

**2004 Honda Element DX**

2003-06 ENGINE PERFORMANCE EVAP System - Element

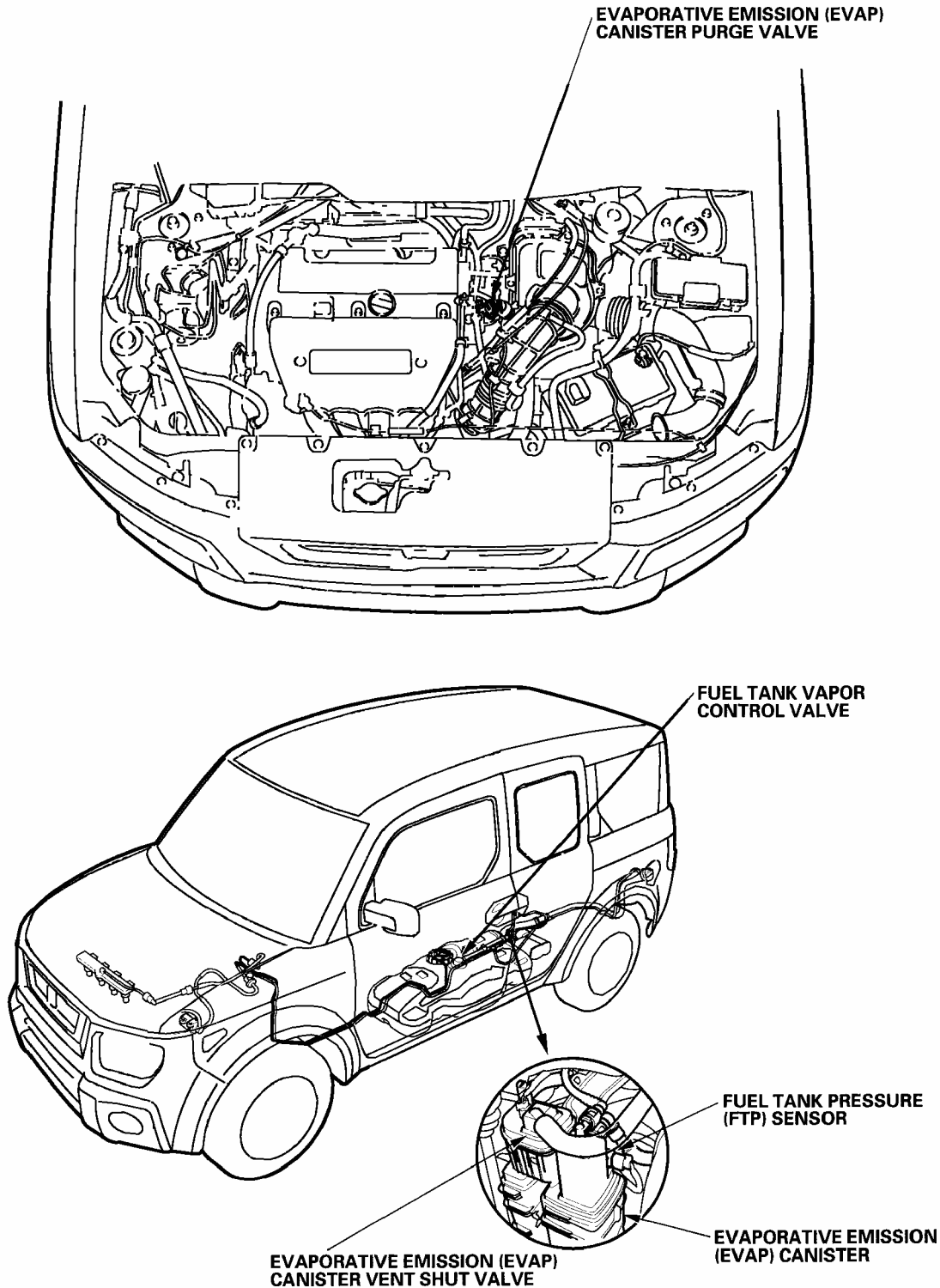
**2003-06 ENGINE PERFORMANCE**

**EVAP System - Element**

**COMPONENT LOCATION INDEX**

# 2004 Honda Element DX

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**Fig. 1: Identifying EVAP System Components Location**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## DTC TROUBLESHOOTING

## 2004 Honda Element DX

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### DTC INDEX

DTC	Description
<b>DTC P0442</b>	EVAP System Small Leak Detected
<b>DTC P0443</b>	EVAP Canister Purge Valve Circuit Malfunction
<b>DTC P0451</b>	FTP Sensor Circuit Range/Performance Problem
<b>DTC P0452</b>	FTP Sensor Circuit Low Voltage (2003-2004 models)
<b>DTC P0452</b>	FTP Sensor Circuit Low Voltage (2005-2006 models)
<b>DTC P0453</b>	FTP Sensor Circuit High Voltage
<b>DTC P0456</b>	EVAP System Very Small Leak Detected
<b>DTC P0457</b>	EVAP System Leak Detected/Fuel Fill Cap Loose or Missing
<b>DTC P0496</b>	EVAP System High Purge Flow
<b>DTC P0497</b>	EVAP System Low Purge Flow
<b>DTC P0498</b>	EVAP Canister Vent Shut Valve Circuit Low Voltage
<b>DTC P0499</b>	EVAP Canister Vent Shut Valve Circuit High Voltage
<b>DTC P1454</b>	FTP Sensor Circuit Range/Performance Problem
<b>DTC P2422</b>	EVAP Canister Vent Shut Valve Stuck Closed Malfunction

**DTC P0442: EVAP SYSTEM SMALL LEAK DETECTED; DTC P0456: EVAP SYSTEM VERY SMALL LEAK DETECTED**

**NOTE:** The fuel system is designed to allow specified maximum vacuum and pressure conditions. Do not deviate from the vacuum and pressure tests as indicated in these procedures. Excessive pressure/vacuum would damage the EVAP components or cause eventual fuel tank failure.

### Special Tools Required

- Vacuum/pressure gauge, 0-4 in.Hg 07JAZ-001000B
- Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available

**NOTE:**

- Fresh fuel has a higher volatility that will create greater pressure/vacuum. The optimum condition for testing is less than a full tank of fresh fuel. If possible, to assist in leak detection, add 1 gallon (3.8 liter) of fresh fuel to the tank (as long as it will not fill the tank) just before starting these procedure.
- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING**)

**INFORMATION ).**

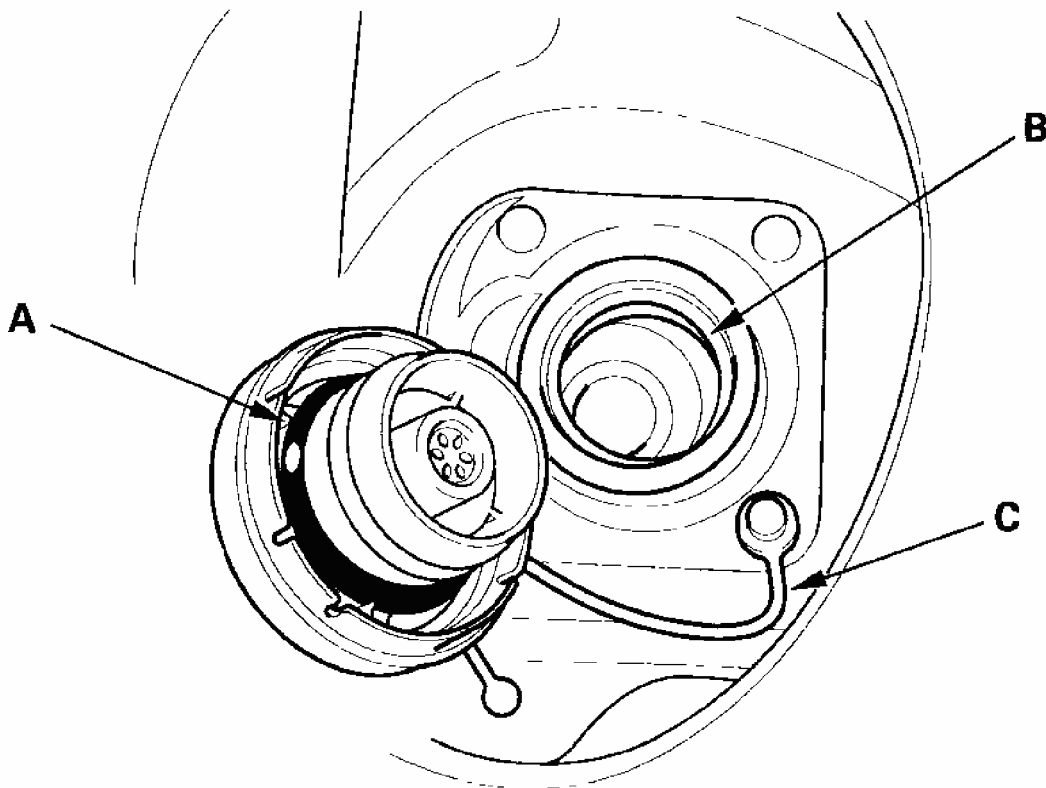
1. Check the fuel fill cap (the cap must say "Tighten to click"). It should turn 1/4 turn after it's tight, then it clicks.

*Is the correct fuel fill cap installed and properly tightened?*

**YES-** Go to step 2.

**NO-** Replace or tighten the cap, then go to step 22 .

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap (2006 model).



\*: This illustration shows 2006 model.

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**Fig. 2: Identifying Fuel Fill Cap Seal And Fuel Fill Pipe Mating Surface For Inspection**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is the fuel fill cap seal missing or damaged, or is the fuel fill pipe damaged, or is the tether cord caught under the cap (2006 model)?*



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**YES-** Replace the fuel fill cap or the fuel fill pipe, then go to step 22 .

**NO-** Go to step 3.

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

*Is the result OK?*

**YES-** Intermittent failure, system is OK at this time. Check the EVAP hose connections. Also check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, or the EVAP canister vent shut valve and the ECM/PCM.

**NO-** Go to step 6.

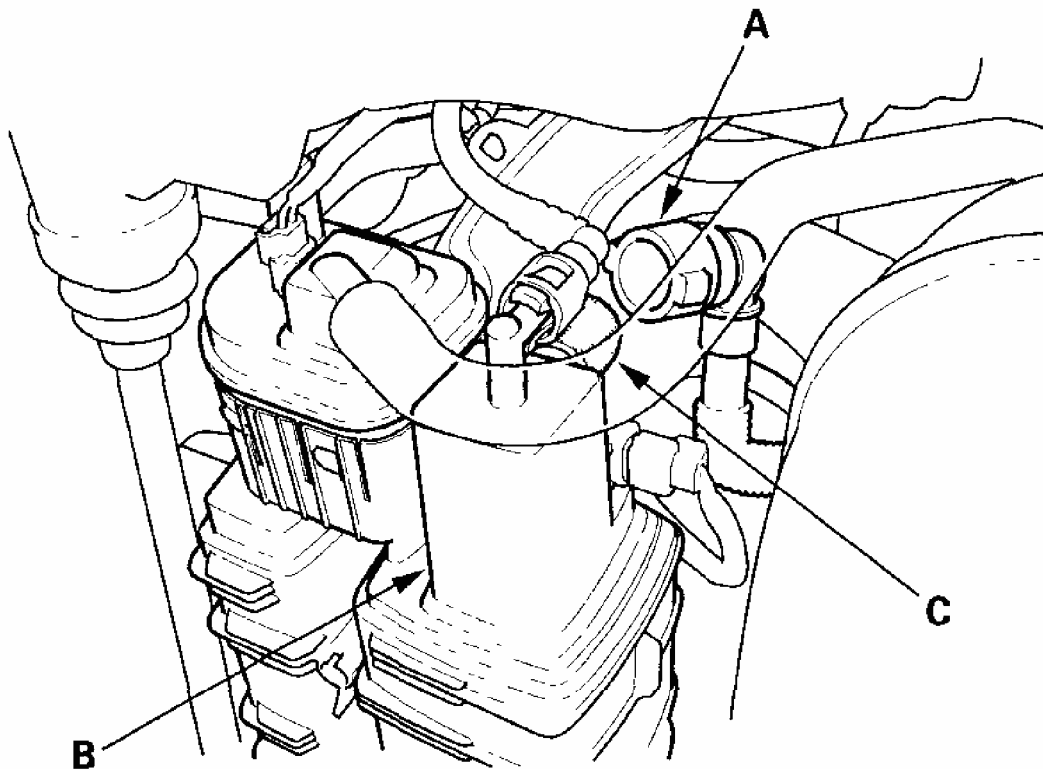
6. Turn the ignition switch OFF.
7. Turn the ignition switch ON (II).
8. Check for a poor connection or damage at the fuel tank vapor recirculation tube.

*Is the tube OK?*

**YES-** Go to step 9.

**NO-**

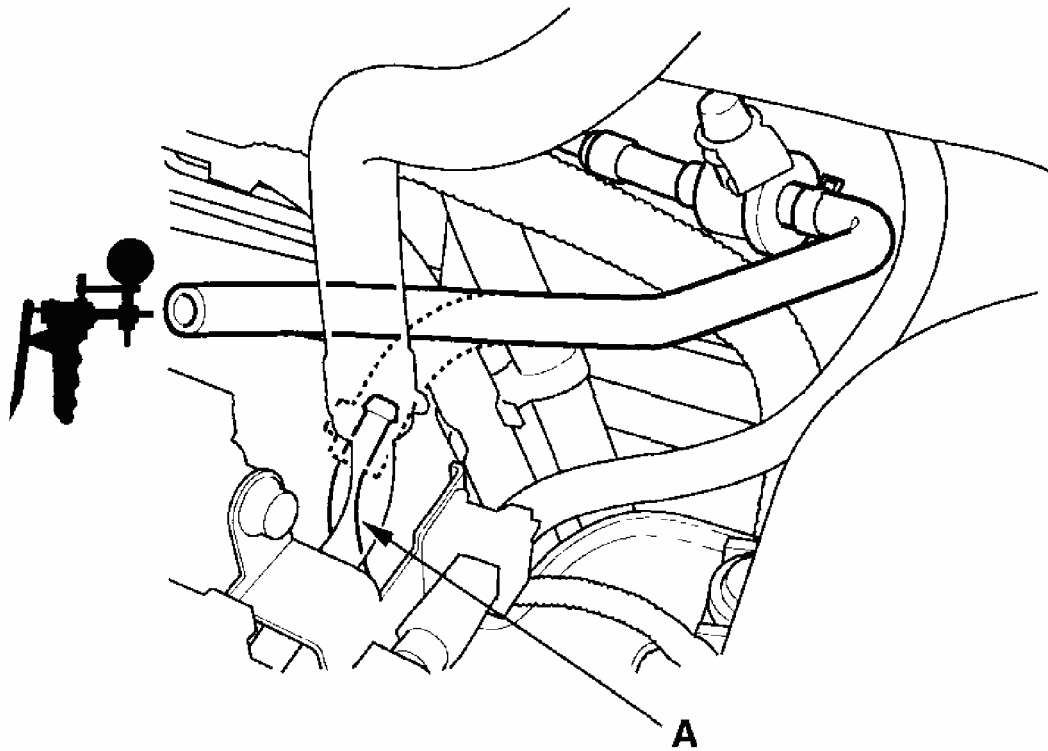
- Replace the fuel tank vapor recirculation tube, then go to step 22 .
  - If necessary, replace the fuel tank (see **FUEL TANK REPLACEMENT** ), then go to step 22 .
9. Disconnect the fuel tank vapor recirculation tube (A) from the EVAP canister (B), and plug the EVAP canister port (C).



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**Fig. 3: Disconnecting Fuel Tank Vapor Recirculation Tube From EVAP Canister**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the vacuum hose (purge line) from the EVAP canister purge valve (A) in the engine compartment, and connect a vacuum pump/gauge, 0-30 in.Hg, to the hose.



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**Fig. 4: Disconnecting Vacuum Hose From EVAP Canister Purge Valve And Connecting Vacuum Gauge**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
12. Apply vacuum to the hose until the FTP reads 1.90 V (2 kPa (0.6 in.Hg, 14.6 mmHg)).

**NOTE:** Be careful not to exceed -10.0 kPa (-2.9 in.Hg, -75 mmHg) of vacuum. If you exceed this amount, the FTP sensor can be damaged.

