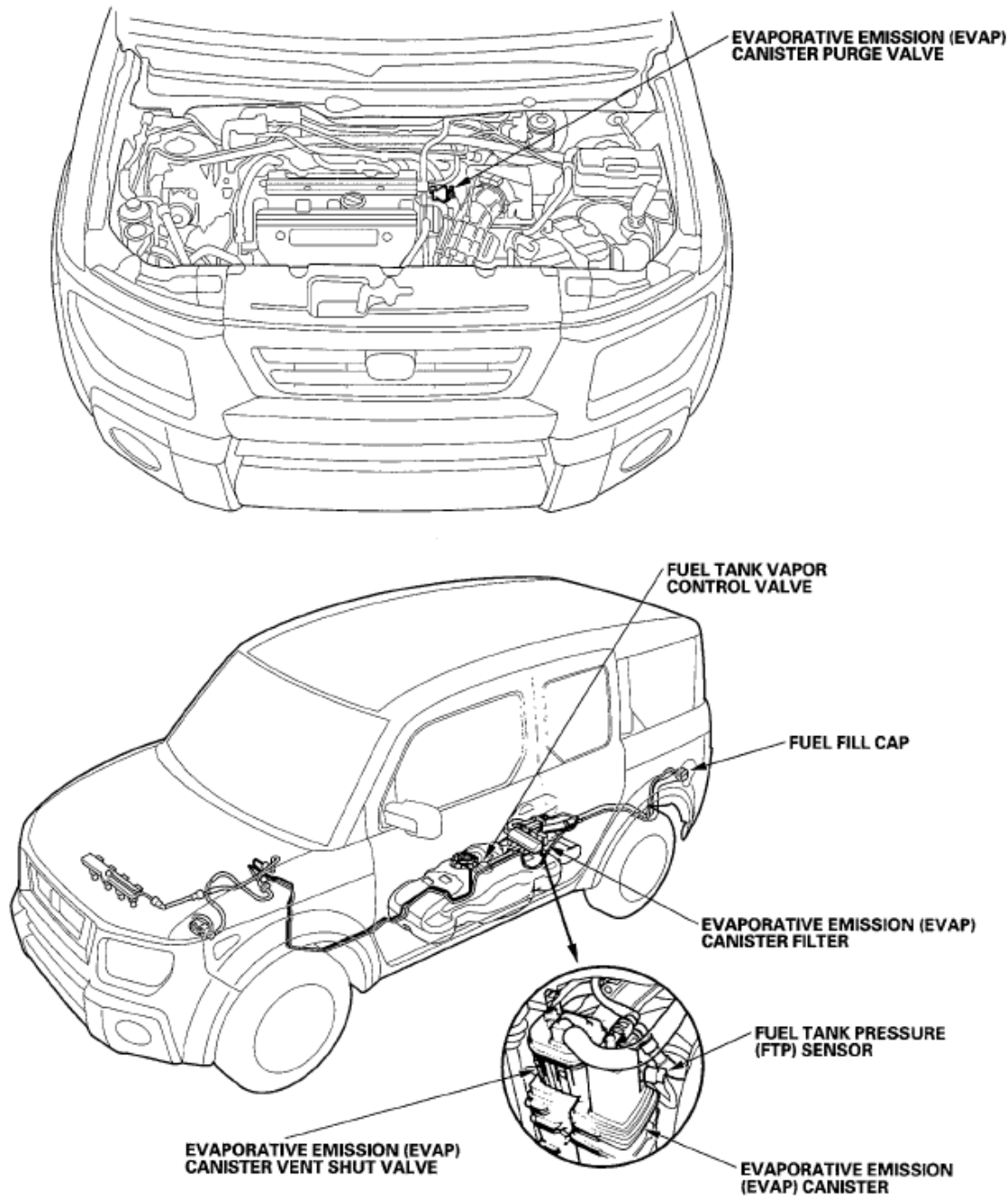


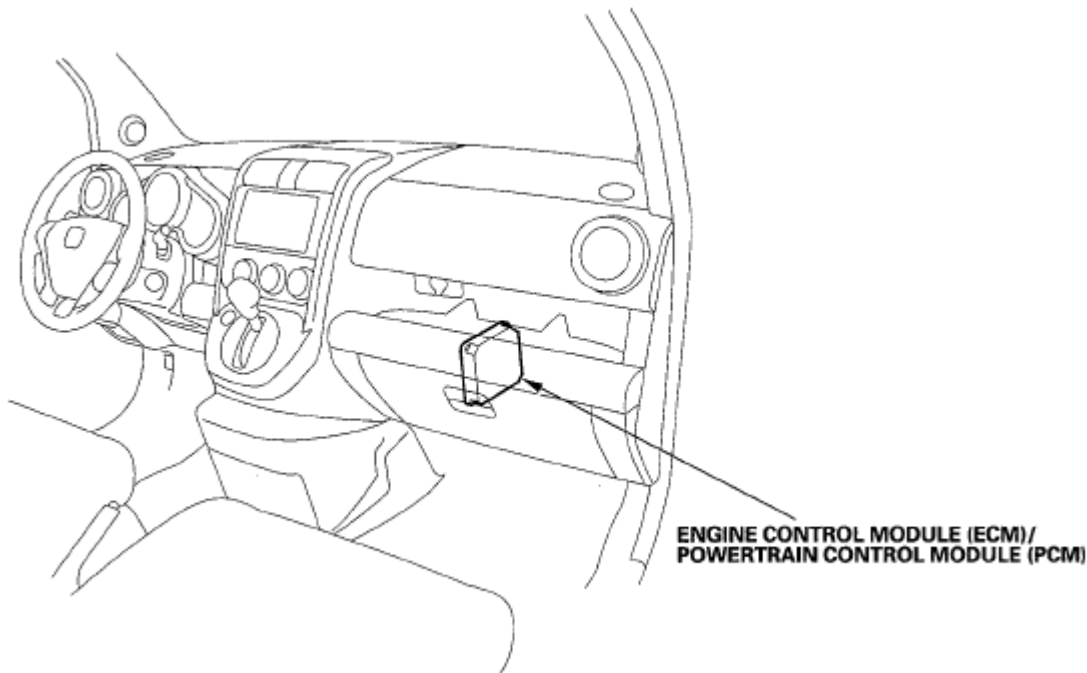
## 2007-2008 ENGINE PERFORMANCE

### EVAP System - Element

## COMPONENT LOCATION INDEX



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



**Fig. 2: Identifying Engine Control Module (ECM) And Powertrain Control Module (PCM)**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## **DTC TROUBLESHOOTING**

### **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.

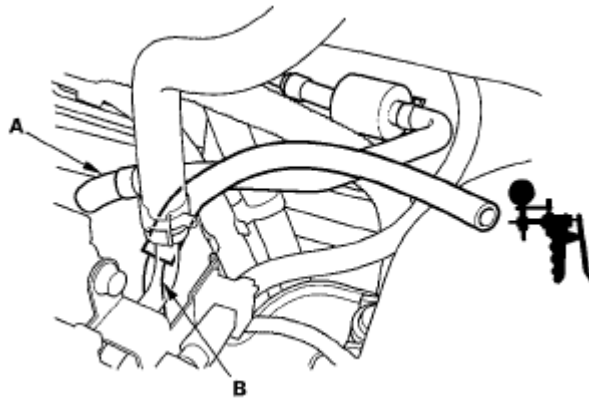
*Is DTC P0443 indicated?*

**YES** -Go to step 5.

**NO** -Intermittent failure, the 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.



**Fig. 3: Identifying Vacuum Hose And EVAP Canister Purge Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Start the engine, and let it idle.

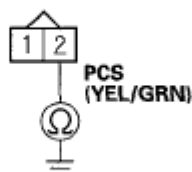
*Is there vacuum?*

**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

**Fig. 4: Checking Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

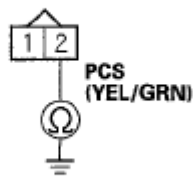
*Is there continuity?*

**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

**Fig. 5: Checking Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 2 And Body Ground**

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

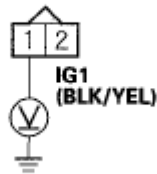
*Is there continuity?*

