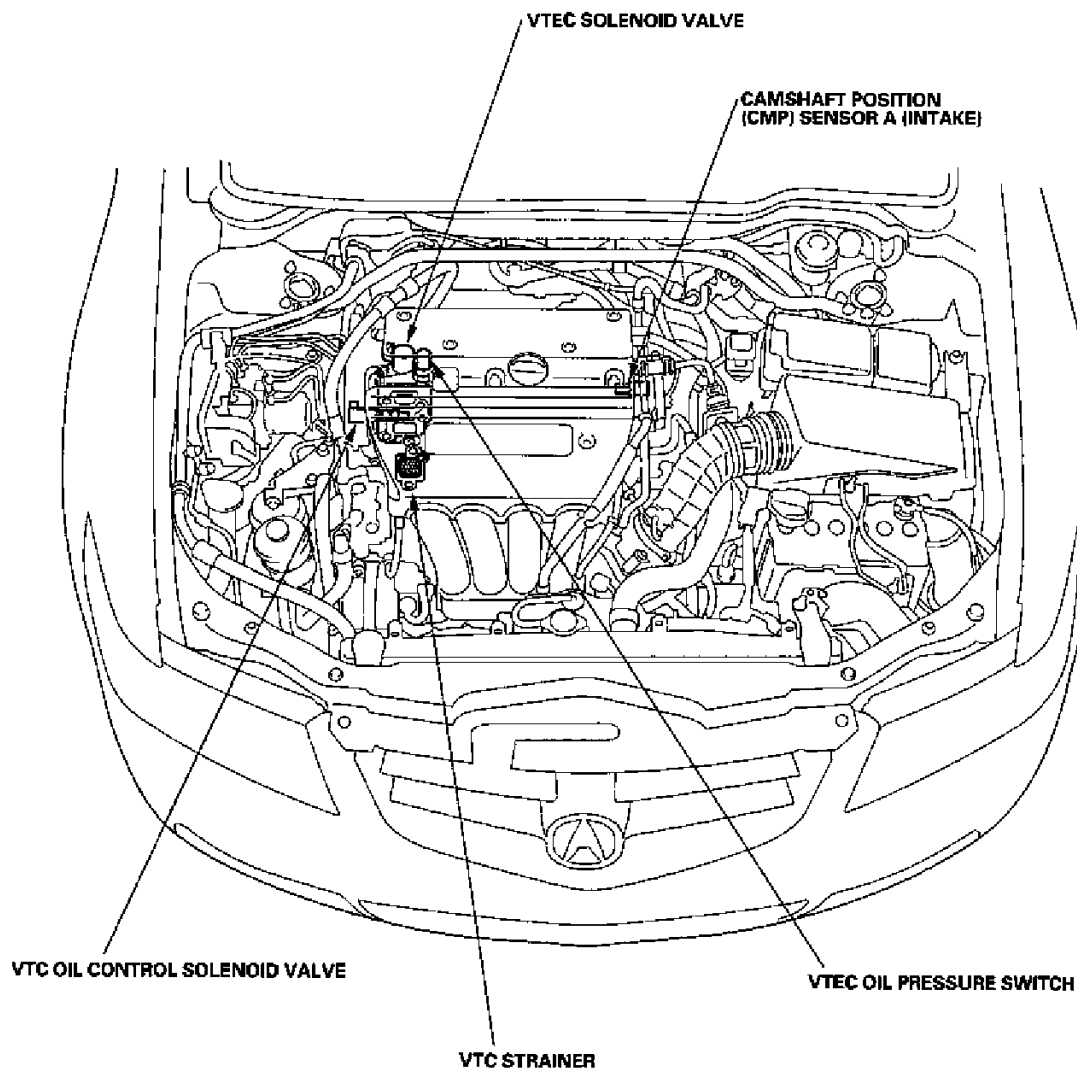


2004 ENGINE PERFORMANCE

VTEC/VTC - TSX

COMPONENT LOCATION INDEX



G01B22256

Fig. 1: Locating VTEC/VTC Components**DTC TROUBLESHOOTING****DTC TROUBLESHOOTING INDEX**

DTC	Description
DTC P0010	VTC Oil Control Solenoid Valve Malfunction
DTC P0011	VTC System Malfunction

DTC P0340	CMP Sensor A No Signal
DTC P0341	CMP Sensor & CKP Sensor Incorrect Phase Detected
DTC P0344	CMP Sensor A Intermittent Interruption
DTC P2646	Oil Pressure Switch Circuit Low Voltage
DTC P2647	VTEC Oil Pressure Switch Circuit High Voltage
DTC P2648	VTEC Solenoid Valve Circuit Low Voltage
DTC P2649	VTEC Solenoid Valve Circuit High Voltage

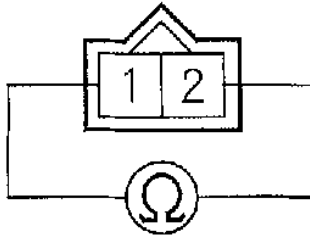
DTC P0010: VTC OIL CONTROL SOLENOID VALVE MALFUNCTION

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. Do the VTC TEST in the INSPECTION MENU with the HDS.
5. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0010 indicated?**YES:** Go to step 6.**NO:** Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the VTC oil control solenoid valve and the ECM/PCM.

6. Turn the ignition switch OFF.
7. Disconnect the VTC oil control solenoid valve 2P connector.
8. Measure resistance between VTC oil control solenoid valve 2P connector terminals No. 1 and No. 2.

Is there 6.75-8.25 ohm?**YES:** Go to step 9.**NO:** Go to step 15 .

VTC OIL CONTROL SOLENOID VALVE 2P CONNECTOR

Terminal side of male terminals

G01822259

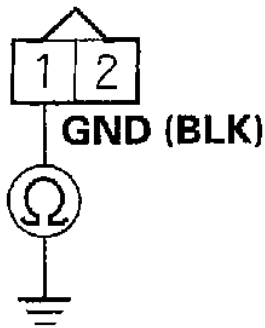
Fig. 2: Measuring Resistance Between VTC Oil Control Solenoid Valve 2P Connector Terminals No. 1 & No. 2

9. Check for continuity between VTC oil control solenoid valve terminal No. 1 and body ground.

Is there continuity?

YES: Go to step 10.

NO: Repair open in the wire between the VTC oil control solenoid valve and G101, then go to step 16 .

VTC OIL CONTROL SOLENOID VALVE 2P CONNECTOR

Wire side of female terminals

G01822260

Fig. 3: Checking For Continuity Between VTC Oil Control Solenoid Valve Terminal No. 1 & Body Ground

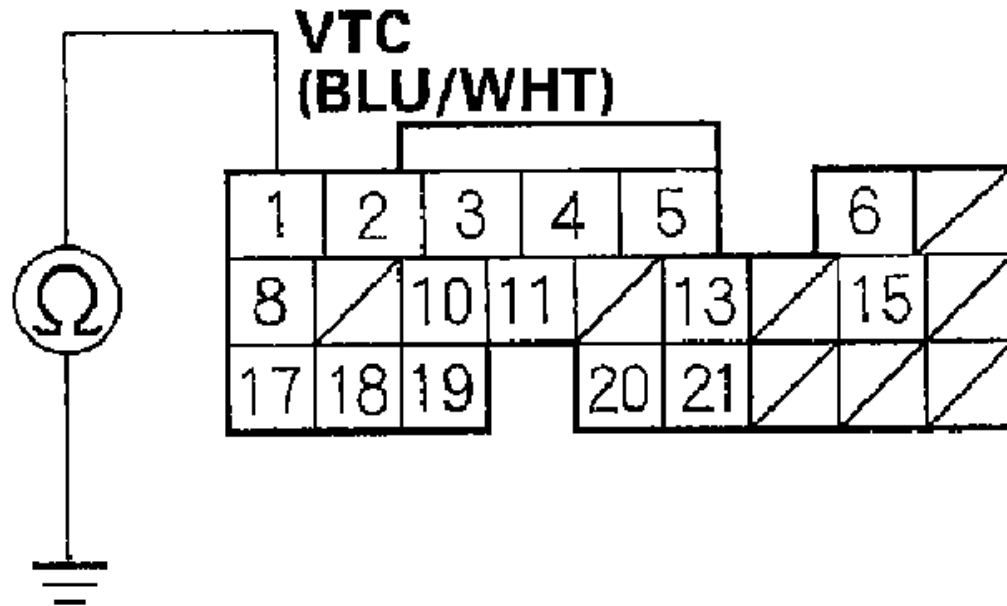
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector B (24P).
12. Check for continuity between ECM/PCM connector terminal B1 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (B1) and the VTC oil control solenoid valve, then go to step 16 .

NO: Go to step 13.

ECM/PCM CONNECTOR B (24P)

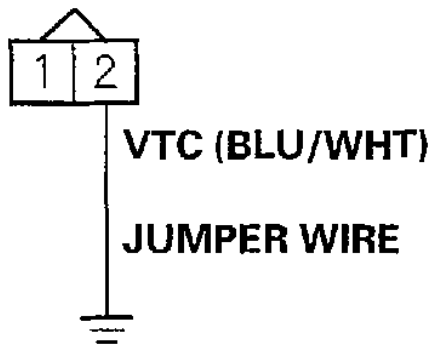


Wire side of female terminals

G01822261

Fig. 4: Checking For Continuity Between ECM/PCM Connector Terminal B1 & Body Ground

13. Connect VTC oil control solenoid valve 2P connector terminal No. 2 to body ground with a jumper wire.

VTC OIL CONTROL SOLENOID VALVE 2P CONNECTOR

Wire side of female terminals

G01822262

Fig. 5: Connecting VTC Oil Control Solenoid Valve 2P Connector Terminal No. 2 To Body Ground With A Jumper Wire

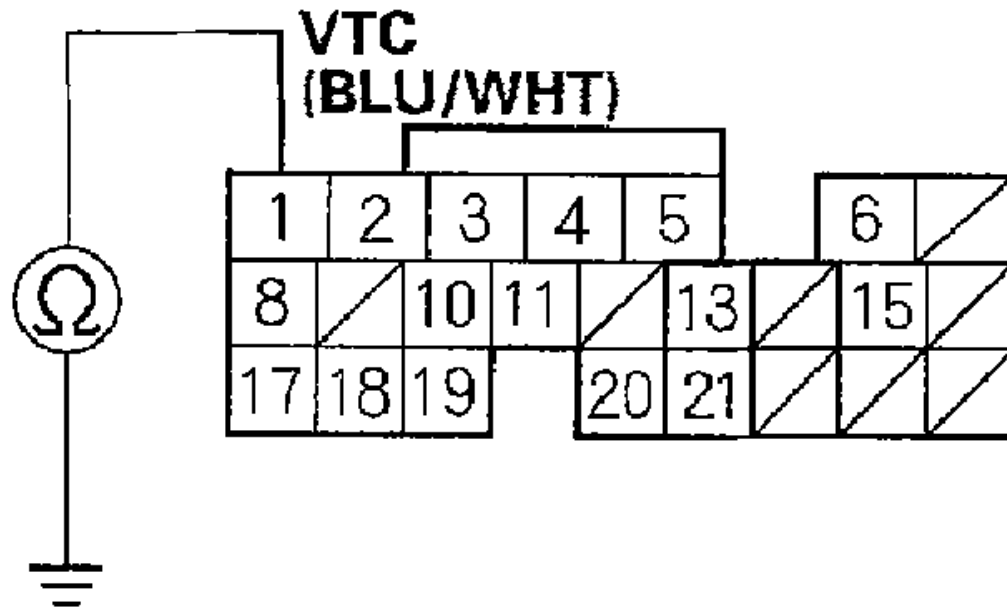
14. Check for continuity between ECM/PCM connector terminal B1 and body ground.