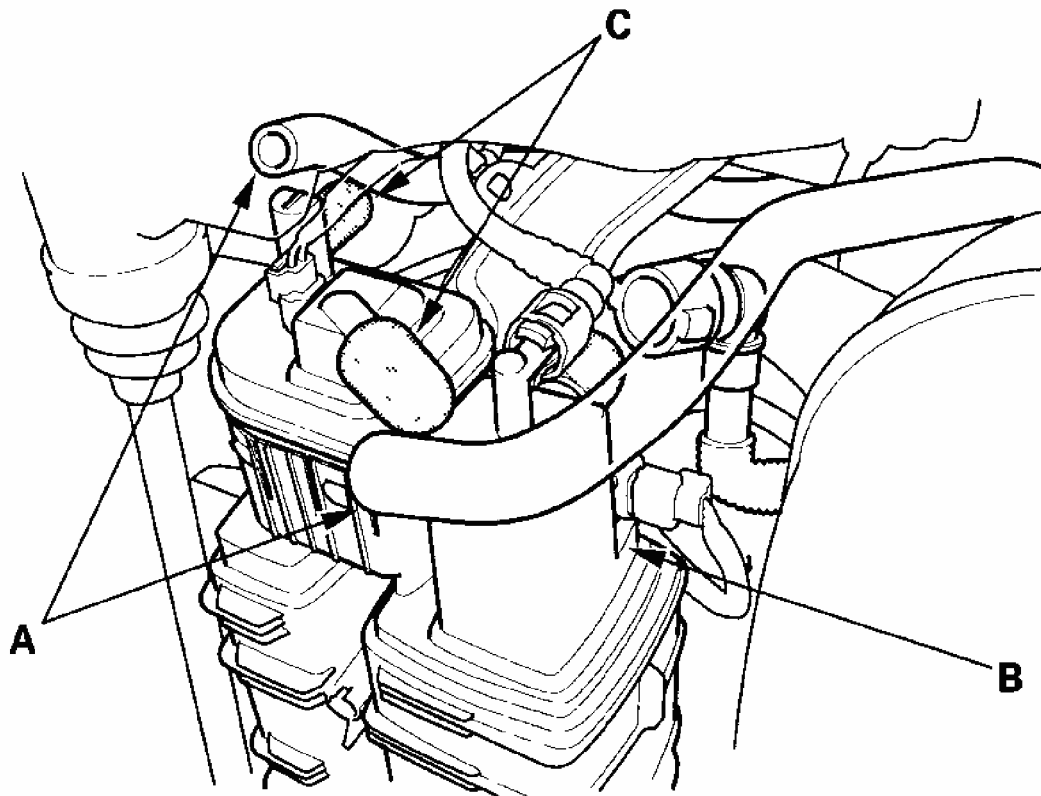
13. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

*Does the voltage increase more than 0.2 V (0.1 in.Hg, 0.5 mmHg)?*

**YES-** Go to step 14.

**NO-** Go to step 19 .

14. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.
15. Disconnect the purge air hoses (A) from the EVAP canister vent shut valve (B), and plug the EVAP canister vent shut valve ports (C).



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**Fig. 5: Disconnecting Purge Air Hoses From EVAP Canister Vent Shut Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Apply vacuum to the hose (disconnected in step 10) until the FTP reads 1.90 V (2 kPa (0.6 in.Hg, 14.6 mmHg)).

**NOTE:** Be careful not to exceed -10.0 kPa (-2.9 in.Hg, -75 mmHg) of vacuum. If you exceed this amount, the FTP sensor can be damaged.

17. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

*Does the voltage increase more than 0.2 V (0.1 in.Hg, 0.5 mmHg)?*

**YES-** Go to step 21 .

**NO-** Replace the EVAP canister vent shut valve, then go to step 18.

18. Check for a loose or damaged EVAP canister purge line between the EVAP canister and the EVAP canister purge valve.

*Is the line OK?*

**YES-** Replace these parts, then go to step 21 .

- FTP sensor O-ring (see **FTP SENSOR REPLACEMENT** )
- EVAP canister vent shut valve case and O-ring (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** )
- EVAP canister (see **EVAP CANISTER REPLACEMENT** )

**NO-** Reconnect or repair the EVAP canister purge hose, then go to step 21 .

19. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.
20. Check for looseness or damage at these parts:
  - Fuel fill pipe
  - Fuel vapor return pipe

*Are the parts OK?*

**YES-** Check the fuel tank unit base gasket (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT** ), and check the fuel tank, then go to step 21.

**NO-** Repair or replace the damaged parts, then go to step 21.

21. Reconnect all hoses.
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. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES-** Troubleshooting is complete.

**NO-** Check the EVAP hose connections. Also check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, or the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 and recheck.

#### **DTC P0443: EVAP CANISTER PURGE VALVE CIRCUIT MALFUNCTION**

#### **Special Tools Required**

Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information

(see **GENERAL TROUBLESHOOTING INFORMATION** ).

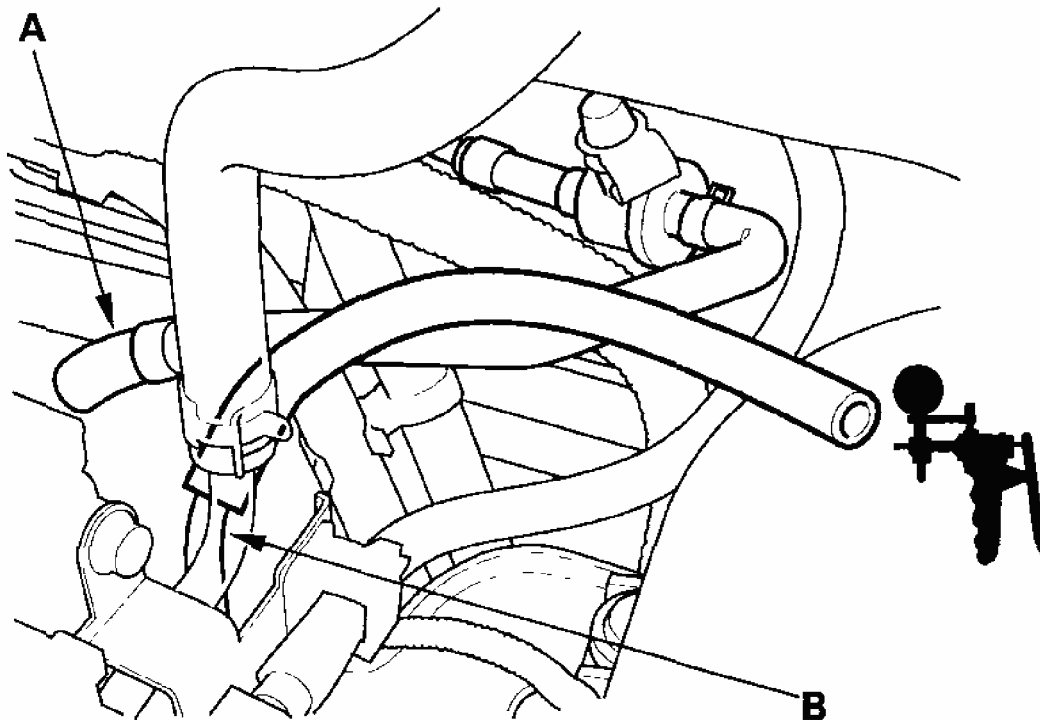
1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0443 indicated?*

**YES-** Go to step 5.

**NO-** Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM.

5. Turn the ignition switch OFF, and allow the engine to cool below 131 °F (55 °C).
6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B) in the engine compartment, and connect a vacuum pump/gauge, 0-30 in.Hg, to the hose.



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**Fig. 6: Disconnecting Vacuum Hose From EVAP Canister Purge Valve In Engine Compartment**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Start the engine, and let it idle.

*Is there vacuum?*

**YES-** Go to step 8.

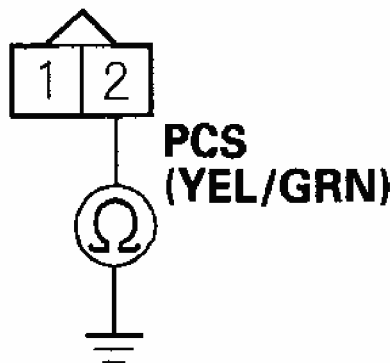
**NO-** Go to step 14 .

8. Turn the ignition switch OFF.

9. Disconnect the EVAP canister purge valve 2P connector.

10. Check for continuity between EVAP canister purge valve 2P connector terminal No. 2 and body ground.

## EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

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**Fig. 7: Checking Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 2 And Body Ground (1 Of 2)**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

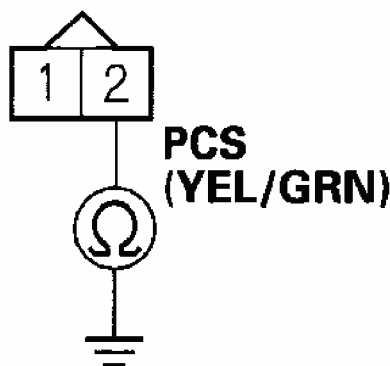
*Is there continuity?*

**YES-** Go to step 11.

**NO-** Go to step 24 .

11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector B (24P).
13. Check for continuity between EVAP canister purge valve 2P connector terminal No. 2 and body ground.

## EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

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**Fig. 8: Checking Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 2 And Body Ground (2 Of 2)**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

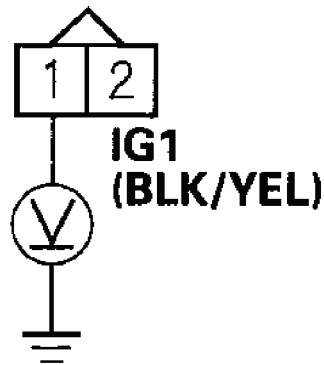
**YES-** Repair short in the wire between the EVAP canister purge valve and the ECM/PCM (B21), then go to step 25 .

**NO-** Go to step 31 .

14. Turn the ignition switch OFF.
15. Disconnect the EVAP canister purge valve 2P connector.
16. Turn the ignition switch ON (II).
17. Measure voltage between EVAP canister purge valve 2P connector terminal No. 1 and body ground.



## EVAP CANISTER PURGE VALVE 2P CONNECTOR



### Wire side of female terminals

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**Fig. 9: Measuring Voltage Between EVAP Canister Purge Valve 2P Connector Terminal No. 1 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

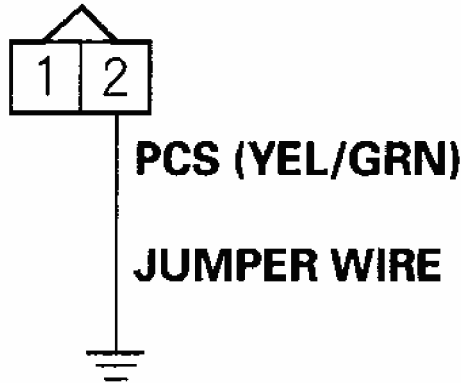
*Is there battery voltage?*

**YES-** Go to step 18.

**NO-** Repair open in the wire between the EVAP canister purge valve and the No. 4 ACG (10 A) fuse in the under-dash fuse/relay box, then go to step 26 .

18. Turn the ignition switch OFF.
19. Jump the SCS line with the HDS.
20. Disconnect ECM/PCM connector B (24P).
21. Connect EVAP canister purge valve 2P connector terminal No. 2 to body ground with a jumper wire.

## EVAP CANISTER PURGE VALVE 2P CONNECTOR



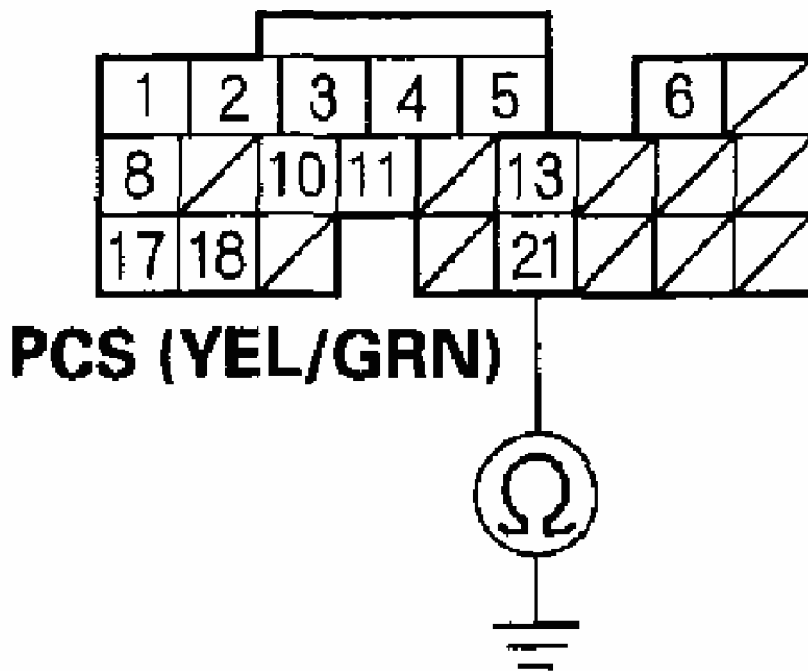
Wire side of female terminals

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**Fig. 10: Connecting EVAP Canister Purge Valve 2P Connector Terminal No. 2 To Body Ground With Jumper Wire**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Check for continuity between ECM/PCM connector terminal B21 and body ground.

## ECM/PCM CONNECTOR B (24P)



### Wire side of female terminals

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**Fig. 11: Checking Continuity Between ECM/PCM Connector Terminal B21 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

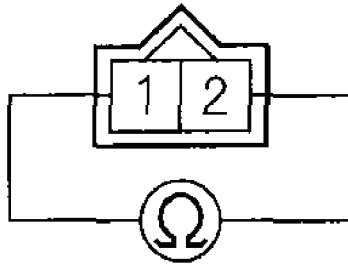
**YES-** Go to step 23.

**NO-** Repair open in the wire between the EVAP canister purge valve and the ECM/PCM (B21), then go to step 25 .

23. Measure resistance between EVAP canister purge valve 2P connector terminals No. 1

and No. 2.

## EVAP CANISTER PURGE VALVE 2P CONNECTOR



Terminal side of male terminals

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**Fig. 12: Measuring Resistance Between EVAP Canister Purge Valve 2P Connector Terminals No 1 And No 2**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there about 33 ohm at room temperature?*

**YES-** Go to step 31 .

**NO-** Go to step 24.

24. Replace the EVAP canister purge valve (see **FTP SENSOR REPLACEMENT** ).
25. Reconnect all connectors.
26. Turn the ignition switch ON (II).
27. Reset the ECM/PCM with the HDS.
28. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
29. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

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**YES-** If DTC P0443 is indicated, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting .

**NO-** Go to step 30.

30. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

*Does the screen indicate PASSED?*

**YES-** Troubleshooting is complete.

**NO-** If the screen indicate FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1 . If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to 28 and recheck.

31. 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** ).
32. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0443 is indicated, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ).

#### **DTC P0451: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM**

#### **NOTE:**

- If DTC P2422 is stored at the same time as the DTC P0451, troubleshoot DTC P2422 first, then recheck for DTC P0451.
- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle 1 minute.
4. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

*Does the screen indicate FAILED?*

**YES-** Go to step 5.

**NO-** If the screen indicates PASSED, intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, go to step 3 and recheck.

5. Turn the ignition switch OFF.
6. Replace the FTP sensor (see **FTP 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. Start the engine, and let it idle 1 minute.
11. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0451 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** Go to step 12.

12. Monitor the OBD STATUS for DTC P0451 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 FTP sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to 10 and recheck.

**DTC P0452: FTP SENSOR CIRCUIT LOW VOLTAGE (2003-2004 MODELS)**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

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. Check for Temporary DTCs or DTCs with the HDS.

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*Are DTC P0107, P0122, and P0452 indicated at the same time?*

**YES-** Go to step 23 .

**NO-** Go to step 6.

6. Turn the ignition switch OFF.
7. Remove the fuel fill cap.
8. Turn the ignition switch ON (II).
9. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is about -7.3 kPa (-2.16 in.Hg, -55 mmHg), or 0.3 V or less indicated?*

**YES-** Go to step 13 .

**NO-** Go to step 10.

10. Install the fuel fill cap.
11. Start the engine.
12. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

*Does the screen indicate FAILED?*

**YES-** Go to step 13.

**NO-** If the screen indicates PASSED, intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, go to step 8 and recheck.

13. Turn the ignition switch OFF.
14. Disconnect the FTP sensor 3P connector.
15. Turn the ignition switch ON (II).
16. Check the FTP SENSOR in the DATA LIST with the HDS.