**YES** -Repair short in the wire between the 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

**Fig. 6: Measuring Voltage Between EVAP Canister Purge Valve 2P Connector Terminal No. 1 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

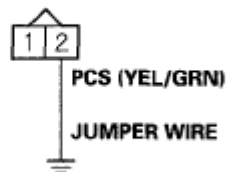
*Is there battery voltage?*

**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 25.

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

**Fig. 7: Connecting EVAP Canister Purge Valve 2P Connector Terminal No. 2 To Body Ground With Jumper Wire**

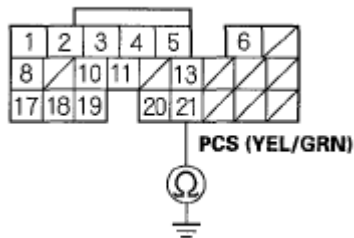
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

ECM/PCM CONNECTOR B (24P)



Wire side of female terminals

**Fig. 8: Checking Continuity Between ECM/PCM Connector Terminal B21 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

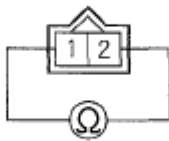
*Is there continuity?*

**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. At the purge valve side, 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

**Fig. 9: 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 24.5 ohms, at room temperature?*

**YES** -Go to step 31.

**NO** -Go to step 24.

24. Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT** ).
25. Reconnect all connectors.
26. Turn the ignition switch ON (II).

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

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.