Is there continuity?

YES: Go to step 23 .

NO: Repair open in the wire between the ECM/PCM (B1) and the VTC oil control solenoid valve, then go to step 16 .

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822263

Fig. 6: Checking For Continuity Between ECM/PCM Connector Terminal B1 & Body Ground

15. Replace the VTC oil control solenoid valve (see **VTC OIL CONTROL SOLENOID VALVE REMOVAL/TEST/INSTALLATION**).
16. Reconnect all connectors.
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. Do the VTC TEST in the INSPECTION MENU with the HDS.
21. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0010 is indicated, check for poor connections or loose terminals at the VTC oil control solenoid valve 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 22.

22. Monitor the OBD STATUS for DTC P0010 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/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING**).
24. Do the VTC TEST in the INSPECTION MENU with the HDS.
25. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0010 indicated, check for poor connections or loose terminals at the VTC oil control solenoid valve 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 P0011: VTC SYSTEM MALFUNCTION

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Watch the low oil pressure light with the engine running.

Is the low oil pressure light on?

YES: Check the oil pressure (see **OIL PRESSURE TEST**), then go to step 15 .

NO: Go to step 5.

5. Do the VTC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES: Go to step 6.

NO: Go to step 9 .

6. Test-drive at a steady speed between 19-38 MPH (30-60 km/h) for 10 minutes.
7. Check the VTC STATUS in the DATA LIST with the HDS.

Does it indicate ON?

YES: Go to step 8.

NO: Go to step 6 and recheck.

8. Monitor the OBD STATUS for DTC P0011 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 9.

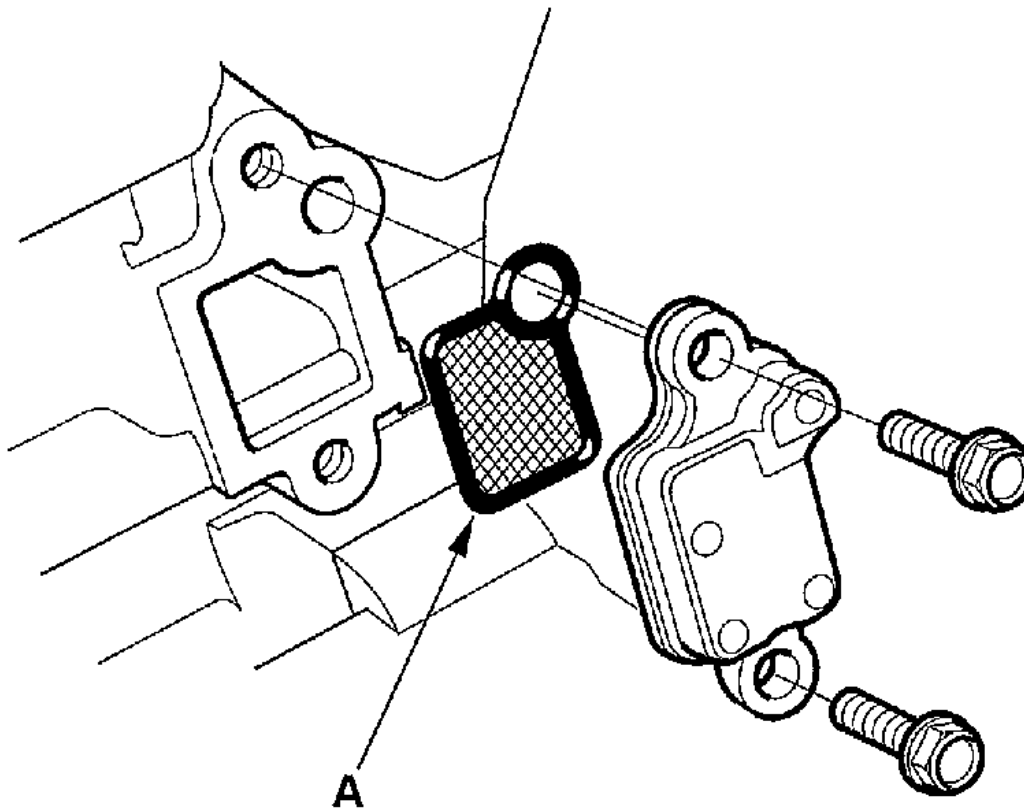
NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

9. Turn the ignition switch OFF.
10. Remove the power steering pump and the autotensioner (see **DRIVE BELT AUTO-TENSIONER**).
11. Remove the VTC strainer (A), and check it for clogging.

Is the strainer OK?

YES: Go to step 12.

NO: Clean the VTC strainer, replace the engine oil filter and the engine oil, then go to step 14 .



G01822264

Fig. 7: Removing The VTC Strainer & Checking It For Clogging

12. Test the VTC oil control solenoid valve (see **VTC OIL CONTROL SOLENOID VALVE REMOVAL/TEST/INSTALLATION**).

Is the VTC oil control solenoid valve OK?

YES: Go to step 13.

NO: Replace the VTC oil control solenoid valve (see **VTC OIL CONTROL SOLENOID VALVE REMOVAL/TEST/INSTALLATION**), then go to step 14 .

13. Inspect the VTC actuator (see **VTC ACTUATOR INSPECTION**).

Is the VTC actuator OK?

YES: Go to step 14.

NO: Replace the VTC actuator (see **VTC ACTUATOR, EXHAUST CAMSHAFT SPROCKET REPLACEMENT**), then go to step 14.

14. Turn the ignition switch ON (II).
15. Reset the ECM/PCM with the HDS.
16. Clear the CKP pattern with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Do the CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN PROCEDURE**).
19. Do the VTC TEST in the INSPECTION MENU with the HDS.
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0011 is indicated, check for poor connections or loose terminals at the VTC oil control solenoid valve 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 21.

21. Monitor the OBD STATUS for DTC P0341 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 VTC oil control solenoid valve and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 19 and recheck.

DTC P0340: CMP SENSOR A 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 P0340 indicated?

YES: Go to step 5.

NO: Intermittent failure, system is OK at this time. Check for poor connections or loose

terminals at CMP Sensor A and the ECM/PCM.

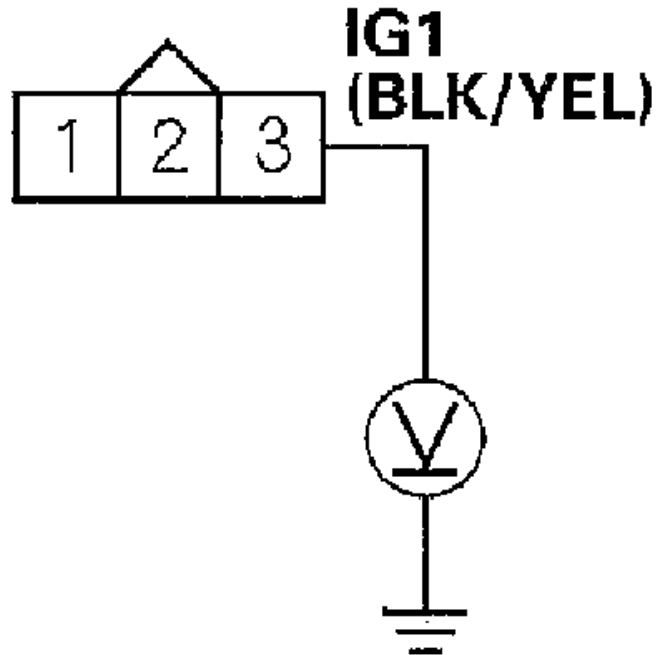
5. Turn the ignition switch OFF.
6. Disconnect the CMP Sensor A 3P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between CMP Sensor A 3P connector terminal No. 3 and body ground.

Is there battery voltage?

YES: Go to step 9.

NO: Repair open in the wire between the No. 18 ACG (15A) fuse in the under-dash fuse/relay box and CMP Sensor A, then go to step 19 .

CMP SENSOR A 3P CONNECTOR



Wire side of female terminals

G01822265

Fig. 8: Measuring Voltage Between CMP Sensor A 3P Connector Terminal No. 3 & Body Ground

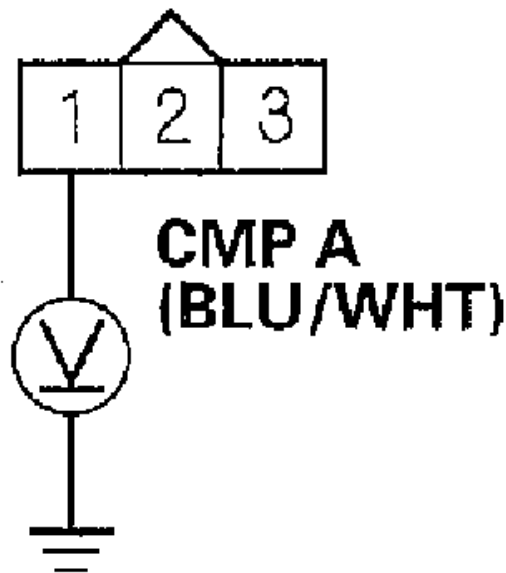
9. Measure voltage between CMP Sensor A 3P connector terminal No. 1 and body ground.

Is there about 5 V?

YES: Go to step 10.

NO: Go to step 11 .

CMP SENSOR A 3P CONNECTOR



Wire side of female terminals

G01822266

Fig. 9: Measuring Voltage Between CMP Sensor A 3P Connector Terminal No. 1 & Body Ground

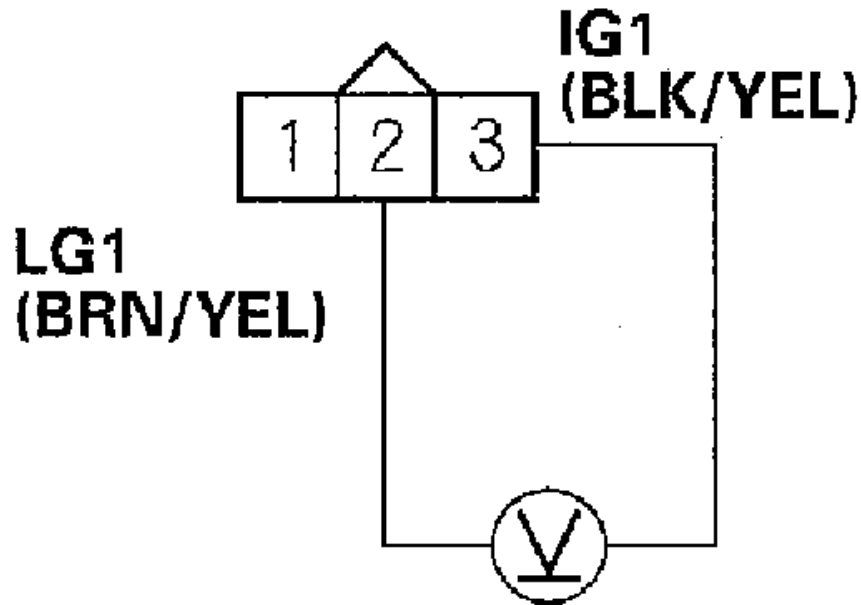
10. Measure voltage between CMP Sensor A 3P connector terminals No. 2 and No. 3.

