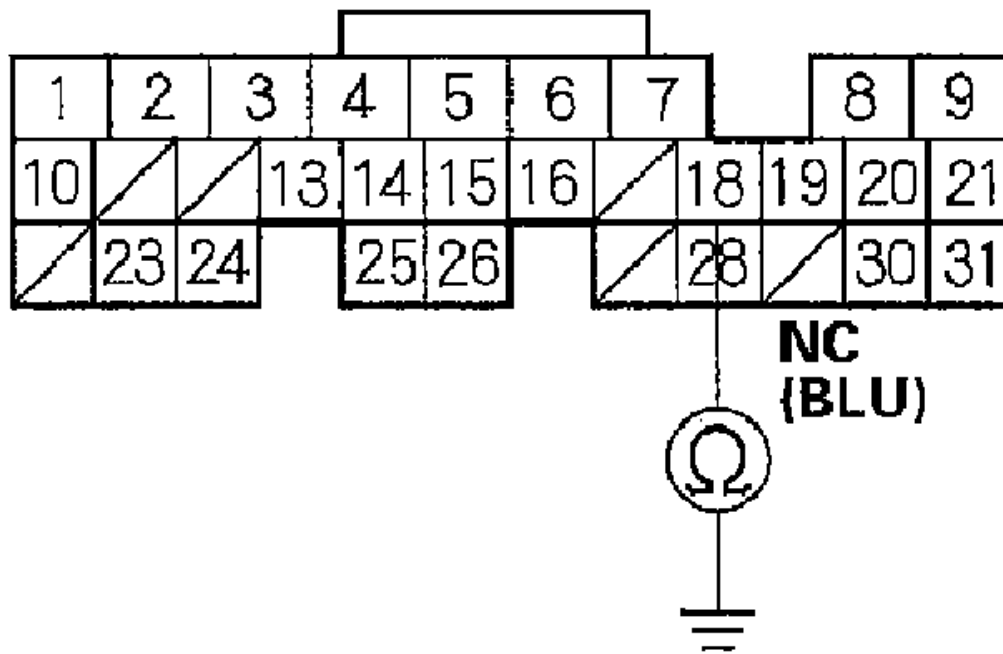
11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect ECM connector A (31P).
14. Check for continuity between ECM connector terminal A 18 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM (A18) and the countershaft speed sensor, then go to step 17 .

NO: Go to step 23 .

ECM CONNECTOR A (31P)



Wire side of female terminals

G01822127

Fig. 88: Checking For Continuity Between ECM Connector Terminal A 18 & Body Ground

15. Turn the ignition switch OFF.
16. Replace the countershaft speed sensor (see **CKP SENSOR REPLACEMENT**), then go to step 16.
17. Turn the ignition switch ON (II).
18. Reset the ECM with the HDS.
19. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
20. Test-drive under the following conditions:
 - Engine coolant temperature more than 158°F (70°C)
 - Transmission in 5th gear
 - Engine speed at 2,000-3,000 RPM

- Drive for several minutes, then decelerate (with the throttle fully closed) for 8 seconds

21. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0720 is indicated, check for poor connections or loose terminals at the output shaft speed sensor and the ECM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Go to step 22.

22. Monitor the OBD STATUS for DTC P0720 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, go to step 1 and recheck. If the screen indicates NOT COMPLETED, go to step 20 and recheck.

23. Update the ECM if it does not have the latest software, or substitute a known-good ECM (see **HOW TO SUBSTITUTE THE ECM/PCM**).

24. Test-drive under the following conditions:

- Engine coolant temperature more than 158°F (70°C)
- Transmission in 5th gear
- Engine speed at 2,000-3,000 RPM
- Drive for several minutes, then decelerate (with the throttle fully closed) for 8 seconds

25. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0720 is indicated, check for poor connections or loose terminals at the countershaft speed sensor and the ECM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original ECM (see **HOW TO SUBSTITUTE THE ECM/PCM**).

DTC P1297: ELD CIRCUIT LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the ELD in the DATA LIST with the HDS.

Is 72A or more indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ELD and the ECM/PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch ON (II).
6. Check the ELD in the DATA LIST with the HDS.

Is 72A or more indicated?

YES: Go to step 7.

NO: Go to step 11 .

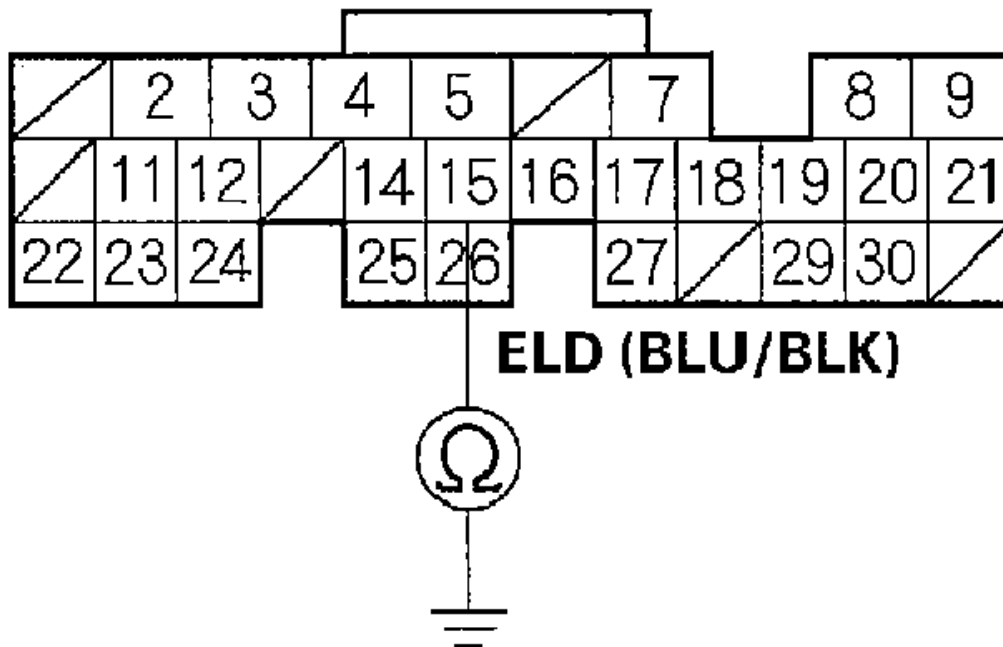
7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector E (31P).
10. Check for continuity between ECM/PCM connector terminal E15 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (E15) and the ELD, then go to step 13 .

NO: Go to step 19 .

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G01822128

Fig. 89: Checking For Continuity Between ECM/PCM Connector Terminal E15 & Body Ground

11. Turn the ignition switch OFF.
12. Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).
13. Turn the ignition switch ON (II).
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Start the engine.
17. Turn on the headlights.
18. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P1297 is indicated, check for poor connections or loose terminals at the ELD and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

19. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
20. Start the engine.
21. Turn on the headlights.
22. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P1297 is indicated, check for poor connections or loose terminals at the ELD and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P1298: ELD CIRCUIT HIGH VOLTAGE

1. Start the engine and let it idle.
2. Check the ELD in the DATA LIST with the HDS.

Is 0.2A or less indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ELD and the ECM/PCM.

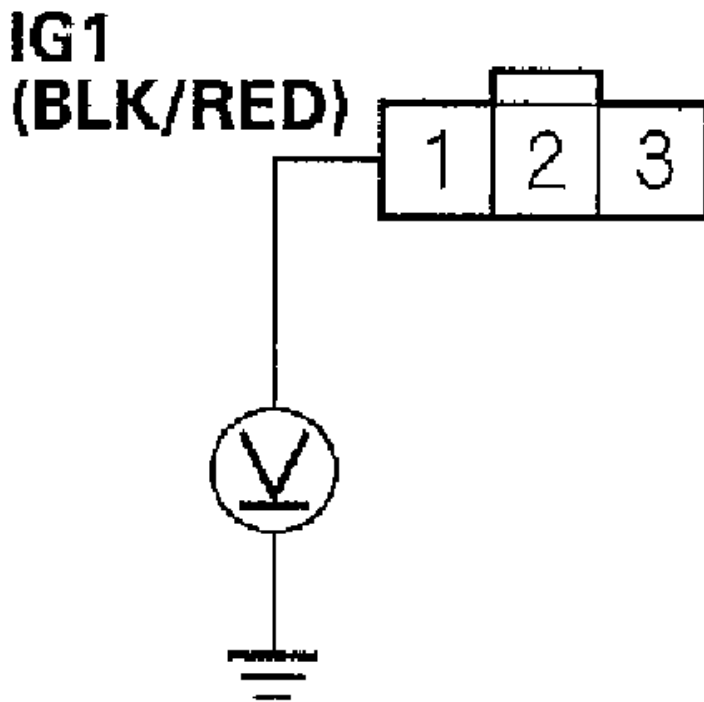
3. Turn the ignition switch OFF.
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch ON (II).
6. Measure voltage between ELD 3P connector terminal No. 1 and body ground.

Is there battery voltage?

YES: Go to step 7.

NO: Repair open in the wire between the No. 18 ACG (15A) fuse and the ELD, then go to step 14 .

ELD 3P CONNECTOR



Wire side of female terminals

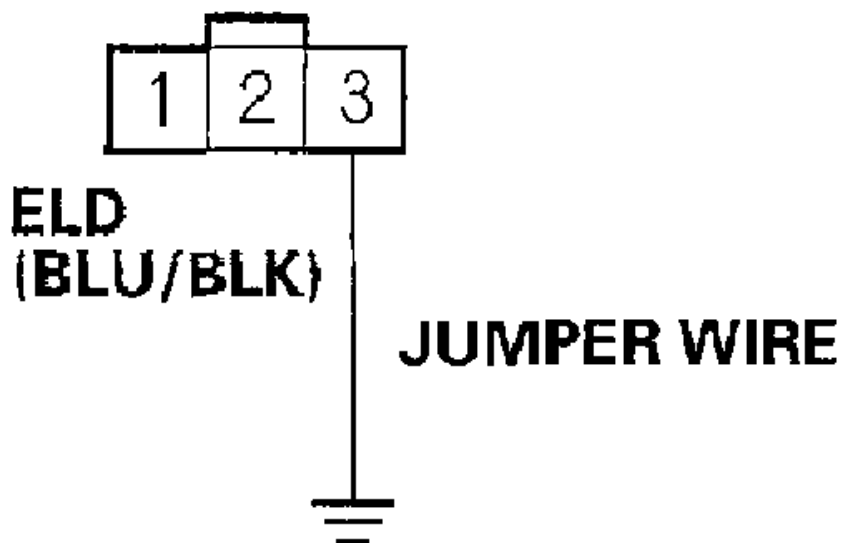
G01822129

Fig. 90: Measuring Voltage Between ELD 3P Connector Terminal No. 1 & Body Ground

7. Turn the ignition switch OFF.

8. Connect ELD 3P connector terminal No. 3 to body ground with a jumper wire.

ELD 3P CONNECTOR



Wire side of female terminals

G01822130

Fig. 91: Connecting ELD 3P Connector Terminal No. 3 To Body Ground With A Jumper Wire

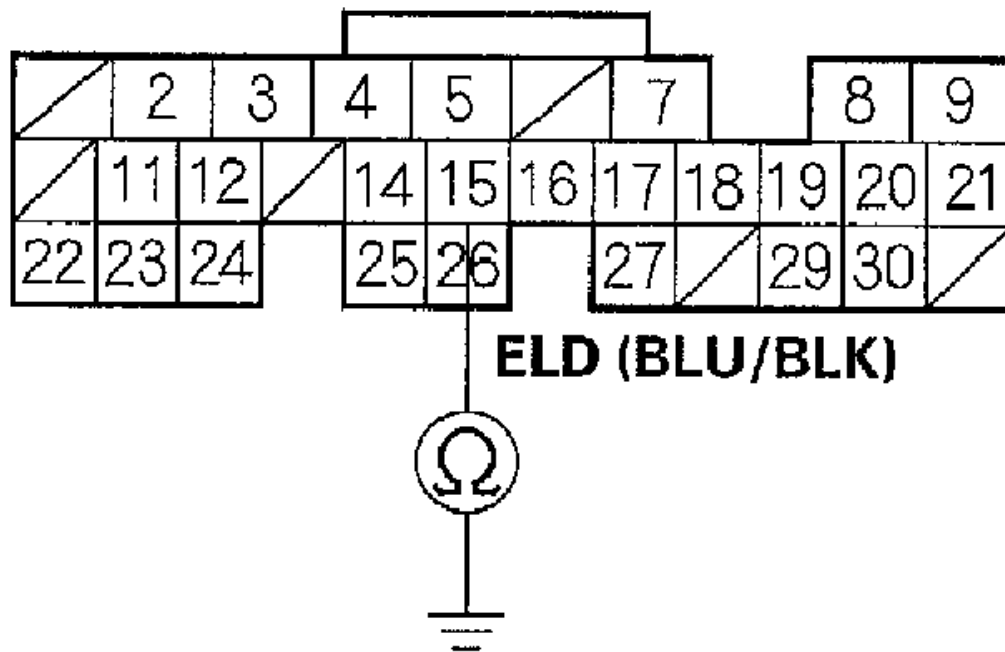
9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector E (31P).
11. Check for continuity between ECM/PCM connector terminal E15 and body ground.

Is there continuity?

YES: Go to step 12.

NO: Repair open in the wire between the ECM/PCM (E15) and the ELD, then go to step 14 .

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G01822131

Fig. 92: Checking For Continuity Between ECM/PCM Connector Terminal E15 & Body Ground

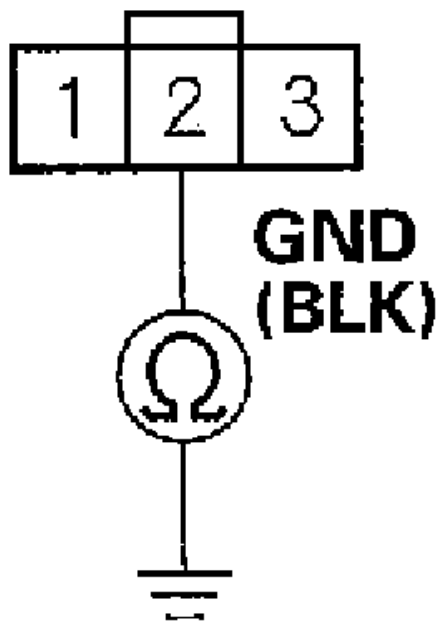
12. Check for continuity between ELD 3P connector terminal No. 2 and body ground.

Is there continuity?

YES: Go to step 13.

NO: Repair open in the wire between the ELD and G201, then go to step 14 .

ELD 3P CONNECTOR



Wire side of female terminals

G01822132

Fig. 93: Checking For Continuity Between ELD 3P Connector Terminal No. 2 & Body Ground

13. Replace the under-hood fuse/relay box (see REMOVAL AND INSTALLATION).
14. Turn the ignition switch ON (II).
15. Reset the ECM/PCM with the HDS.

16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: Go to step 18.

NO: Troubleshooting is complete.

18. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
19. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P1298 is indicated, check for poor connections or loose terminals at the ELD and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P2227: BARO SENSOR RANGE/PERFORMANCE PROBLEM

NOTE: If DTC P0107, P0108, P1128 and/or P1129 are stored at the same time as DTC P2227 troubleshoot those DTCs first, then recheck for DTC P2227.

1. Turn the ignition switch ON (II), and wait 2 seconds.
2. Check the BARO SENSOR in the DATA LIST with the HDS.

Is about 101kPa (760 mm Hg, 29.9 in. Hg), or about 2.9 V at sea level indicated?

YES: Go to step 3.

NO: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3,000 RPM with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under the following conditions, then connect the HDS:
 - Engine coolant temperature more than 158°F (70°C)
 - A/T in D position (M/T in 4th gear)
 - Throttle position between 12 degrees and 20 degrees for 2 seconds
6. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 7.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates NOT COMPLETED, go to step 4 and recheck.

7. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2227 is indicated, check for poor connections or loose terminals at the ECM/PCM then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P2228: BARO SENSOR CIRCUIT LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the BARO SENSOR in the DATA LIST with the HDS.

Is about 53 kPa (397 mm Hg, 15.6 in. Hg), 1.58 V, or less indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time.

3. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2228 is indicated, check for poor connections or loose terminals at the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC P2229: BARO SENSOR CIRCUIT HIGH VOLTAGE

1. Turn the ignition switch ON (II).
2. Check the BARO SENSOR in the DATA LIST with the HDS.

Is about 160 kPa (1200 mm Hg, 47.2 in. Hg), 4.5 V, or higher indicated?

YES: Go to step 3.

NO: Intermittent failure, system is OK at this time.

3. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **HOW TO SUBSTITUTE THE ECM/PCM**).
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2229 is indicated, check for poor connections or loose terminals at the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

DTC U0073: FCAN MALFUNCTION (BUS-OFF); DTC U0155: FCAN MALFUNCTION (GAUGE CONTROL MODULE - ECM/PCM)

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC U0073 and/or U0155 indicated?

YES: Go to step 4.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the gauge control module, VSA control unit, the navigation unit and the ECM/PCM.

4. Check for DTCs in the DTCs MENU in the Body Electrical system with the HDS.

Is DTC B1168, B1169 and/or B1178 indicated?

YES: Go to step 5.

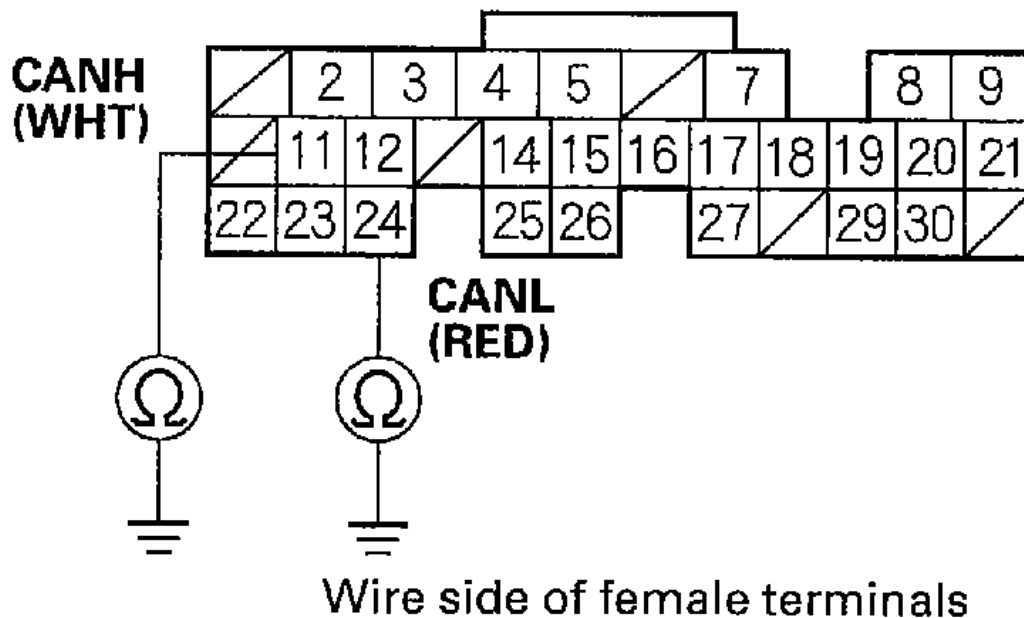
NO: Perform the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

5. Turn the ignition switch OFF.
6. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
7. Disconnect the gauge control module 30P connector.
8. Disconnect the VSA control unit 47P connector.
9. If equipped with the navigation system, disconnect the navigation unit 20P connector.
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector E (31P).
12. Check for continuity between ECM/PCM connector terminals E11, E24 and body ground individually.

Is there continuity?