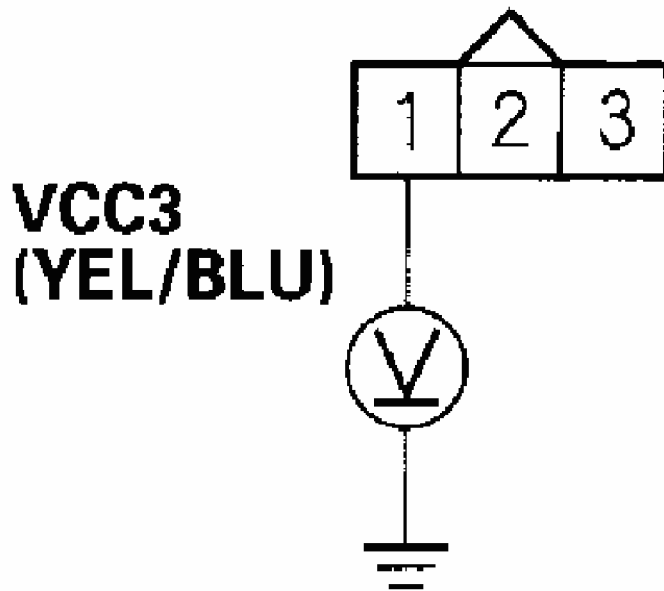
*Is about 7.3 kPa (2.15 in.Hg, 54.7 mmHg), or 4.90 V indicated?*

**YES-** Go to step 32 .

**NO-** Go to step 17.

17. Measure voltage between FTP sensor 3P connector terminal No. 1 and body ground.

## FTP SENSOR 3P CONNECTOR



Wire side of female terminals

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**Fig. 13: Measuring Voltage Between FTP Sensor 3P Connector Terminal No 1 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there about 5 V?*

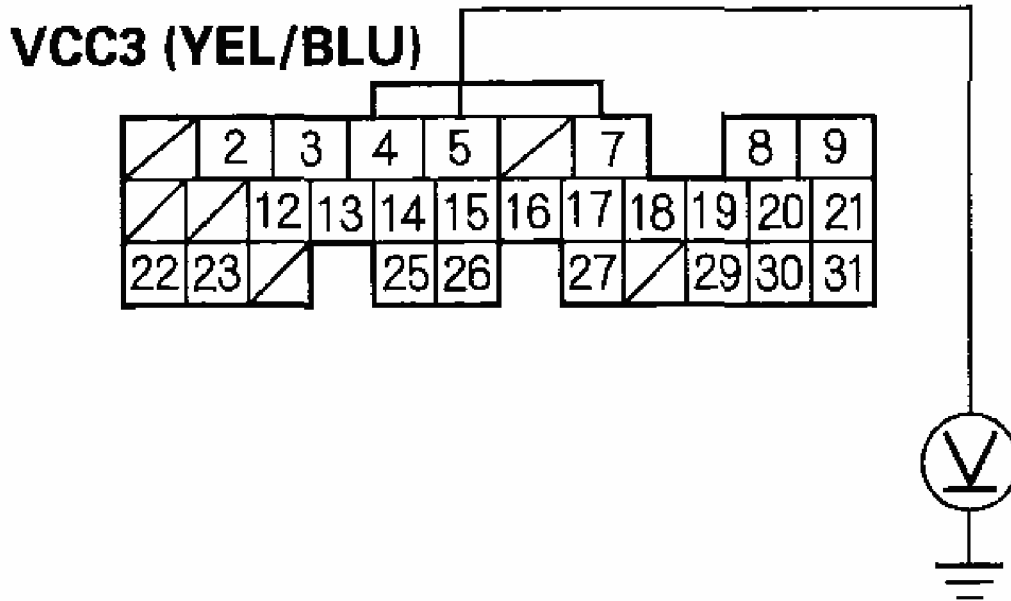
**YES-** Go to step 19 .

**NO-** Go to step 18.

18. Measure voltage between ECM/PCM connector terminal E5 and body ground.



## ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

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**Fig. 14: Measuring Voltage Between ECM/PCM Connector Terminal E5 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

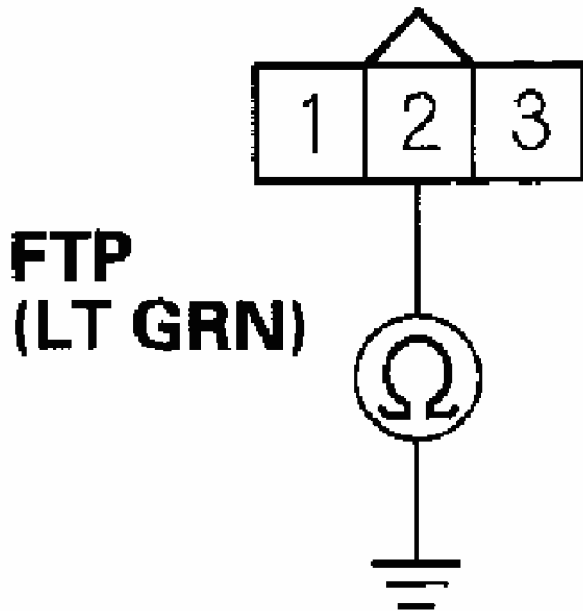
*Is there 5 V*

**YES-** Repair open in the wire between the ECM/PCM (E5) and the FTP sensor, then go to step 35 .

**NO-** Go to step 41 .

19. Turn the ignition switch OFF.
20. Jump the SCS line with the HDS.
21. Disconnect ECM/PCM connector E (31P).
22. Check for continuity between FTP sensor 3P connector terminal No. 2 and body ground.

## FTP SENSOR 3P CONNECTOR



**FTP  
(LT GRN)**

### Wire side of female terminals

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**Fig. 15: Checking Continuity Between FTP Sensor 3P Connector Terminal No. 2 And Body Ground**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

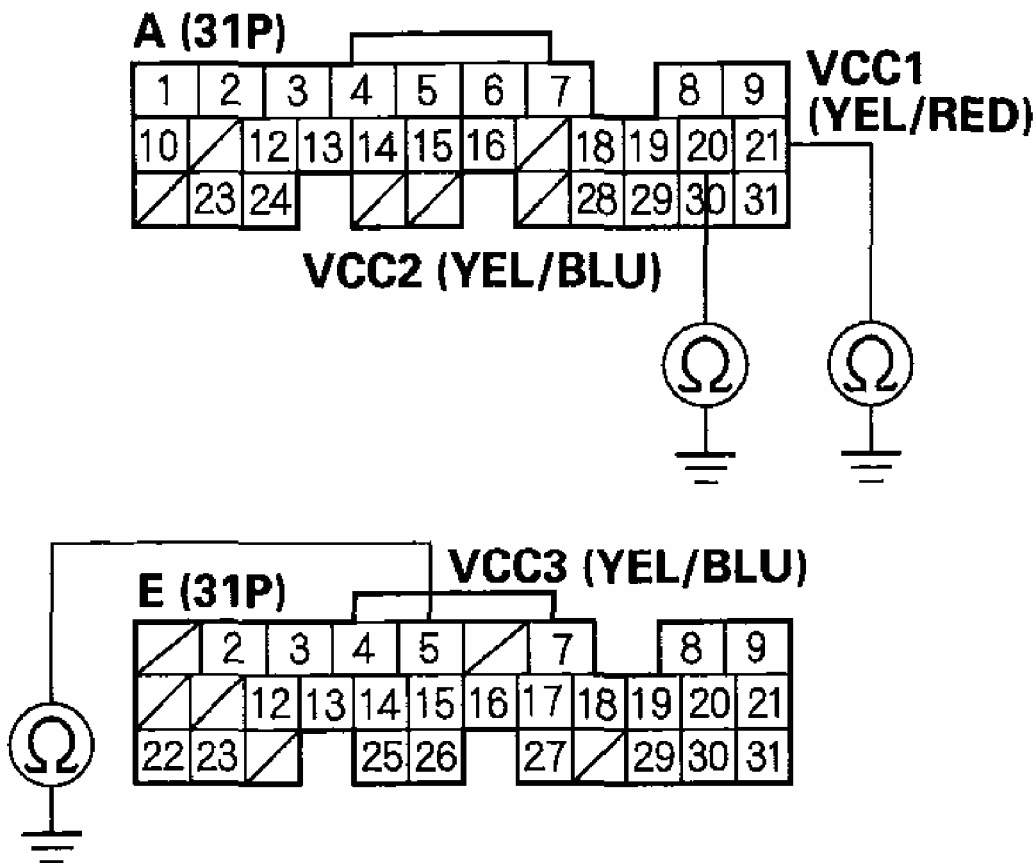
*Is there continuity?*

**YES-** Repair short in the wire between the ECM/PCM (E14) and the FTP sensor, then go to step 34 .

**NO-** Go to step 41 .

23. Turn the ignition switch OFF.
24. Jump the SCS line with the HDS.
25. Disconnect ECM/PCM connectors A (31P) and E (31P).
26. Disconnect the connectors from these sensors:
  - MAP sensor
  - TP sensor
  - FTP sensor
  - Input shaft (mainshaft) speed sensor
  - Output shaft (countershaft) speed sensor
27. Check for continuity between body ground and ECM/PCM connector terminals A20, A21, and E5 individually.

### ECM/PCM CONNECTORS



Wire side of female terminals

**Fig. 16: Checking Continuity Between Body Ground And ECM/PCM Connector Terminals A20, A21 And E5**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

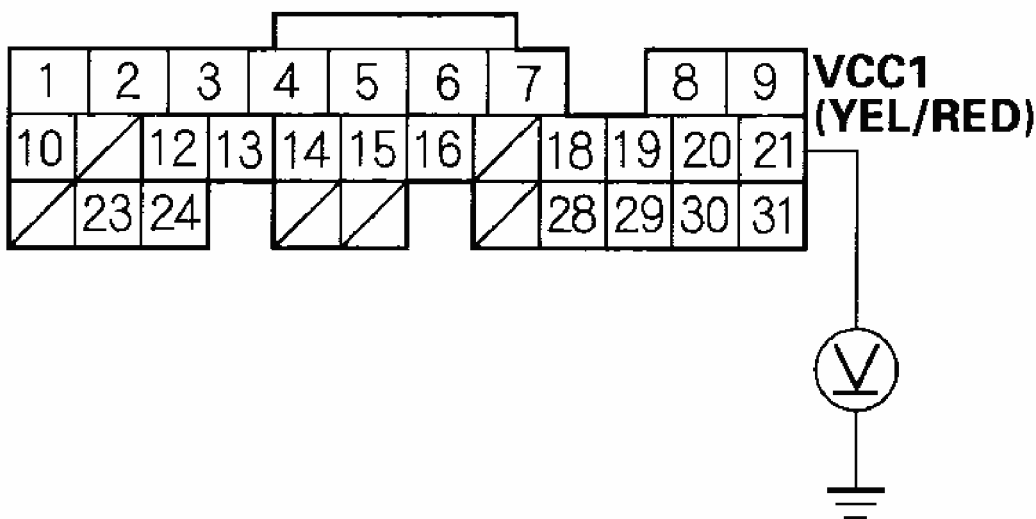
*Is there continuity?*

**YES-** Repair short in the wire between the ECM/PCM (A20, A21, or E5) and each disconnected part, then go to step 34 .

**NO-** Go to step 28.

28. Reconnect ECM/PCM connectors A (31P) and E (31P).
29. Turn the ignition switch ON (II).
30. Measure voltage between ECM/PCM connector terminal A21 and body ground.

**ECM/PCM CONNECTOR A (31P)**



Wire side of female terminals

G03677793

**Fig. 17: Measuring Voltage Between ECM/PCM Connector Terminal A21 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there about 5 V?*

**YES-** Go to step 31.

**NO-** Go to step 41 .

31. Continue to monitor voltage at ECM/PCM connector terminal A21 while reconnecting these sensors, one at a time:

- MAP sensor
- TP sensor
- FTP sensor
- Input shaft (mainshaft) speed sensor
- Output shaft (countershaft) speed sensor

*Did the voltage drop to about 0 V?*

**YES-** Replace the sensor that caused the voltage to drop, then go to step 36 .

**NO-** Go to step 41 .

32. Turn the ignition switch OFF.

33. Replace the FTP sensor (see **FTP SENSOR REPLACEMENT** ).

34. Reconnect ECM/PCM connectors.

35. Reconnect the FTP sensor 3P connector.

36. Turn the ignition switch ON (II).

37. Reset the ECM/PCM with the HDS.

38. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).

39. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0452 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** Go to step 40.

40. Monitor the OBD STATUS for DTC P0452 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 FTP sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to 38 and recheck.

41. 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** ).

42. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0452 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ).

**DTC P0452: FTP SENSOR CIRCUIT LOW VOLTAGE (2005-2006 MODELS)**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Remove the fuel fill cap.
5. Turn the ignition switch ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is about -7.3 kPa (-2.16 in.Hg, -55 mmHg), or 0.3 V or less indicated?*

**YES-** Go to step 10 .

**NO-** Go to step 7.

7. Install the fuel fill cap.
8. Start the engine.
9. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

*Does the screen indicate FAILED?*

**YES-** Go to step 10.

**NO-** If the screen indicates PASSED, intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

10. Turn the ignition switch OFF.
11. Disconnect the FTP sensor 3P connector.
12. Turn the ignition switch ON (II).

13. Check the FTP SENSOR in the DATA LIST with the HDS.

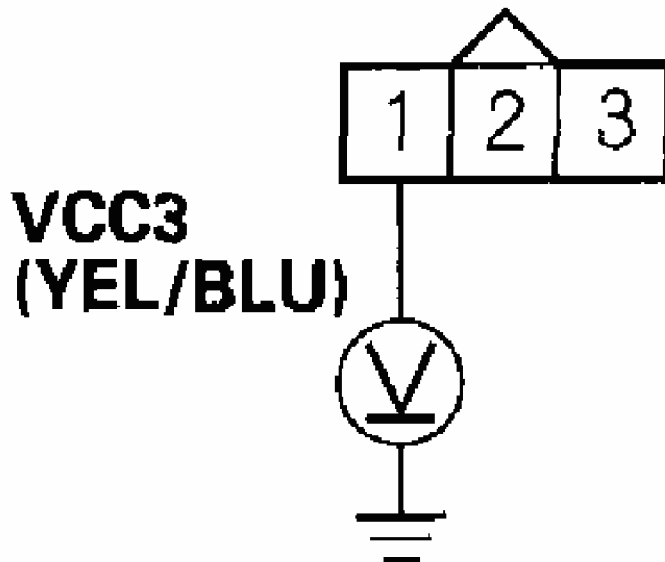
*Is about 7.3 kPa (2.15 in.Hg, 54.7 mmHg), or 4.90 V indicated?*

**YES-** Go to step 20 .

**NO-** Go to step 14.

14. Measure voltage between FTP sensor 3P connector terminal No. 1 and body ground.

## FTP SENSOR 3P CONNECTOR



### Wire side of female terminals

G03677794

**Fig. 18: Measuring Voltage Between FTP Sensor 3P Connector Terminal No 1 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

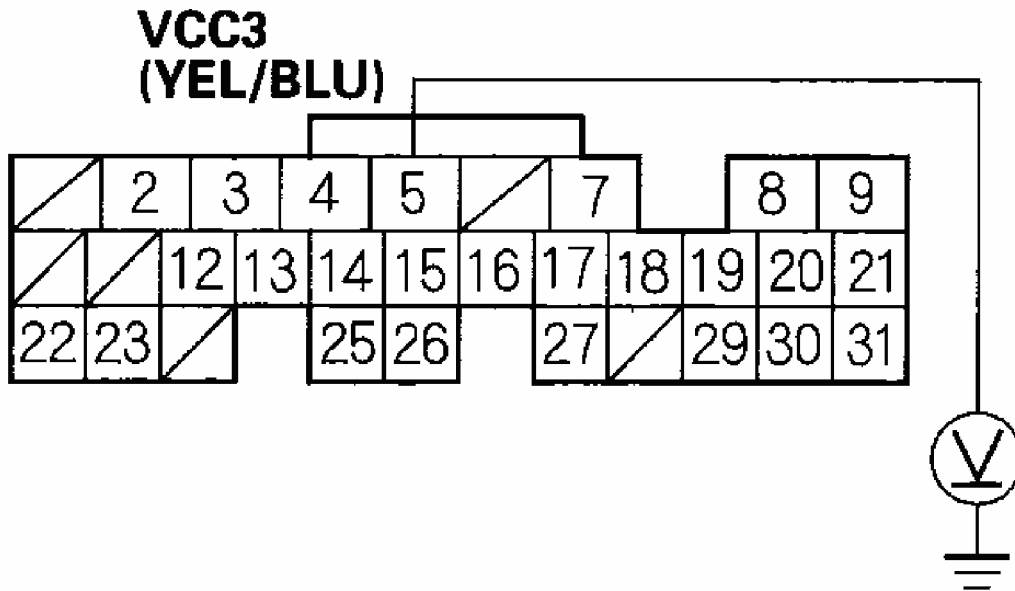
*Is there about 5 V?*

**YES-** Go to step 16 .

**NO-** Go to step 15.

15. Measure voltage between ECM/PCM connector terminal E5 and body ground.

## ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G03677795

**Fig. 19: Checking Voltage Between ECM/PCM Connector Terminal E5 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there about 5 V?*

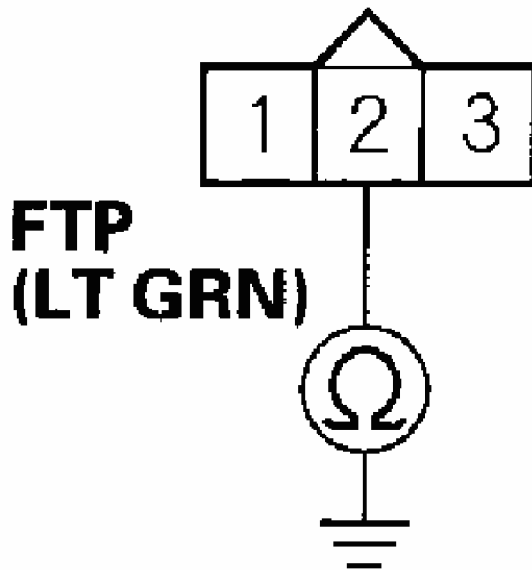
**YES-** Repair open in the wire between the ECM/PCM (E5) and the FTP sensor, then go to step 22 .