Is there battery voltage?

YES: Go to step 16 .

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

CMP SENSOR A 3P CONNECTOR



Wire side of female terminals

G01822267

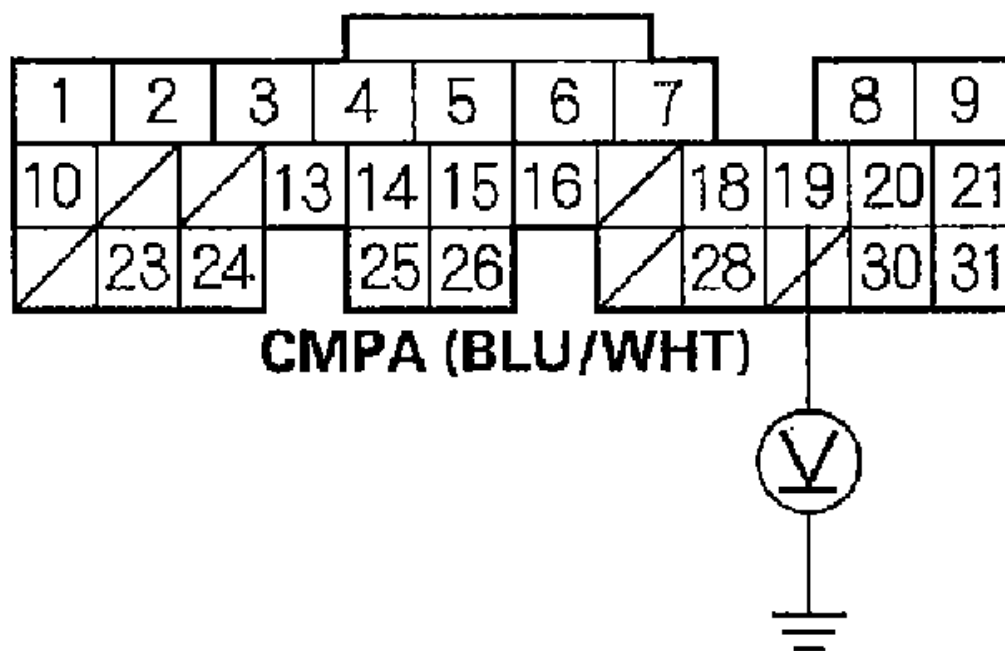
Fig. 10: Measuring Voltage Between CMP Sensor A 3P Connector Terminals No. 2 & No. 3

11. Measure voltage between ECM/PCM connector terminal A19 and body ground.

Is there about 5 V?

YES: Repair open in the wire between the ECM/PCM (A19) and CMP Sensor A, then go to step 19 .

NO: Go to step 12.

ECM/PCM CONNECTOR A (31P)

Wire side of female terminals

G01822268

Fig. 11: Measuring Voltage Between ECM/PCM Connector Terminal A19 & Body Ground

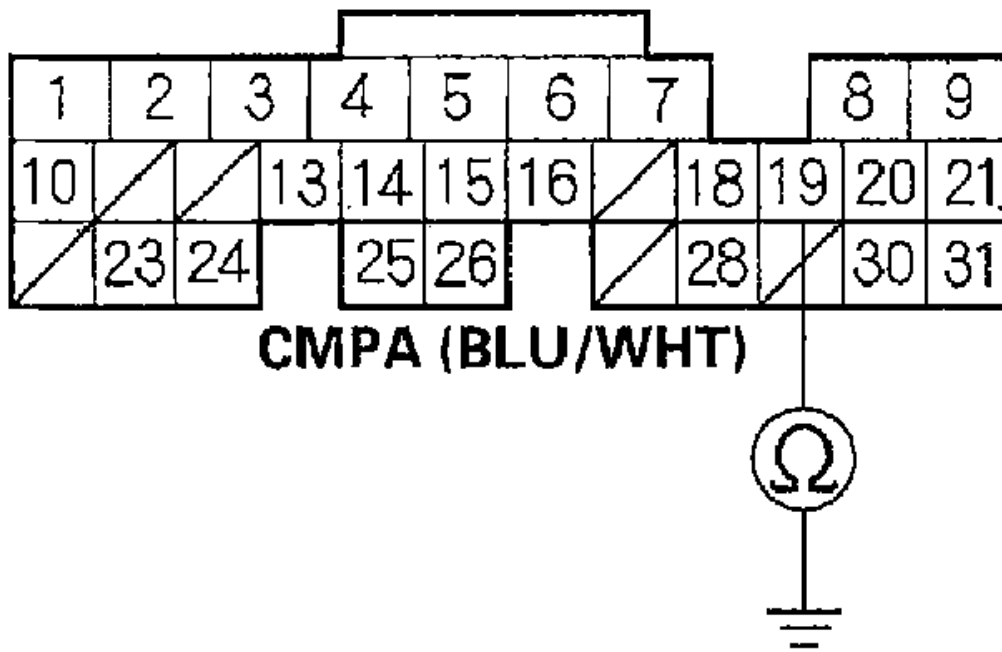
12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector A (31P).
15. Check for continuity between ECM/PCM connector terminal A19 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (A19) and CMP Sensor A, then go to step 18 .

NO: Go to step 23 .

ECM/PCM CONNECTOR A (31P)



Wire side of female terminals

G01822269

Fig. 12: Checking For Continuity Between ECM/PCM Connector Terminal A19 & Body Ground

16. Turn the ignition switch OFF.
17. Replace CMP Sensor A (see **CMP SENSOR A 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 P0340 is indicated, check for poor connections or loose terminals at CMP

Sensor A 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 **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING**).
24. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0340 is indicated, check for poor connections or loose terminals at CMP Sensor A 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 P0341: CMP SENSOR & CKP SENSOR INCORRECT PHASE DETECTED

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive at a steady speed between 19-38 MPH (30-60 km/h) for 10 minutes.
4. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P0341 indicated?

YES: Go to step 9 .

NO: Go to step 5.

5. Do the VTC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES: Go to step 6.

NO: Go to step 9 .

6. Test-drive at a steady speed between 19-38 MPH (30-60 km/h) for 10 minutes.
7. Check the VTC STATUS in the DATA LIST with the HDS.

Does it indicate ON?

YES: Go to step 8.

NO: Go to step 6 and recheck.

8. Monitor the OBD STATUS for DTC P0341 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES: Go to step 9.

NO: If the screen indicates PASSED, intermittent failure, system is OK at this time. If the screen indicates NOT COMPLETED, go to step 6 and recheck.

9. Turn the ignition switch OFF.
10. Test the VTC oil control solenoid valve (see **VTC OIL CONTROL SOLENOID VALVE REMOVAL/TEST/INSTALLATION**).

Is the VTC oil control solenoid valve OK?

YES: Go to step 11.

NO: Replace the VTC oil control solenoid valve (see VTC OIL CONTROL SOLENOID VALVE REMOVAL/TEST/INSTALLATION), then go to step 14 .

11. Check the camshaft timing (see step 1 of CAM CHAIN INSTALLATION).

Is the camshaft timing OK?

YES: Go to step 12.

NO: Reset the camshaft timing (see CAM CHAIN INSTALLATION), then go to step 14 .

12. Check for damage to the cam chain (see COMPONENT LOCATION INDEX).

Is the cam chain damaged?

YES: Replace the cam chain (see CAM CHAIN INSTALLATION), then go to step 14 .

NO: Go to step 13.

13. Inspect the VTC actuator (see VTC ACTUATOR INSPECTION).

Is the actuator OK?

YES: Go to step 14.

NO: Replace the VTC actuator (see VTC ACTUATOR, EXHAUST CAMSHAFT SPROCKET REPLACEMENT), then go to step 14.

14. Turn the ignition switch ON (II).
15. Reset the ECM/PCM with the HDS.
16. Clear the CKP pattern with the HDS.
17. Do the ECM/PCM idle learn procedure (see ECM/PCM IDLE LEARN PROCEDURE).
18. Do the CKP pattern learn procedure (see CKP PATTERN CLEAR/CKP PATTERN LEARN PROCEDURE).
19. Test-drive at a steady speed between 19-38 MPH (30-60 km/h) for 10 minutes.
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P0341 is indicated, check for poor connections or loose terminals at the VTC oil control solenoid valve 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 21.

21. Monitor the OBD STATUS for DTC P0341 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 VTC oil control solenoid valve and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 19 and recheck.

DTC P0344: CMP SENSOR A INTERMITTENT INTERRUPTION

1. Note the following freeze data.

- Engine speed
 - Vehicle speed
2. Clear the DTC with the HDS.
 3. Start engine, and let it idle for 10 seconds.
 4. Check the CMP NOISE A 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 A 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 A and the ECM/PCM.

7. Check for poor or loose connections and terminals at these locations:

- CMP sensor A
- 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 A pulse plate (see **CMP PULSE PLATE A REPLACEMENT**).

Is the pulse plate damaged?

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

NO: Go to step 9.

9. Turn the ignition switch OFF.
10. Replace CMP sensor A (see **CMP SENSOR A 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 P0344 is indicated, check for poor connections or loose terminals at CMP Sensor A 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 P2646: OIL PRESSURE SWITCH CIRCUIT LOW VOLTAGE

Special Tools Required:

- Pressure gauge adapter 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 adapter 07MAJ-PY40120
- Oil pressure hose 07ZAJ-S5A0200

1. Check the engine oil level.

Is the level OK?

YES: Go to step 2.

NO: Adjust the engine oil to the proper level, then go to step 21 .

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES: Intermittent failure, system in OK at this time. Check for poor connections or loose terminals at the VTEC oil pressure switch, the VTEC solenoid valve, and the ECM/PCM.

NO: Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the VTEC oil pressure switch 2P connector.
7. Turn the ignition switch ON (II).
8. Check the VTEC PRES SW in the DATA LIST with the HDS.