YES: Repair short in the wire between the gauge control module, VSA control unit, the navigation unit, and the ECM/PCM E11 (E24 - CANL line), then go to step 17 .

NO: Go to step 13.

ECM/PCM CONNECTOR E (31P)

G01822133

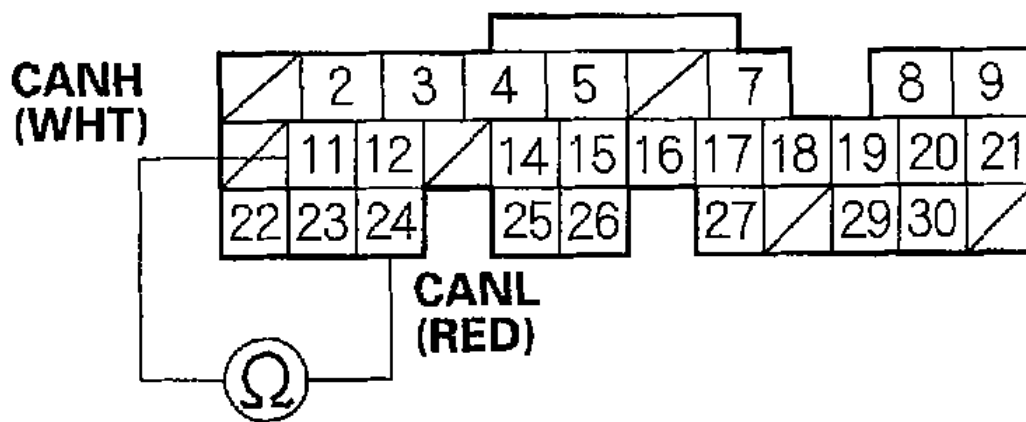
Fig. 94: Checking For Continuity Between ECM/PCM Connector Terminals E11, E24 & Body Ground

13. Check for continuity between ECM/PCM connector terminals E11 and E24.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM E11 (CANH line) and E24 (CANL line), then go to step 17 .

NO: Go to step 14.

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822134

Fig. 95: Checking For Continuity Between ECM/PCM Connector Terminals E11 & E24

14. Check for continuity between ECM/PCM connector terminal E11 and the connector terminals shown in the table. See **Fig. 96** .

Is there continuity between the ECM/PCM terminal and each of the terminals in the chart?

YES: Go to step 15.

NO: Repair open in the wire between the ECM/PCM and the appropriate connector, then go to step 17 .

Connector	Terminal
Gauge control module 30P	No. 12 (WHT)
VSA control unit 47P	No. 14 (WHT)
Navigation unit 20P	No.8 (WHT)

G01822135

Fig. 96: ECM/PCM Connector Terminal E11 Continuity Table

15. Check for continuity between ECM/PCM connector terminal E24 and the connector terminals shown in the table. See **Fig. 97** .

Is there continuity between the ECM/PCM terminal and each of the terminals in the chart?

YES: Go to step 16.

NO: Repair open in the wire between the ECM/PCM and the appropriate connector, then go to step 17 .

Connector	Terminal
Gauge control module 30P	No. 13 (RED)
VSA control unit 47P	No. 30 (RED)
Navigation unit 20P	No.18 (RED)

G01822136

Fig. 97: ECM/PCM Connector Terminal E24 Continuity Table

16. Refer to the following chart. See **Fig. 98** . Select the row that most closely represents the combination of DTCs retrieved from the PGM-FI, VSA, and Body Electrical systems: Check connections at the control module indicated in the last column. If all connections are OK, substitute a known-good control module, then go to step 17 and recheck.

Are the DTCs still indicated?

YES: Substitute the remaining control modules, one at time, until the DTCs are no longer present, then replace that control module. After replacing the faulty control module, go to step 17.

NO: Replace the faulty control module, then go to step 17.

PGM-FI	ABS/TCS	Body Electrical	Control module
U0155	86-1	B1168 B1169 B1178	Gauge Control Module
U0073 U0122 U0155	68-1 86-1	B1168 B1169 B1178	ECM/PCM
U0073 U0122 U0155	68-1 86-1	B1168 B1178	VSA control unit

G01822137

Fig. 98: Control Module DTC Symptom Table

17. Reconnect all the connectors.
18. Turn the ignition switch ON (II).
19. Reset the ECM/PCM with the HDS.
20. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
21. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC U0073 and/or U0155 is indicated, check for poor connections or loose terminals at the gauge assembly, VSA control unit, navigation unit, and the ECM/PCM, then go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

DTC U0122: FCAN MALFUNCTION (VSA-ECM/PCM)

NOTE: If DTC U0073 is stored at the same time as DTC U0122, troubleshoot DTC U0073 first, then recheck for DTC U0122.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC U0122 indicated?

YES: Go to step 4.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the gauge assembly, the VSA control unit, and the ECM/PCM.

4. Check for DTCs in the DTCs MENU with the HDS.

Is TCS DTC 86 indicated?

YES: Go to step 5.

NO: Go to step 9 .

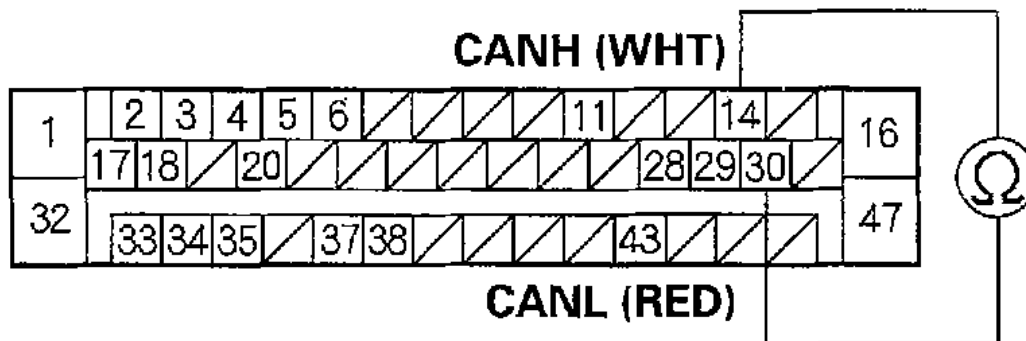
5. Turn the ignition switch OFF.
6. Disconnect the VSA control unit 47P connector.
7. Check for continuity between VSA control unit 47P connector terminals No. 14 and No. 30.

Is there continuity?

YES: Go to step 8.

NO: Repair open in the wire between the VSA control unit No. 14 (No. 30 - CANL line) and the ECM/PCM E11 (E24 - CANL line), then go to step 14 .

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

G01822138

Fig. 99: Checking For Continuity Between VSA Control Unit 47P Connector Terminals No. 14 & No. 30

8. Check for poor connection at the cabin wire harness/dashboard wire harness 20P connector.

Is it OK?

YES: Substitute a known-good VSA control unit, then go to step 14 and recheck. If no DTCs are indicated, replace the original VSA control unit, then go to step 14 .

NO: Reconnect the cabin wire harness/dashboard wire harness 20P connector, then go to step 14 .

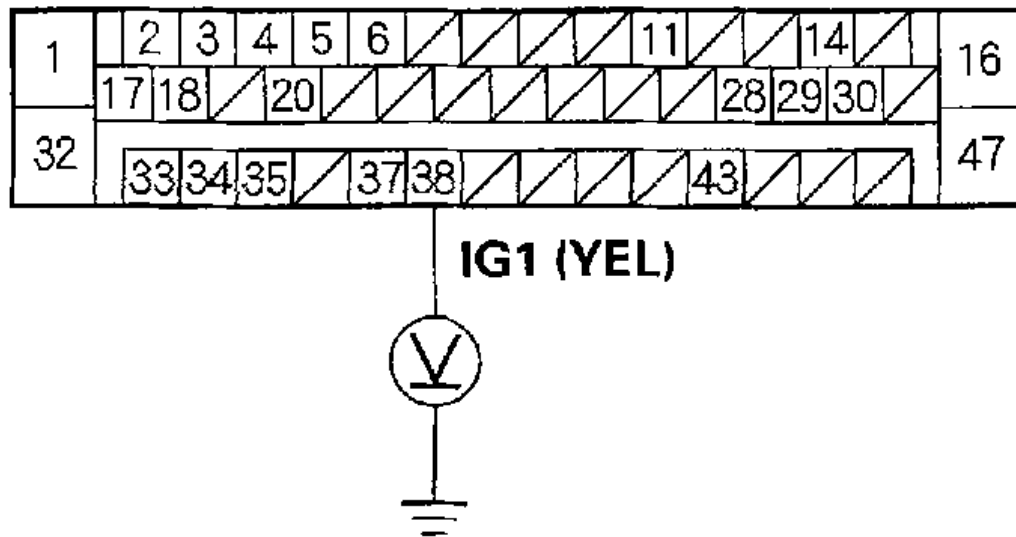
9. Turn the ignition switch OFF.
10. Disconnect the VSA control unit 47P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between VSA control unit 47P connector terminal No. 38 and body ground.

Is there battery voltage?

YES: Go to step 13.

NO: Check the No. 21 IG METER (7.5A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between the No. 21 IG METER (7.5A) fuse and the VSA control unit, then go to step 14 .

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

G01822139

Fig. 100: Measuring Voltage Between VSA Control Unit 47P Connector Terminal No. 38 & Body Ground

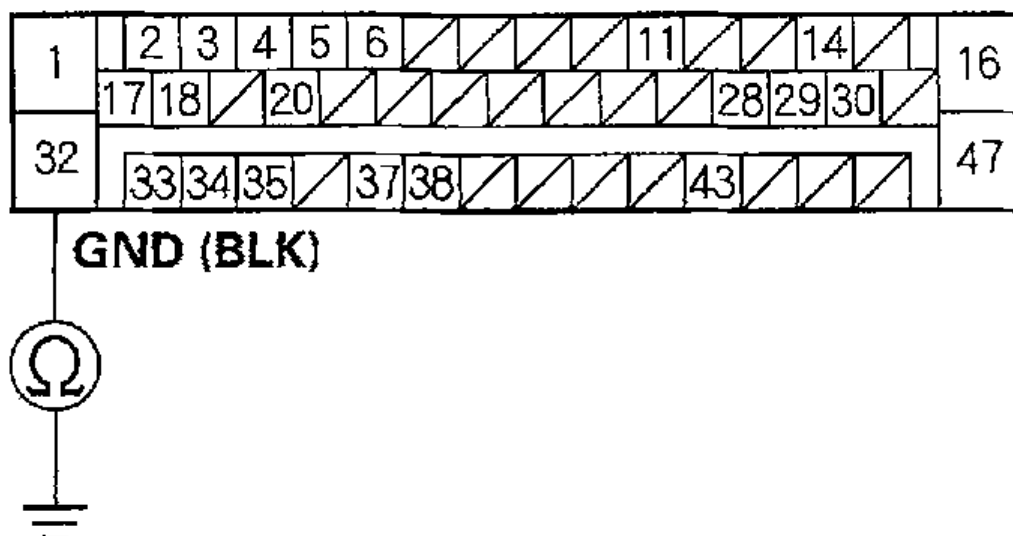
13. Check for continuity between VSA control unit 47P connector terminal No. 32 and body ground.

Is there continuity?

YES: Substitute a known-good VSA control unit, then go to step 14 and recheck. If no DTCs are indicated, replace the original VSA control unit, then go to step 14.

NO: Repair open in the wire between the VSA control unit and G203, then go to step 14.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

G01822140

Fig. 101: Checking For Continuity Between VSA Control Unit 47P Connector Terminal No. 32 & Body Ground

14. Turn the ignition switch ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC U0122 is indicated, check for poor connections or loose terminals at the gauge assembly, the VSA control unit, and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC troubleshooting.

NO: Troubleshooting is complete.

MIL CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch ON (II).

2. Do the gauge self-diagnostic procedure (see **SELF-DIAGNOSTIC PROCEDURE**).

Does the MIL indicator flash?

YES: Go to step 3.

NO: Substitute a known-good gauge assembly (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck. If the MIL circuit is OK, replace the original gauge assembly.

3. Turn the ignition switch OFF.
4. Turn the ignition switch ON (II), and watch the MIL.

Does the MIL stay off?

YES: Go to step 17 .

NO: Go to step 5.

5. Turn the ignition switch OFF.
6. Turn the ignition switch ON (II), wait 20 seconds, and watch the MIL.

Does the MIL stay on or flash more than 5 times?

YES: Go to step 7.

NO: The MIL circuit is OK.

7. Turn the ignition switch OFF.
8. Connect the HDS. (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
9. Turn the ignition switch ON (II), and read the HDS.

Does the HDS communicate with the ECM/PCM?

YES: Go to step 10.

NO: Go to "DLC Circuit Troubleshooting" (see **DLC CIRCUIT TROUBLESHOOTING**). If no problem is found in the DLC troubleshooting, go to step 21 .

10. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: Go to the DTC Troubleshooting Index.

NO: Go to step 11.

11. Check the MIL in the DATA LIST with the HDS.

Is ON indicated?

YES: Go to step 12.

NO: Substitute a known-good gauge assembly, and recheck. If the MIL circuit is OK, replace the original gauge assembly.

12. Check the SCS in the DATA LIST with the HDS.

Is a short indicated?

YES: Go to step 13.

NO: Update the ECM/PCM If it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original

ECM/PCM.

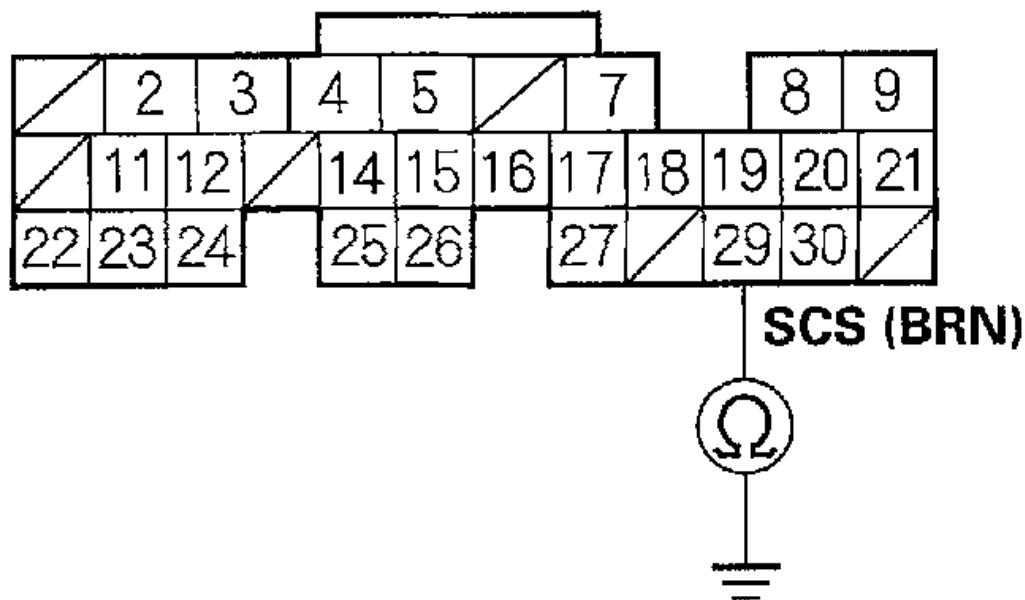
13. Turn the ignition switch OFF.
14. Jump the SCS line with the HDS.
15. Disconnect ECM/PCM connector E (31P).
16. Check for continuity between ECM/PCM connector terminal E29 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (E29) and the DLC.

NO: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G01822141

Fig. 102: Checking For Continuity Between ECM/PCM Connector Terminal E29 & Body Ground

17. Try to start the engine.

Did the engine not start, or does it idle rough?

YES: Go to step 22 .

NO: Go to step 18.

18. Turn the ignition switch OFF.

19. Connect the HDS (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).

20. Turn the ignition switch ON (II), and read the HDS.

Does the HDS communicate with the ECM/PCM?

YES: Go to step 21.

NO: Go to "DLC Circuit Troubleshooting" (see **DLC CIRCUIT TROUBLESHOOTING**). If no problem is found in the DLC troubleshooting, go to step 21.

21. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC U0073 and/or U0155 indicated?

YES: Go to the indicated DTC troubleshooting.

NO: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

22. Turn the ignition switch OFF.

23. Inspect the No. 23 + B IG MAIN (50A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

YES: Repair open in the wire between the No. 20 IG (50A) fuse and the ignition switch. If the wire is OK, go to step 24.

NO: Repair short in the wire between No. 23 + B IG MAIN (50A) fuse and the under-dash fuse/relay box. Also replace the No. 23 + B IG MAIN (50A) fuse.

24. Inspect the No. 8 FI ECU (ECM/PCM) (15A) fuse in the under-hood fuse/relay box.

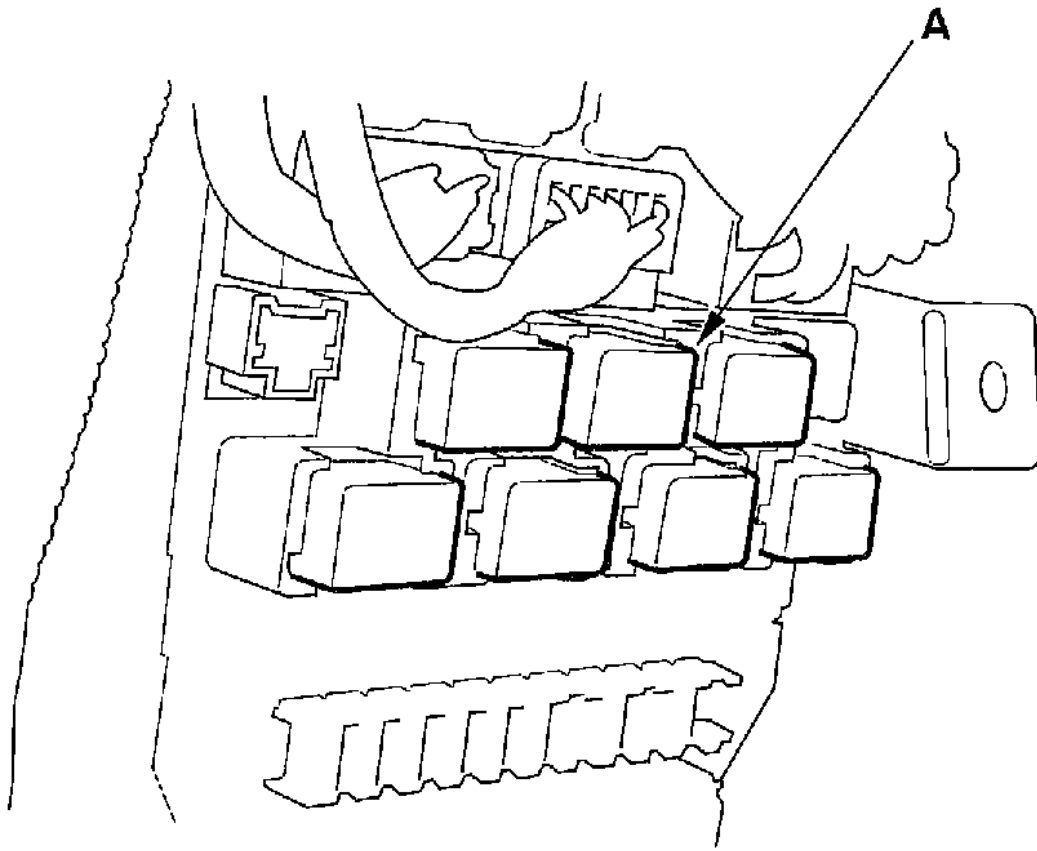
Is the fuse OK?

YES: Go to step 31 .

NO: Go to step 25.

25. Remove the blown No. 8 FI ECU (ECM/PCM) (15A) fuse from the under-dash fuse/relay box.

26. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREA**), then remove PGM-FI main relay 1 (FI MAIN) (A) from the under-hood fuse/relay box.