*Is DTC P0443 indicated?*

**YES** -Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1.

**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. If any other Temporary DTCs or DTCs were indicated in step 29, go to the **INDICATED DTCS TROUBLESHOOTING**.

**NO** -If the screen indicates 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 or OUT OF CONDITION, keep idling until a result comes on.

31. Reconnect all connectors.
32. Update the ECM/PCM if it does not have the latest software (see **UPDATING THE ECM/PCM** ), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ).
33. Start the engine, and let it idle.
34. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0443 indicated?*

**YES** -Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 33. If the ECM/PCM was substituted, go to step 1.

**NO** -Go to step 35.

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

*Does the screen indicate PASSED?*

**YES** -If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ). If any other Temporary DTCs or DTCs were indicated in step 34, go to the **INDICATED DTCS TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

purge valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then recheck. If the ECM/PCM was substituted, go to step 1. If the screen indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

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

##### NOTE:

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

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, the 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, keep idling until a result comes on.

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.

*Is DTC P0451 indicated?*

**YES** -Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

**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?*



## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

**YES** -Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 11, go to the **INDICATED DTCS TROUBLESHOOTING**.

**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, keep idling until a result comes on.

#### DTC P0452: FTP SENSOR 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.
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, the 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 4 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 (2.16 in.Hg, 55 mmHg), or 4.7 V indicated?*

## 2007 Honda Element EX

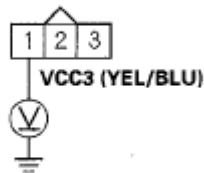
### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

**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

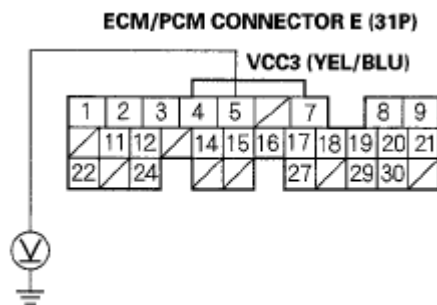
**Fig. 10: Measuring Voltage Between FTP Sensor 3P Connector Terminal No. 1 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*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.



Wire side of female terminals

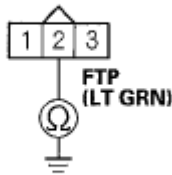
**Fig. 11: Measuring Voltage Between ECM/PCM Connector Terminal E5 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 5 V?*

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

**Fig. 12: 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 29.

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.

*Is DTC P0452 indicated?*

**YES** -Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

**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?*

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

**YES** -Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 26, go to the **INDICATED DTCS TROUBLESHOOTING**.

**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, keep idling until a result comes on.

28. Turn the ignition switch OFF.
29. Reconnect all connectors.
30. Update the ECM/PCM if it does not have the latest software (see **UPDATING THE ECM/PCM** ), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ).
31. Start the engine, and let it idle.
32. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0452 indicated?*

**YES** -Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 31. If the ECM/PCM was substituted, go to step 1.

**NO** -Go to step 33.

33. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

*Does the screen indicate PASSED?*

**YES** -If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ). If any other Temporary DTCs or DTCs were indicated in step 32, go to the **INDICATED DTCS TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 31. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

### 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.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

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.

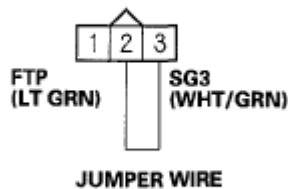
*Does the screen indicate FAILED?*

**YES** -Go to step 10.

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

**Fig. 13: Connecting FTP Sensor 3P Connector Terminals No. 2 And 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.

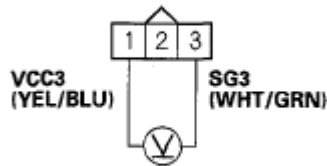
## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

**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

**Fig. 14: Measuring Voltage Between FTP Sensor 3P Connector Terminals No. 1 And No. 3**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

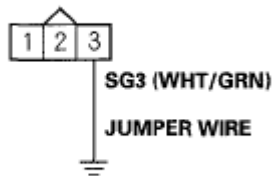
*Is there about 5 V?*

**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



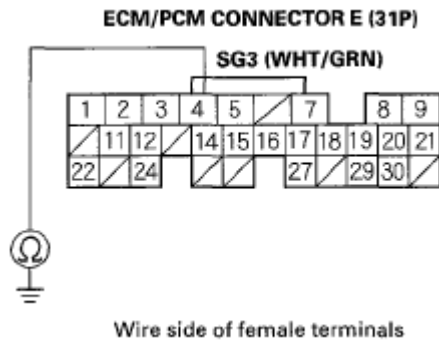
Wire side of female terminals

**Fig. 15: 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.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element



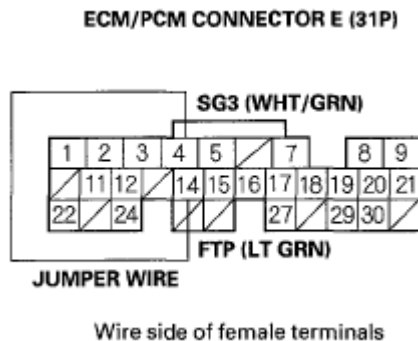
**Fig. 16: Checking Continuity Between ECM/PCM Connector Terminal E4 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 34.