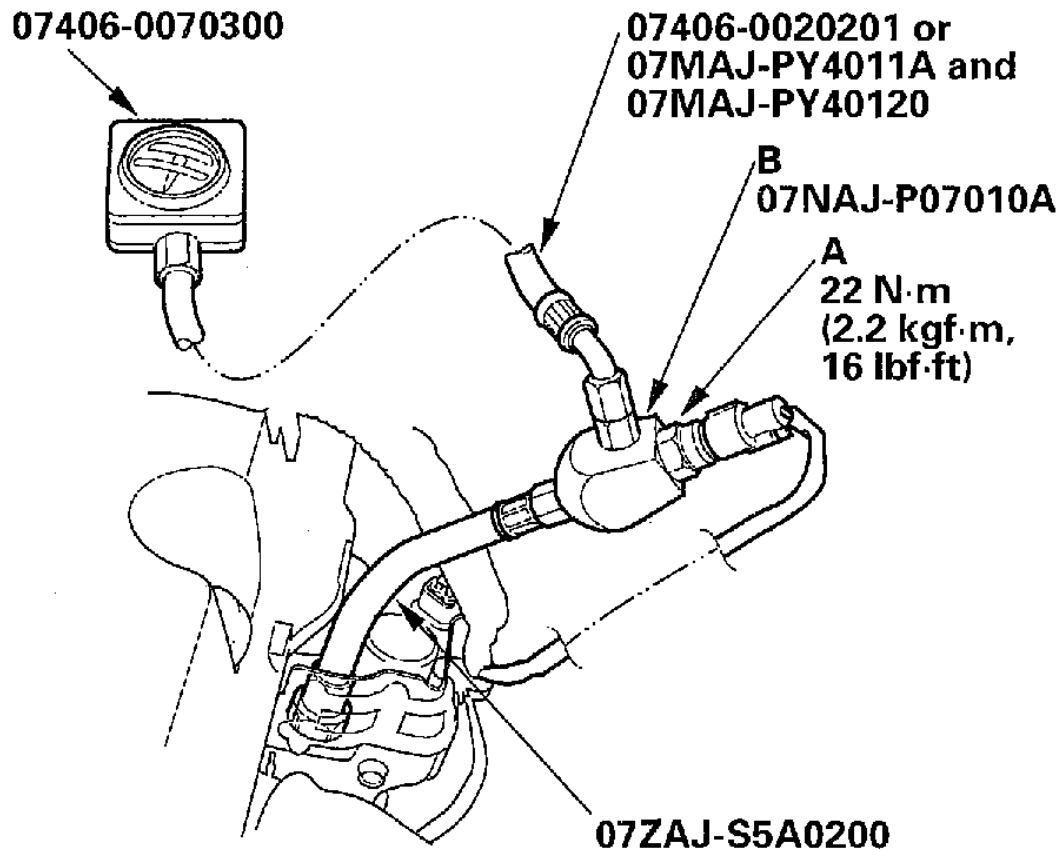
Is SWITCH ON indicated?

YES: Go to step 9.

NO: Replace the VTEC oil pressure switch (see **VTEC OIL PRESSURE SWITCH REPLACEMENT**), then go to step 21 .

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

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



G01822270

Fig. 13: Removing The VTEC Oil Pressure Switch & Installing The Special Tools & Installing The VTEC Oil Pressure Switch To The Oil Pressure Gauge Adapter

11. Turn the ignition switch ON (II).
12. Do the VTEC TEST in the INSPECTION MENU with the HDS.
13. Check the oil pressure.

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

YES: Inspect the VTEC system. If it is OK, replace the VTEC solenoid valve (see **VTEC SOLENOID VALVE REMOVAL/INSTALLATION**), then go to step 21.

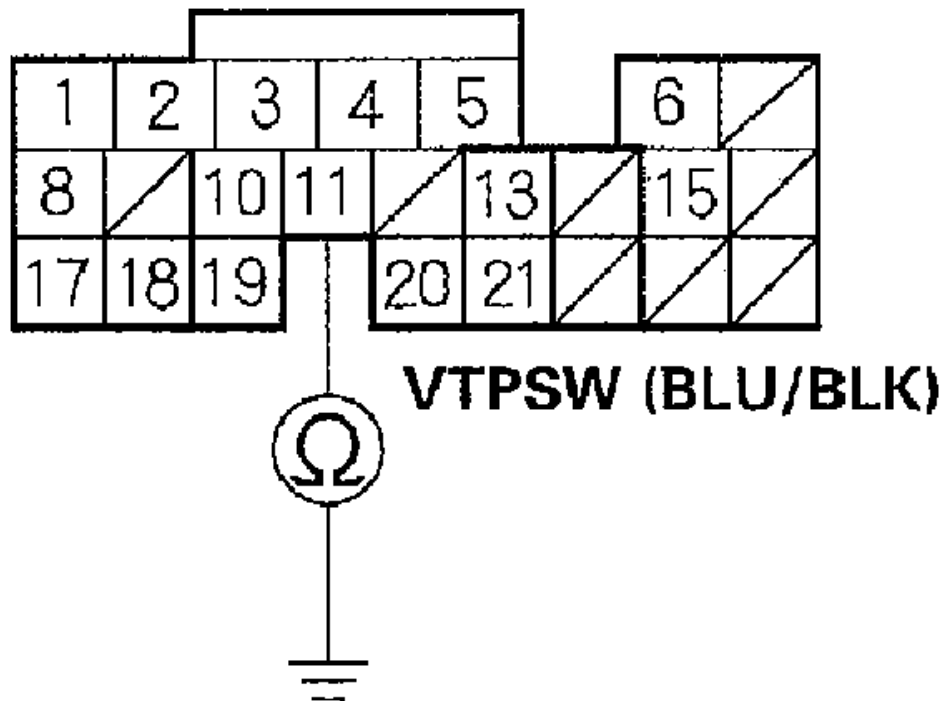
NO: Go to step 14.

14. Turn the ignition switch OFF.
15. Jump the SCS line with the HDS.
16. Disconnect the VTEC oil pressure switch 2P connector.
17. Disconnect ECM/PCM connector B (24P).
18. Check for continuity between ECM/PCM connector terminal B11 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (B11) and the VTEC oil pressure switch, then go to step 19.

NO: Go to step 27 .

ECM/PCM CONNECTOR B (24P)

Wire side of female terminals

G01822271

Fig. 14: Checking For Continuity Between ECM/PCM Connector Terminal B11 & Body Ground

19. Reconnect the VTEC oil pressure switch 2P connector.
20. Reconnect ECM/PCM connector B (24P).

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. Do the VTEC TEST in the INSPECTION MENU with the HDS.
25. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2646 is indicated, check for poor connections or loose terminals at the VTEC oil pressure switch, the VTEC solenoid valve, 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 P2646 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 24 and recheck.

27. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING**).
28. Do the VTEC TEST in the INSPECTION MENU with the HDS.
29. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2646 is indicated, check for poor connections or loose terminals at the VTEC oil pressure switch, the VTEC solenoid valve, 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 P2647: VTEC OIL PRESSURE SWITCH CIRCUIT HIGH VOLTAGE

1. Check the engine oil level.

Is the level OK?

YES: Go to step 2.

NO: Adjust the engine oil to the proper level, then go to step 14 .

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the VTEC oil pressure switch and the ECM/PCM.

NO: Go to step 5.

5. Check the result of step 4.

Does the test result indicate one of the following failures?

- VTEC Switch Failure
- VTEC Switch Open
- VTEC Switch SIG Line Open
- VTEC Switch GND Line Open

YES: Go to step 6.

NO: Check for poor connections or loose terminals at the VTEC oil pressure switch. If it is OK, replace the VTEC solenoid valve (see **VTEC SOLENOID VALVE**

REMOVAL/INSTALLATION), then, go to step 14 .

6. Turn the ignition switch OFF.

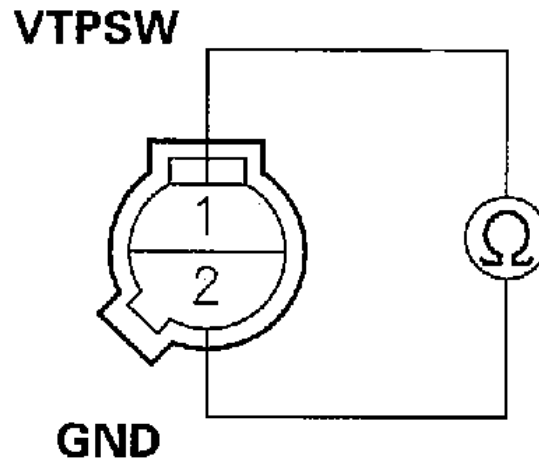
7. Disconnect the VTEC oil pressure switch 2P connector.

8. At the VTEC oil pressure switch, check for continuity between terminals No. 1 and No. 2.

Is there continuity?

YES: Go to step 9.

NO: Replace the VTEC oil pressure switch (see **VTEC OIL PRESSURE SWITCH REPLACEMENT**), then go to step 13 .

VTEC OIL PRESSURE SWITCH 2P CONNECTOR

Terminal side of male terminals

G01822272

Fig. 15: Checking For Continuity Between VTEC Oil Pressure Switch Terminals No. 1 & No. 2

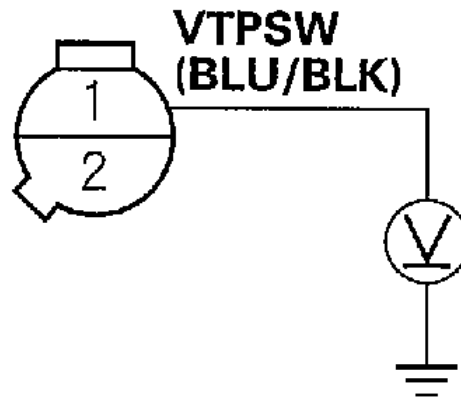
9. Turn the ignition switch ON (II).
10. Measure voltage between VTEC oil pressure switch terminal No. 1 and body ground.

Is there battery voltage?

YES: Repair open in the wire between the VTEC oil pressure switch and G101, then go to step 13 .

NO: Go to step 11.

VTEC OIL PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

G01822273

Fig. 16: Measuring Voltage Between VTEC Oil Pressure Switch Terminal No. 1 & Body Ground

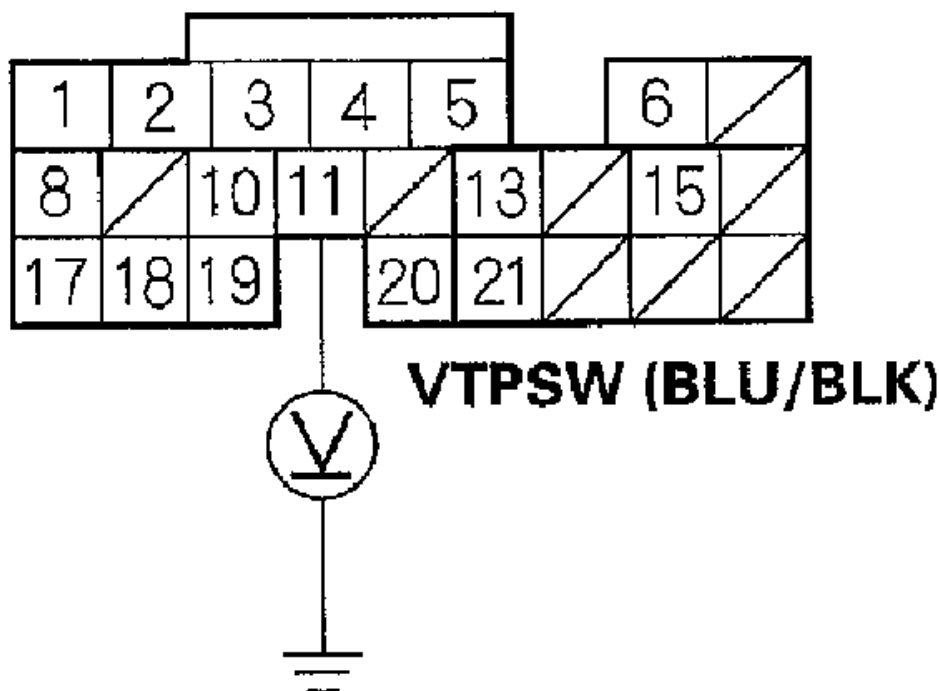
11. Measure voltage between ECM/PCM connector terminal B11 and body ground.