G01822142

Fig. 103: Removing PGM-FI Main Relay 1 (FI MAIN) From The Under-Hood Fuse/Relay Box

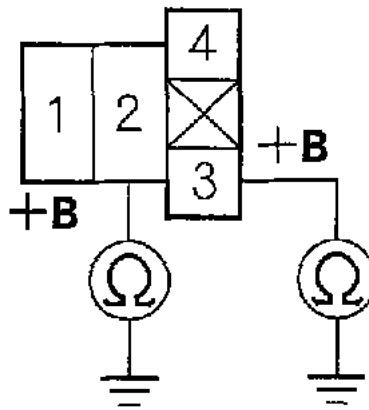
27. Check for continuity between body ground and PGM-FI main relay 1 (FI MAIN) 4P connector terminals No. 2 and No. 3 individually.

Is there continuity?

YES: Repair short in the wire between the No. 8 FI ECU (ECM/PCM) (15A) fuse and PGM-FI main relay 1. Also replace the No. 8 FI ECU (ECM/PCM) (15A) fuse.

NO: Go to step 28.

PGM-FI MAIN RELAY 1 (FI MAIN) 4P CONNECTOR



Terminal side of female terminals

G01822143

Fig. 104: Checking For Continuity Between Body Ground & PGM-FI Main Relay 1 (FI MAIN) 4P Connector Terminals No. 2 & No. 3

28. Disconnect each of the components or connectors below, one at a time, and check for continuity between PGM-FI main relay 1 (FI MAIN) 4P connector terminal No. 1 and body ground:

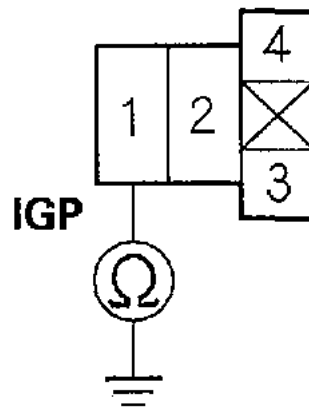
- PGM-FI main relay 2 (FUEL PUMP)
- ECM/PCM connector A (31P)
- Each injector 2P connector
- Camshaft position (CMP) sensor B 3P connector
- Crankshaft position (CKP) sensor 3P connector

Is there continuity?

YES: Go to step 29.

NO: Replace the component that made the short to body ground go away when disconnected. If the item is the ECM/PCM, update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM. Also replace the No. 8 FI ECU (ECM/PCM) (15A) fuse.

PGM-FI MAIN RELAY 1 (FI MAIN) 4P CONNECTOR



Terminal side of female terminals

G01822144

Fig. 105: Checking For Continuity Between PGM-FI Main Relay 1 (FI MAIN) 4P Connector Terminal No. 1 & Body Ground

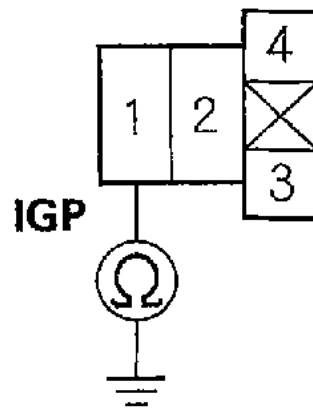
29. Disconnect the connectors from these components:
 - PGM-FI main relay 2 (FUEL PUMP)
 - ECM/PCM connector A (31P)
 - Injectors
 - Camshaft position (CMP) sensor B
 - Crankshaft position (CKP) sensor
30. Check for continuity between PGM-FI main relay 1 (FI MAIN) 4P connector terminal No. 1 and body ground.

Is there continuity?

YES: Repair short in the wire between PGM-FI main relay 1 (FI MAIN) and each item. Also replace the No. 8 FI ECU (ECM/PCM) (15A) fuse.

NO: Replace PGM-FI main relay 1 (FI MAIN). Also replace the No. 8 FI ECU (ECM/PCM) (15A) fuse.

PGM-FI MAIN RELAY 1 (FI MAIN) 4P CONNECTOR



Terminal side of female terminals

G01822145

Fig. 106: Checking For Continuity Between PGM-FI Main Relay 1 (FI MAIN) 4P Connector Terminal No. 1 & Body Ground

31. Inspect the No. 19 FUEL PUMP (15A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES: Go to step 44 .

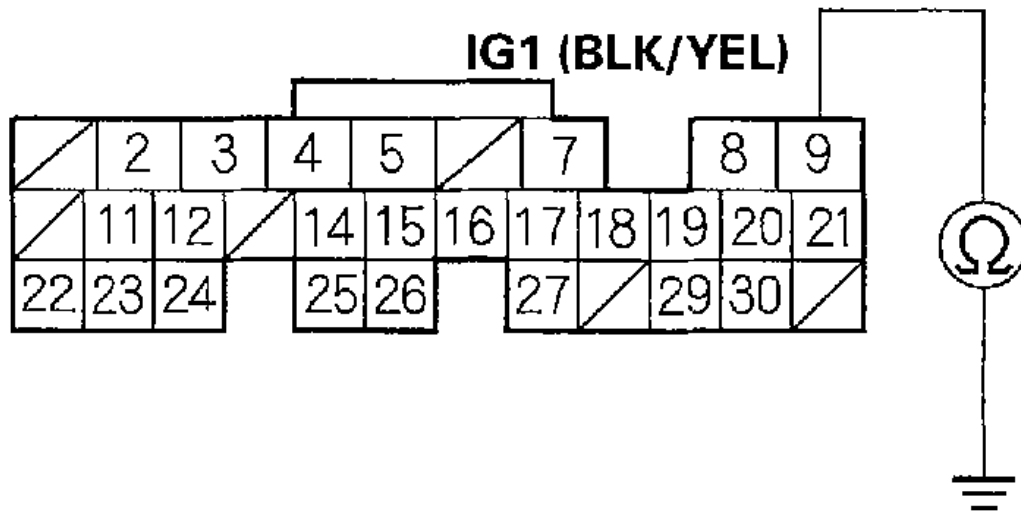
NO: Go to step 32.

32. Remove the blown No. 19 FUEL PUMP (15A) fuse from the under-dash fuse/relay box.
33. Jump the SCS line with the HDS.
34. Disconnect ECM/PCM connector E (31P).
35. Check for continuity between ECM/PCM connector terminal E9 and body ground.

Is there continuity?

YES: Go to step 36.

NO: Replace the No. 19 FUEL PUMP (15A) fuse, and update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822146

Fig. 107: Checking For Continuity Between ECM/PCM Connector Terminal E9 & Body Ground

36. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREA**), then remove PGM-FI main relay 2 (FUEL PUMP) (A) from the under-hood fuse/relay box.

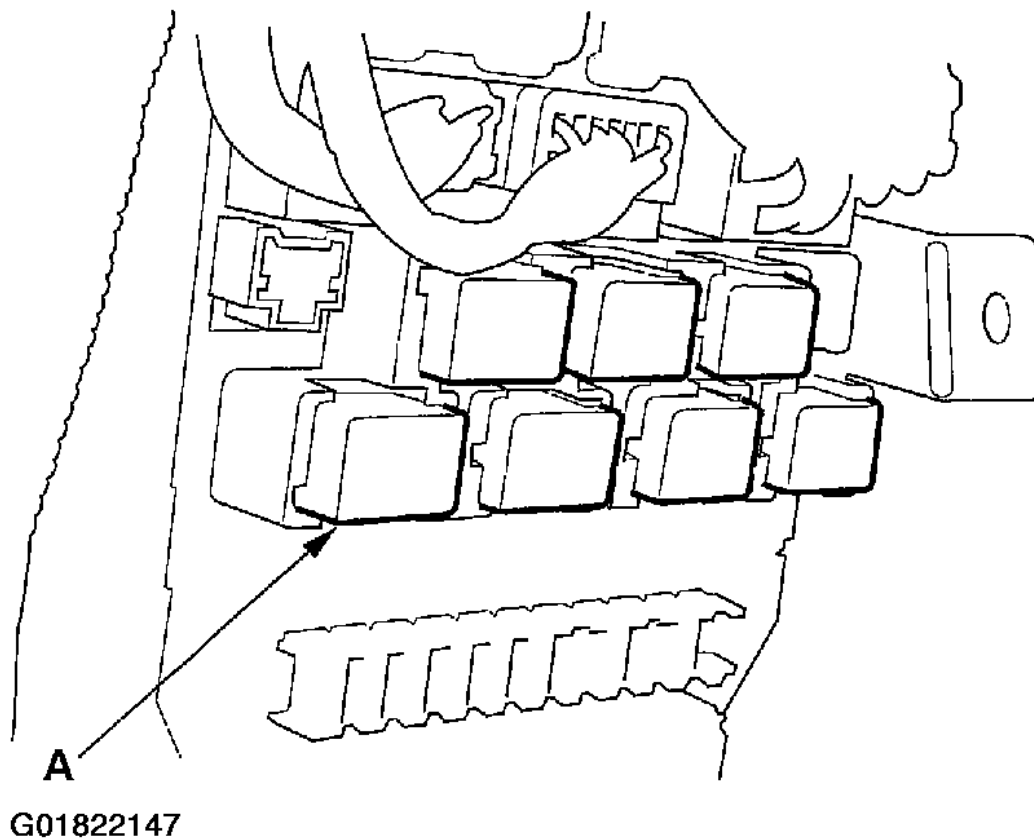


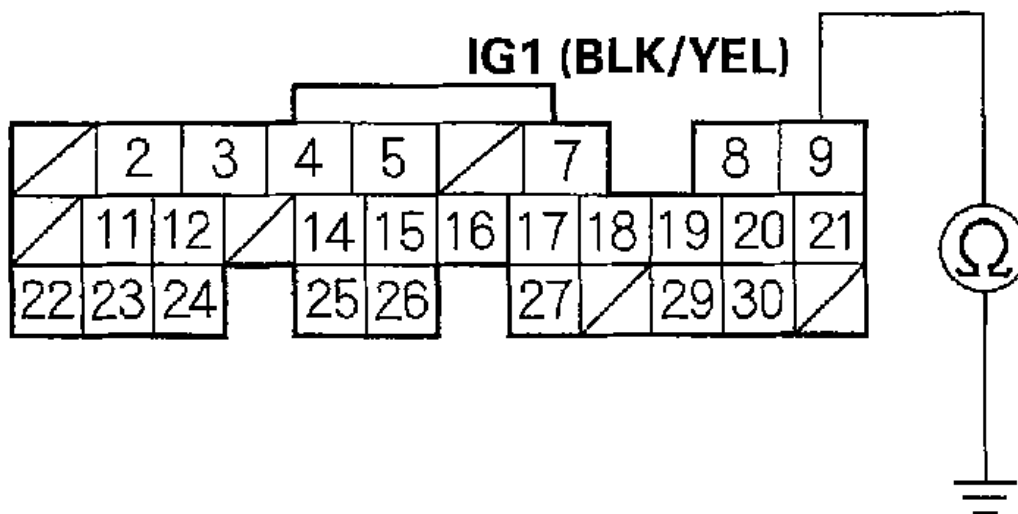
Fig. 108: Removing PGM-FI Main Relay 2 (FUEL PUMP) From The Under-Hood Fuse/Relay Box

37. Check for continuity between ECM/PCM connector terminal E9 and body ground.

Is there continuity?

YES: Repair short in the wire between the No. 19 FUEL PUMP (15A) fuse and the ECM/PCM (E9), or between the No. 19 FUEL PUMP (15A) fuse and PGM-FI main relay 2 (FUEL PUMP). Also replace the No. 19 FUEL PUMP (15A) fuse.

NO: Go to step 38.

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822148

Fig. 109: Checking For Continuity Between ECM/PCM Connector Terminal E9 & Body Ground

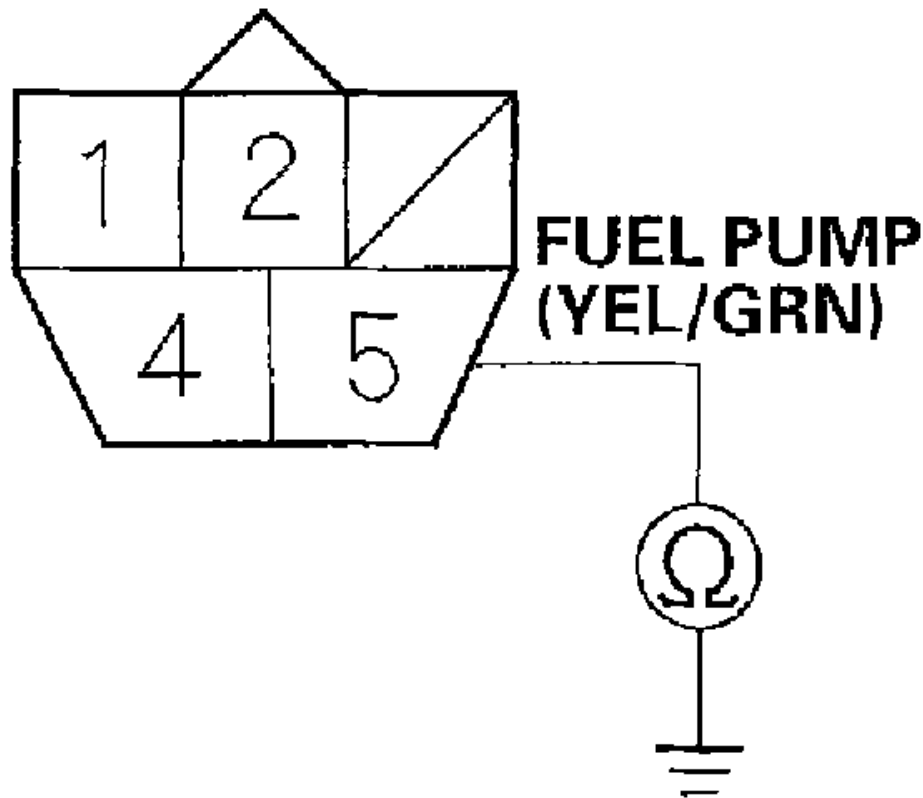
38. Remove the trunk floor trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
39. Remove the access panel from the floor (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**).
40. Disconnect the fuel pump 5P connector.
41. Check for continuity between fuel pump 5P connector terminal No. 5 and body ground.

Is there continuity?

YES: Repair short in the wire between the fuel pump and PGM-FI main relay 2 (FUEL PUMP). Also replace the No. 19 FUEL PUMP (15A) fuse.

NO: Go to step 42.

FUEL PUMP 5P CONNECTOR



Wire side of female terminals

G01822149

Fig. 110: Checking For Continuity Between Fuel Pump 5P Connector Terminal No. 5 & Body Ground

42. Reinstall PGM-FI main relay 2 (FUEL PUMP) (A).

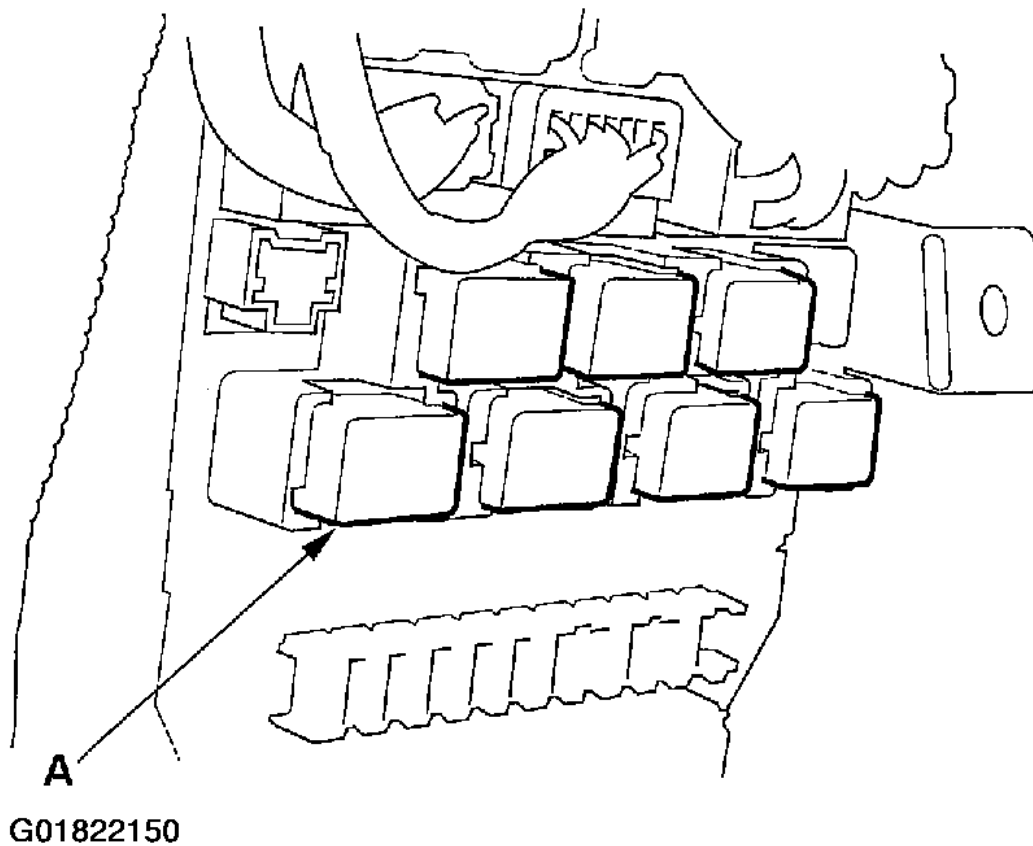


Fig. 111: Reinstalling PGM-FI Main Relay 2 (FUEL PUMP)

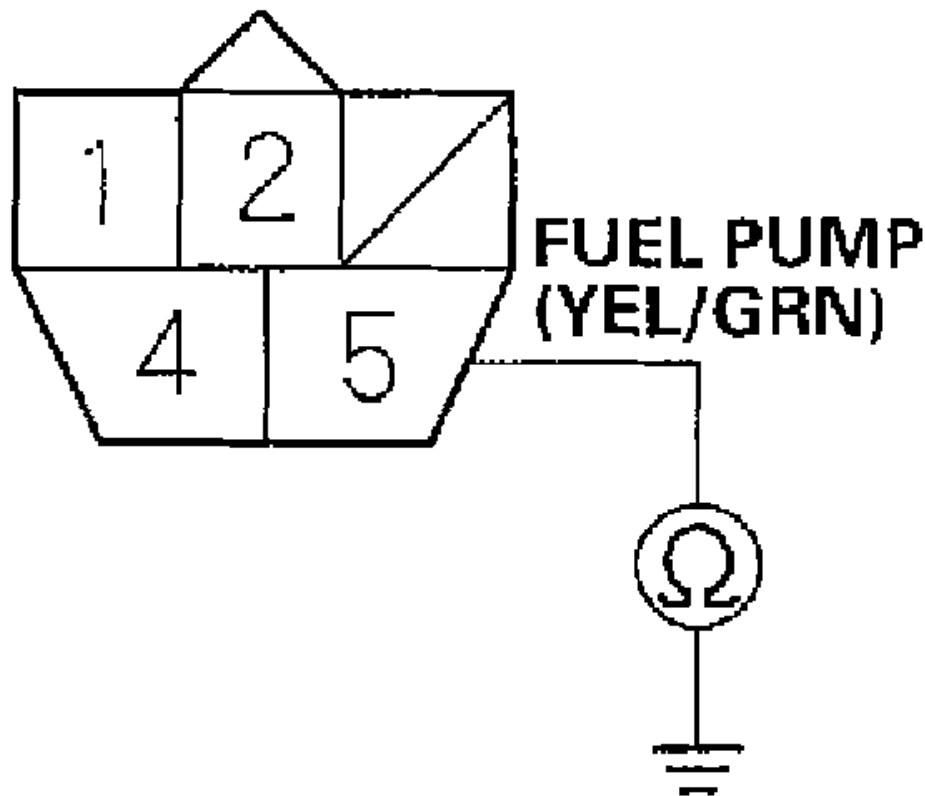
43. Check for continuity between fuel pump 5P connector terminal No. 5 and body ground.