**NO-** Go to step 28 .



16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector E (31P).
19. Check for continuity between FTP sensor 3P connector terminal No. 2 and body ground.

## FTP SENSOR 3P CONNECTOR



**Wire side of female terminals**

**G03677796**

**Fig. 20: Checking Continuity Between FTP Sensor 3P Connector Terminal No 2 And Body Ground**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

**YES-** Repair short in the wire between the ECM/PCM (E14) and the FTP sensor, then go to step 22 .

**NO-** Go to step 28 .

20. Turn the ignition switch OFF.
21. Replace the FTP sensor (see **FTP SENSOR REPLACEMENT** ).
22. Reconnect all connectors.
23. Turn the ignition switch ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
26. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0452 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** Go to step 27.

27. Monitor the OBD STATUS for DTC P0452 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 FTP sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to step 25 and recheck.

28. 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** ).
29. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0452 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ).

**DTC P0453: FTP SENSOR CIRCUIT HIGH VOLTAGE**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Remove the fuel fill cap.
5. Turn the ignition switch ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?*

**YES-** Go to step 10 .

**NO-** Go to step 7.

7. Install the fuel fill cap.
8. Start the engine.
9. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

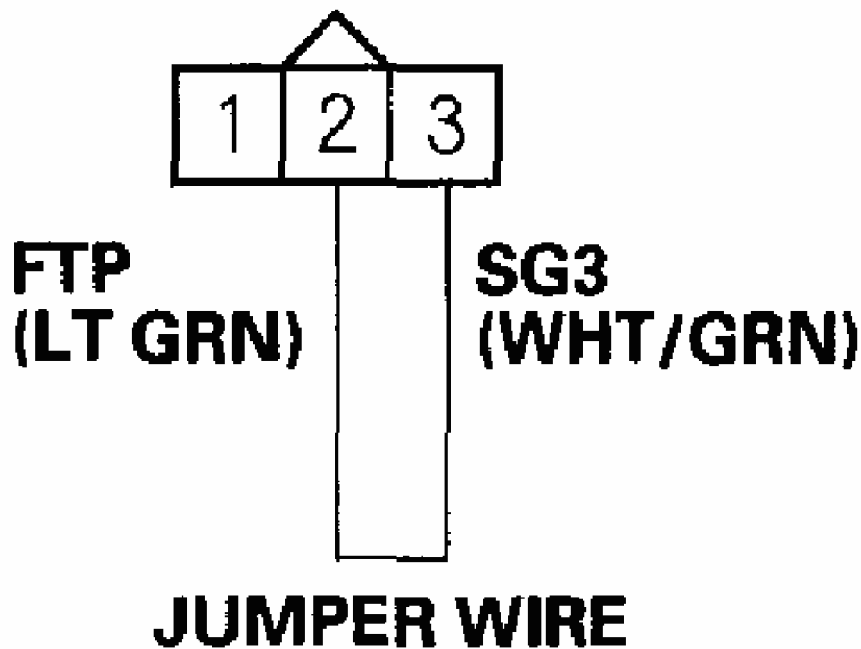
*Does the screen indicate FAILED?*

**YES-** Go to step 10.

**NO-** If the screen indicates PASSED, intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, go to step 6 and recheck.

10. Turn the ignition switch OFF.
11. Disconnect the FTP sensor 3P connector.
12. Connect FTP sensor 3P connector terminals No. 2 and No. 3 with a jumper wire.

## FTP SENSOR 3P CONNECTOR



### Wire side of female terminals

G03677797

**Fig. 21: Connecting FTP Sensor 3P Connector Terminals No 2 And No 3 With Jumper Wire**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

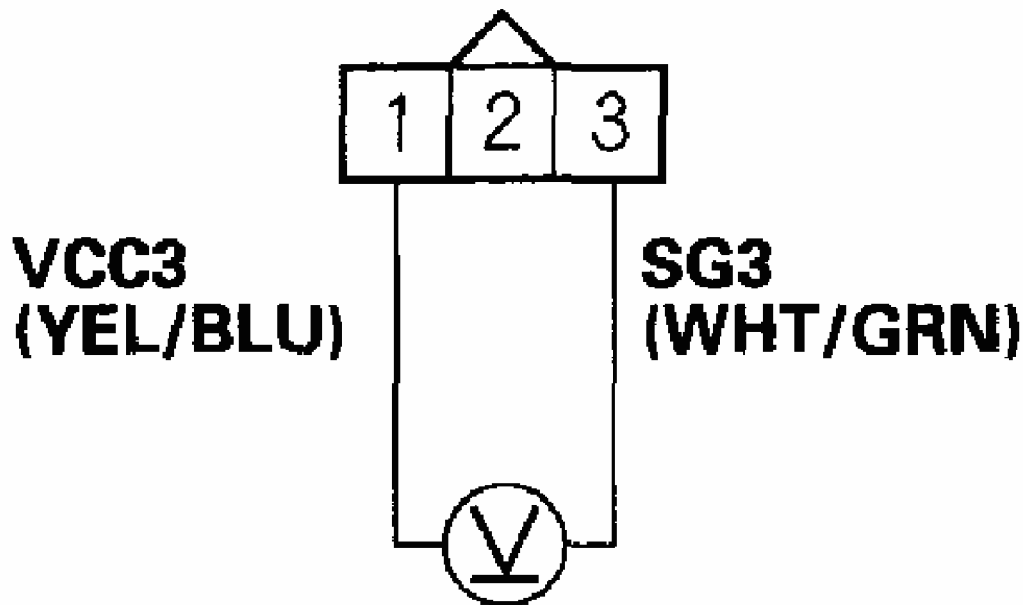
*Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?*

**YES-** Go to step 15.

**NO-** Go to step 25 .

15. Measure voltage between FTP sensor 3P connector terminals No. 1 and No. 3.

## FTP SENSOR 3P CONNECTOR



### Wire side of female terminals

G03677798

**Fig. 22: Checking Voltage Between FTP Sensor 3P Connector Terminals No. 1 And No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

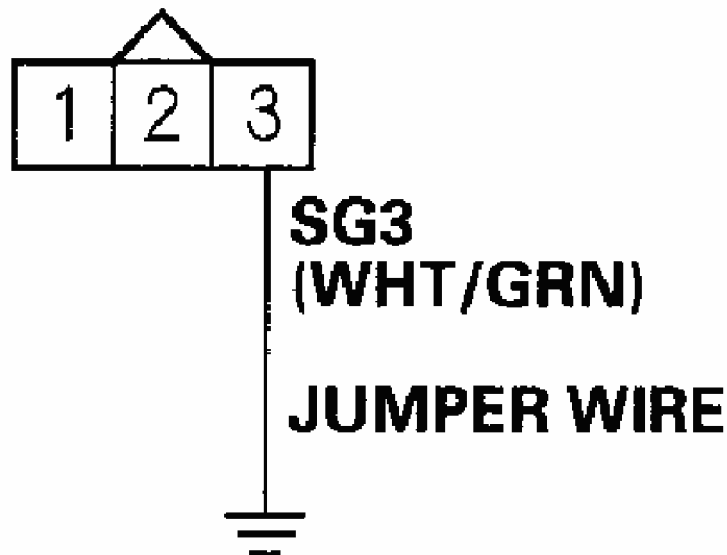
*Is there about 5 V?*

**YES-** Go to step 21 .

**NO-** Go to step 16.

16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector E (31P).
19. Connect FTP sensor 3P connector terminal No. 3 to body ground with a jumper wire.

## FTP SENSOR 3P CONNECTOR



**Wire side of female terminals**

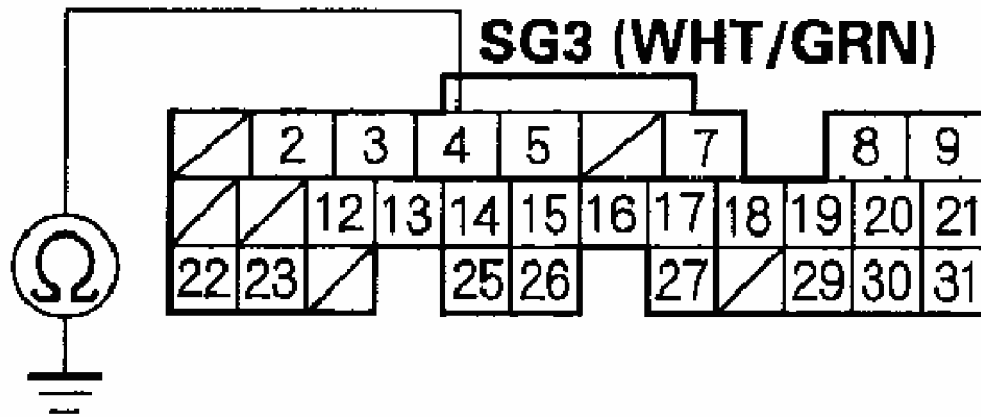
**G03677799**

**Fig. 23: Connecting FTP Sensor 3P Connector Terminal No 3 To Body Ground With Jumper Wire**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

20. Check for continuity between ECM/PCM connector terminal E4 and body ground.

## ECM/PCM CONNECTOR E (31P)



### Wire side of female terminals

G03677800

**Fig. 24: Checking Continuity Between ECM/PCM Connector Terminal E4 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

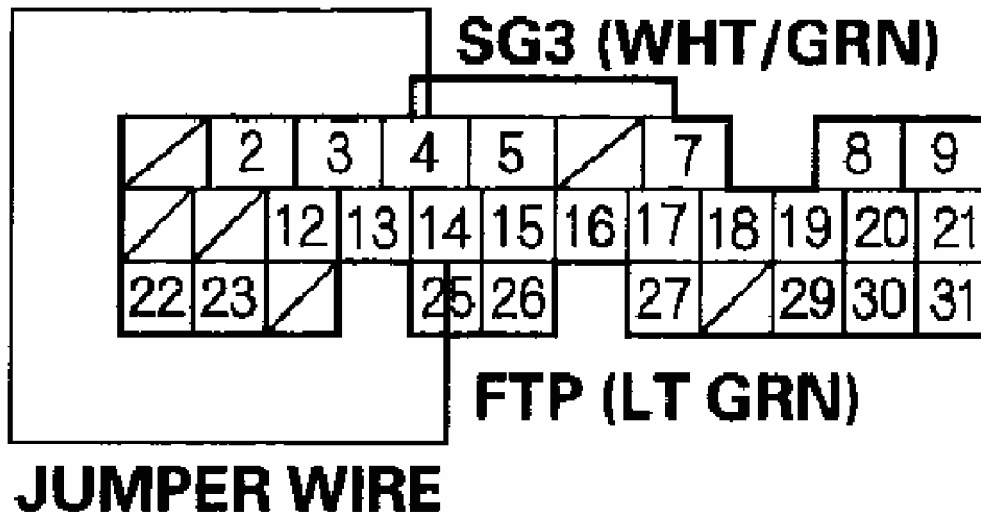
*Is there continuity?*

**YES-** Go to step 33 .

**NO-** Repair open in the wire between the ECM/PCM (E4) and the FTP sensor, then go to step 27 .

21. Turn the ignition switch OFF.
22. Connect ECM/PCM connector terminals E4 and E14 with a jumper wire.

## ECM/PCM CONNECTOR E (31P)



### Wire side of female terminals

G03677801

**Fig. 25: Connecting ECM/PCM Connector Terminals E4 And E14 With Jumper Wire**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Turn the ignition switch ON (II).
24. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?*

**YES-** Go to step 33 .

**NO-** Repair open in the wire between the ECM/PCM (E14) and the FTP sensor, then go to step 27 .



25. Turn the ignition switch OFF.
26. Replace the FTP sensor (see **FTP SENSOR REPLACEMENT** ).
27. Reconnect all connectors.
28. Turn the ignition switch ON (II).
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
31. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0453 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** Go to step 32.

32. Monitor the OBD STATUS for DTC P0453 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 FTP sensor and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to 30 and recheck.

33. 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** ).
34. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0453 is indicated, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 33 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ).

**DTC P0457: EVAP SYSTEM LEAK DETECTED/FUEL FILL CAP LOOSE OR MISSING**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information

(see **GENERAL TROUBLESHOOTING INFORMATION** ).

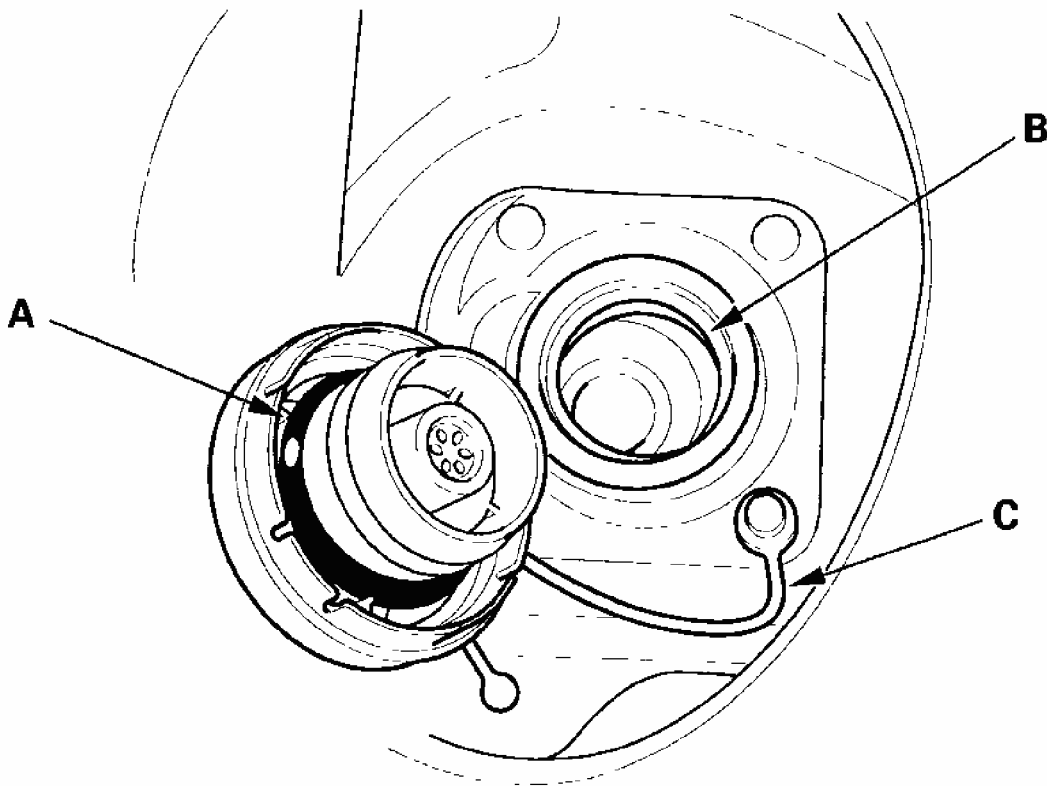
1. Check the fuel fill cap (the cap must say "Tighten to click"). It should turn 1/4 turn after it's tight, then it clicks.

*Is the correct fuel fill cap installed and properly tightened?*

**YES-** Go to step 2.

**NO-** Replace or tighten the cap, then go to step 19 .

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap (2006 model).



\*: This illustration shows 2006 model.