**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.



**Fig. 17: 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.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

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.

*Is DTC P0453 indicated?*

**YES** -Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

**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. If any other Temporary DTCs or DTCs were indicated in step 31, go to the **INDICATED DTCs TROUBLESHOOTING**.

**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, keep idling until a result comes on.

33. Turn the ignition switch OFF.
34. Reconnect all connectors.
35. Update the ECM/PCM if it does not have the latest software (see **UPDATING THE ECM/PCM** ), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ).
36. Start the engine, and let it idle.
37. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0453 indicated?*

**YES** -Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 36. If the ECM/PCM was substituted, go to step 1.

**NO** -Go to step 38.

38. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

*Does the screen indicate PASSED?*



## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

**YES** -If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ). If any other Temporary DTCs or DTCs were indicated in step 37, go to the **INDICATED DTCS TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 36. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

#### **DTC P0455: EVAP SYSTEM LARGE 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 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** ).
  - 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 of fresh fuel to the tank (as long as it will not fill the tank) just before starting these procedures.

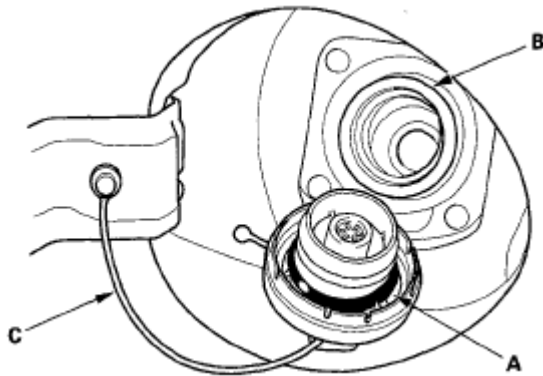
1. Check the fuel fill cap (the cap must say "TIGHTEN TO CLICK"). It should turn 1/4 turn after it's tight, then it clicks.

*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.



**Fig. 18: Identifying Fuel Fill Cap Seal, Fuel Fill Pipe Mating Surface And Fuel Fill Cap Tether Cord**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

**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, the 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 6.

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

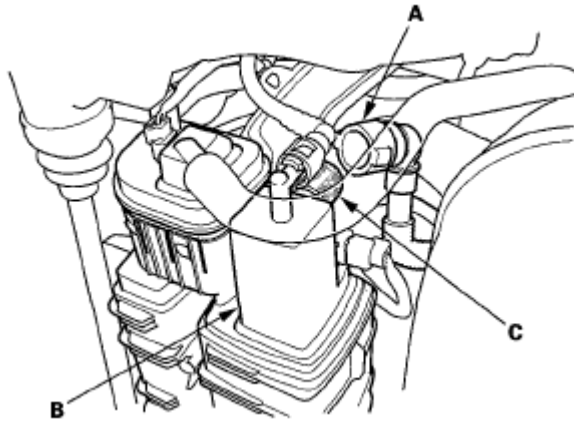
*Is the tube OK?*

**YES** -Go to step 8.

**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.
8. Disconnect the fuel tank vapor recirculation tube (A) from the EVAP canister (B), and plug the EVAP

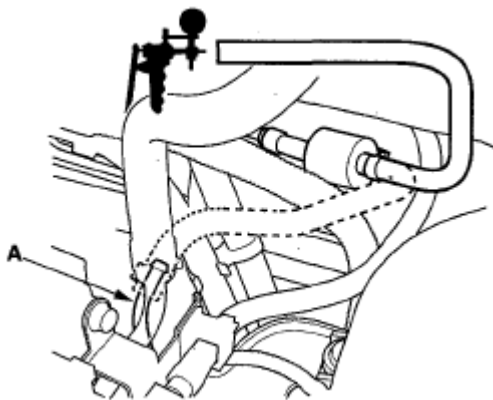
canister port (C).



**Fig. 19: Identifying Fuel Tank Vapor Recirculation Tube, EVAP Canister And EVAP Canister Port**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 20: Identifying Vacuum Hose (Purge Line)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Turn the ignition switch ON (II).
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 (--0.59 in.Hg, --15.1 mmHg).