Is there continuity?

YES: Replace PGM-FI main relay 2 (FUEL PUMP). Also replace the No. 19 FUEL PUMP (15A) fuse.

NO: Check the fuel pump, and replace it if necessary. Also replace the No. 19 FUEL PUMP (15A) fuse.

FUEL PUMP 5P CONNECTOR



Wire side of female terminals

G01822151

Fig. 112: Checking For Continuity Between Fuel Pump 5P Connector Terminal No. 5 & Body Ground

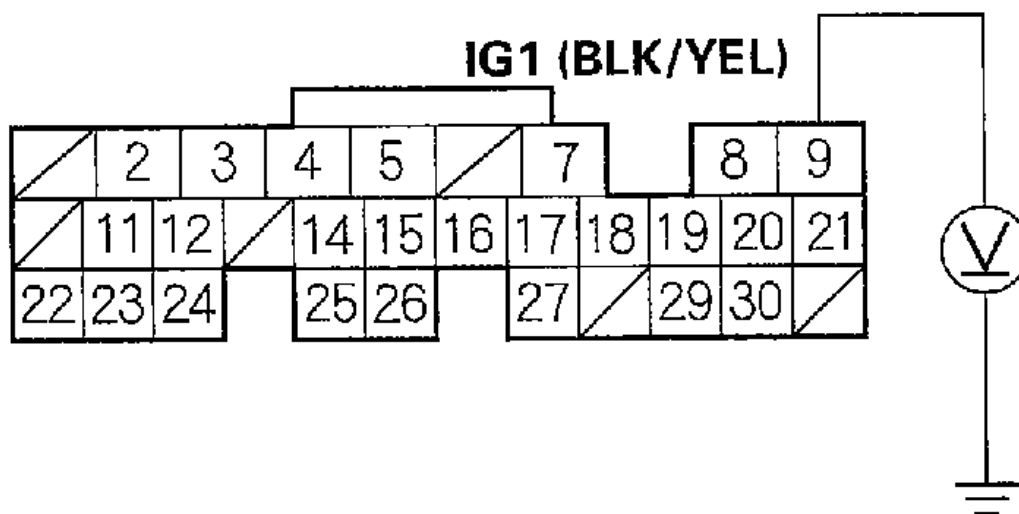
44. Jump the SCS line with the HDS.
45. Disconnect ECM/PCM connector E (31P).
46. Turn the ignition switch ON (II).
47. Measure voltage between ECM/PCM connector terminal E9 and body ground.

Is there battery voltage?

YES: Go to step 48.

NO: Repair open in the wire between the No. 19 FUEL PUMP (15A) fuse and the ECM/PCM (E9).

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G01822152

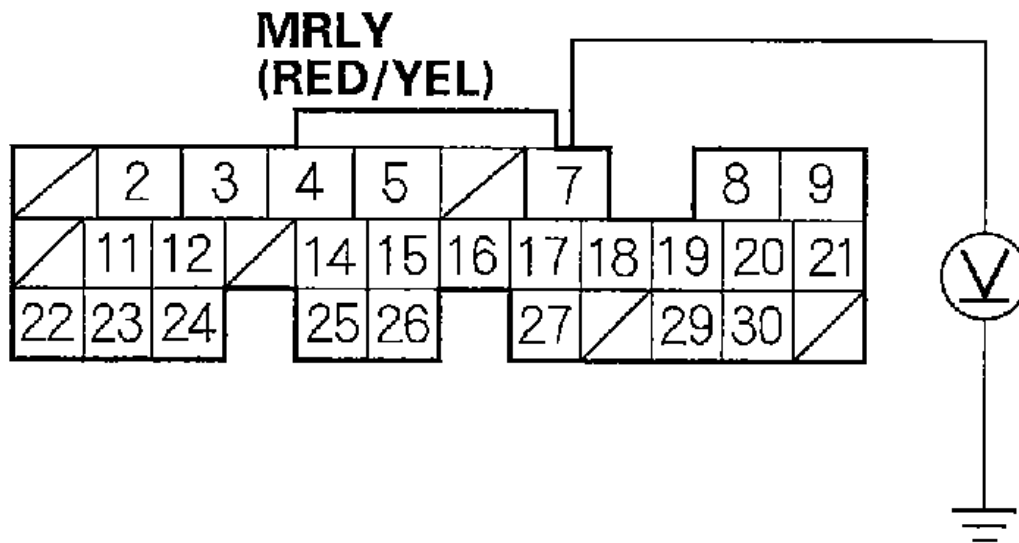
Fig. 113: Measuring Voltage Between ECM/PCM Connector Terminal E9 & Body Ground

48. Measure voltage between ECM/PCM connector terminal E7 and body ground.

Is there battery voltage?

YES: Go to step 53 .

NO: Go to step 49.

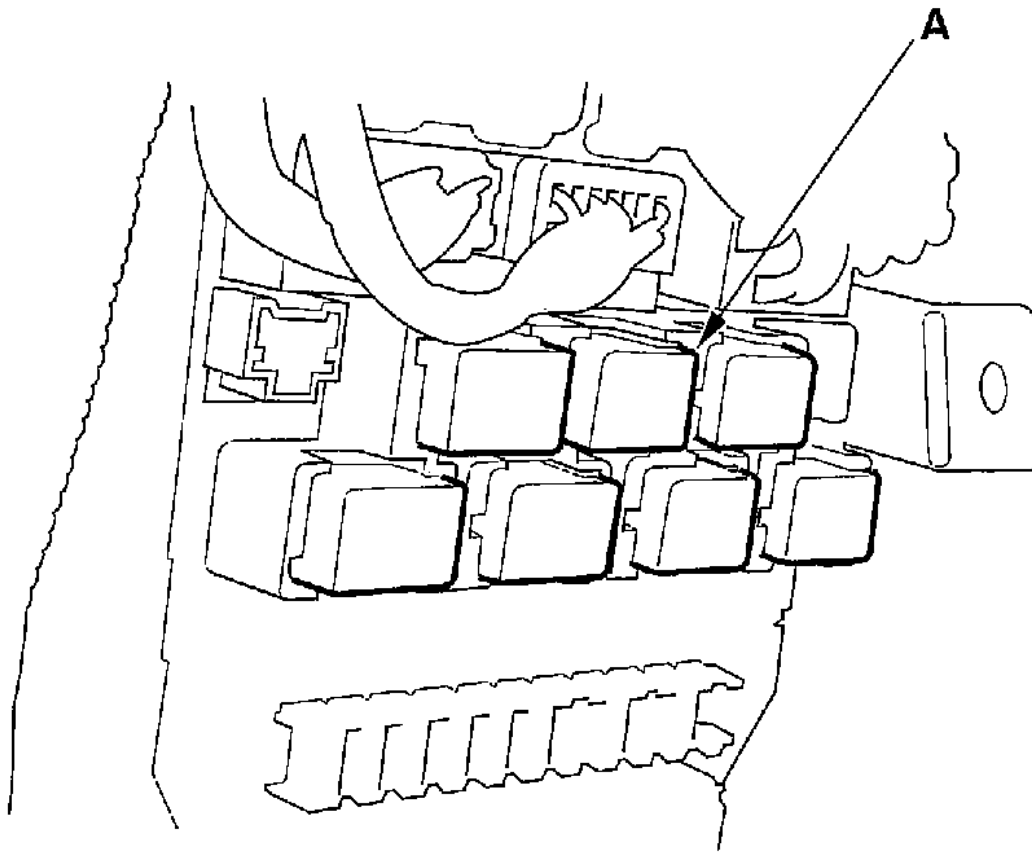
ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822153

Fig. 114: Measuring Voltage Between ECM/PCM Connector Terminal E7 & Body Ground

49. Turn the ignition switch OFF.
50. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREA**), then remove PGM-FI main relay 1 (FI MAIN) (A) from the under-hood fuse/relay box.



G01822154

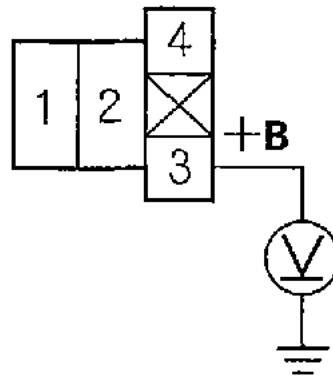
Fig. 115: Removing PGM-FI Main Relay 1 (FI MAIN) From The Under-Hood Fuse/Relay Box

51. Measure voltage between PGM-FI main relay 1 (FI MAIN) 4P connector terminal No. 3 and body ground.

Is there battery voltage?

YES: Go to step 52.

NO: Repair open in the wire between the No. 8 FI ECU (ECM/PCM) (15A) fuse and PGM-FI main relay 1.

PGM-FI MAIN RELAY 2 (FUEL PUMP) 4P CONNECTOR

Terminal side of female terminals

G01822155

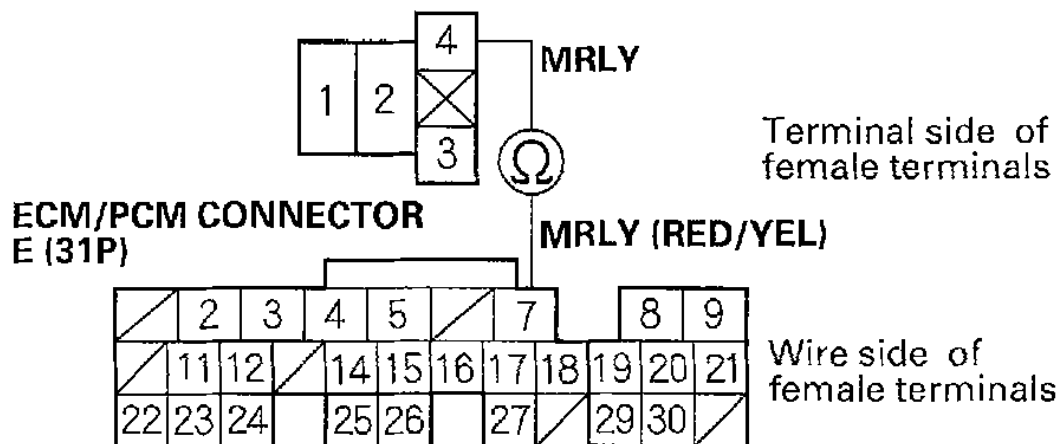
Fig. 116: Measuring Voltage Between PGM-FI Main Relay 1 (FI MAIN) 4P Connector Terminal No. 3 & Body Ground

52. Check for continuity between PGM-FI main relay 1 (FI MAIN) 4P connector terminal No. 4 and ECM/PCM connector terminal E7.

Is there continuity?

YES: Test PGM-FI main relay 1 (FI MAIN) (see **RELAYS**). If the relay is OK, update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Repair open in the wire between PGM-FI main relay 1 (FI MAIN) and the ECM/PCM (E7).

PGM-FI MAIN RELAY 1 (FI MAIN) 4P CONNECTOR

G01822156

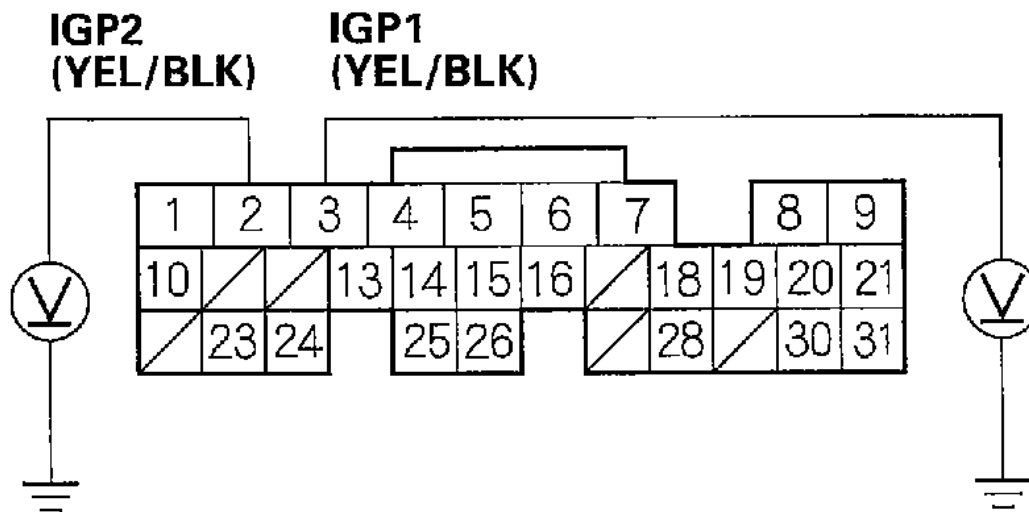
Fig. 117: Checking For Continuity Between PGM-FI Main Relay 1 (FI MAIN) 4P Connector Terminal No. 4 & ECM/PCM Connector Terminal E7

53. Reconnect ECM/PCM connector E (31P).
54. Turn the ignition switch ON (II).
55. Measure voltage between body ground and ECM/PCM connector terminals A2 and A3 individually.

Is there battery voltage?

YES: Go to step 62 .

NO: Go to step 56.

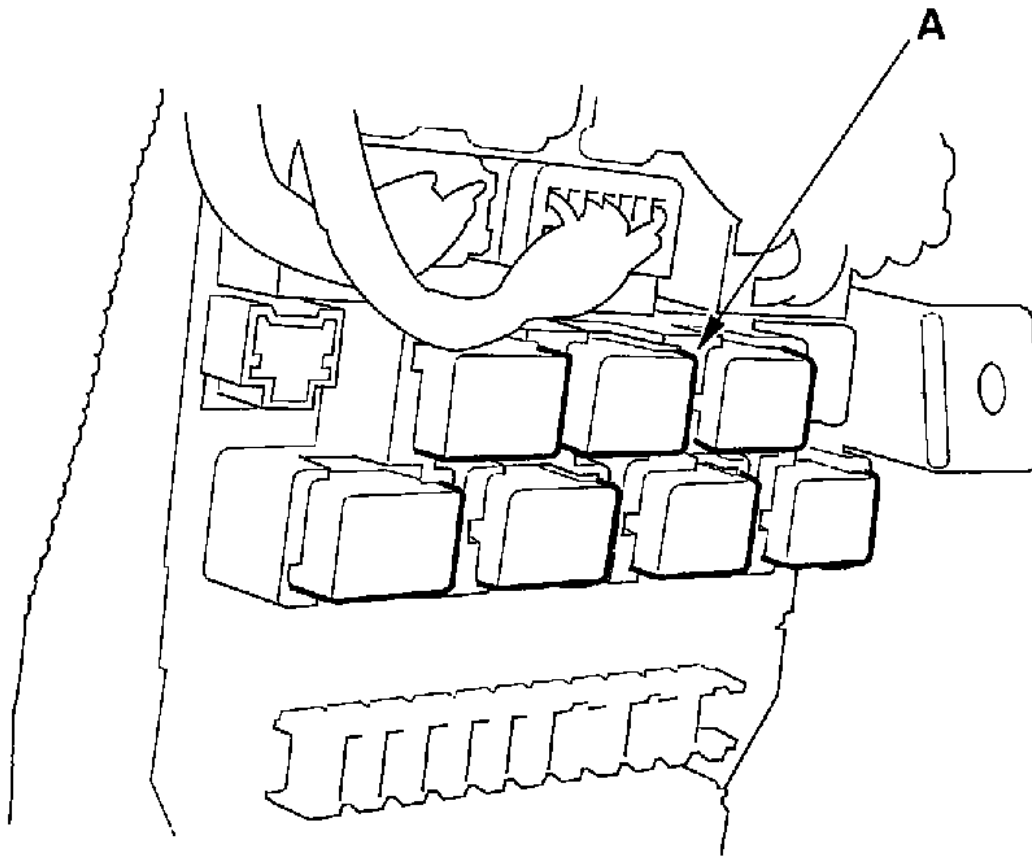
ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822157

Fig. 118: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminals A2 & A3

56. Turn the ignition switch OFF.
57. Remove PGM-FI main relay 1 (FI MAIN) (A).



G01822158

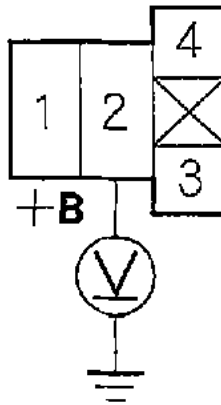
Fig. 119: Removing PGM-FI Main Relay 1 (FI MAIN)

58. Turn the ignition switch ON (II).
59. Measure voltage between PGM-FI main relay 1 4P connector terminal No. 2 and body ground.

Is there battery voltage?

YES: Go to step 60.

NO: Repair open in the wire between the No. 8 FI ECU (ECM/PCM) (15A) fuse and PGM-FI main relay 1 (FI MAIN).

PGM-FI MAIN RELAY 1 (FI MAIN) 4P CONNECTOR

Terminal side of female terminals

G01822159

Fig. 120: Measuring Voltage Between PGM-FI Main Relay 1 4P Connector Terminal No. 2 & Body Ground

60. Turn the ignition switch OFF.
61. Check for continuity between PGM-FI main relay 1 (FI MAIN) 4P connector terminal No. 1 and ECM/PCM connector terminals A2 and A3 individually.

Is there continuity?

YES: Replace PGM-FI main relay 1 (FI MAIN).

NO: Repair open in the wire between PGM-FI main relay 1 (FI MAIN) and the ECM/PCM (A2, A3).

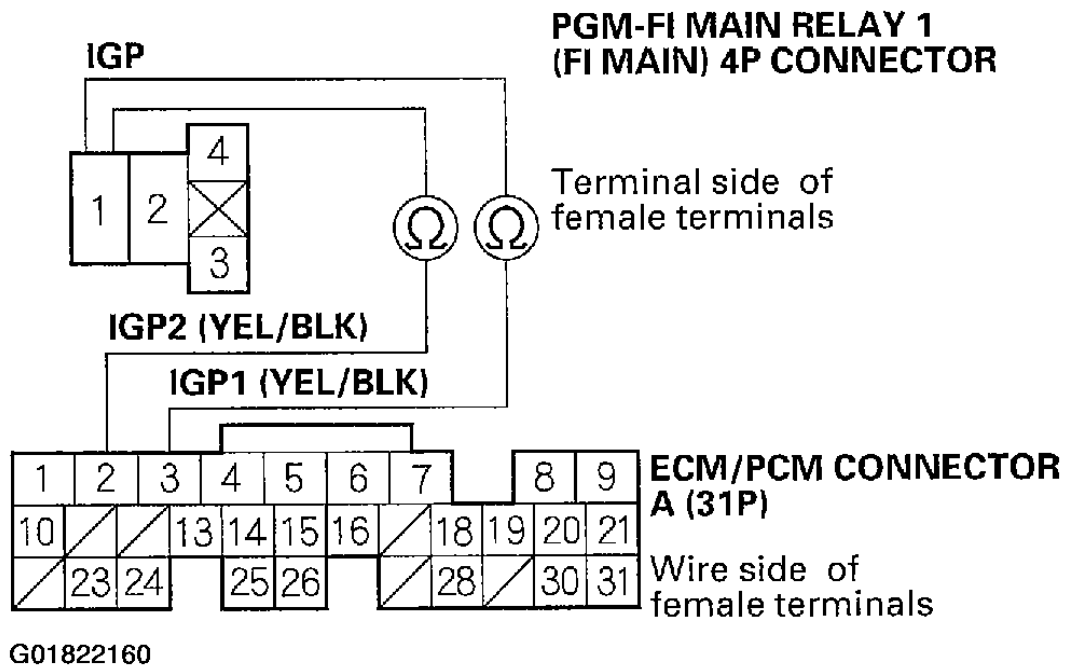


Fig. 121: Checking For Continuity Between PGM-FI Main Relay 1 (FI MAIN) 4P Connector Terminal No. 1 & ECM/PCM Connector Terminals A2 & A3

62. Measure voltage between body ground and ECM/PCM connector terminals A4, A5, A8 and A9 individually.

Is there more than 0.2 V?