G03677802

**Fig. 26: Identifying Fuel Fill Cap Seal And Fuel Fill Pipe Mating Surface For Inspection**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is the fuel fill cap seal missing or damaged, or is the fuel fill pipe damaged, or is the tether cord caught under the cap (2006 model)?*

**YES-** Replace the fuel fill cap or the fuel fill pipe, then go to step 19 .

**NO-** Go to step 3.

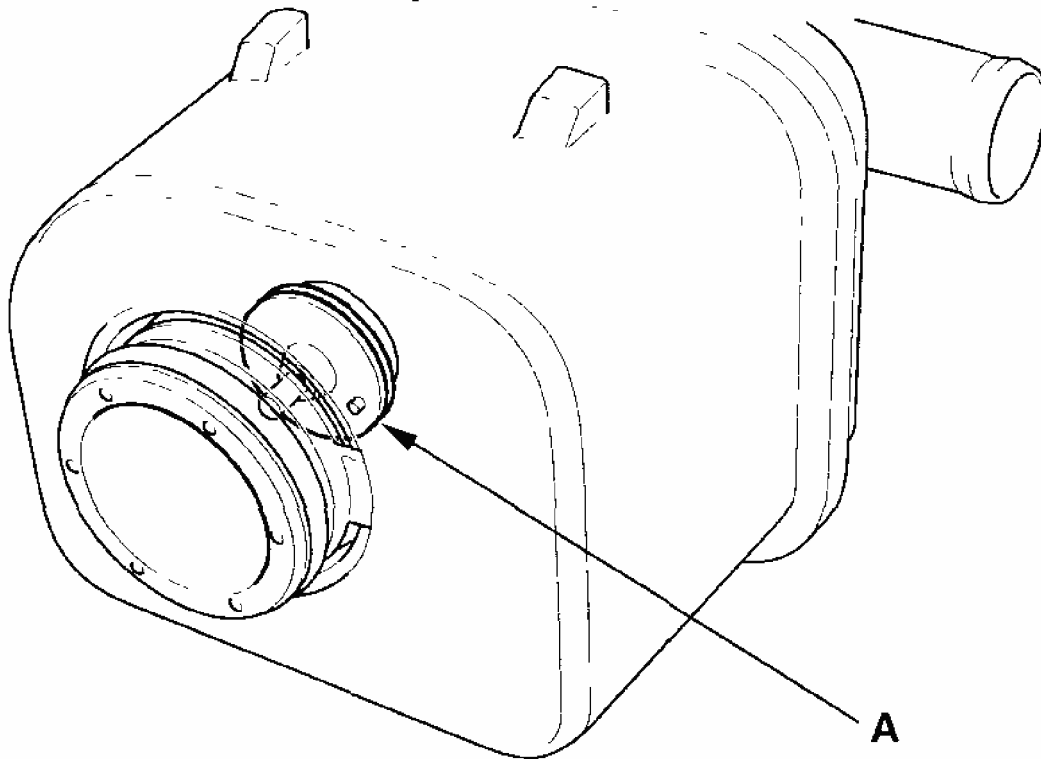
3. Turn the ignition switch ON (II).
4. Clear the DTC with the HDS.
5. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES-** Intermittent failure, system is OK at this time. Check the EVAP hose connections. Also check for poor connections or loose terminals at the FTP sensor, or the EVAP canister vent shut valve, and the ECM/PCM.

**NO-** Go to step 6.

6. Turn the ignition switch OFF.
7. Remove the EVAP canister vent shut valve from the EVAP canister (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** ).
8. Connect the 2P connector to the EVAP canister vent shut valve.
9. Turn the ignition switch ON (II).
10. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
11. Check the EVAP canister vent shut valve (A) operation.



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**Fig. 27: Identifying EVAP Canister Vent Shut Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the valve operate?*

**YES-** Check the routing of the EVAP canister vent tube, then go to step 18 .

**NO-** Go to step 12.

12. Turn the ignition switch OFF.
13. Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE 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. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES-** Troubleshooting is complete.

**NO-** Check the EVAP hose connections. Also check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 16 .

18. Reinstall the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** ).
19. Turn the ignition switch ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
22. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES-** Troubleshooting is complete.

**NO-** Check the EVAP hose connections. Also check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1 .

#### **DTC P0496: EVAP SYSTEM HIGH PURGE FLOW**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Do the EVAP FUNCTION 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 FTP sensor, or the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM.

**NO-** Go to step 4.

4. Turn the ignition switch OFF.
5. Replace the EVAP canister purge valve (see **FTP SENSOR REPLACEMENT** ).
6. Turn the ignition switch ON (II).
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).

9. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES-** Troubleshooting is complete.

**NO-** Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1 .

#### **DTC P0497: EVAP SYSTEM LOW PURGE FLOW**

#### **Special Tools Required**

- Vacuum/pressure gauge, 0-4 in.Hg 07JAZ-001000B
- Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Check the fuel fill cap installation.

*Is the fuel fill cap installed and properly tightened?*

**YES-** Go to step 2.

**NO-** Properly install the fuel fill cap (the cap must say "Tighten to click"). It should turn 1/4 turn after it's tight, then go to step 24 .

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Do the EVAP FUNCTION 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 FTP sensor, the EVAP canister purge valve, or the EVAP canister vent shut valve and the ECM/PCM.

**NO-** Go to step 5.

5. Check for loose or damaged EVAP canister purge line between the intake manifold and the EVAP canister purge valve.

*Is the line OK?*

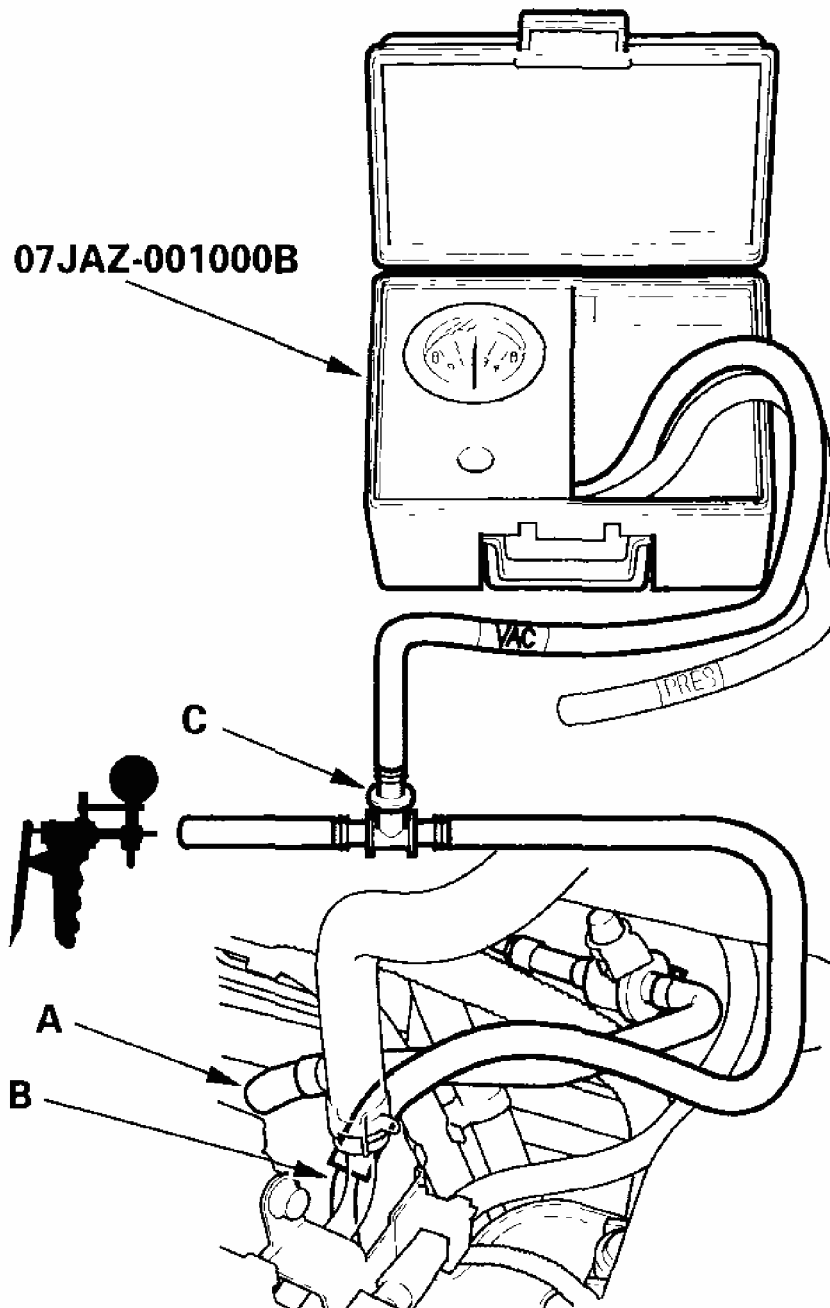
2004 Honda Element DX

2003-06 ENGINE PERFORMANCE EVAP System - Element

**YES-** Go to step 6.

**NO-** Reconnect or repair the EVAP canister purge line, then go to step 24 .

6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B) in the engine compartment, and connect a T-fitting (C) from the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg, to the EVAP canister purge valve as shown.



**Fig. 28: Connecting T-Fitting From Vacuum Gauge And Vacuum Pump To EVAP Canister Purge Valve (1 Of 2)**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

7. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
8. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

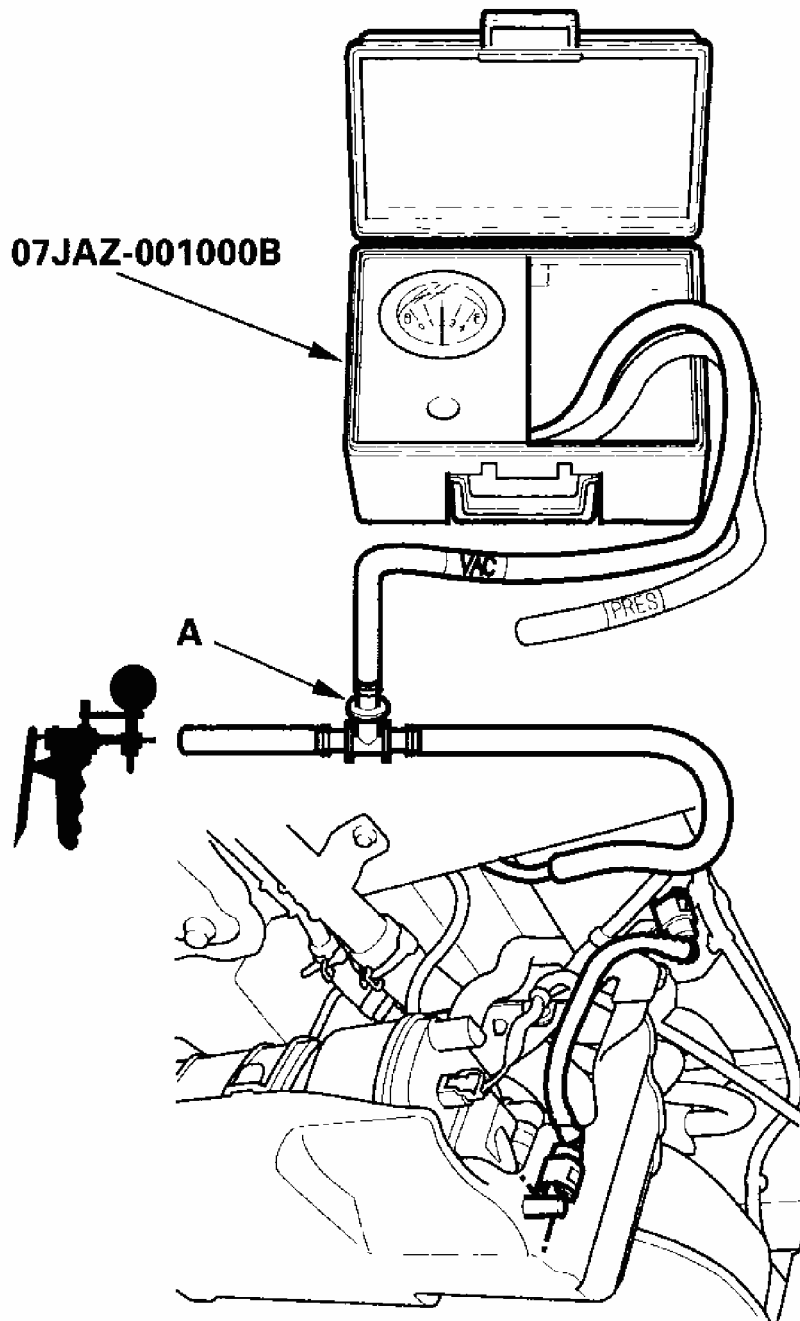
*Does it hold vacuum?*

**YES-** Check for blockage on the EVAP canister purge line between the intake manifold and the EVAP canister purge valve. If the vacuum hose is OK, replace the EVAP canister purge valve, then go to step 24 .

**NO-** Go to step 9.

9. Reconnect the vacuum hose to the EVAP canister purge valve.
10. Disconnect the vacuum hoses from the EVAP canister purge line (EVAP canister side), and connect a T-fitting (A) from the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg as shown.





G03677805

**Fig. 29: Connecting T-Fitting From Vacuum Gauge And Vacuum Pump To EVAP Canister Purge Valve (2 Of 2)**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
12. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.



## 2004 Honda Element DX

2003-06 ENGINE PERFORMANCE EVAP System - Element

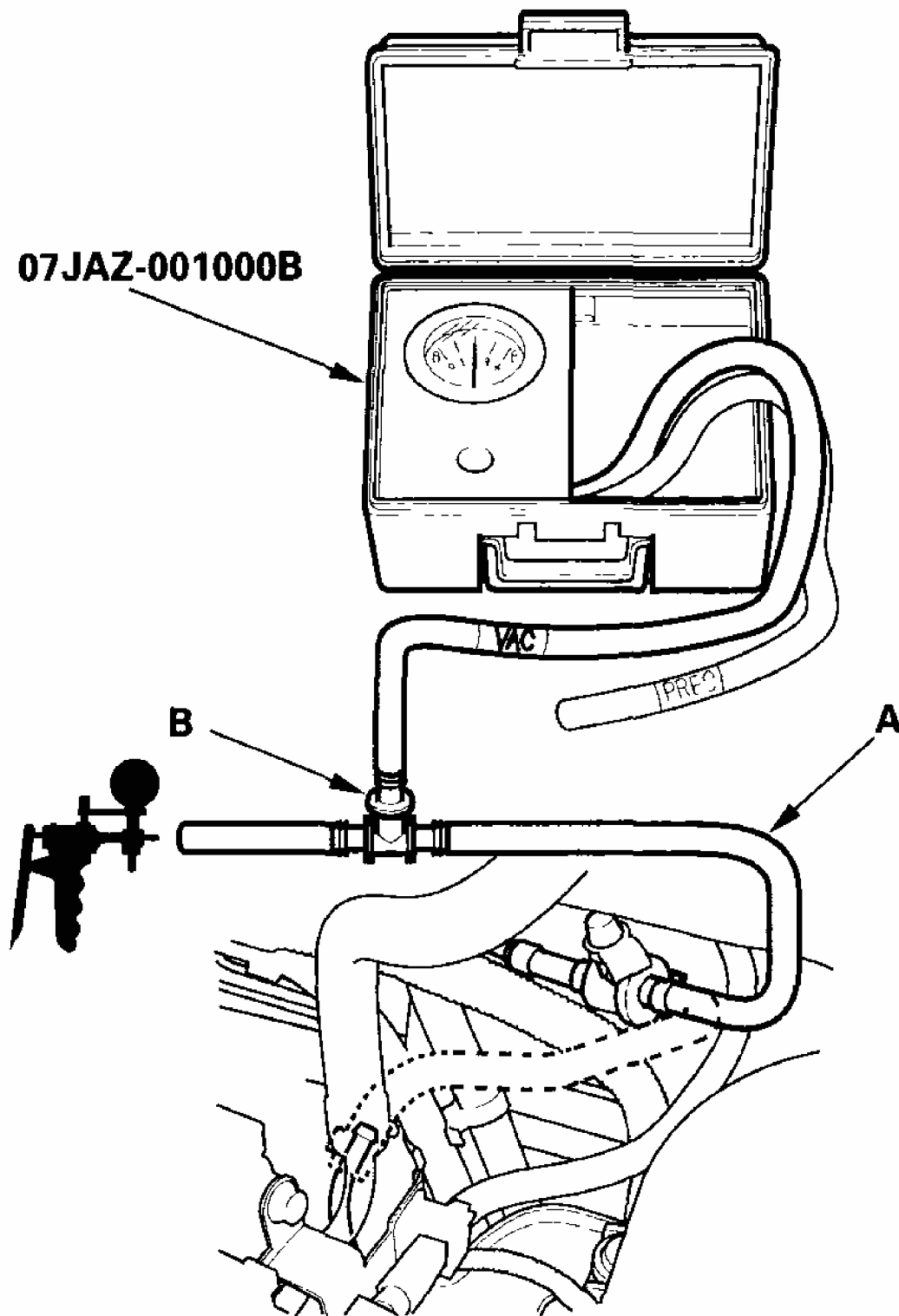
16. Slowly apply about 1.3 kPa (0.4 in.Hg, 10 mmHg) of vacuum to the hose.
17. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is the difference more than 1.1 kPa (0.31 in.Hg, 8 mmHg) before and after applying vacuum?*

**YES-** Go to step 18.

**NO-** Replace the FTP sensor (see step **FTP SENSOR REPLACEMENT** ), then go to 23 .

18. Reconnect the vacuum hoses to the EVAP canister purge line (EVAP canister side), and reinstall the FTP sensor.
19. Disconnect the vacuum hose (A) from the EVAP canister purge line (EVAP canister purge valve side), and connect a T-fitting (B) from the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg, to the hose as shown.