**NOTE:** Be careful not to exceed the vacuum. If you do, the FTP sensor can be damaged.

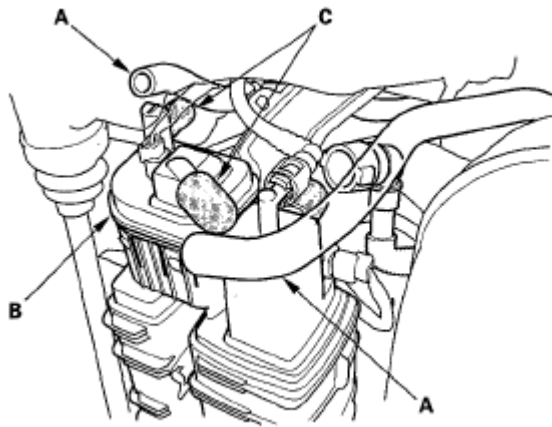
13. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

*Does the voltage increase more than 0.2 V (0.1 in.Hg, 2.5 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 fresh air hoses (A) from the EVAP canister vent shut valve (B), and plug the EVAP canister vent shut valve port (C).



**Fig. 21: Identifying EVAP Canister Vent Shut Valve And Plug EVAP Canister Vent Shut Valve Port**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Apply vacuum to the hose (disconnected in step 9) until the FTP reads 1.90 V (--0.59 in.Hg, --15.1 mmHg).

**NOTE:** Be careful not to exceed the vacuum. If you do, 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, 2.5 mmHg)?*

**YES** -Go to step 18.

**NO** -Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**), then go to step 21.

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?*

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

**YES** -Replace the following 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 these parts for looseness or damage:

- Fuel fill pipe
- Fuel vapor return pipe

*Are the parts OK?*

**YES** -Check the fuel pump base gasket (see **FUEL TANK UNIT REMOVAL/INSTALLATION** ), 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 and connectors.
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 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 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** ).

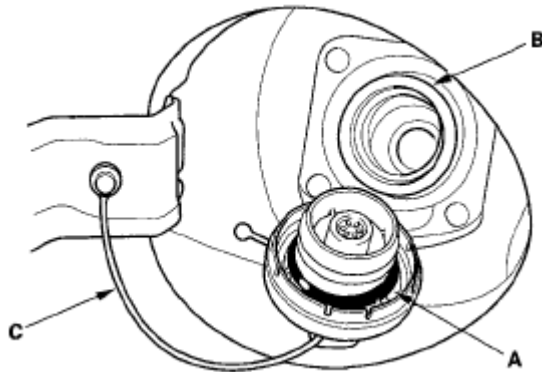
1. Check the fuel fill cap (the cap must say "TIGHTEN TO CLICK"). It should turn 1/4 turn after it's tight, then it clicks.

*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.



**Fig. 22: Identifying Cap Seal, Fuel Fill Pipe Mating Surface And Fuel Fill Cap Tether Cord**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

**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.

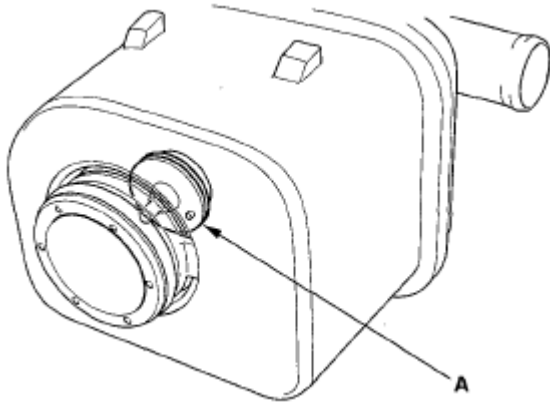
*Is the result OK?*

**YES** -Intermittent failure, the 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.

**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.



**Fig. 23: 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 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.

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.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

*Is the result OK?*

**YES** -Troubleshooting is complete.

**NO** -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.

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

**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, the 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 4.

4. Turn the ignition switch OFF.
5. Replace the EVAP canister purge valve (see EVAP CANISTER PURGE VALVE 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, or the EVAP canister vent shut valve and the ECM/PCM, then go to step 1.

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

##### **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. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Select EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

*Is the result OK?*

**YES** -Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM.

**NO** -Go to step 4.

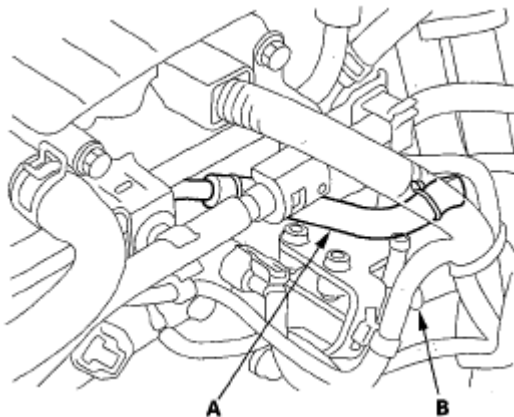
4. Check for a loose, clogged, or damaged at EVAP canister purge line between the throttle body and the EVAP canister.