Is there battery voltage?

YES: Repair open in the wire between the ECM/PCM (B11) and the VTEC oil pressure switch, then go to step 12.

NO: Go to step 19 .

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822274

Fig. 17: Measuring Voltage Between ECM/PCM Connector Terminal B11 & Body Ground

12. Turn the ignition switch OFF.
13. Reconnect the VTEC oil pressure switch 2P connector.
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 P2647 is indicated, check for poor connections or loose terminals at the VTEC oil pressure switch 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 P2647 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicates FAILED, then go to step 1 and recheck. If the screen indicates NOT COMPLETED, go to step 16 and recheck.

19. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING**).
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2647 is indicated, check for poor connections or loose terminals at the VTEC oil pressure switch 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 P2648: VTEC SOLENOID VALVE CIRCUIT LOW VOLTAGE

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Do the VTEC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES: Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the VTEC solenoid valve and the ECM/PCM.

NO: Go to step 4.

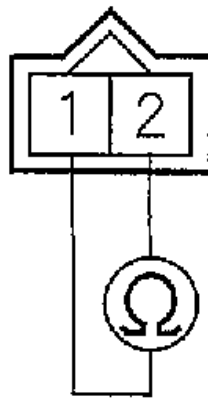
4. Turn the ignition switch OFF.
5. Disconnect the VTEC solenoid valve 2P connector.
6. Measure resistance between VTEC solenoid valve 2P connector terminals No. 1 and No. 2.

Is there 14-30 ohm?

YES: Go to step 7.

NO: Go to step 10 .

VTEC SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

G01822275

Fig. 18: Measuring Resistance Between VTEC Solenoid Valve 2P Connector Terminals No. 1 & No. 2

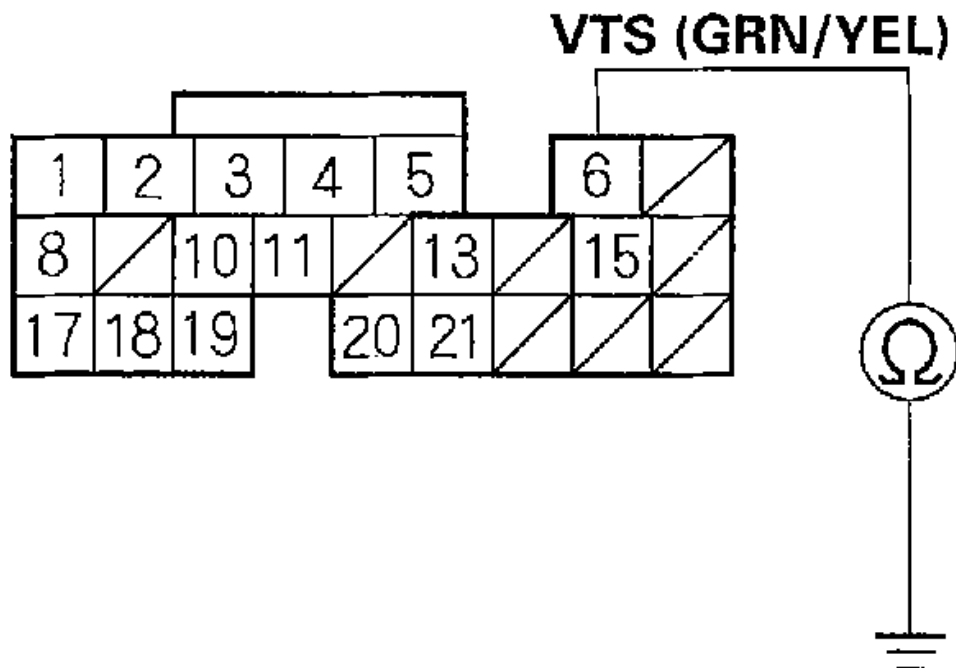
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector B (24P).
9. Check for continuity between ECM/PCM connector terminal B6 and body ground.

Is there continuity?

YES: Repair short in the wire between the ECM/PCM (B6) and the VTEC solenoid valve, then go to step 11 .

NO: Go to step 18 .

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

G01822276

Fig. 19: Checking For Continuity Between ECM/PCM Connector Terminal B6 & Body Ground

10. Replace the VTEC solenoid valve (see **VTEC SOLENOID VALVE REMOVAL/INSTALLATION**).
11. Reconnect all connectors.
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. Do the VTEC TEST in the INSPECTION MENU with the HDS.
16. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2648 is indicated, check for poor connections or loose terminals at the VTEC solenoid valve 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 17.

17. Monitor the OBD STATUS for DTC P2648 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 15 and recheck.

18. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING**).
19. Do the VTEC TEST in the INSPECTION MENU with the HDS.
20. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2648 is indicated, check for poor connections or loose terminals at the VTEC solenoid valve 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 P2649: VTEC SOLENOID VALVE 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 for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC P2649 indicated?

YES: Go to step 5.

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

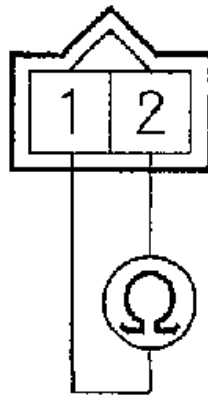
5. Turn the ignition switch OFF.
6. Disconnect the VTEC solenoid valve 2P connector.
7. Measure resistance between VTEC solenoid valve 2P connector terminals No. 1 and No. 2.

Is there 14-30 ohm?

YES: Go to step 8.

NO: Go to step 13 .

VTEC SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

G01822277

Fig. 20: Measuring Resistance Between VTEC Solenoid Valve 2P Connector Terminals No. 1 & No. 2

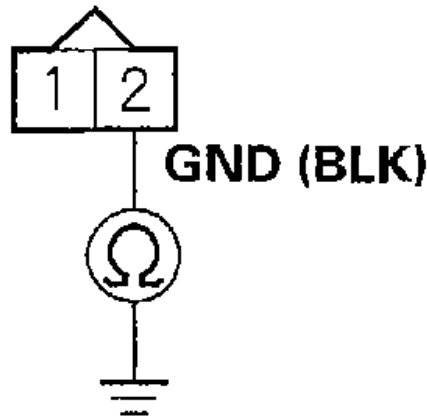
8. Check for continuity between VTEC solenoid valve terminal No. 2 and body ground.

Is there continuity?

YES: Go to step 9.

NO: Repair open in the wire between the VTEC solenoid valve and G101, then go to step 14 .

VTEC SOLENOID VALVE 2P CONNECTOR



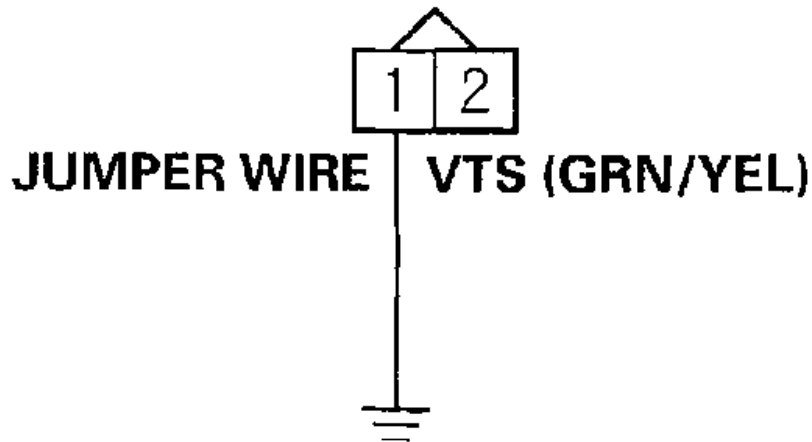
Wire side of female terminals

G01822278

Fig. 21: Checking For Continuity Between VTEC Solenoid Valve Terminal No. 2 & Body Ground

9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector B (24P).
11. Connect VTEC solenoid valve 2P connector terminal No. 1 to body ground with a jumper wire.

VTEC SOLENOID VALVE 2P CONNECTOR



Wire side of female terminals

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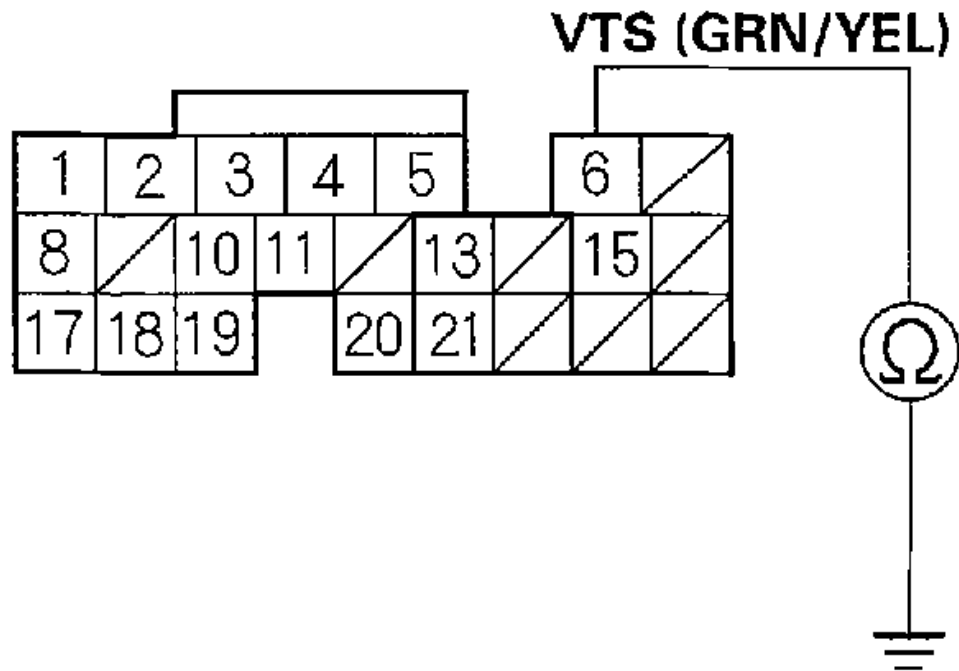
Fig. 22: Connecting VTEC Solenoid Valve 2P Connector Terminal No. 1 To Body Ground With A Jumper Wire

12. Check for continuity between ECM/PCM connector terminal B6 and body ground.

Is there continuity?

YES: Go to step 20 .

NO: Repair open in the wire between the ECM/PCM (B6) and the VTEC solenoid valve, then go to step 14 .