G03677807

Fig. 31: Disconnecting Vacuum Hose From EVAP Canister Purge Line

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

20. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
21. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

*Does the hose hold vacuum?*

**YES-** Check for blockage at the EVAP canister port, then go to step 22.

**NO-** Replace the EVAP canister vent shut valve (see EVAP CANISTER VENT SHUT VALVE REPLACEMENT ), then go to step 22.

22. Install the FTP sensor (see FTP SENSOR REPLACEMENT ).
23. Reconnect all hoses.
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. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES-** Troubleshooting is complete.

**NO-** Check the EVAP hose connections. Also check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, or the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 .

**DTC P0498: EVAP CANISTER VENT SHUT VALVE CIRCUIT LOW VOLTAGE**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS, then wait 5 seconds.
3. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0498 indicated?*

**YES-** Go to step 6 .

**NO-** Go to step 4.

4. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
5. Check for Temporary DTCs or DTCs with the HDS.

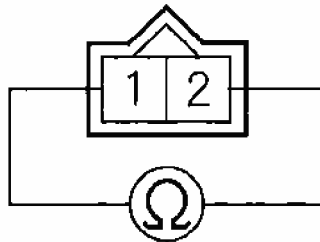
*Is DTC P0498 indicated?*

**YES-** Go to step 6.

**NO-** Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM.

6. Turn the ignition switch OFF.
7. Disconnect the EVAP canister vent shut valve 2P connector.
8. Measure resistance between EVAP canister vent shut valve 2P connector terminals No. 1 and No. 2.

## EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Terminal side of male terminals

G03677808

**Fig. 32: Measuring Resistance Between EVAP Canister Vent Shut Valve 2P Connector Terminals No. 1 And No. 2**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

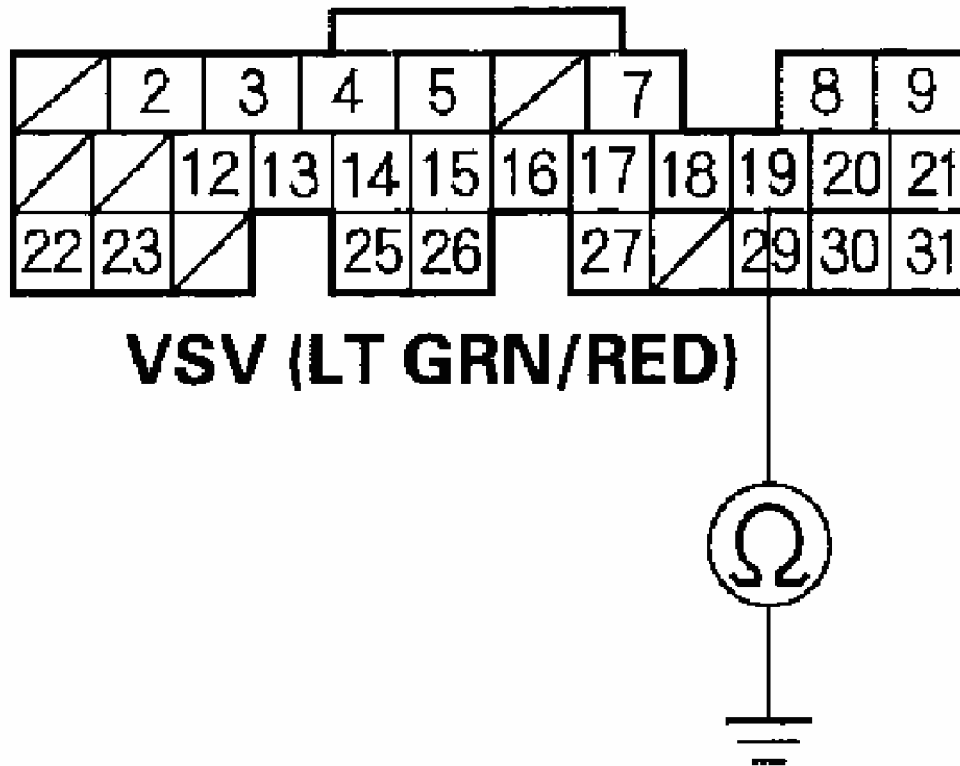
*Is there about 25-30 ohm at room temperature?*

**YES-** Go to step 9.

**NO-** Go to step 12 .

9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector E (31P).
11. Check for continuity between ECM/PCM connector terminal E19 and body ground.

## ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G03677809

**Fig. 33: Checking Continuity Between ECM/PCM Connector Terminal E19 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES-** Repair short in the wire between the EVAP canister vent shut valve and the ECM/PCM (E19), then go to step 13 .

**NO-** Go to step 19 .

12. Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT**

**VALVE REPLACEMENT ).**

13. Reconnect all connectors.
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. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
18. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0498 is indicated, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's 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 **ECM/PCM UPDATING AND SUBSTITUTION FOR TESTING** ).
20. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
21. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0498 is indicated, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ).

**DTC P0499: EVAP CANISTER VENT SHUT VALVE CIRCUIT HIGH VOLTAGE**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS, then wait 5 seconds.
3. Select EVAP CVS ON in the INSPECTION MENU with the HDS.



4. Check for Temporary DTCs or DTCs with the HDS.

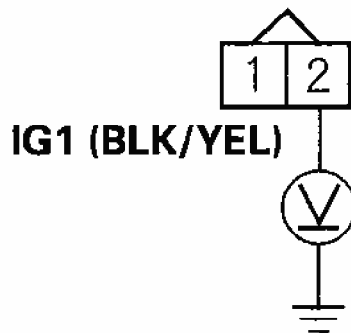
*Is DTC P0499 indicated?*

**YES-** Go to step 5.

**NO-** Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM.

5. Turn the ignition switch OFF.
6. Disconnect the EVAP canister vent shut valve 2P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between EVAP canister vent shut valve 2P connector terminal No. 2 and body ground.

## EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Wire side of female terminals

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**Fig. 34: Measuring Voltage Between EVAP Canister Vent Shut Valve 2P Connector Terminal No 2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

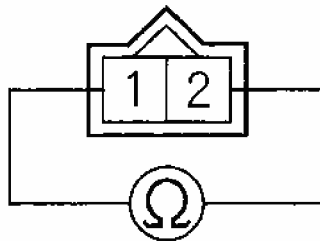
*Is there battery voltage?*

**YES-** Go to step 9.

**NO-** Repair open in the wire between the EVAP canister vent shut valve and the

- No. 4 ACG (10 A) fuse in the under-dash fuse/relay box, then go to step 17 .
9. Turn the ignition switch OFF.
  10. Measure resistance between EVAP canister vent shut valve 2P connector terminals No. 1 and No. 2.

## EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Terminal side of male terminals

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**Fig. 35: Measuring Resistance Between EVAP Canister Vent Shut Valve 2P Connector Terminals No 1 And No 2**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

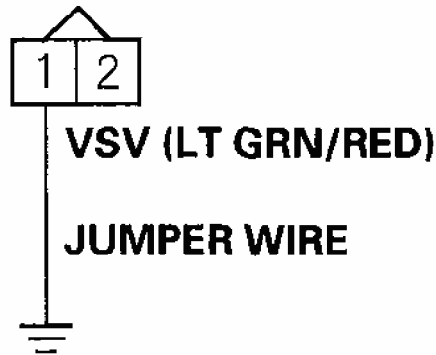
*Is there about 25-30 ohm at room temperature?*

**YES-** Go to step 11.

**NO-** Go to step 15 .

11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector E (31P).
13. Connect EVAP canister vent shut valve 2P connector terminal No. 1 to body ground with a jumper wire.

## EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



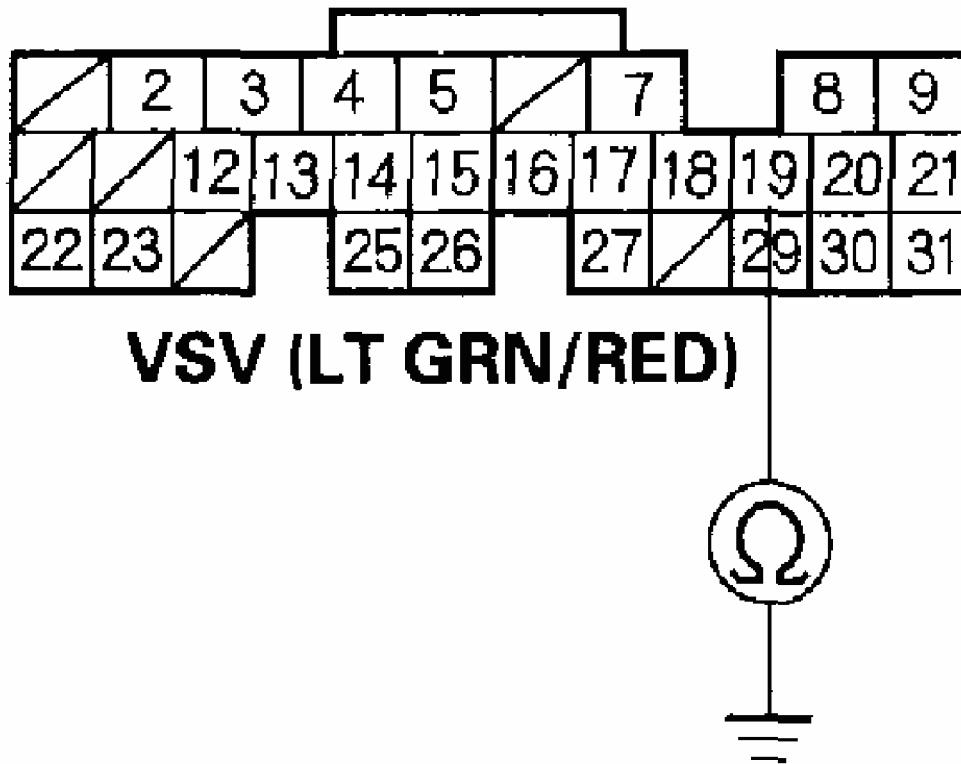
Wire side of female terminals

G03677812

**Fig. 36: Connecting EVAP Canister Vent Shut Valve 2P Connector Terminal No 1 To Body Ground With Jumper Wire**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between ECM/PCM connector terminal E19 and body ground.

## ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G03677813

**Fig. 37: Checking Continuity Between ECM/PCM Connector Terminal E19 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES-** Go to step 22 .

**NO-** Repair open in the wire between the EVAP canister vent shut valve and the ECM/PCM (E19), then go to step 16 .

15. Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT**

**VALVE REPLACEMENT** ).

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. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
21. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0499 is indicated, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** Troubleshooting is complete.

22. 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** ).
23. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
24. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P0499 is indicated, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ).

**DTC P1454: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM; DTC P2422: EVAP CANISTER VENT SHUT VALVE STUCK CLOSED MALFUNCTION**

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.

## 2004 Honda Element DX

### 2003-06 ENGINE PERFORMANCE EVAP System - Element

4. Remove the fuel fill cap, and wait 1 minute.
5. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is it between -0.67 kPa and 0.67 kPa (-0.2 and 0.2 in.Hg, -5 and 5 mmHg), or 2.4 and 2.6 V?*

**YES-** Go to step 6.

**NO-** Go to step 17 .

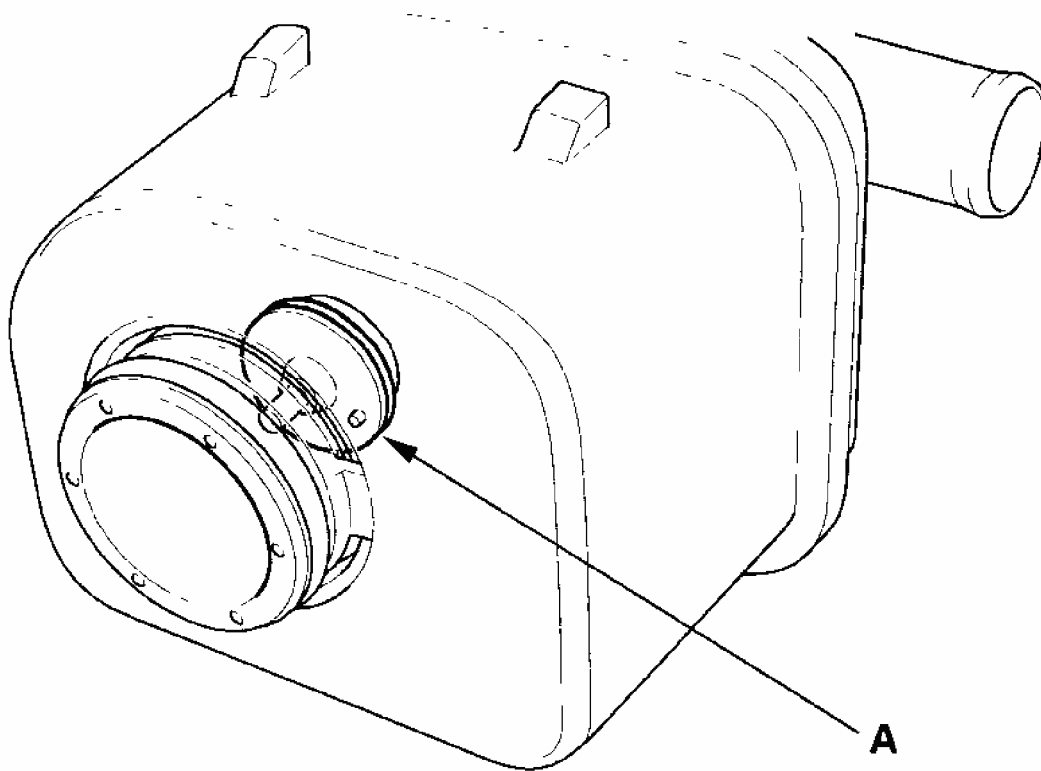
6. Install the fuel fill cap.
7. Clear the DTC with the HDS.
8. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
9. Monitor the OBD STATUS for DTC P1454 or P2422 in the DTCs MENU with the HDS.

*Does the screen indicate FAILED?*

**YES-** Go to step 10.

**NO-** If the screen indicates PASSED, intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, or the EVAP canister vent shut valve and the ECM/PCM. Also check for blockage in the canister filter, vent hoses, and drain joint. If the screen indicates NOT COMPLETED, go to step 7 and recheck.

10. Clear the DTC with the HDS.
11. Turn the ignition switch OFF.
12. Remove the EVAP canister vent shut valve from the EVAP canister (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** ).
13. Connect the 2P connector to the EVAP canister vent shut valve.
14. Turn the ignition switch ON (II).
15. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
16. Check the EVAP canister vent shut valve (A) operation.



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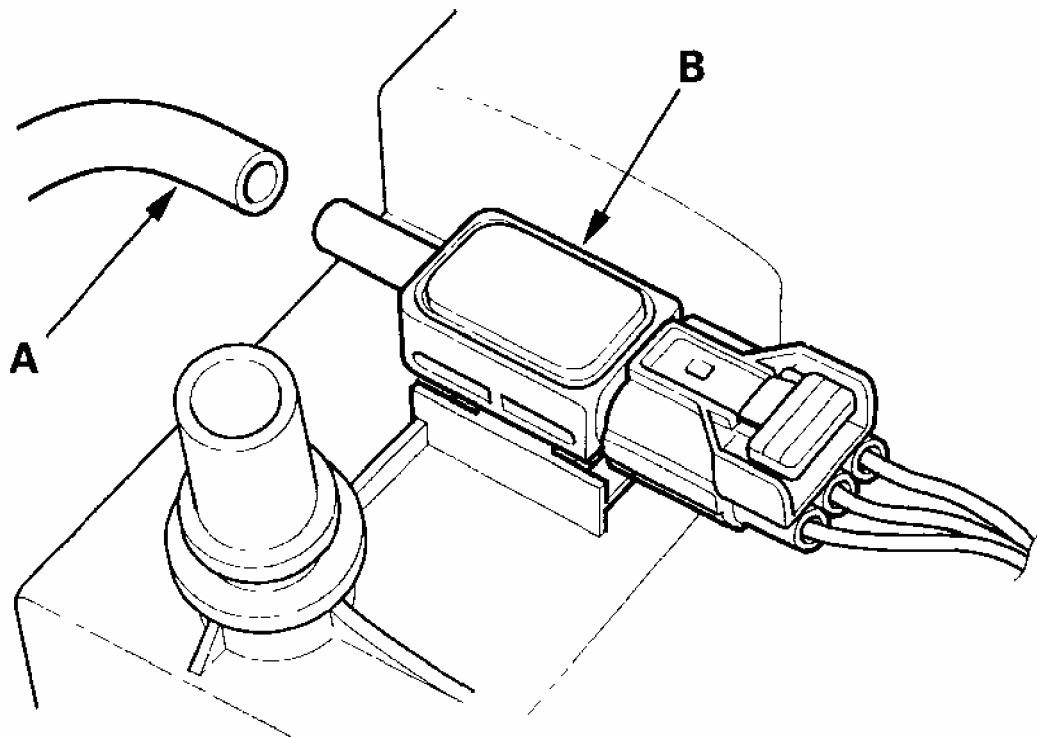
**Fig. 38: Identifying EVAP Canister Vent Shut Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the valve operate?*

**YES-** Check for a blockage in the EVAP canister, canister filter, vent hoses, and drain joint, then install the EVAP canister vent shut valve, and go to step 23 .