*Is the line OK?*

**YES** -Go to step 5.

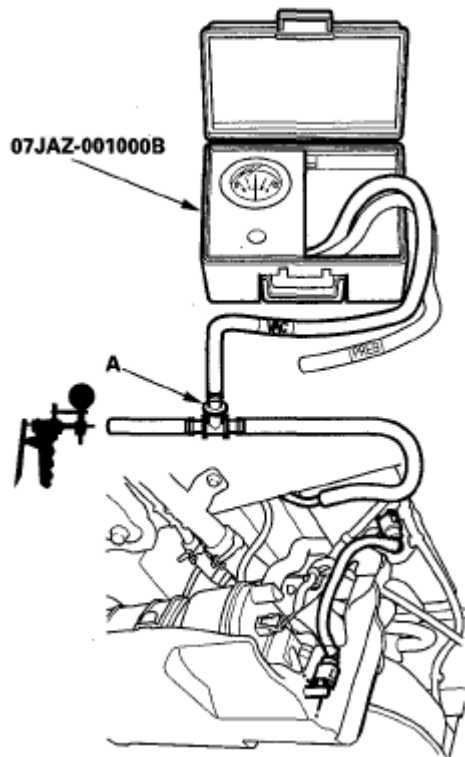
**NO** -Reconnect or repair the EVAP canister purge line, then go to step 23.

5. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B).



**Fig. 24: Identifying Vacuum Hose And EVAP Canister Purge Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the vacuum hose from the EVAP canister purge line (EVAP canister side), and connect a T-fitting (A) between the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg, as shown.



**Fig. 25: Identifying EVAP Canister Purge Line And T-fitting**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

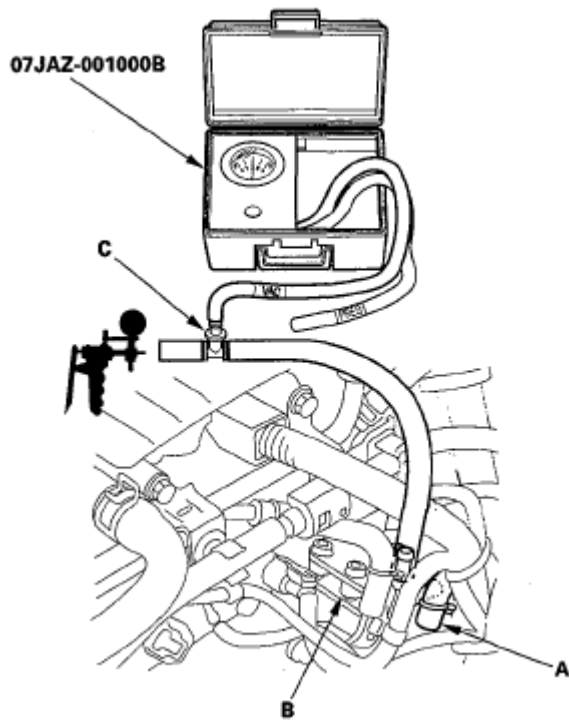
7. Apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.
8. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

*Does the vacuum release immediately?*

**YES** -Go to step 14.

**NO** -Go to step 9.

9. Select EVAP PCS OFF in the INSPECTION MENU with the HDS.
10. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B). Connect a T-fitting (C) between the vacuum pump/gauge, 0-30 in.Hg, the vacuum pump, and the EVAP canister purge valve as shown.



**Fig. 26: Identifying EVAP Canister Purge Line And T-fitting**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

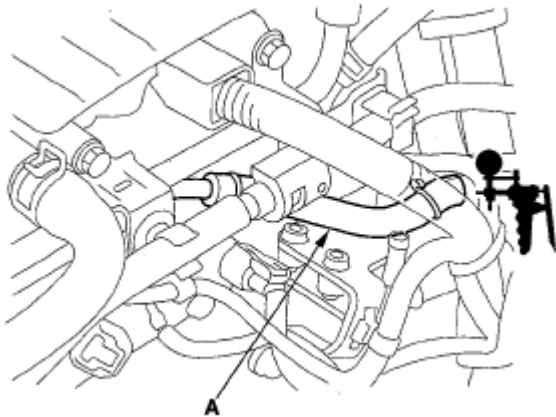
11. Apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.
12. Turn the ignition switch ON (II).
13. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

*Does the vacuum release immediately?*

**YES** -Check for blockage in the vacuum hose between the EVAP canister purge valve and EVAP canister, then go to step 23.

**NO** -Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT** ), then go to step 23.

14. Connect the vacuum pump/gauge, 0-30 in.Hg, to the vacuum hose (A) as shown.

**Fig. 27: Identifying Vacuum Hose**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

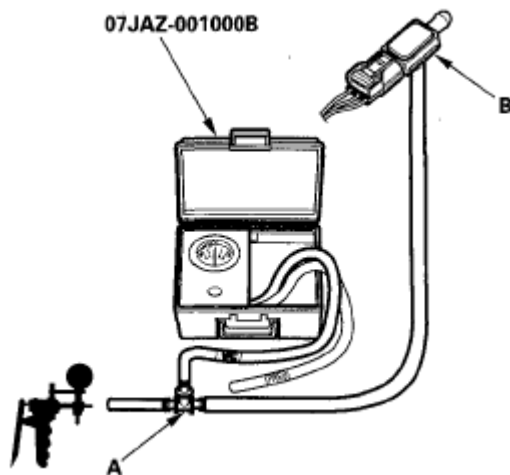
15. Start the engine, and let it idle.