YES: Repair open in the wire(s) that had more than 0.2 V between G101 and the ECM/PCM (A4, A5, A8, A9).

NO: Go to step 63.

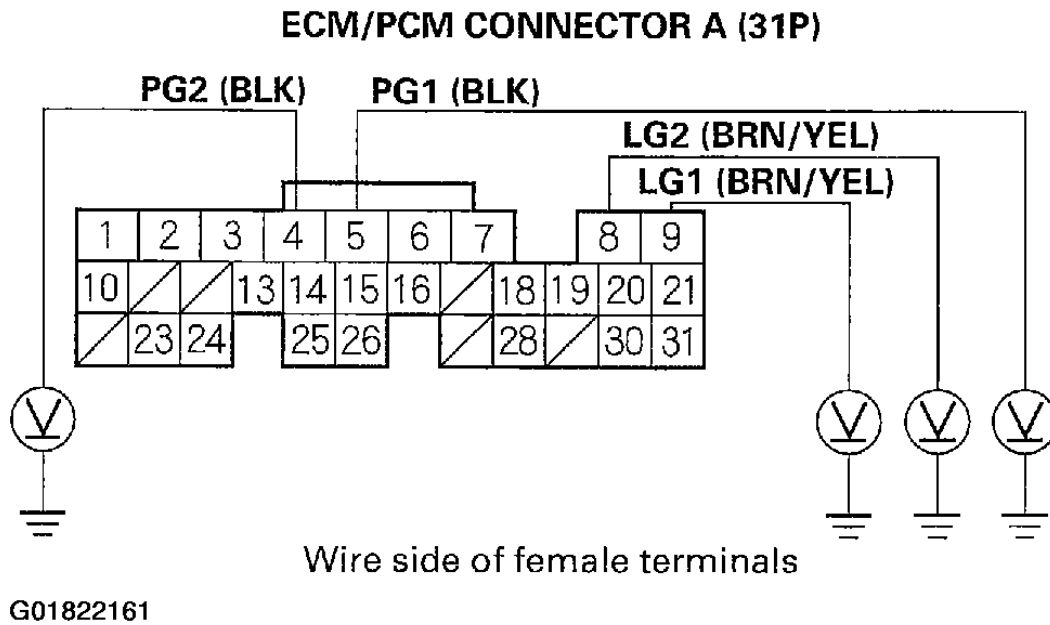


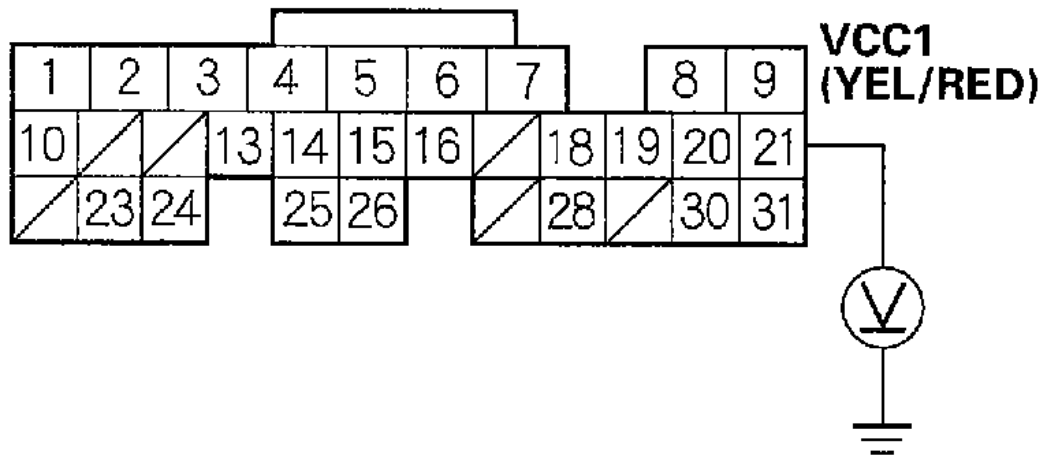
Fig. 122: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminals A4, A5, A8 & A9

63. Measure voltage between body ground and ECM/PCM connector terminal A21.

Is there more than 5 V?

YES: Go to step 71 .

NO: Go to step 64.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822162

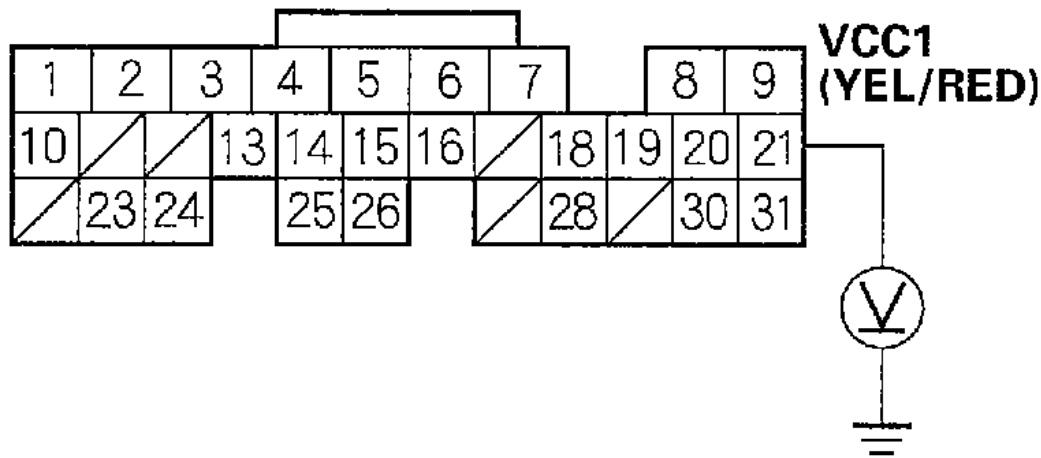
Fig. 123: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminal A21

64. Turn the ignition switch OFF.
65. Disconnect the connector from each of these sensors, one at a time, and measure voltage between body ground and ECM/PCM connector terminal A21 with the ignition switch ON (II):
 - Manifold absolute pressure (MAP) sensor
 - Accelerator pedal position (APP) sensor
 - Mainshaft speed sensor (A/T)

Is there about 5 V?

YES: Replace the sensor that restored 5 V when disconnected.

NO: Go to step 66.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822163

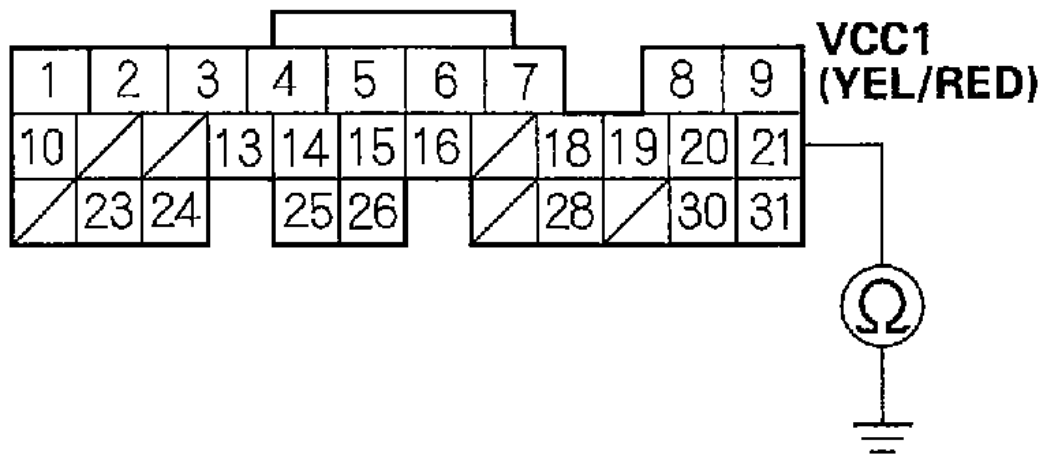
Fig. 124: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminal A21

66. Turn the ignition switch OFF.
67. Jump the SCS line with the HDS.
68. Disconnect the connectors from the following sensors:
 - Manifold absolute pressure (MAP) sensor
 - Accelerator pedal position (APP) sensor
 - Mainshaft speed sensor (A/T)
69. Disconnect ECM/PCM connector A (31P).
70. Check for continuity between ECM/PCM connector terminal A21 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A21) and the MAP sensor, APP sensor or mainshaft speed sensor (A/T).

NO: Update the ECM/PCM if it does not have the latest software, or substitute a known-good, ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication does away with a known-good ECM/PCM, replace the original ECM/PCM.

ECM/PCM CONNECTOR A (31P)

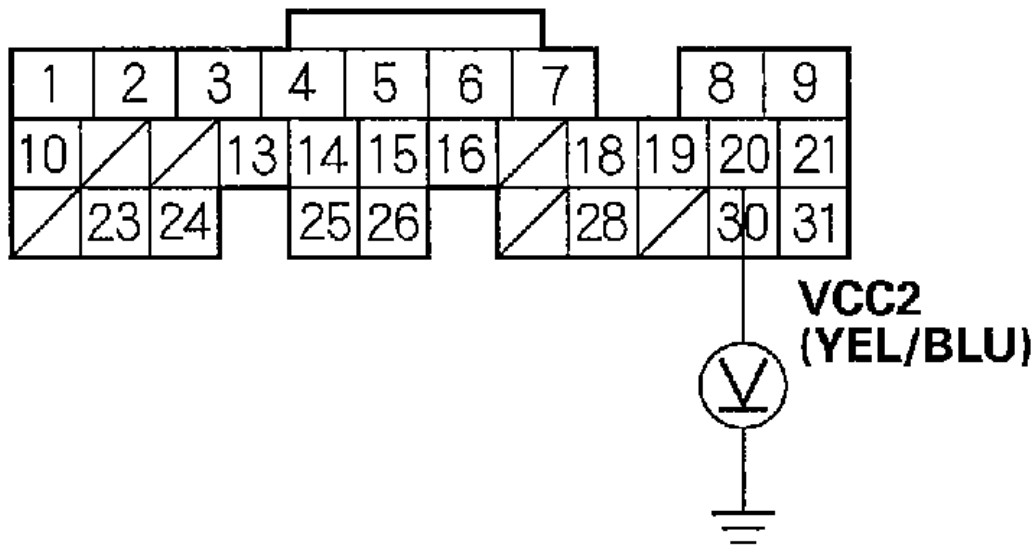
Wire side of female terminals

G01822164

Fig. 125: Checking For Continuity Between ECM/PCM Connector Terminal A21 & Body Ground

71. Measure voltage between body ground and ECM/PCM connector terminal A20.

Is there about 5 V?**YES:** Go to step 79 .**NO:** Go to step 72.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822165

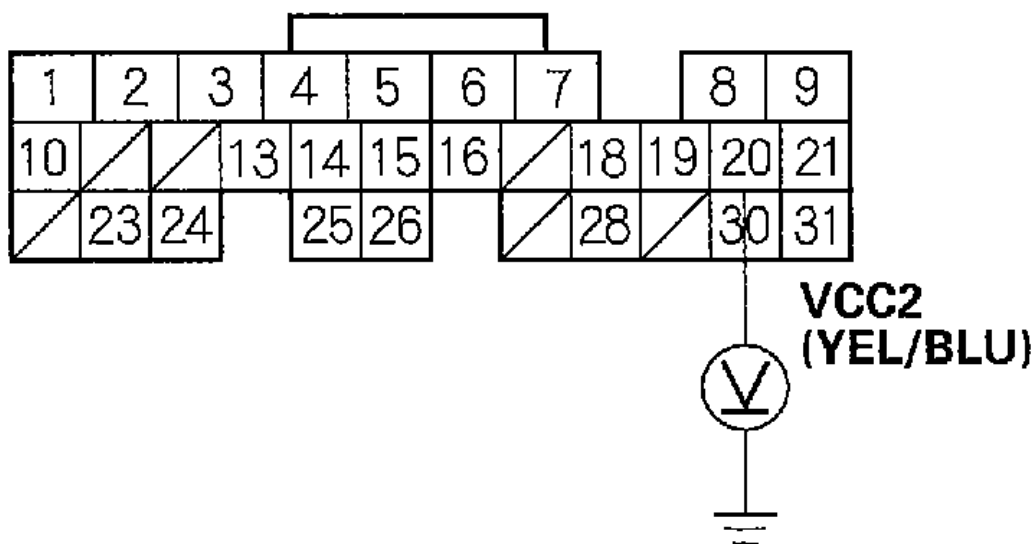
Fig. 126: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminal A20

72. Turn the ignition switch OFF.
73. Disconnect the connector from each of these sensors, one at a time, and measure voltage between body ground and ECM/PCM connector terminal A20 with the ignition switch ON (II):
 - Throttle position (TP) sensor
 - Accelerator pedal position (APP) sensor
 - Countershaft speed sensor

Is there about 5 V?

YES: Replace the sensor that restored 5 V when disconnected.

NO: Go to step 74.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822166

Fig. 127: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminal A20

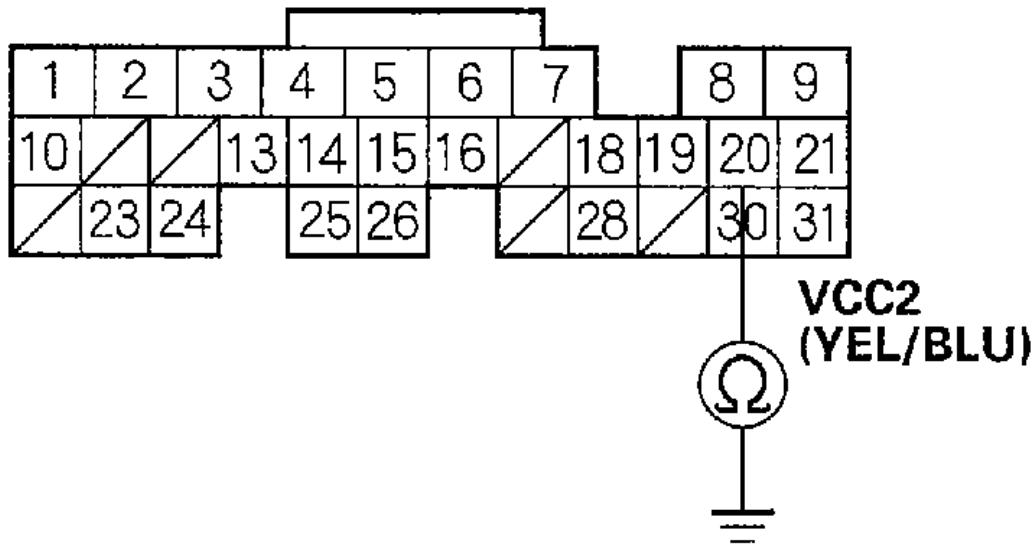
74. Turn the ignition switch OFF.
75. Jump the SCS line with the HDS.
76. Disconnect the connector from the following sensors:
 - Throttle position (TP) sensor
 - Accelerator pedal position (APP) sensor
 - Countershaft speed sensor
77. Disconnect ECM/PCM connector A (31P).
78. Check for continuity between ECM/PCM connector terminal A20 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A20) and the TP sensor, APP sensor, EGR valve or countershaft speed sensor.

NO: Update the ECM/PCM if it does not have the latest software, or substitute a known-good, ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original

ECM/PCM.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822167

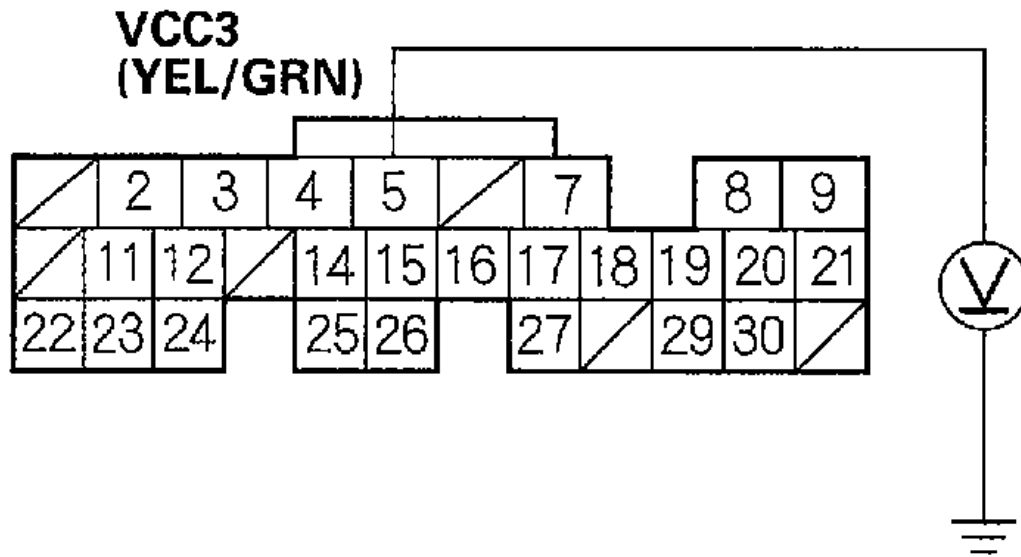
Fig. 128: Checking For Continuity Between ECM/PCM Connector Terminal A20 & Body Ground

79. Measure voltage between body ground and ECM/PCM connector terminal E5.

Is there about 5 V?

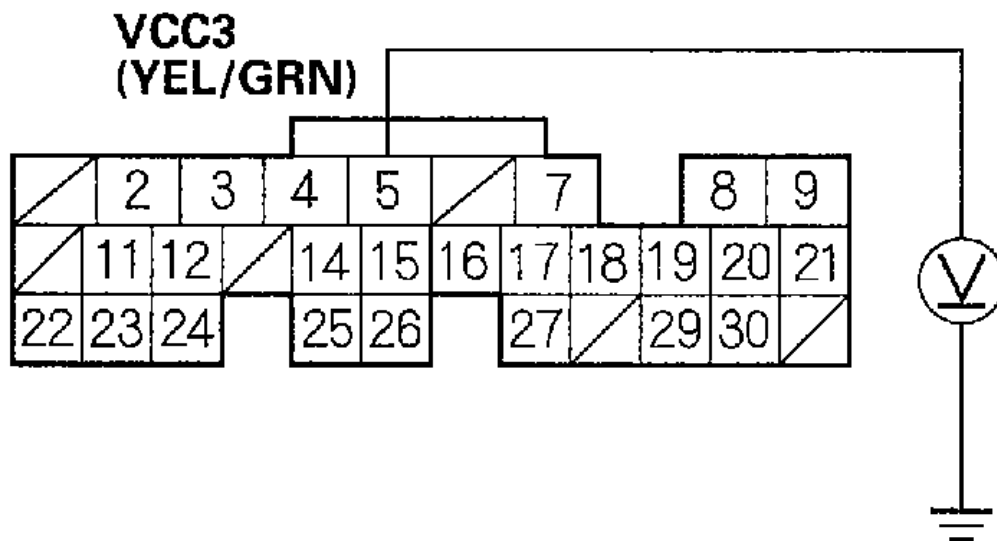
YES: Update the ECM/PCM if it does not have the latest software, or substitute a known-good, ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Go to step 80.

ECM/PCM CONNECTOR E (31P)**Wire side of female terminals****G01822168****Fig. 129: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminal E5**

80. Turn the ignition switch OFF.
81. Disconnect the FTP sensor 3P connector, and measure voltage between body ground and ECM/PCM connector terminal E5 with the ignition switch ON (II).