**NO-** Replace the EVAP canister vent shut valve (see step **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** ), then go to 23 .

17. Disconnect the air tube (A) from the FTP sensor (B).



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**Fig. 39: Disconnecting Air Tube From FTP Sensor**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Check the FTP SENSOR in the DATA LIST with the HDS.

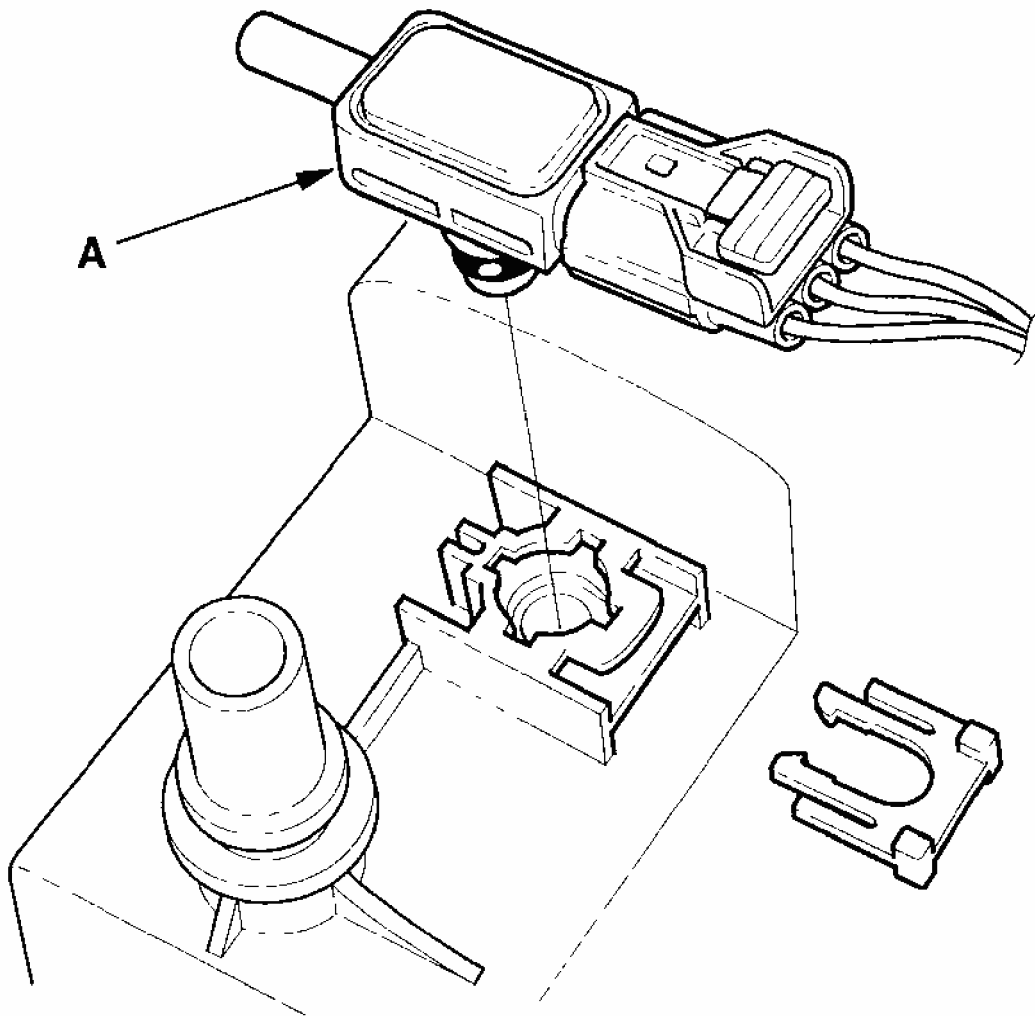
*Is it between -0.67 kPa and 0.67 kPa (-0.2 and 0.2 in.Hg, -5 and 5 mmHg), or 2.4 and 2.6 V?*

**YES-** Check for a blockage in the FTP sensor air tube, then go to step 23 .

**NO-** Go to step 19.

19. Turn the ignition switch OFF.
20. Remove the FTP sensor (A) from the EVAP canister with its connector connected (see **FTP SENSOR REPLACEMENT** ).





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**Fig. 40: Removing FTP Sensor From EVAP Canister**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Turn the ignition switch ON (II).
22. Check the FTP SENSOR in the DATA LIST with the HDS.

*Is it between -0.67 kPa and 0.67 kPa (-0.2 and 0.2 in.Hg, -5 and 5 mmHg), or 2.4 and 2.6 V?*

**YES-** Check for debris or clogging at the EVAP canister and the FTP sensor port, then go to step 23.

**NO-** Replace the FTP sensor (see **FTP SENSOR REPLACEMENT** ), then go to step 23.

23. Turn the ignition switch ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
26. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
27. Check for Temporary DTCs or DTCs with the HDS.

*Are any Temporary DTCs or DTCs indicated?*

**YES-** If DTC P1454 and/or P2422 is indicated, check for poor connections or loose terminals at the FTP sensor, or the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1 . If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

**NO-** Go to step 28.

28. Monitor the OBD STATUS for DTC P1454 or P2422 in the DTCs MENU with the HDS.

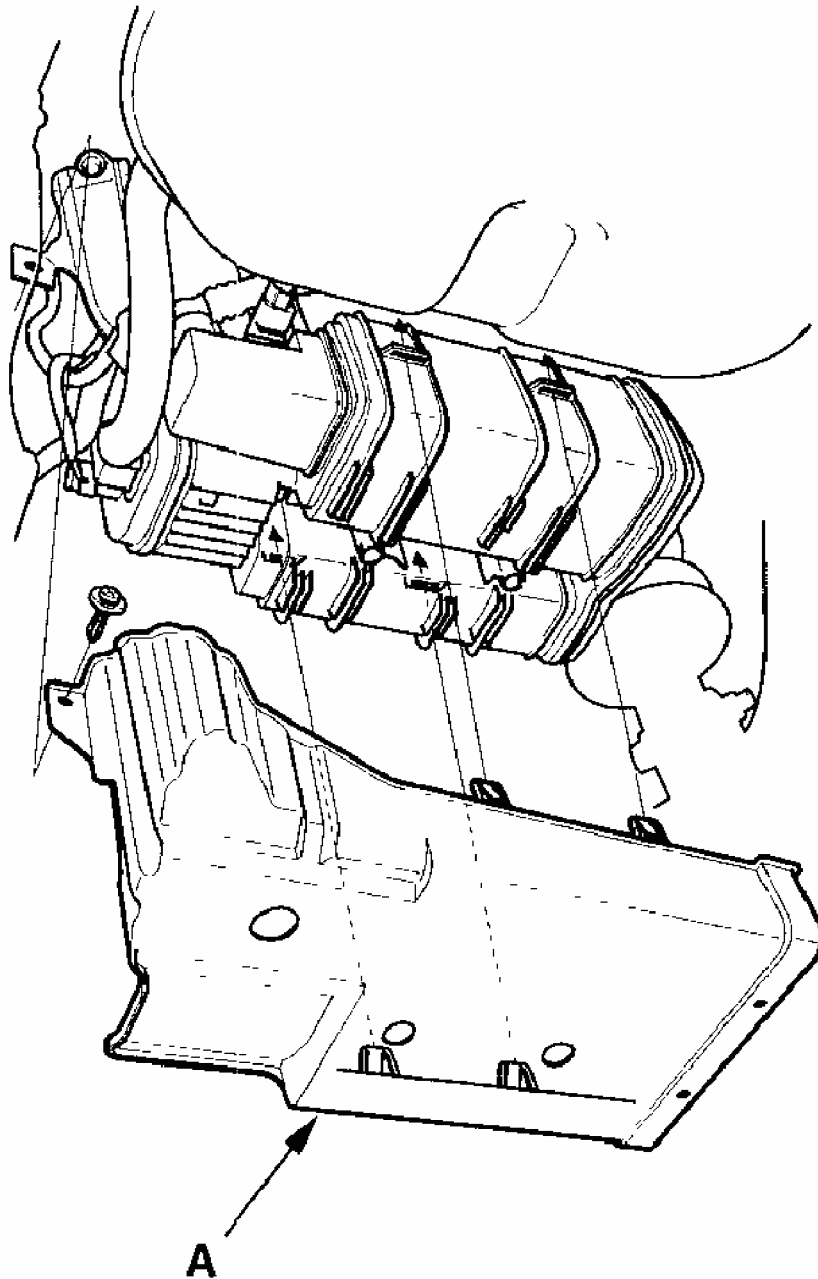
*Does the screen indicate PASSED?*

**YES-** Troubleshooting is complete.

**NO-** If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor, or the EVAP canister vent shut valve and the ECM/PCM, then go to step 1 . If the screen indicates NOT COMPLETED, go to 26 and recheck.

## **EVAP CANISTER REPLACEMENT**

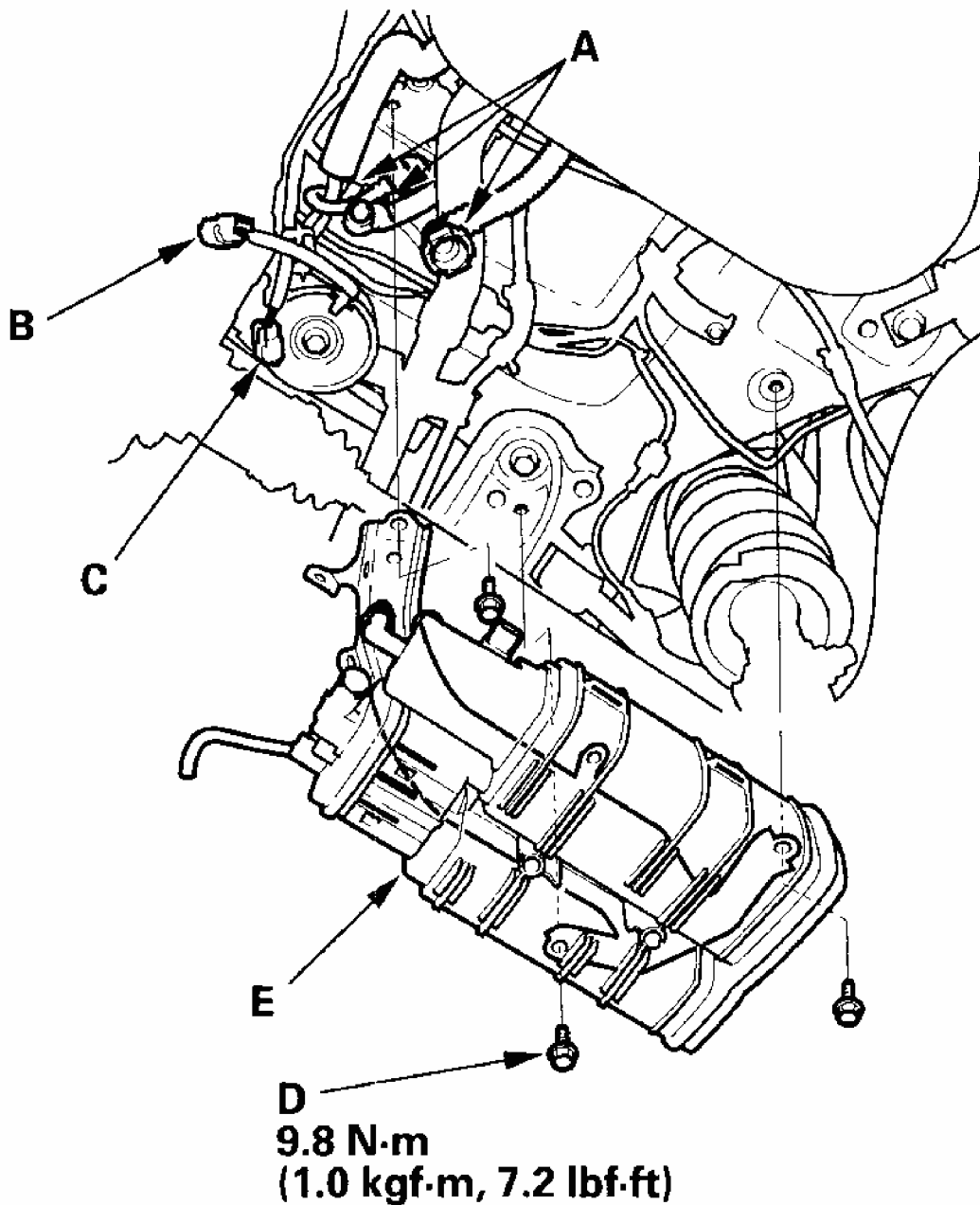
1. Remove the EVAP canister cover (A).



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**Fig. 41: Removing EVAP Canister Cover**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

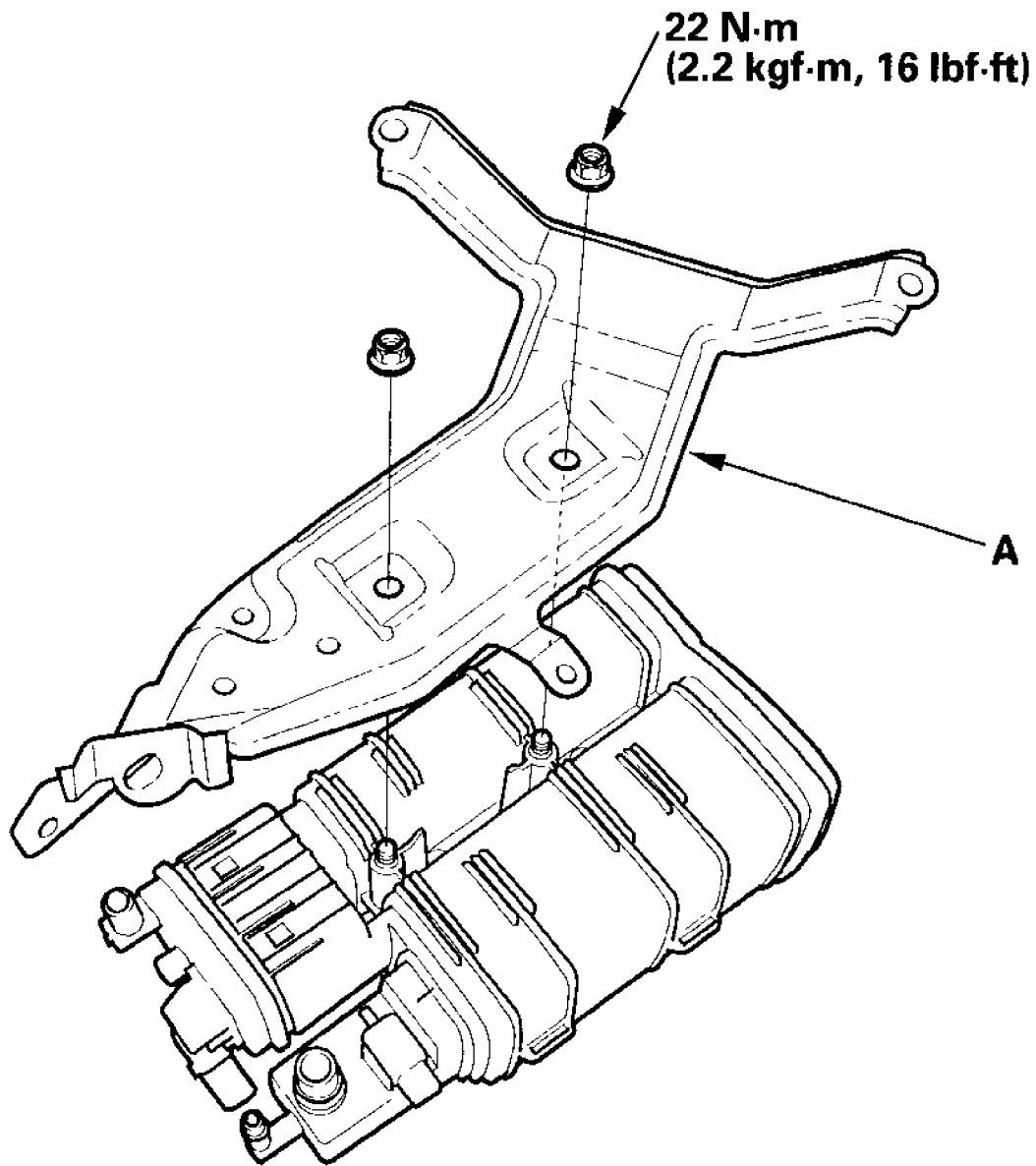
2. Remove the hoses (A), the FTP sensor 3P connector (B), and the EVAP canister vent shut valve 2P connector (C).