ECM/PCM CONNECTOR B (24P)

Wire side of female terminals

G01822280

Fig. 23: Checking For Continuity Between ECM/PCM Connector Terminal B6 & Body Ground

13. Replace the VTEC solenoid valve (see **VTEC SOLENOID VALVE REMOVAL/INSTALLATION**).
14. Reconnect all connectors.
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 P2649 is indicated, check for poor connections or loose terminals at the VTEC solenoid valve 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 19.

19. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES: Troubleshooting is complete.

NO: If the screen indicated FAILED, go to step 1 and recheck. If the screen indicates NOT COMPLETED, go to step 17 and recheck.

20. Update the ECM/PCM if it does not have the latest software, or substitute a known-good ECM/PCM (see **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING**).
21. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

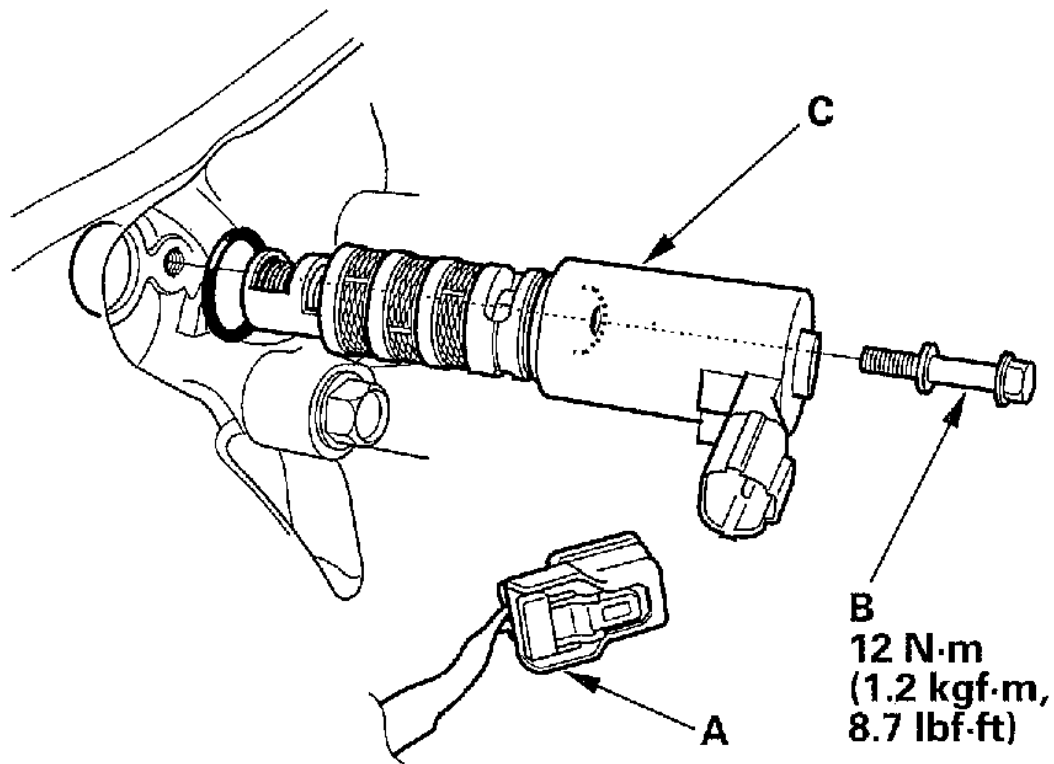
Are any Temporary DTCs or DTCs indicated?

YES: If DTC P2647 is indicated, check for poor connections or loose terminals at the VTEC solenoid valve 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**).

VTC OIL CONTROL SOLENOID VALVE REMOVAL/TEST/INSTALLATION

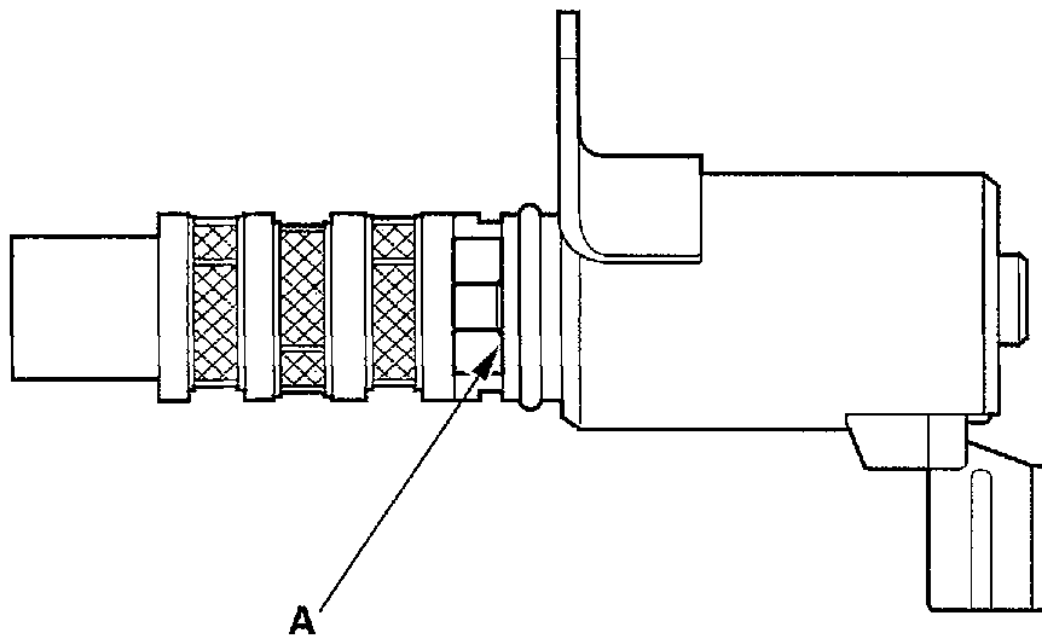
1. Disconnect the VTC oil control solenoid valve connector (A).



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Fig. 24: Disconnecting The VTC Oil Control Solenoid Valve Connector

2. Remove the bolt (B) and VTC oil control solenoid valve (C).
3. Check the VTC oil control solenoid valve for sticking and the solenoid valve filter for clogging. If the valve is stuck or clogged, replace the VTC oil control solenoid valve.
4. Check clearance between the port (advance side) and the valve. Make sure the valve (A) closes fully.

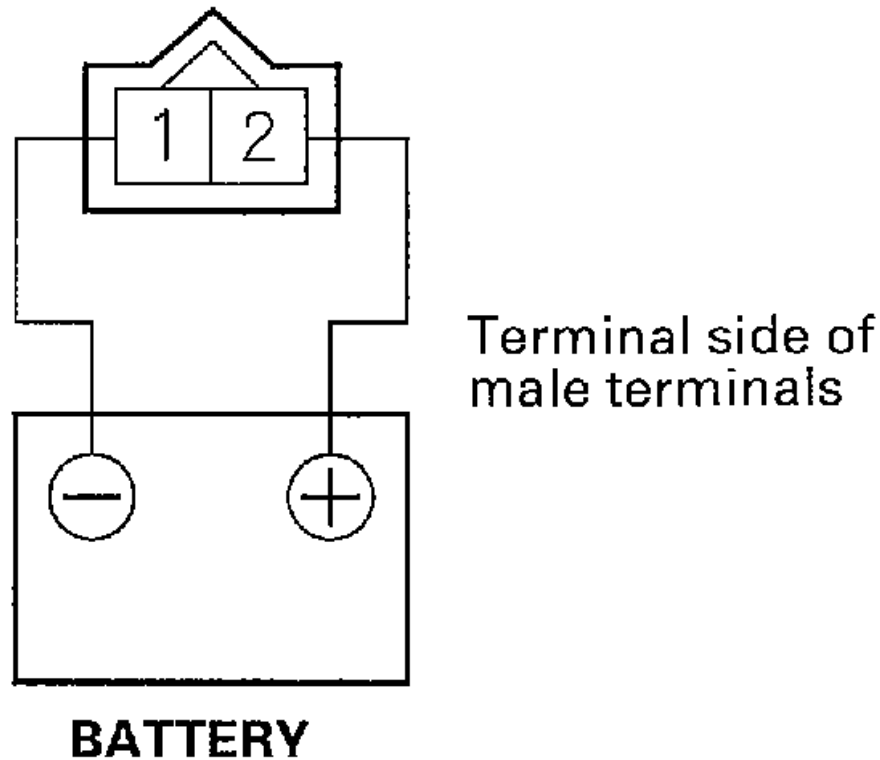


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Fig. 25: Checking Clearance Between The Port & The Valve

5. Connect the battery positive terminal to VTC oil control solenoid valve 2P connector terminal No. 2.

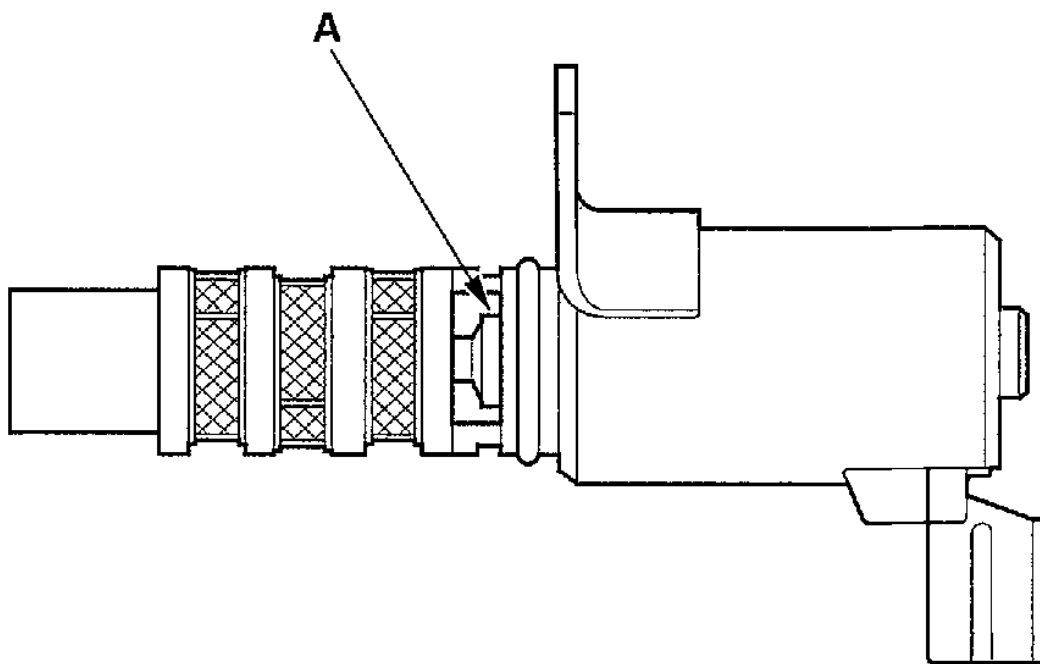
VTC OIL CONTROL SOLENOID VALVE 2P CONNECTOR



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Fig. 26: Connecting Battery To VTC Oil Control Solenoid Valve 2P Connector