Is there about 5 V?**YES:** Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**).**NO:** Go to step 82.

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822169

Fig. 130: Measuring Voltage Between Body Ground & ECM/PCM Connector Terminal E5

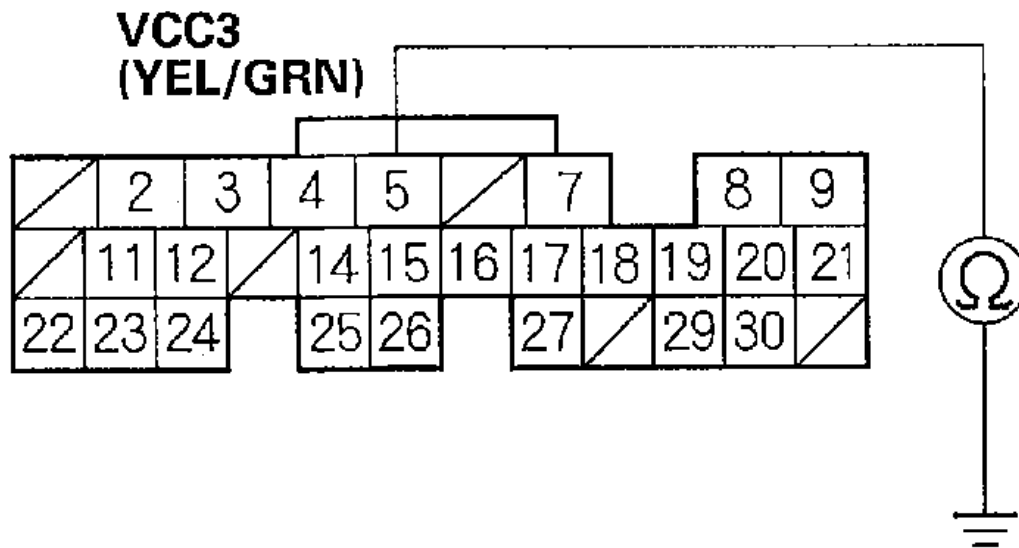
82. Turn the ignition switch OFF.
83. Jump the SCS line with the HDS.
84. Disconnect the FTP sensor 3P connector.
85. Disconnect ECM/PCM connector E (31P).
86. Check for continuity between ECM/PCM connector terminal E5 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (E5) and FTP sensor.

NO: Update the ECM/PCM if it does not have the latest software, or substitute a known-good, ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G01822170

Fig. 131: Checking For Continuity Between ECM/PCM Connector Terminal E5 & Body Ground

DLC CIRCUIT TROUBLESHOOTING

NOTE:

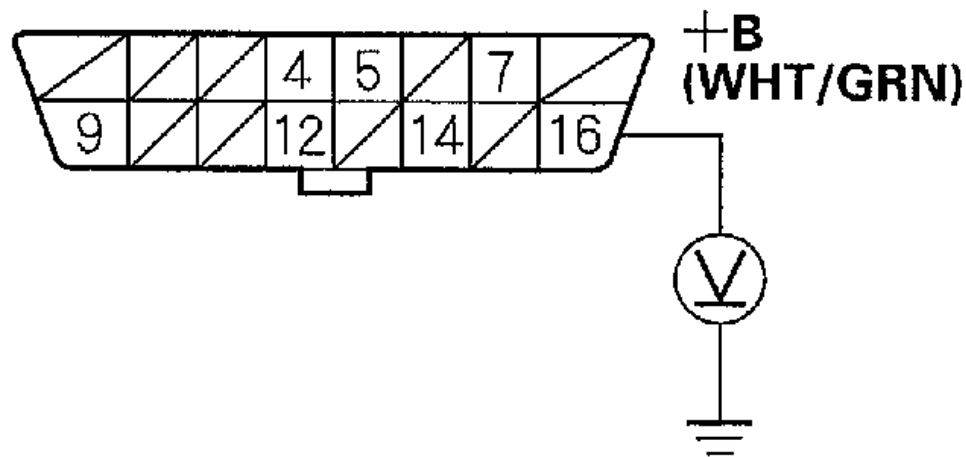
- If the ECM/PCM does not communicate with the HDS, do this troubleshooting procedure.
- Check that the MIL circuit is normal, then do this troubleshooting.

1. Measure voltage between DLC terminal No. 16 and body ground.

Is there battery voltage?

YES: Go to step 2.

NO: Repair open in the wire between DLC terminal No. 16 and the No. 8 FI ECU (15A) fuse in the underhood fuse/relay box.

DATA LINK CONNECTOR (DLC)

Terminal side of female terminals
G01822171

Fig. 132: Measuring Voltage Between DLC Terminal No. 16 & Body Ground

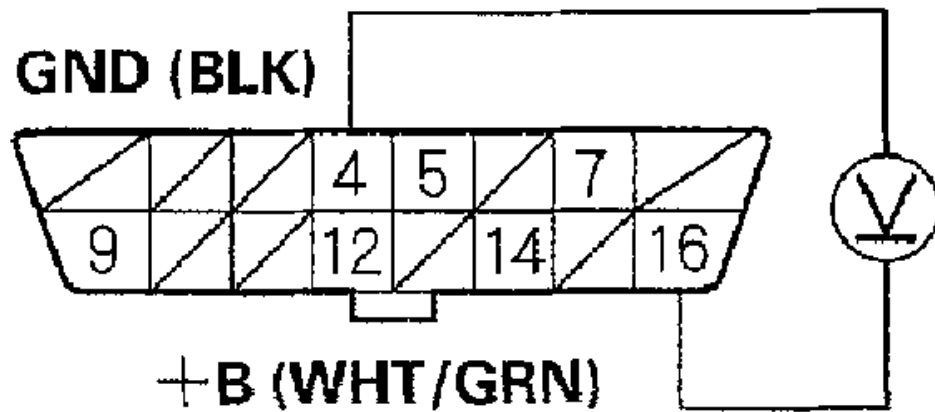
2. Measure voltage between DLC terminals No. 4 and No. 16.

Is there battery voltage?

YES: Go to step 3.

NO: Repair open in the wire between DLC terminal No. 4 and body ground (G451).

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals
G01822172

Fig. 133: Measuring Voltage Between DLC Terminals No. 4 & No. 16

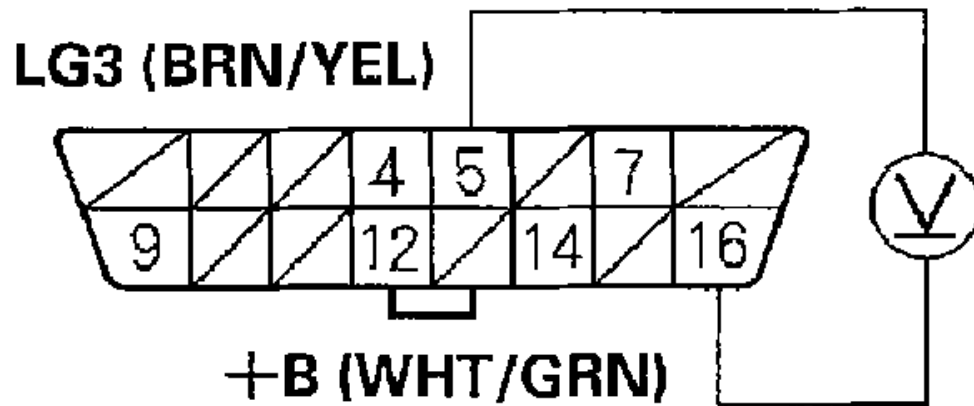
3. Measure voltage between DLC terminals No. 5 and No. 16.

Is there battery voltage?

YES: Go to step 4.

NO: Repair open in the wire between the ECM/PCM (E3) and DLC terminal No. 5.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

G01822173

Fig. 134: Measuring Voltage Between DLC Terminals No. 5 & No. 16

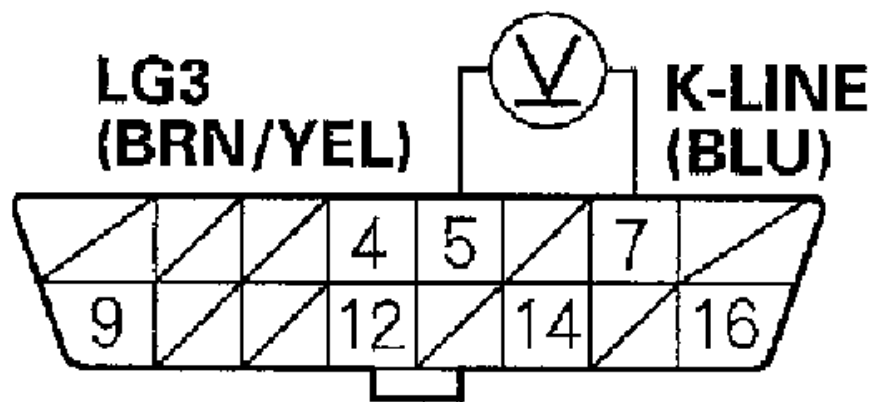
4. Turn the ignition switch ON (II).
5. Measure voltage between DLC terminals No. 5 and No. 7.

Is there 8.5 V or more?

YES: Go to step 11 .

NO: Go to step 6.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals G01822174

Fig. 135: Measuring Voltage Between DLC Terminals No. 5 & No. 7

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector E (31P).
9. Check for continuity between DLC terminal No. 7 and body ground.

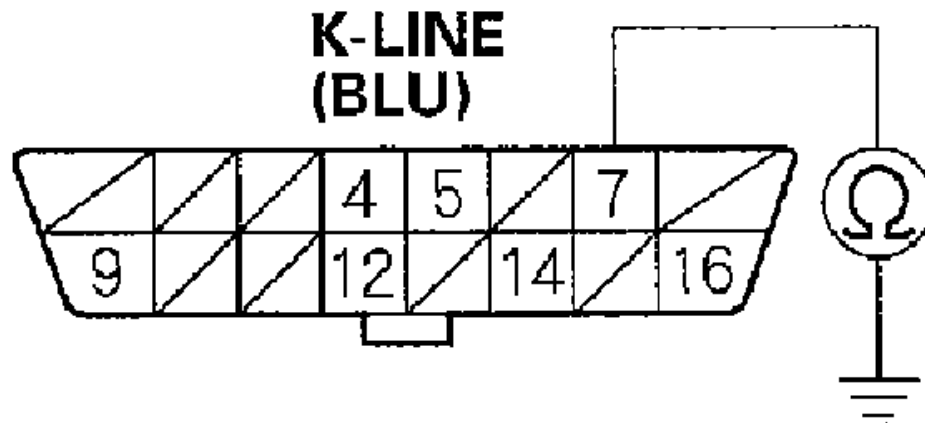
Is there continuity?

YES: Repair short to ground in the wire between DLC terminal No. 7 and the ECM/PCM (E23). After repairing the wire, check for a DTC with the HDS, then go to the indicated DTC

troubleshooting.

NO: Go to step 10.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

G01822175

Fig. 136: Checking For Continuity Between DLC Terminal No. 7 & Body Ground

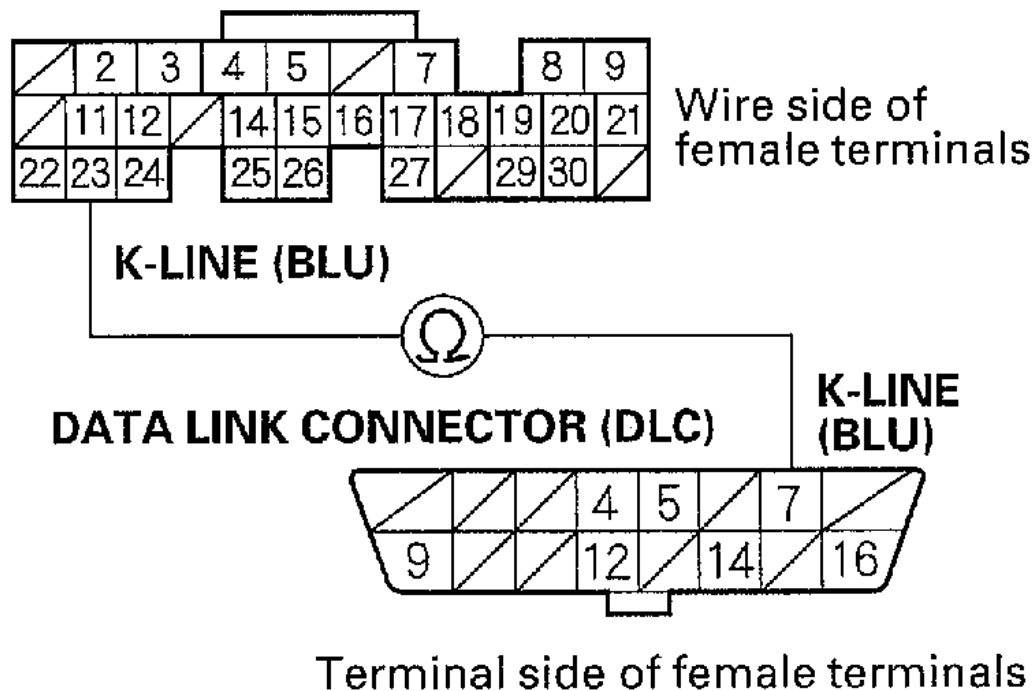
10. Check for continuity between DLC terminal No. 7 and ECM/PCM terminal E23.

Is there continuity?

YES: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Repair open in the wire between DLC terminal No. 7 and the ECM/PCM (E23). After repairing the wire, check for a DTC with the HDS, then go to the indicated DTC troubleshooting.

ECM/PCM CONNECTOR E (31P)



G01822176

Fig. 137: Checking For Continuity Between DLC Terminal No. 7 & ECM/PCM Terminal E23

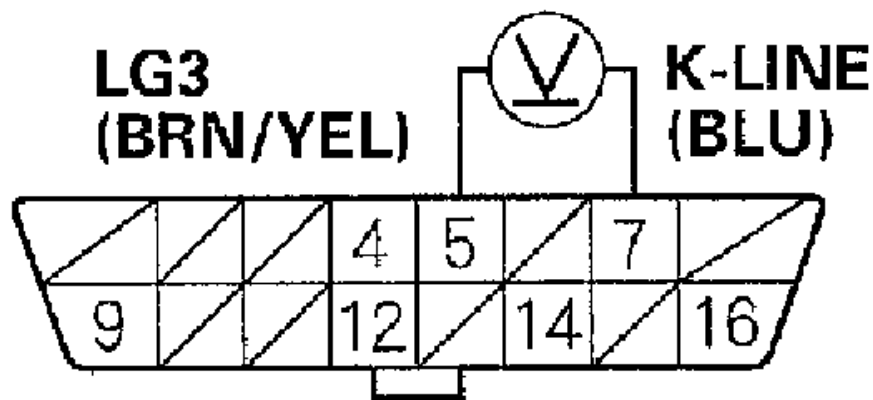
11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector E (31P).
14. Turn the ignition switch ON (II).
15. Measure voltage between DLC terminals No. 5 and No. 7.

Is there 0 V?

YES: Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM, then recheck (see **HOW TO SUBSTITUTE THE ECM/PCM**). If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM.

NO: Repair short to power in the wire between DLC terminal No. 7 and the ECM/PCM (E23). After repairing the wire, check for a DTC with the HDS, then go to the indicated DTC troubleshooting.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

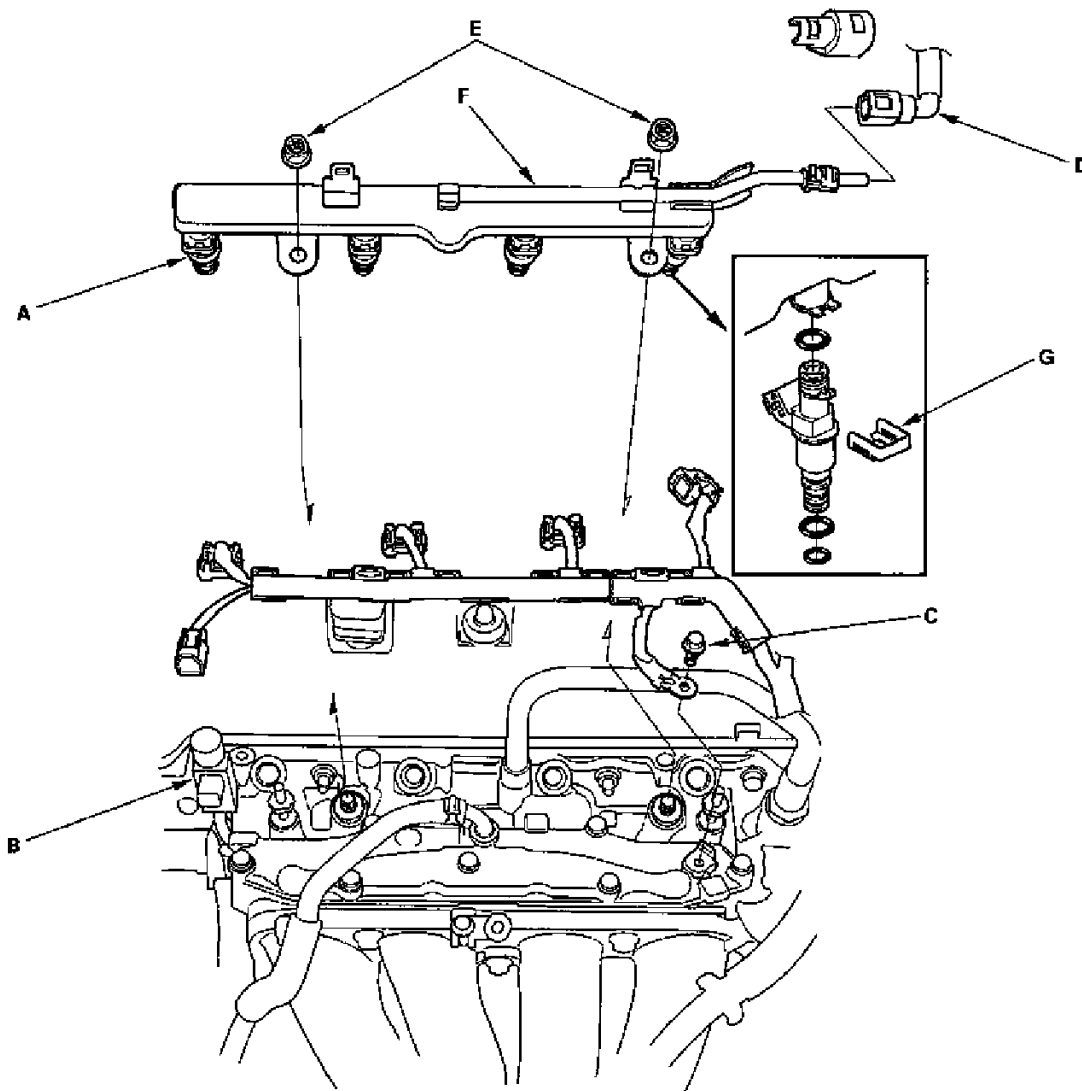
G01822177

Fig. 138: Measuring Voltage Between DLC Terminals No. 5 & No. 7

REMOVAL & INSTALLATION

INJECTOR REPLACEMENT

1. Relieve fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Remove the intake manifold cover (see **CYLINDER HEAD COVER REMOVAL**).
3. Disconnect the connectors from the injectors (A) and the engine mount control solenoid valve (B).
4. Remove the ground cable bolt (G101) (C).