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**Fig. 42: Removing Hoses, FTP Sensor 3P Connector And EVAP Canister Vent Shut Valve 2P Connector With Specified Torques**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts (D).
4. Remove the EVAP canister (E).
5. Remove the EVAP canister bracket (A).



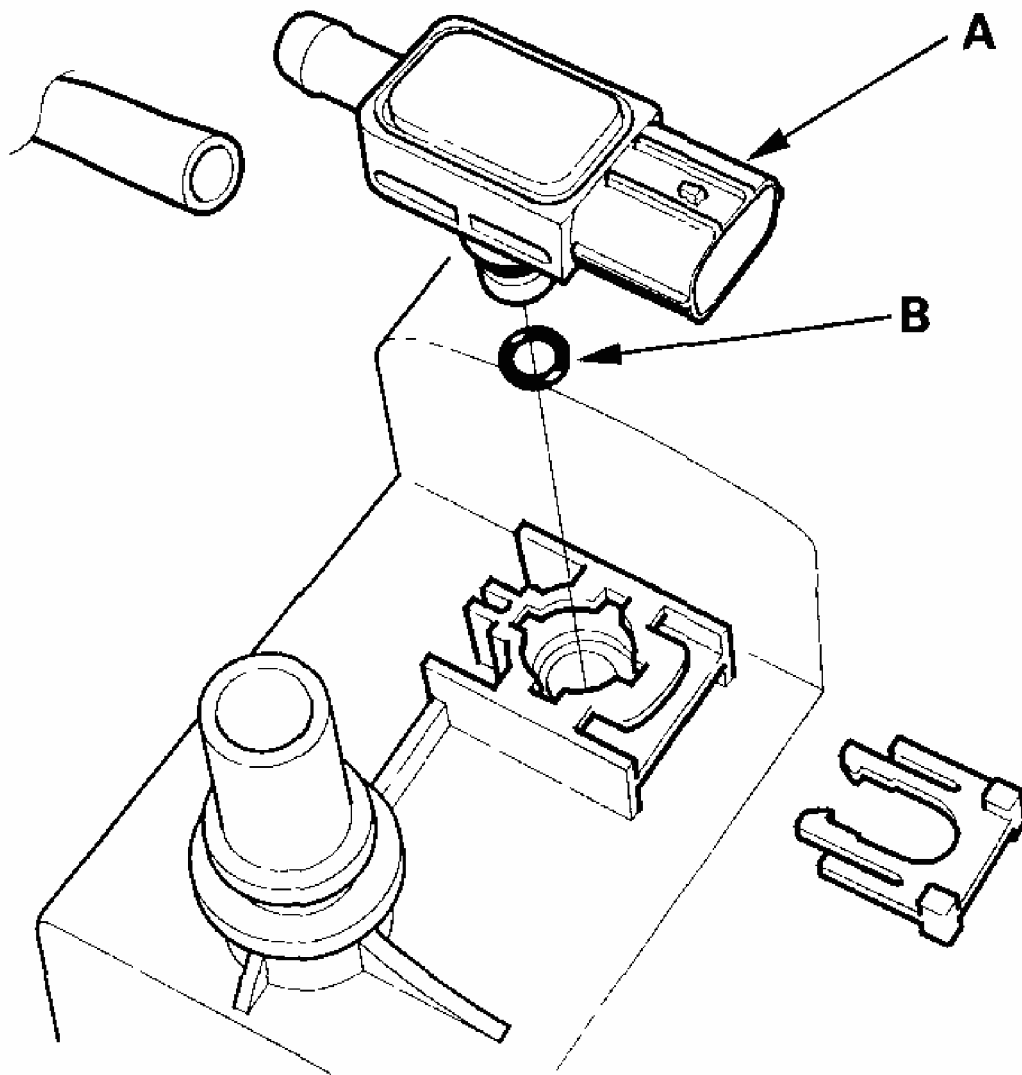
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**Fig. 43: Removing EVAP Canister Bracket And Torque Specifications**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the canister in the reverse order of removal.

## FTP SENSOR REPLACEMENT

1. Remove the EVAP canister (see **EVAP CANISTER REPLACEMENT** ).
2. Remove the FTP sensor (A).



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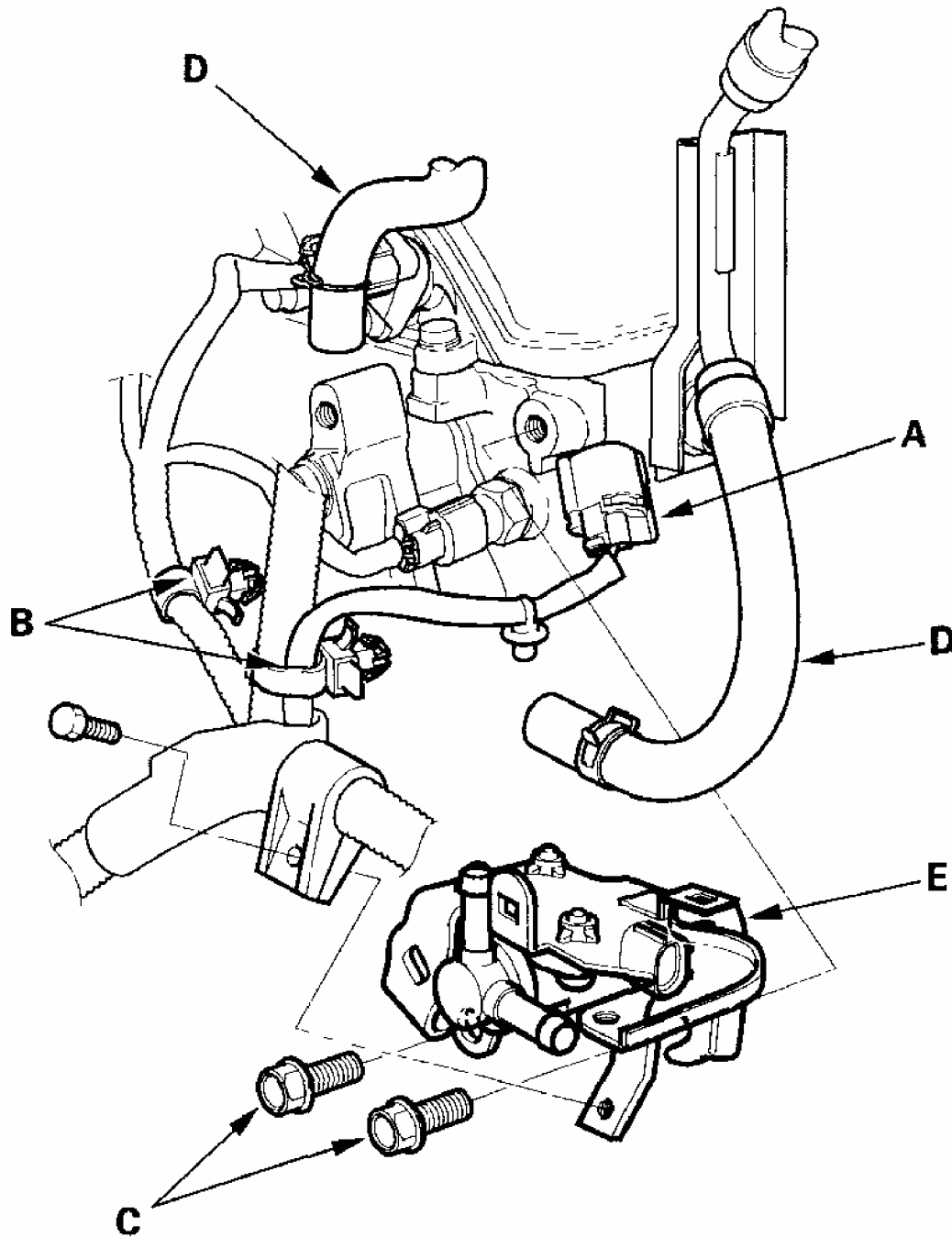
**Fig. 44: Removing FTP Sensor**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the sensor in the reverse order of removal with a new O-ring (B).

## **EVAP CANISTER PURGE VALVE REPLACEMENT**

1. Disconnect the EVAP canister purge valve 2P connector (A).

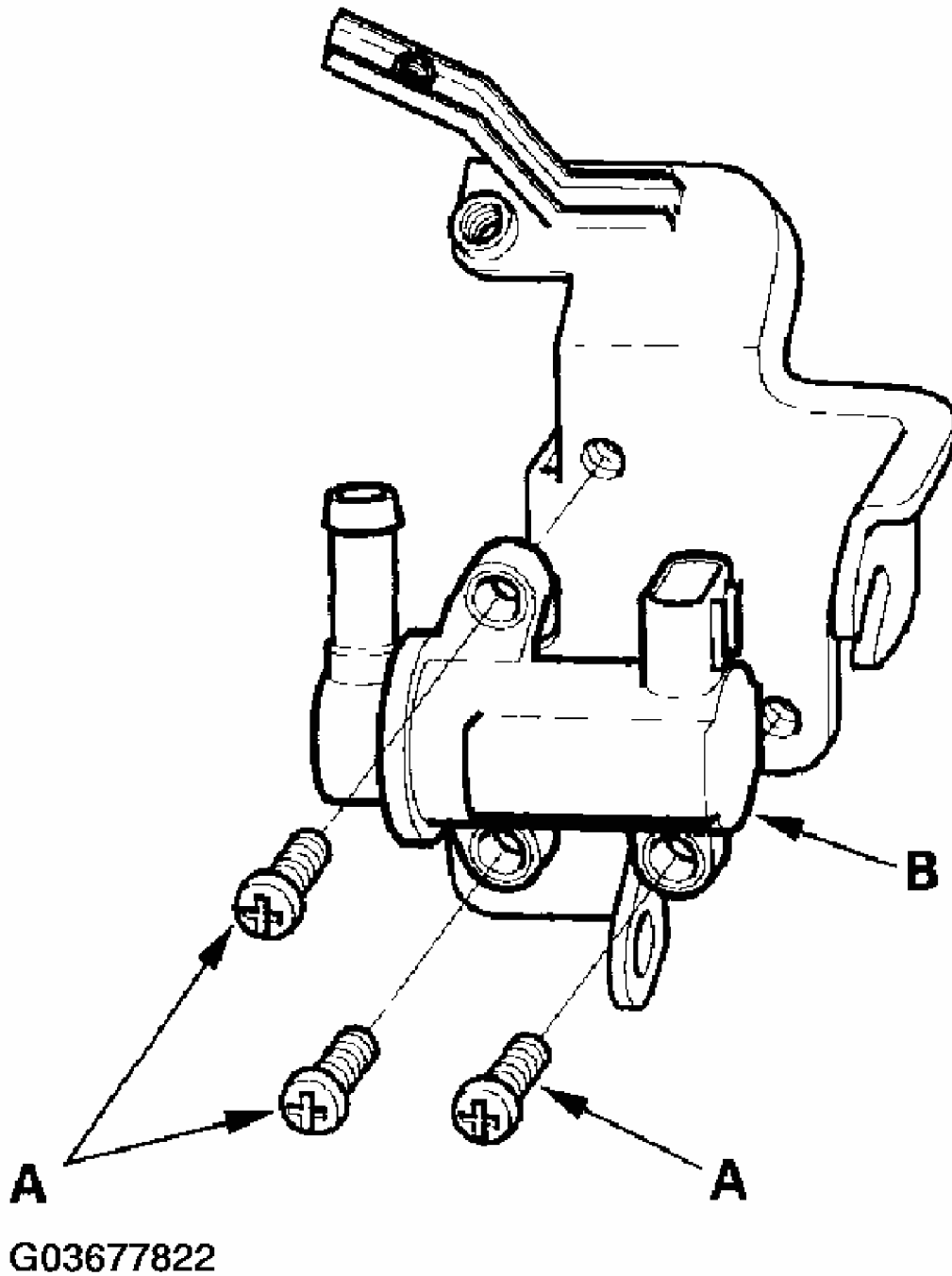


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**Fig. 45: Disconnecting EVAP Canister Purge Valve 2P Connector**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the harness clips (B), the bolts (C), and the hoses (D), then remove the EVAP canister purge valve assembly (E).

3. Remove the screws (A).



**Fig. 46: Removing EVAP Canister Purge Valve From Bracket**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

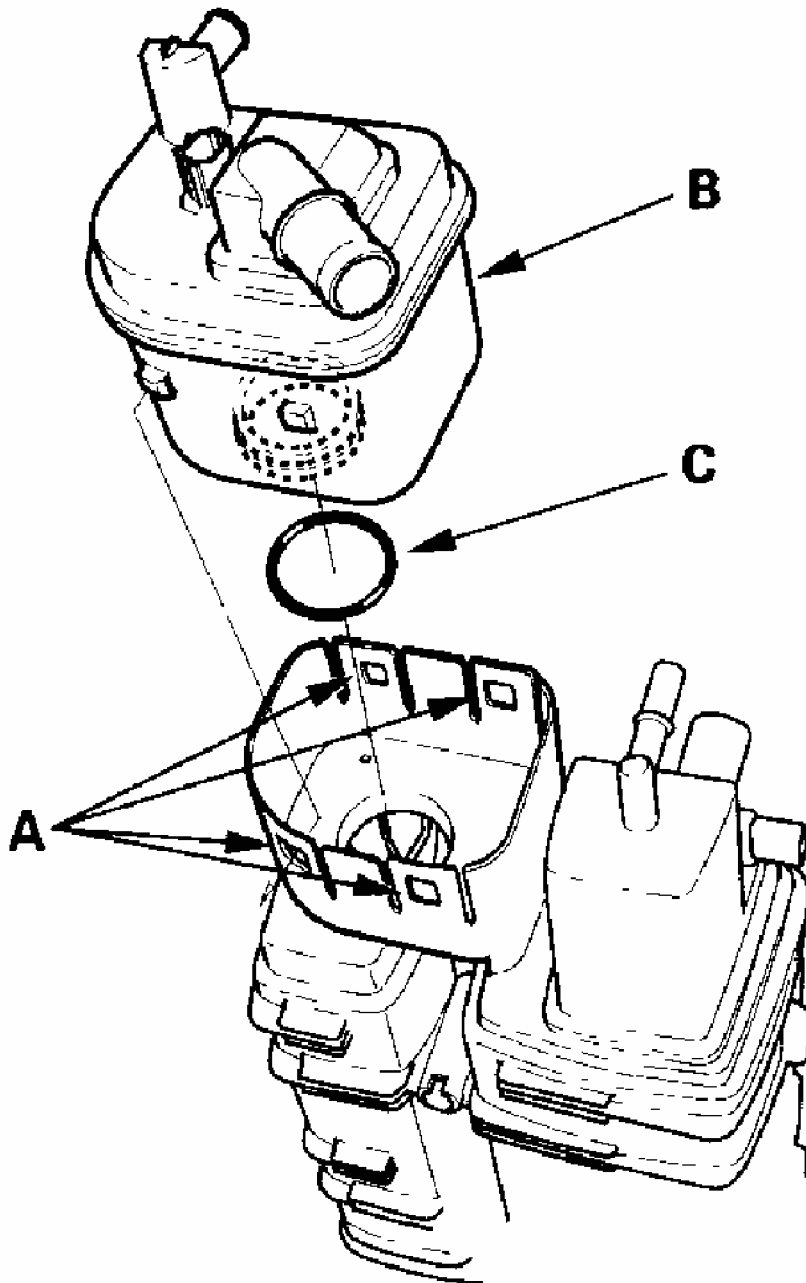


4. Remove the EVAP canister purge valve (B) from the bracket.
5. Install the valve in the reverse order of removal.

## **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**

1. Remove the EVAP canister (see **EVAP CANISTER REPLACEMENT** ).
2. Pry the lock tabs outward (A), then remove the EVAP canister vent shut valve (B).

**NOTE:**      **Be careful not to damage the lock tabs.**



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**Fig. 47: Removing EVAP Canister Vent Shut Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the valve in the reverse order of removal with a new O-ring (C).

**NOTE:** Do not coat the O-ring with engine oil, etc.