*Is there vacuum?*

**YES** -Go to step 16.

**NO** -Check for blockage in the vacuum hose between the EVAP canister purge valve and the throttle body, then go to step 23.

16. Turn the ignition switch OFF.
17. Remove the FTP sensor with its connector connected (see **FTP SENSOR REPLACEMENT** ).
18. Connect a T-fitting (A) between the vacuum pump/gauge, 0-30 in.Hg, the vacuum pump, and the FTP sensor (B) as shown.

**Fig. 28: Identifying Vacuum Pump And FTP Sensor**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

19. Check and record the FTP SENSOR reading in the DATA LIST with the HDS.
20. Slowly apply about 1.3 kPa (0.4 in.Hg, 10 mmHg) of vacuum to the hose.
21. Check the FTP SENSOR in the DATA LIST with the HDS.

*Does the value change?*

**YES** -Check for debris or blockage at the EVAP canister port, then go to step 23.

**NO** -Go to step 22.

22. Replace 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 for poor connections or loose terminals at the FTP sensor 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, and 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.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

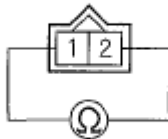
*Is DTC P0498 indicated?*

**YES** -Go to step 6.

**NO** -Intermittent failure, the 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. At the valve side, 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

**Fig. 29: Measuring Resistance Between EVAP Canister Vent Shut Valve 2P Connector Terminals No. 1 And 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there about 25-30 ohms, at room temperature?*

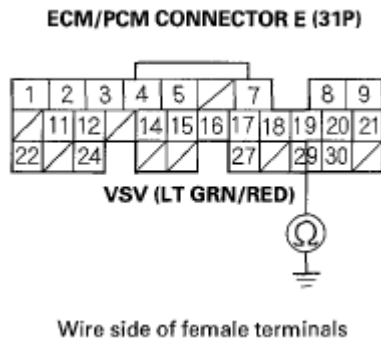
**YES** -Go to step 9.

**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.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element



**Fig. 30: 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 21.

12. Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** ).
13. Reconnect ECM/PCM connector E (31P).
14. Reconnect the EVAP canister vent shut valve 2P connector.
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. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
19. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0498 indicated?*

**YES** -Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1.

**NO** -Go to step 20.

20. Monitor the OBD STATUS for DTC P0498 in the DTCs MENU with the HDS.

*Does the screen indicate PASSED?*

**YES** -Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 19, go to the **INDICATED DTCS TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

vent shut valve and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

21. Reconnect all connectors.
22. Update the ECM/PCM if it does not have the latest software (see **UPDATING THE ECM/PCM** ), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ).
23. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
24. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0498 indicated?*

**YES** -Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 23. If the ECM/PCM was substituted, go to step 1.

**NO** -Go to step 25.

25. Monitor the OBD STATUS for DTC P0498 in the DTCs MENU with the HDS.

*Does the screen indicate PASSED?*

**YES** -If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ). If any other Temporary DTCs or DTCs were indicated in step 24, go to the **INDICATED DTCs TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

### **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, and 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.

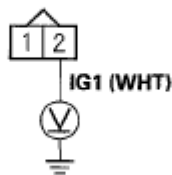
*Is DTC P0499 indicated?*

**YES** -Go to step 5.



**NO** -Intermittent failure, the 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

**Fig. 31: 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 A/F sensor relay (LAF), then go to step 16.

9. Turn the ignition switch OFF.
10. At the valve side, 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

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

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there about 25-30 ohms, 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**



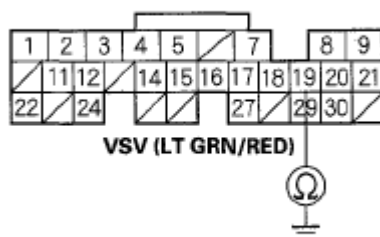
Wire side of female terminals

**Fig. 33: 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

**Fig. 34: 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 23.

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

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

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.

*Is DTC P0499 indicated?*

**YES** -Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1.

**NO** -Go to step 22.

22. Monitor the OBD STATUS for DTC P0499 in the DTCs MENU with the HDS.

*Does the screen indicate PASSED?*

**YES** -Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 21, go to the **INDICATED DTCS TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see **UPDATING THE ECM/PCM** ), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ).
25. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
26. Check for Temporary DTCs or DTCs with the HDS.