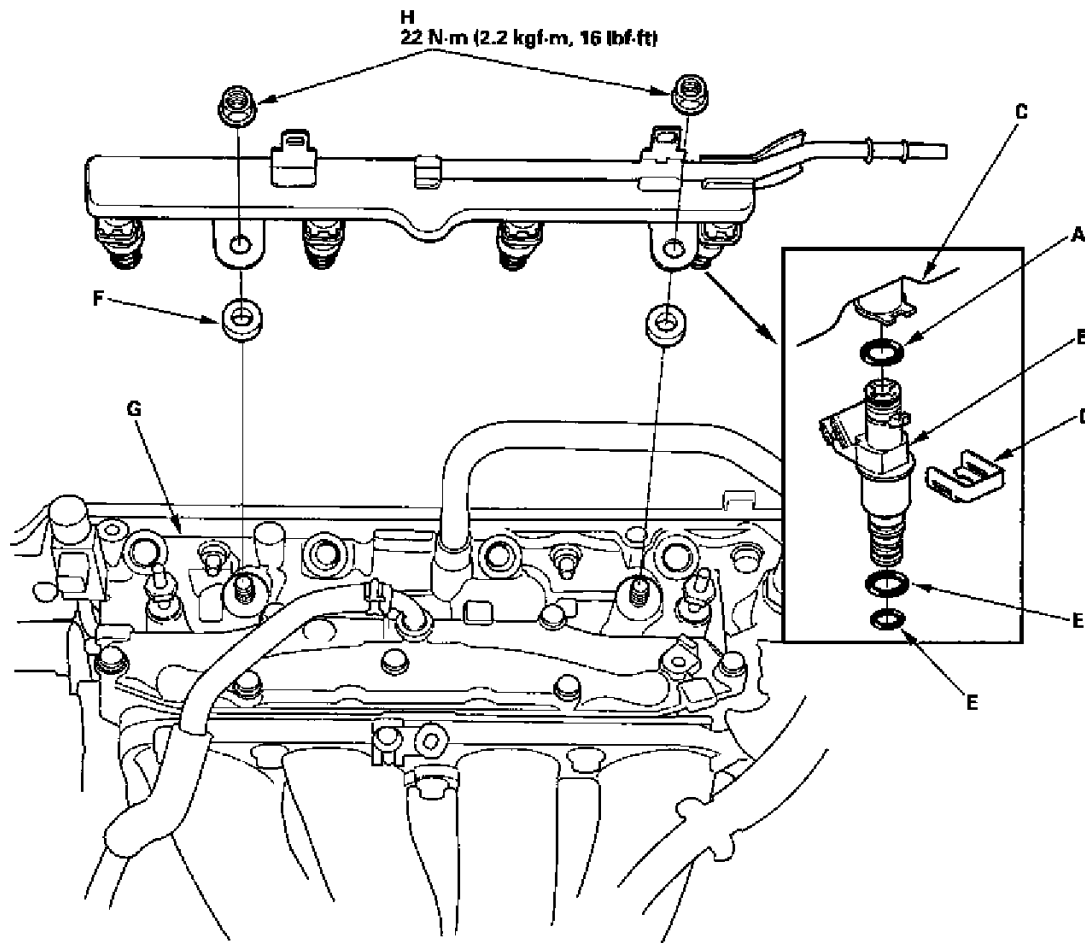


G01822178

Fig. 139: Removing Injectors

5. Disconnect the quick-connect fittings (D).
6. Remove the fuel rail mounting nuts (E) from the fuel rail (F).
7. Remove the injector clip (G) from the injector.
8. Remove the injector from the fuel rail.

9. Coat the new O-rings (A) with clean engine oil, and insert the injectors (B) into the fuel rail (C).



G01622179

Fig. 140: Inserting The Injectors Into The Fuel Rail

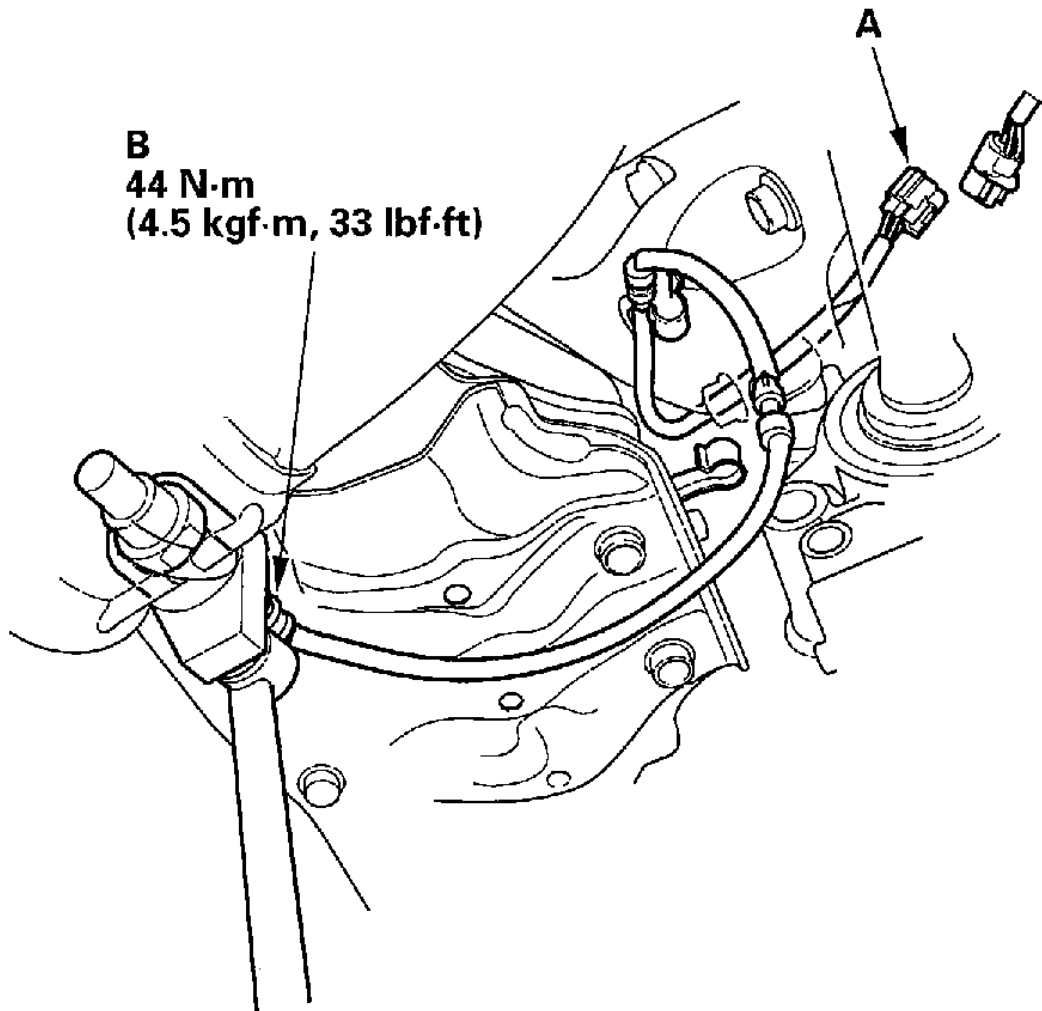
10. Install the injector clip (D).
11. Coat the injector O-rings (E) with clean engine oil.
12. Install the fuel rail insulator (F), and injectors in the injector base (G).
13. Install the fuel rail mounting nuts (H) and the ground cable bolt (G101).
14. Connect the connectors on the injectors and the engine mount control solenoid valve.
15. Connect the quick-connect fitting.
16. Turn the ignition switch ON (II), but do not operate the starter. After the fuel pump runs for about 2 seconds, the fuel rail will be pressurized. Repeat this two or three times, then check for fuel leakage.

A/F SENSOR REPLACEMENT

Special Tools Required: O2 sensor wrench, Snap-on YA8875, SP Tools 93750, or equivalent, commercially

available

1. Disconnect the A/F sensor 4P connector (A), then remove the A/F sensor (B).



G01822180

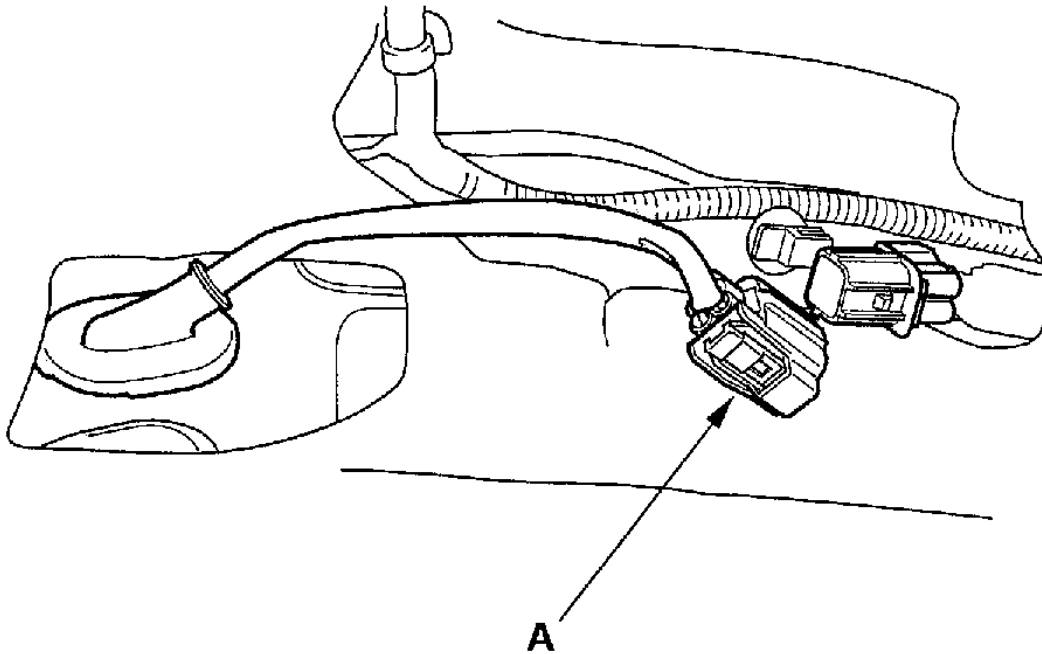
Fig. 141: Removing The A/F Sensor

2. Install the A/F sensor in the reverse order of removal.

SECONDARY HO2S REPLACEMENT

Special Tools Required: O2 sensor wrench, Snap-on YA8875, SP Tools 93750, or equivalent, commercially available

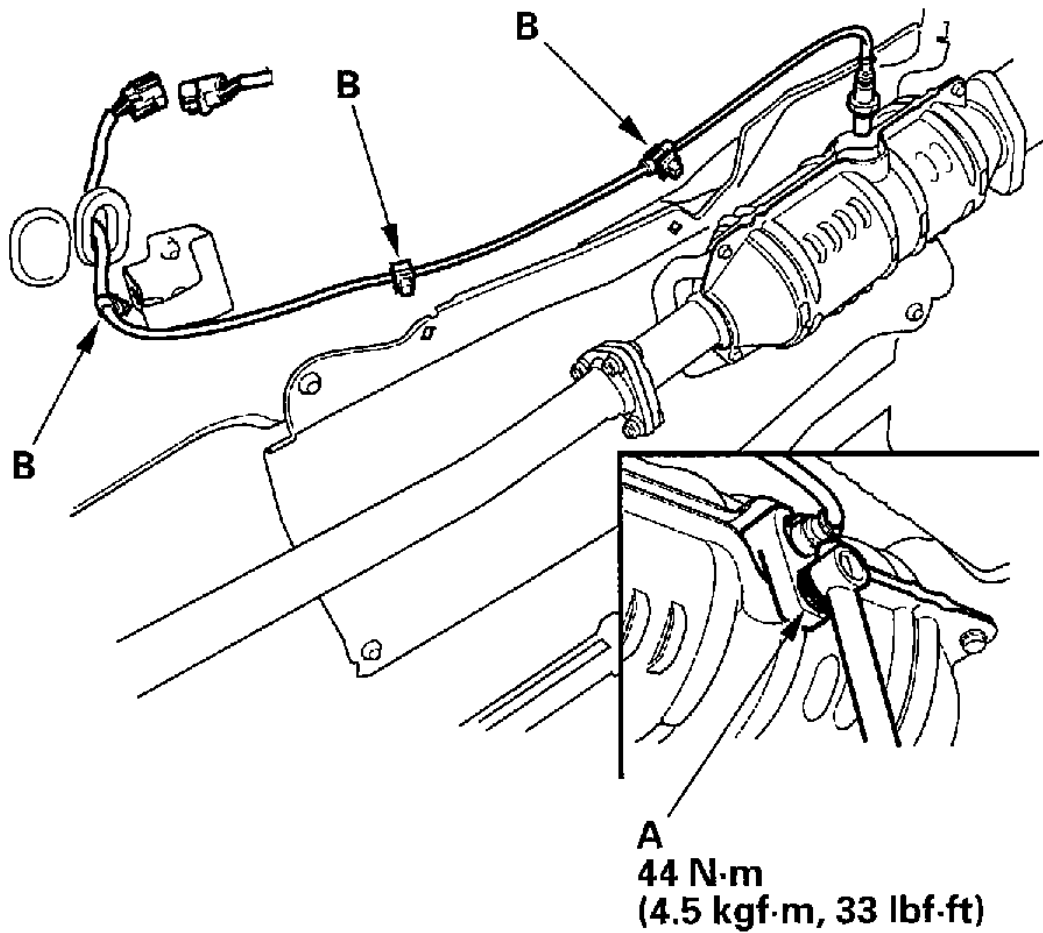
1. Pull back the carpet from the floor rail under the front edge of the front passenger seat to expose the secondary HO2S 4P connector that is attached to the floor rail.
2. Disconnect the secondary HO2S 4P connector (A), under the passenger's seat.



G01822181

Fig. 142: Disconnecting The Secondary HO2S 4P Connector

3. Remove the secondary HO2S (A), and the clips (B).



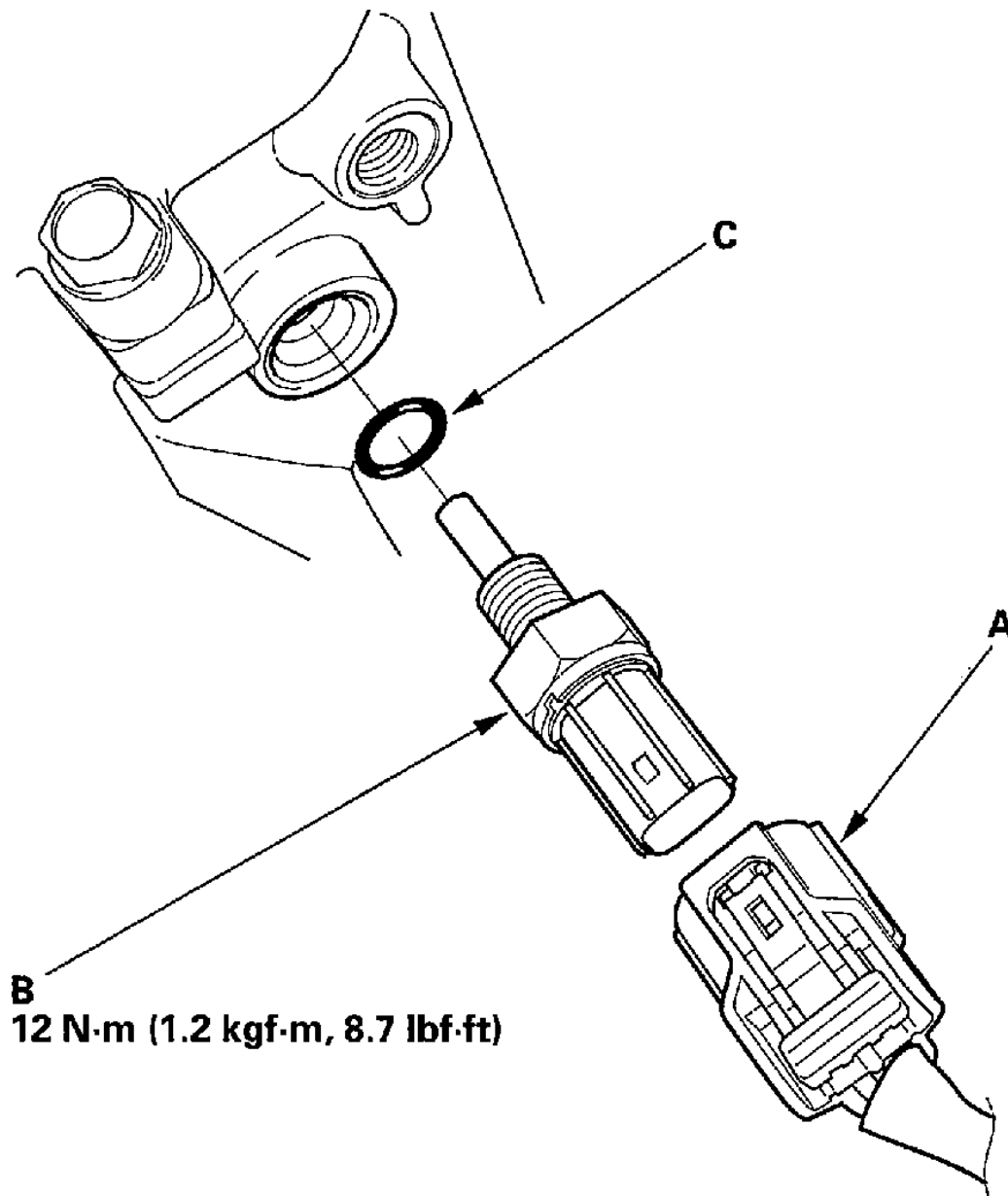
G01822182

Fig. 143: Removing The Secondary HO2S

4. Install the secondary HO2S in the reverse order of removal.

ECT SENSOR REPLACEMENT

1. Remove the air cleaner (see **AIR CLEANER REMOVAL/INSTALLATION**).
2. Remove the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**).
3. Unbolt the under-hood fuse/relay box bolt and move the box aside.
4. Disconnect the ECT sensor connector (A).



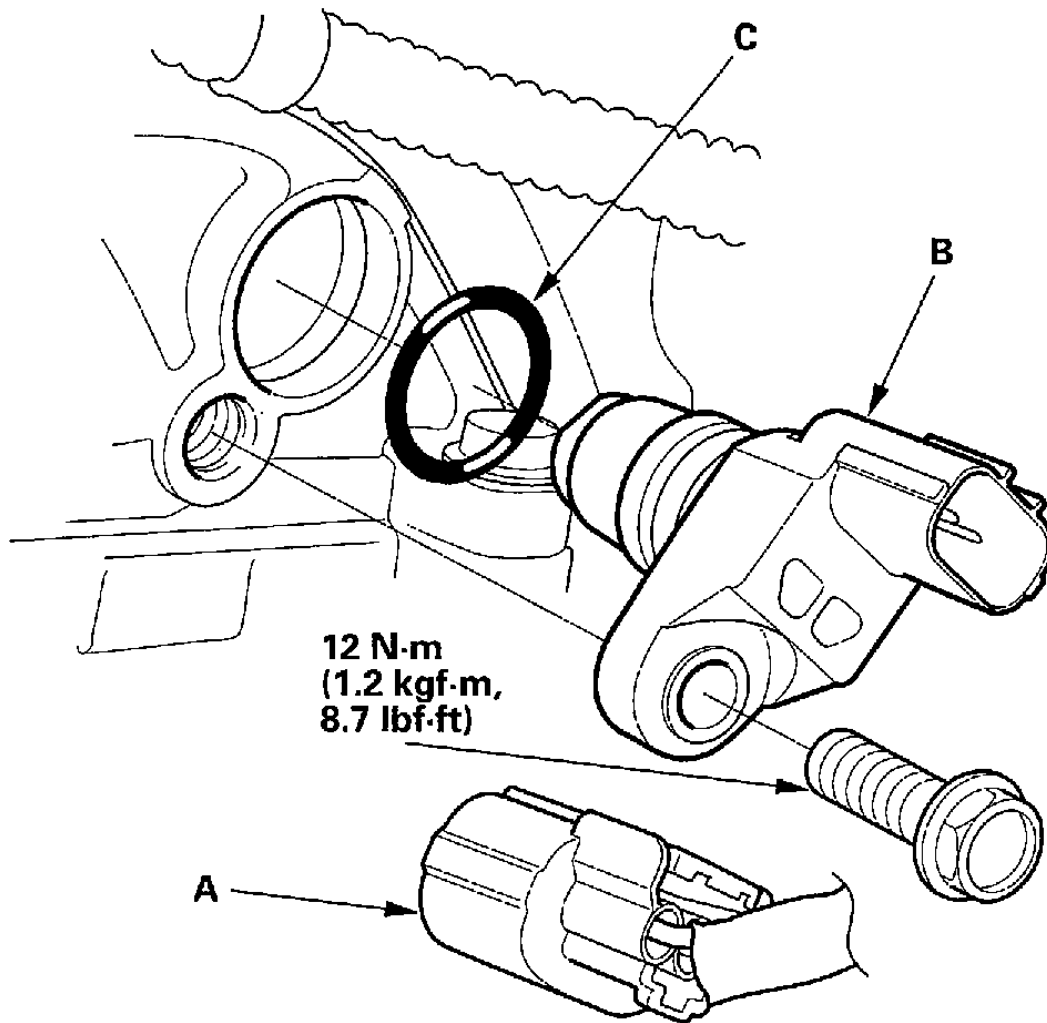
G01822183

Fig. 144: Removing The ECT Sensor

5. Remove the ECT sensor (B).
6. Install the sensor in the reverse order of removal with a new O-ring (C), then refill the radiator with engine coolant (see **COOLANT REPLACEMENT**), and bleed air from the cooling system with the heater valve open.