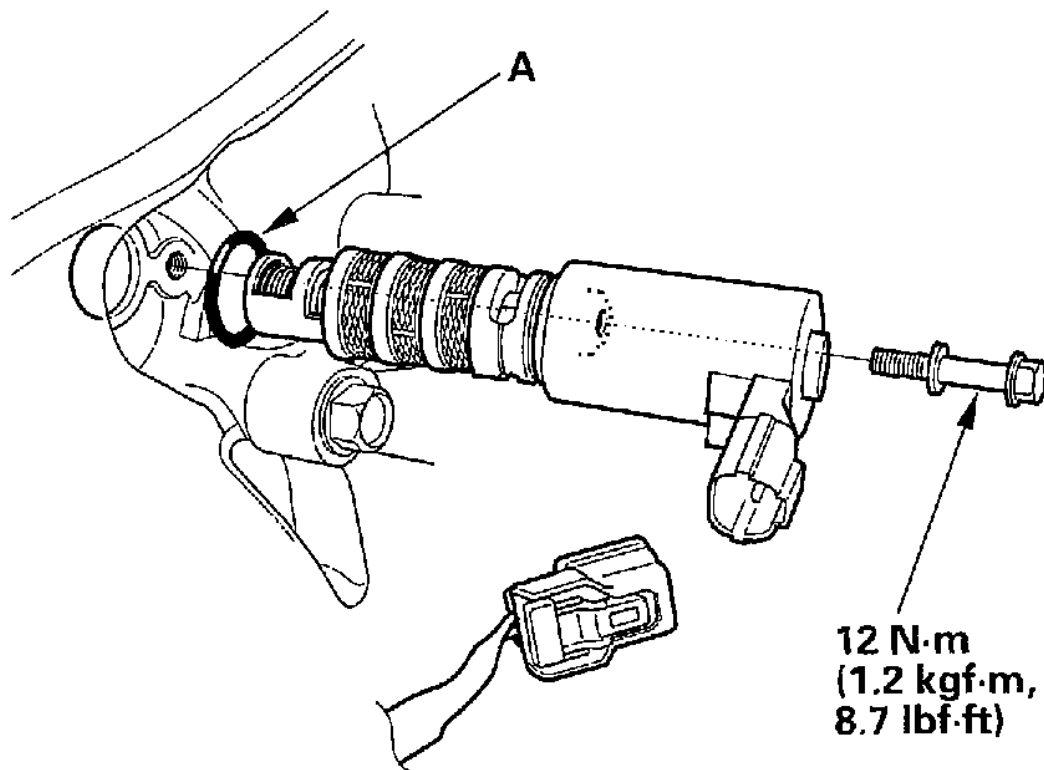
6. Connect the battery negative terminal to VTC oil control solenoid valve 2P connector terminal No. 1. Clearance (A) should be at least 1.2 mm (1/16 in.). If the valve does not open, replace it, then go to step 7.



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Fig. 27: Checking VTC Oil Control Solenoid Valve Clearance

7. Remove the VTC valve O-ring (A).



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Fig. 28: Installing VTC Oil Control Solenoid Valve

8. Coat a new O-ring with engine oil, then install it.
9. Clean and dry the mating surface of the valve.
10. Install the valve.

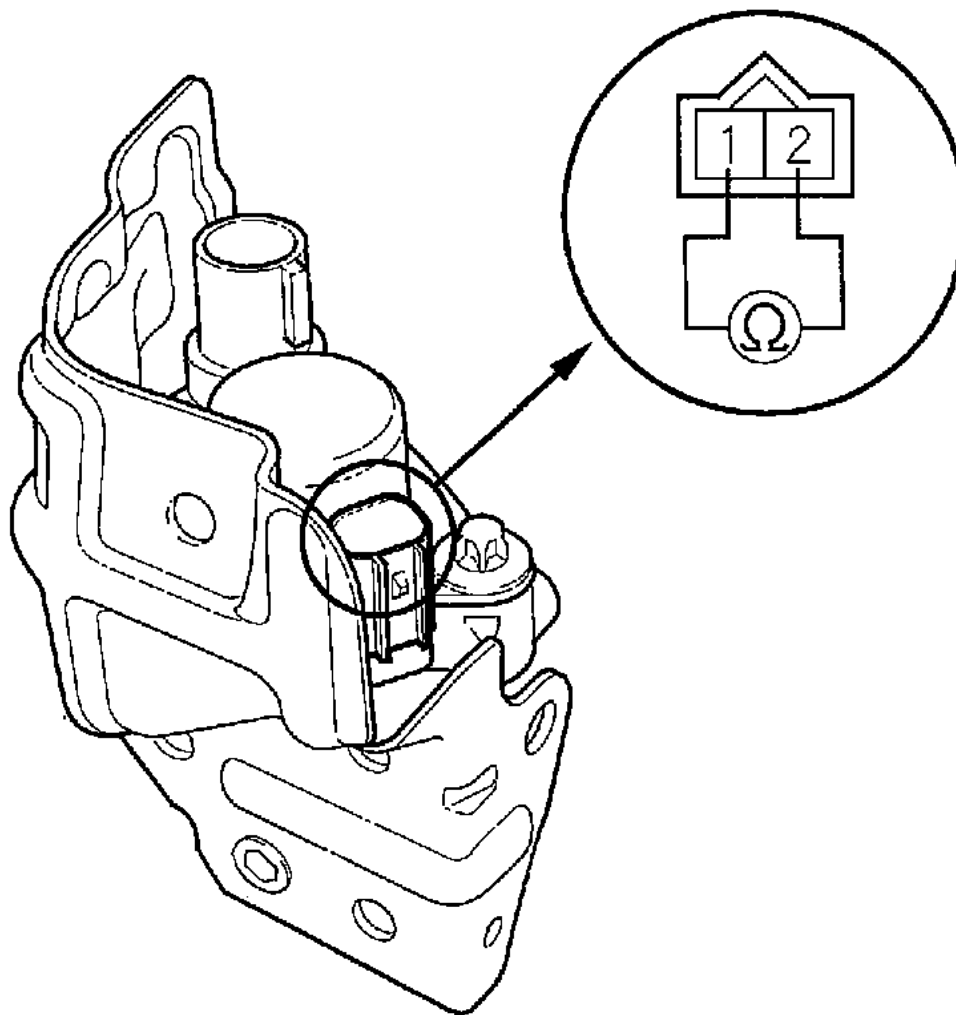
NOTE: Do not install the valve while wearing fibrous cloth gloves. Be careful not to contaminate the cylinder head opening.

VTEC SOLENOID VALVE INSPECTION

1. Disconnect the VTEC solenoid valve connector and the VTEC oil pressure switch connector.
2. Remove the VTEC solenoid valve assembly from the cylinder head (see **VTEC SOLENOID VALVE REMOVAL/INSTALLATION**).
3. Measure resistance between VTEC solenoid valve connector terminals No. 1 and No. 2.

Resistance: 14-30 ohm

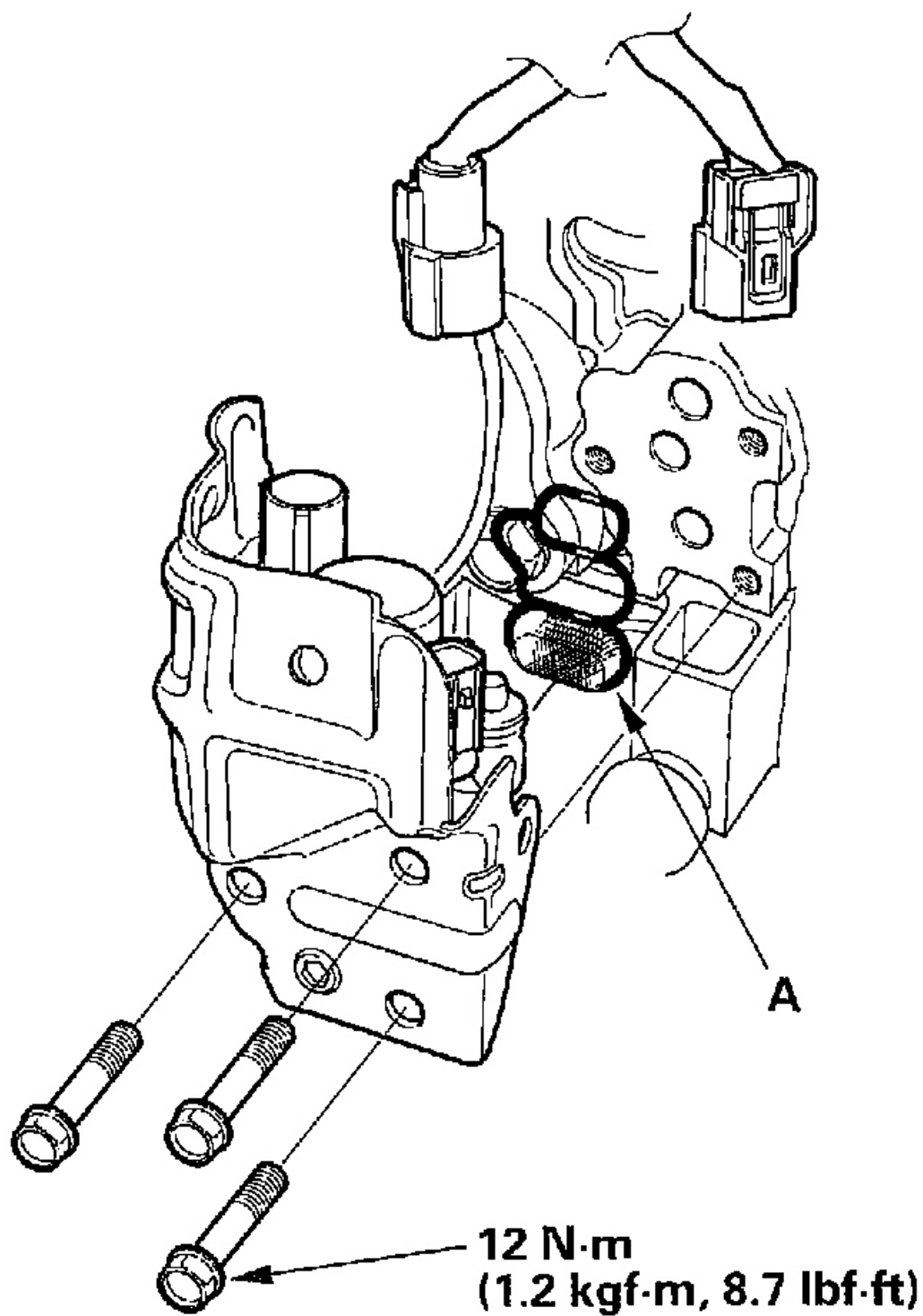
Resistance: 14—30 Ω



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Fig. 29: Measuring Resistance Between VTEC Solenoid Valve Connector Terminals No. 1 & No. 2

4. If the resistance is within specifications, check the solenoid valve filter (A) for clogging. If it is clogged, replace the solenoid valve filter, the engine oil filter, and the engine oil.