CMP SENSOR B REPLACEMENT

1. Remove the air cleaner (see **AIR CLEANER REMOVAL/INSTALLATION**).
2. Remove the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**).
3. Disconnect the CMP sensor B connector (A).



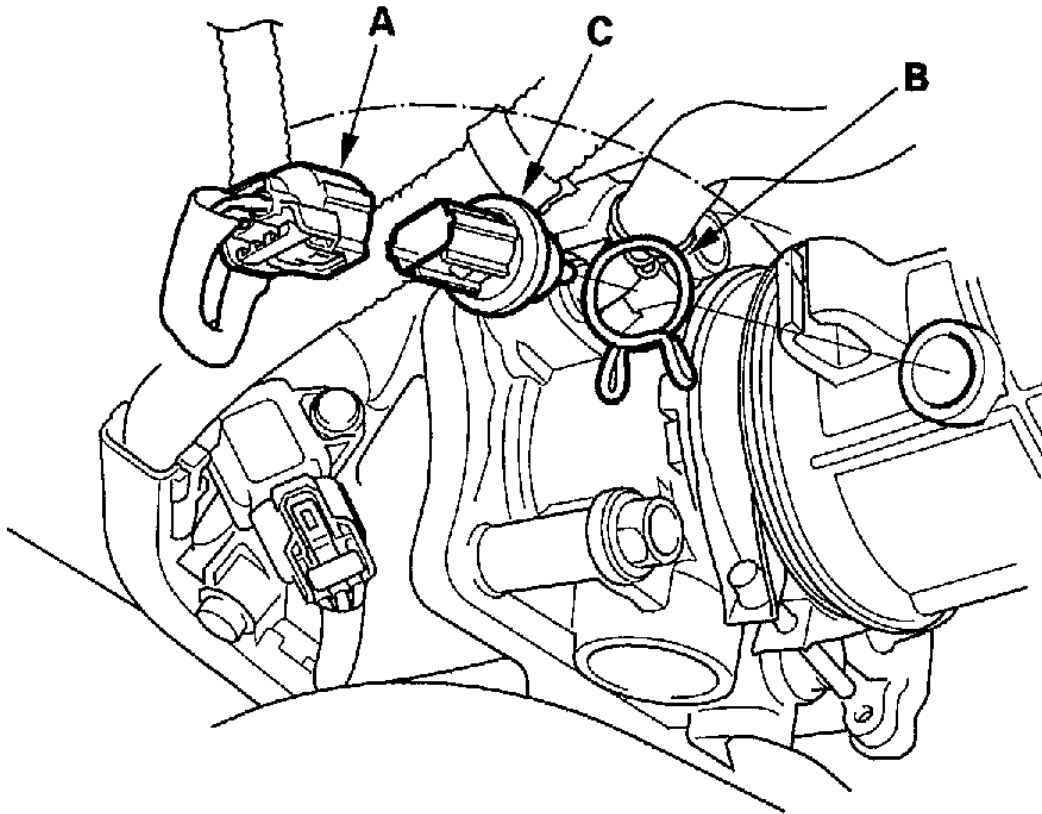
G01822184

Fig. 145: Removing CMP Sensor B

4. Remove CMP sensor B (B).
5. Install the sensor in the reverse order of removal with a new O-ring (C).

IAT SENSOR REPLACEMENT

1. Disconnect the IAT sensor connector (A).



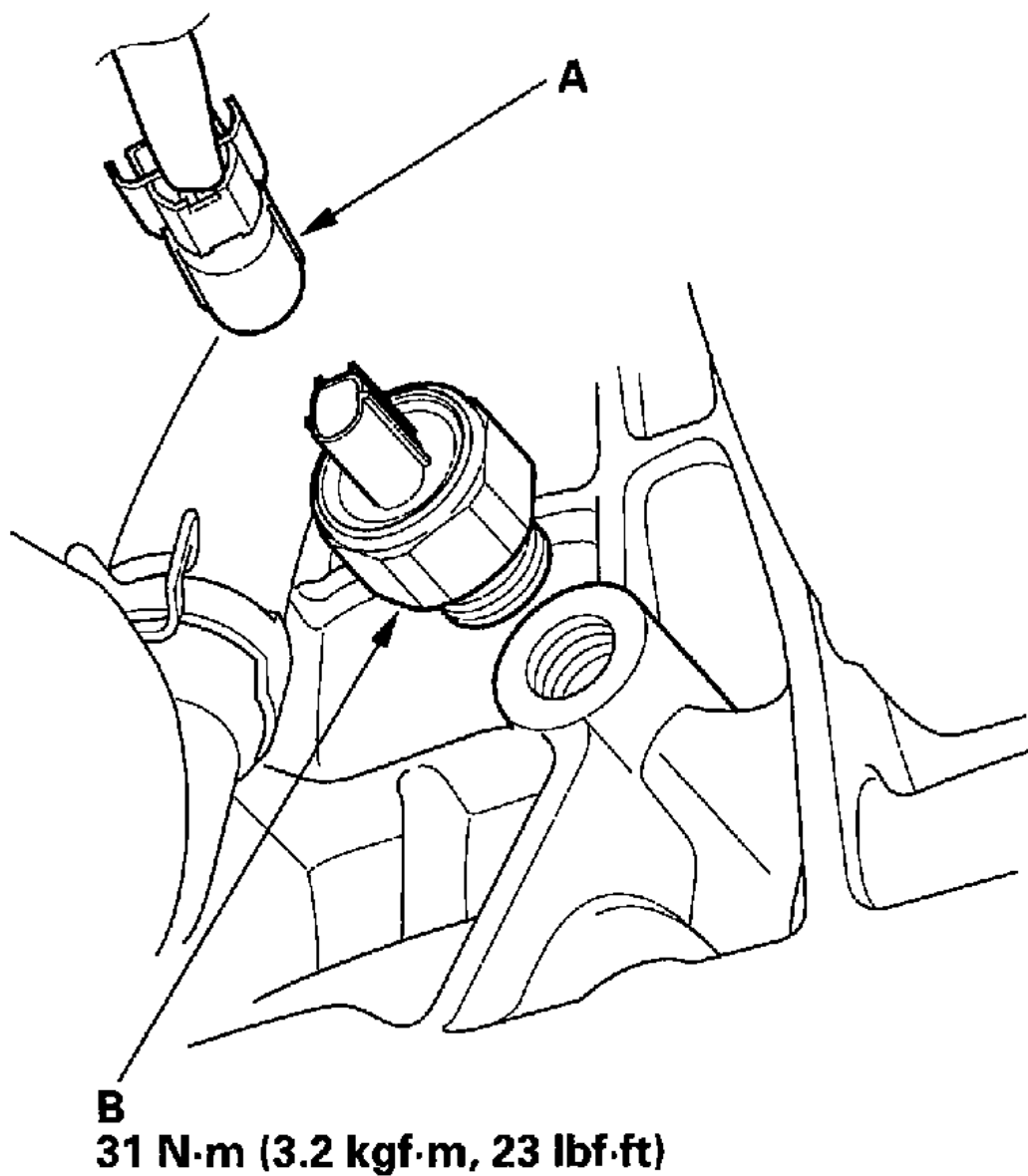
G01822185

Fig. 146: Removing The IAT Sensor

2. Remove the clamp (B) and the IAT sensor (C).
3. Install the sensor in the reverse order of removal.

KNOCK SENSOR REPLACEMENT

1. Disconnect the knock sensor connector (A).



G01822186

Fig. 147: Removing The Knock Sensor

2. Remove the knock sensor (B).
3. Install the sensor in the reverse order of removal.

CKP SENSOR REPLACEMENT

1. Disconnect the CKP sensor connector (A).

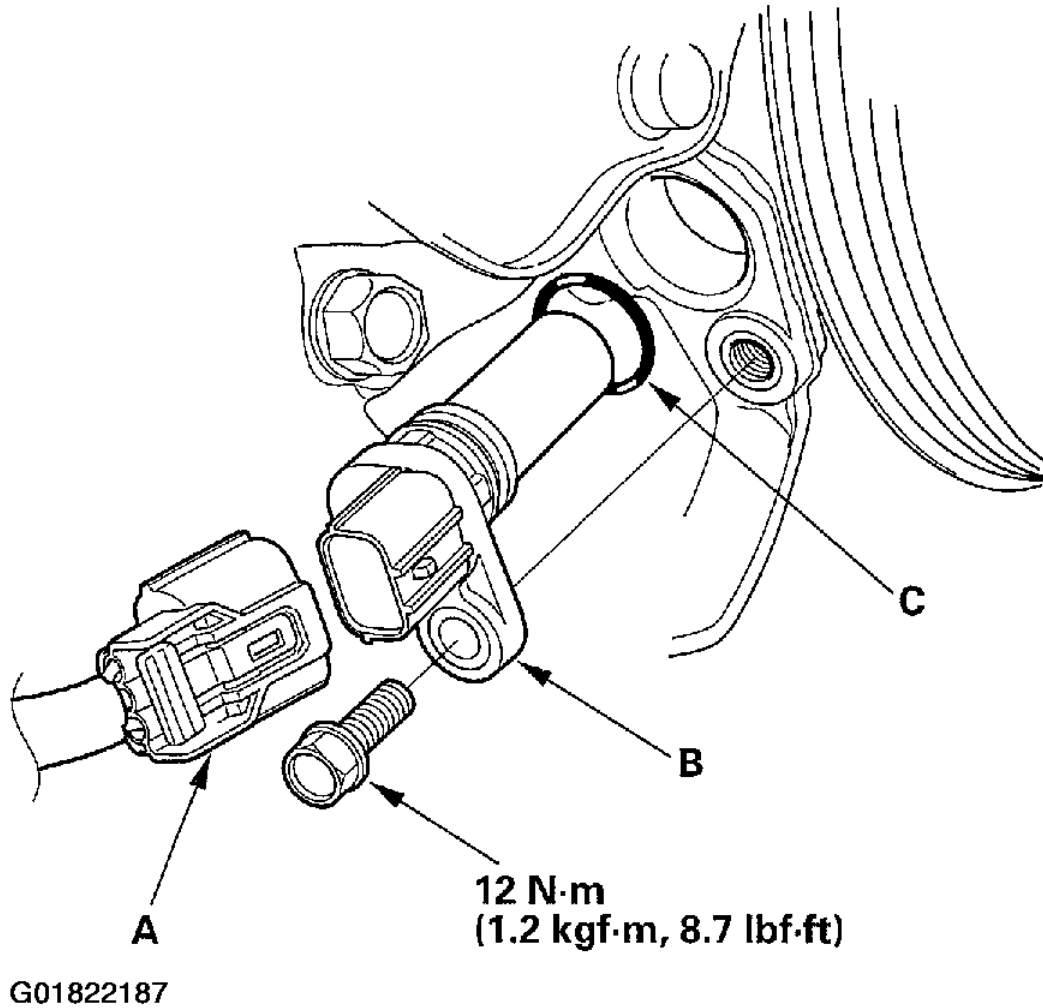
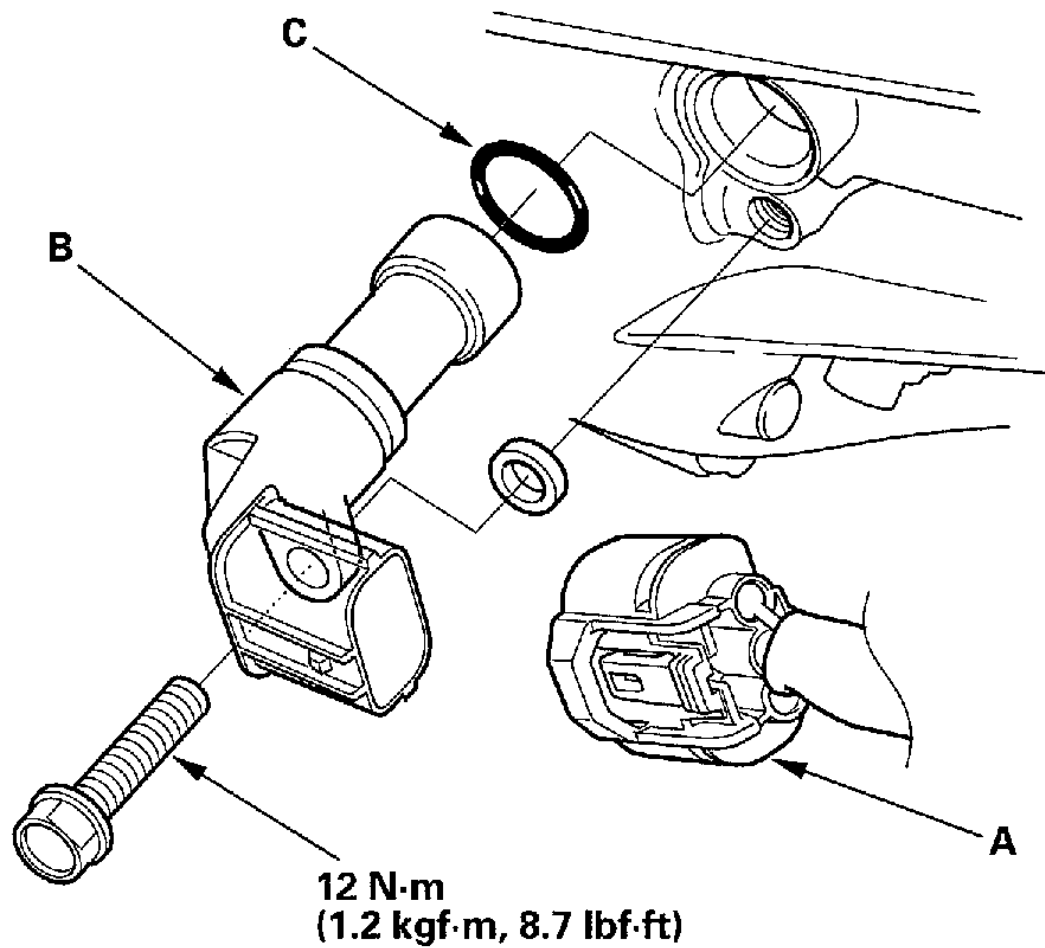


Fig. 148: Removing The CKP Sensor

2. Remove the CKP sensor (B).
3. Install the sensor in the reverse order of removal with a new O-ring (C).

COUNTERSHAFT SPEED SENSOR REPLACEMENT

1. Remove the air cleaner (see **AIR CLEANER REMOVAL/INSTALLATION**).
2. Disconnect the countershaft speed sensor connector (A).



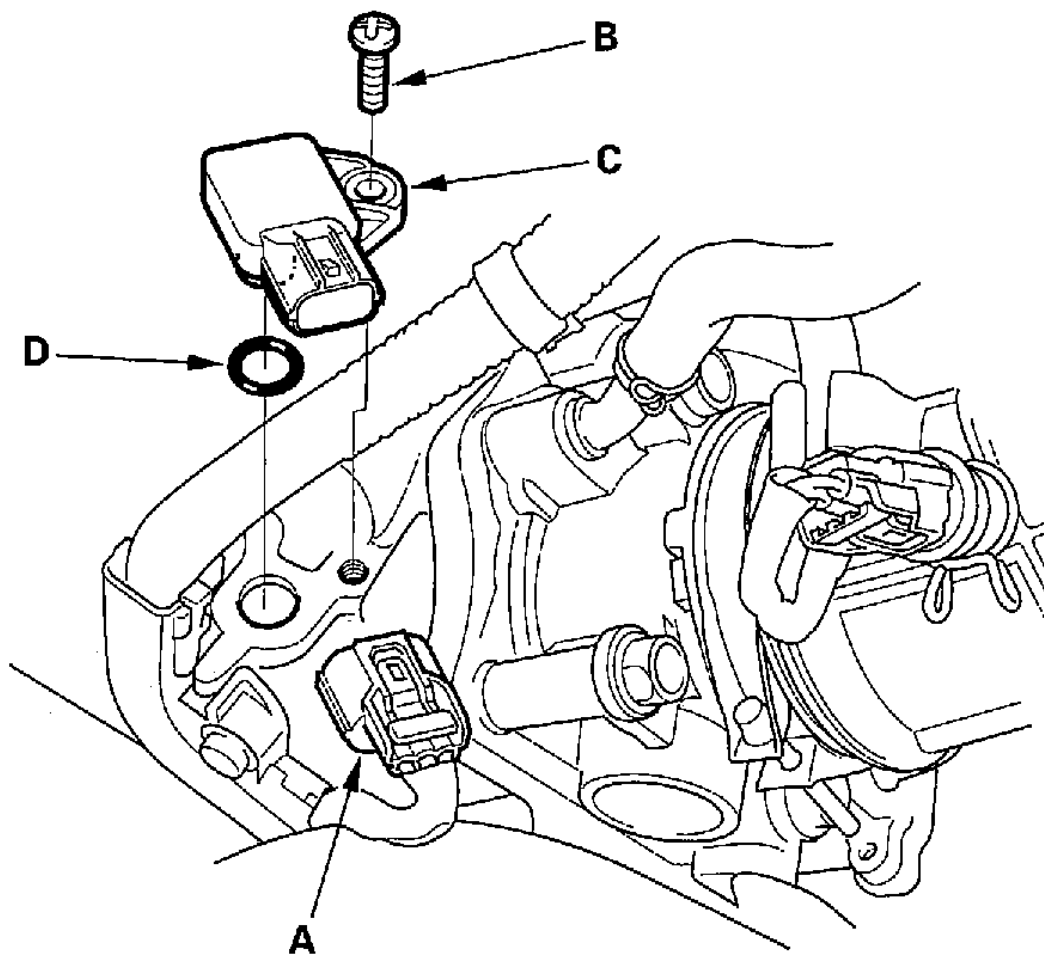
G01822188

Fig. 149: Removing The Countershaft Speed Sensor

3. Remove the countershaft speed sensor (B).
4. Install the sensor in the reverse order of removal with a new O-ring (C).

MAP SENSOR REPLACEMENT

1. Disconnect the MAP sensor connector (A).



G01822189

Fig. 150: Removing The MAP Sensor

2. Remove the screw (B).
3. Remove the MAP sensor (C).
4. Install the sensor in the reverse order of removal with a new O-ring (D).