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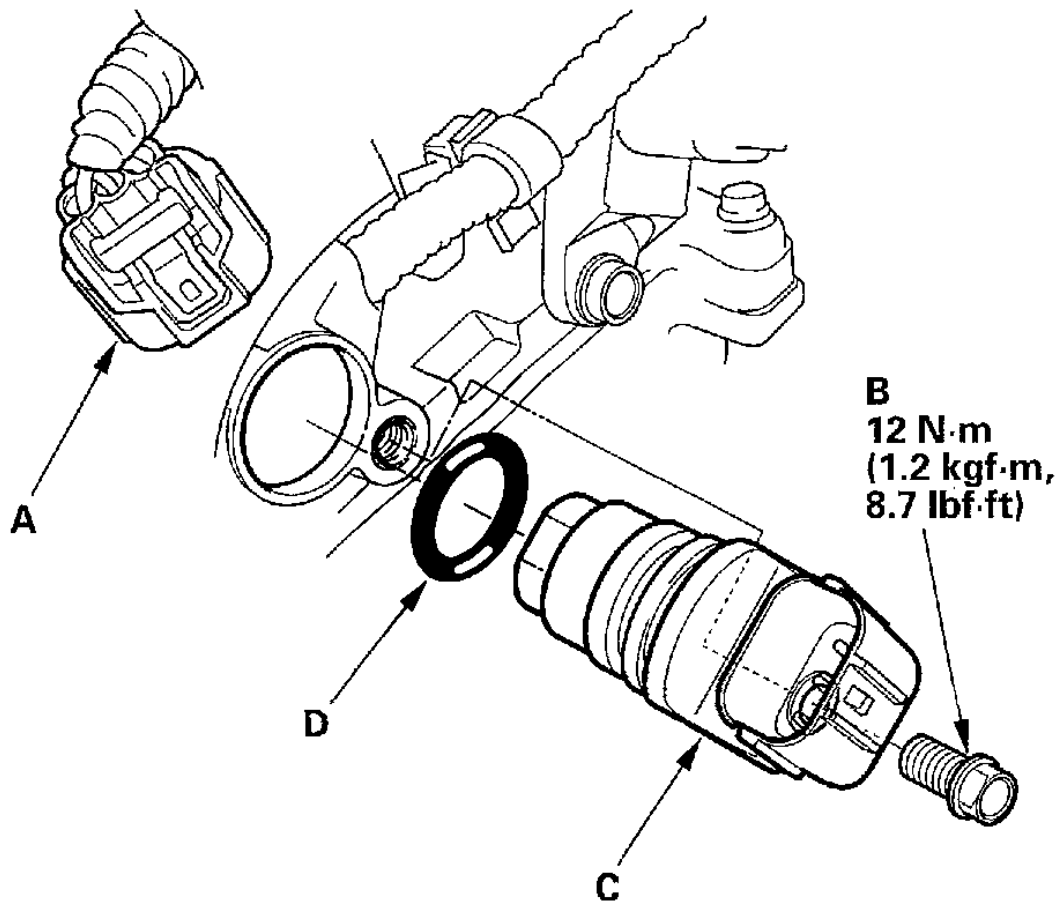
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Fig. 30: Replacing The Solenoid Valve Filter

REMOVAL & INSTALLATION

CMP SENSOR A REPLACEMENT

1. Remove the air cleaner (see **AIR CLEANER REMOVAL/INSTALLATION**).
2. Disconnect the CMP sensor A connector (A).



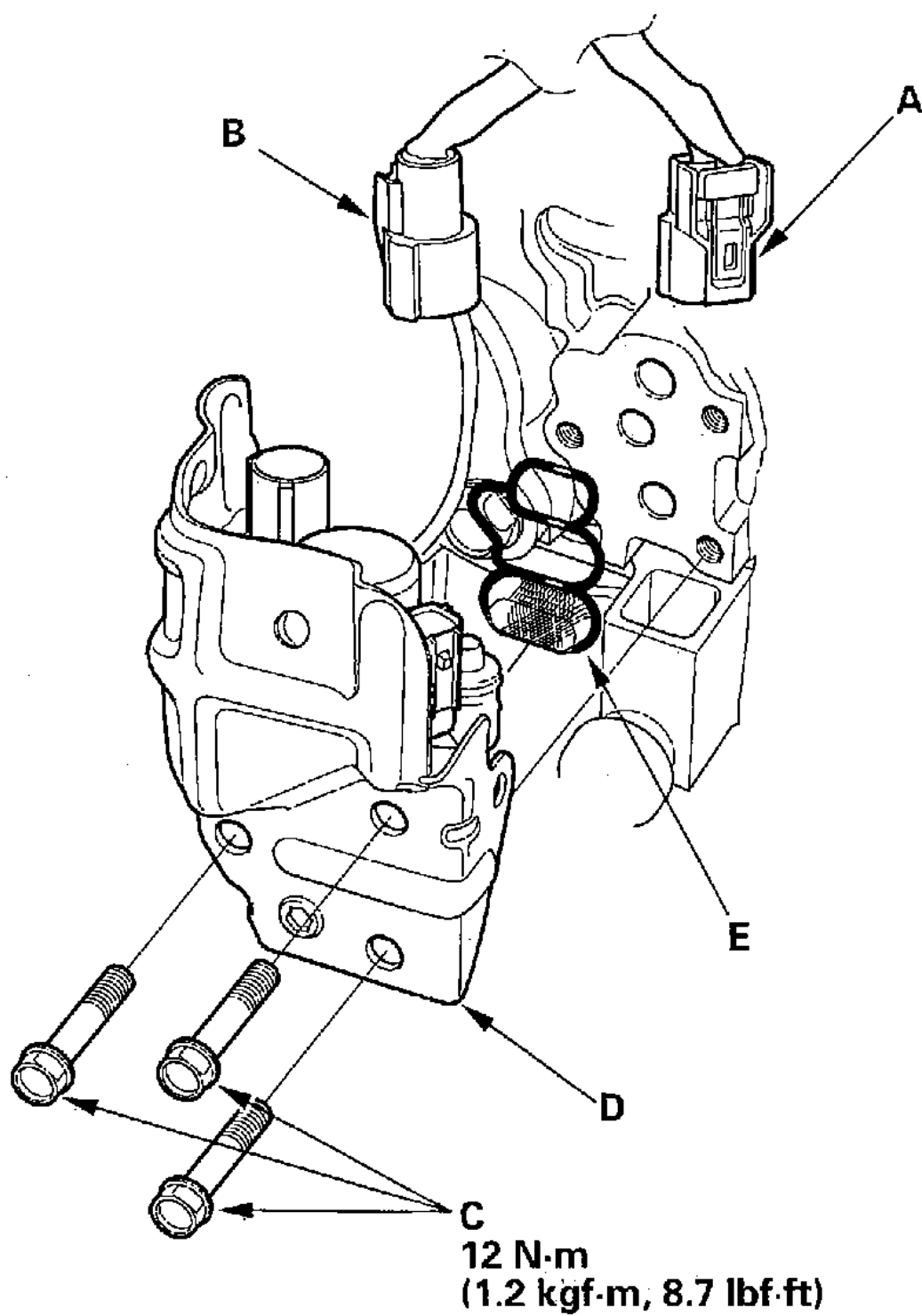
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Fig. 31: Removing CMP Sensor A

3. Remove the bolt (B).
4. Remove CMP sensor A (C).
5. Install the sensor in the reverse order of removal with a new O-ring (D).

VTEC SOLENOID VALVE REMOVAL/INSTALLATION

1. Disconnect the VTEC solenoid valve connector (A) and the VTEC oil pressure switch connector (B).



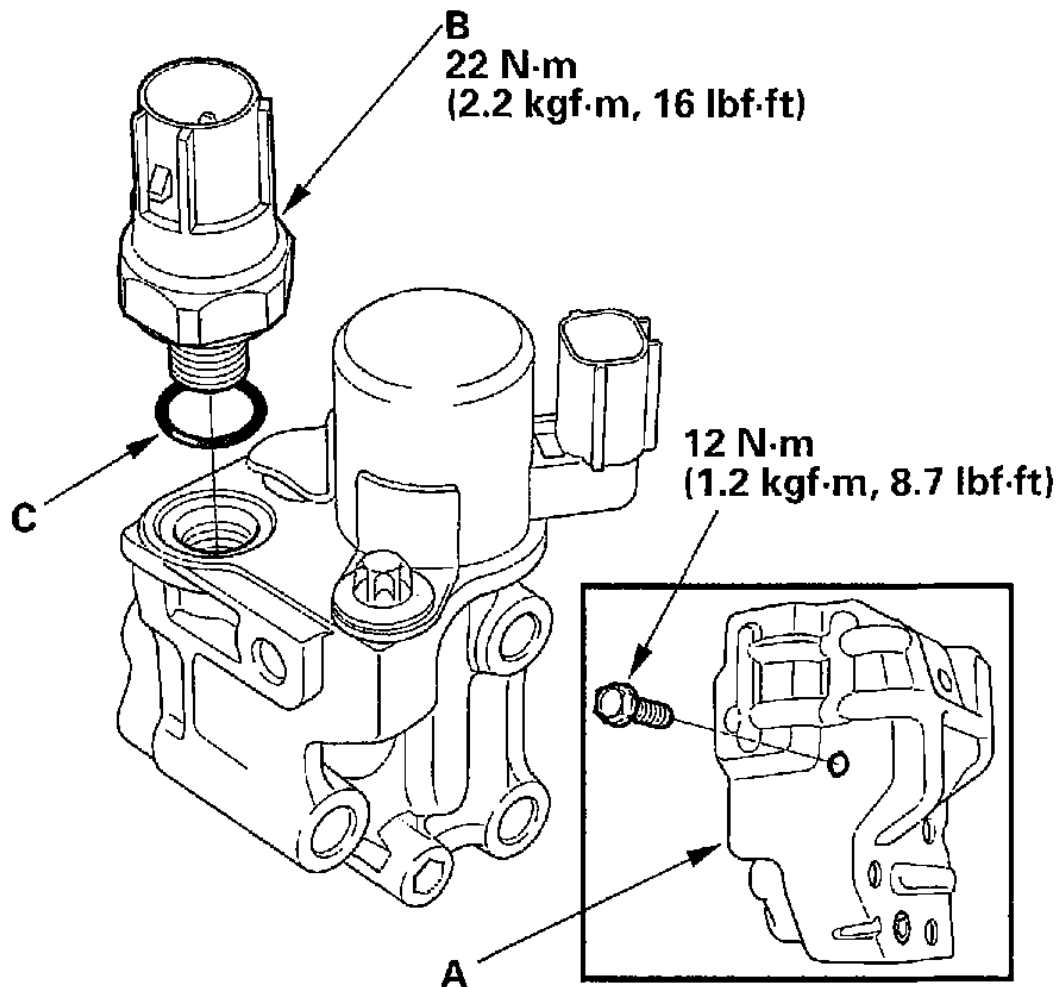
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Fig. 32: Removing VTEC Solenoid Valve

2. Remove the bolts (C).
3. Remove the VTEC solenoid valve (D).
4. Install the valve in the reverse order of removal with a new solenoid valve filter (E).

VTEC OIL PRESSURE SWITCH REPLACEMENT

1. Remove the VTEC solenoid valve assembly (see **VTEC SOLENOID VALVE REMOVAL/INSTALLATION**).
2. Remove the cover (A).



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Fig. 33: Removing VTEC Oil Pressure Switch

3. Remove the VTEC oil pressure switch (B).
4. Install the switch in the reverse order of removal with a new O-ring (C).