*Is DTC P0499 indicated?*

**YES** -Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 25. If the ECM/PCM was substituted, go to step 1.

**NO** -Go to step 27.

27. Monitor the OBD STATUS for DTC P0499 in the DTCs MENU with the HDS.

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

*Does the screen indicate PASSED?*

**YES** -If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT** ). If any other Temporary DTCs or DTCs were indicated in step 26, go to the **INDICATED DTCs TROUBLESHOOTING**.

**NO** -If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM** ), then go to step 25. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 25.

#### **DTC P1454: FTP SENSOR 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.
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.

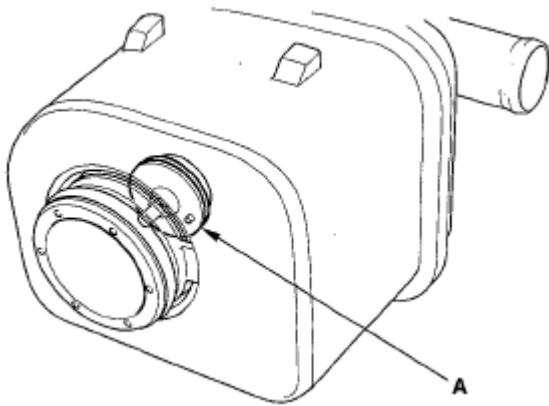
6. Install the fuel fill cap.
7. Clear the DTC with the HDS.
8. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
9. Monitor the OBD STATUS for DTC P1454 in the DTCs MENU with the HDS.

*Does the screen indicate FAILED?*

**YES** -Go to step 10.

**NO** -If the screen indicates PASSED, intermittent failure, the 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 a blockage in the canister filter, vent hoses, and drain joint. If the screen indicates NOT COMPLETED, go to step 8 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.



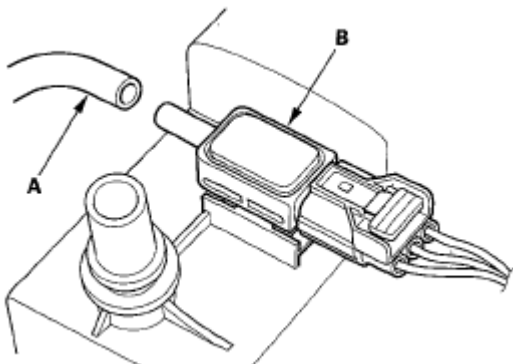
**Fig. 35: Checking EVAP Canister Vent Shut Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*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 **EVAP CANISTER VENT SHUT VALVE REPLACEMENT** ), then go to step 23.

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



**Fig. 36: Identifying Air Tube And FTP Sensor**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

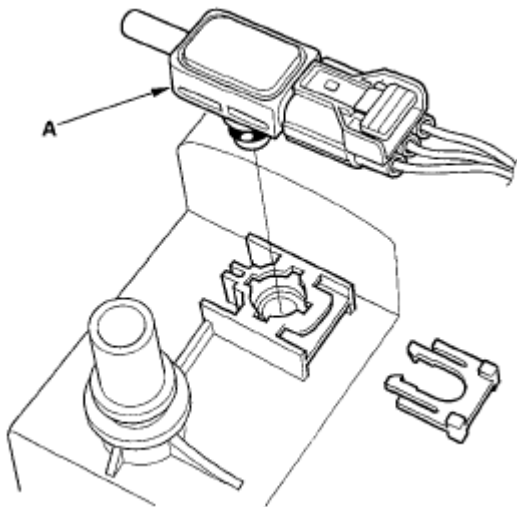
18. Check the FTP SENSOR in the DATA LIST with the HDS.

*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** ).



**Fig. 37: Identifying FTP Sensor And 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** ).

## 2007 Honda Element EX

### 2007-2008 ENGINE PERFORMANCE EVAP System - Element

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.

*Is DTC P1454 and/or P2422 indicated?*

**YES** -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.

**NO** -Go to step 28.

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

*Does the screen indicate PASSED?*

**YES** -Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 27, go to the **INDICATED DTCS TROUBLESHOOTING**.

**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, keep idling until a result comes on.

### DTC P145C: EVAP SYSTEM PURGE FLOW MALFUNCTION

#### NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).
- If DTC P145C is indicated alone, do the troubleshooting for DTC P0496 and P0497 using freeze data from P145C.
- If DTC P0497 and P145C are stored at the same time, check for poor connection, blockage, or damage at EVAP canister purge line between the EVAP canister purge valve and the EVAP canister, a stuck closed EVAP canister purge valve.
- If DTC P0496 and/or P0497 are also stored with P145C, troubleshooting those DTC first, then recheck for P145C.

## FUEL CAP WARNING MESSAGE SYSTEM TROUBLESHOOTING

### 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

Do this procedure if the fuel cap warning message comes on frequently, or if the message does not go off after

the fuel fill cap is tightened and the vehicle is driven several days.

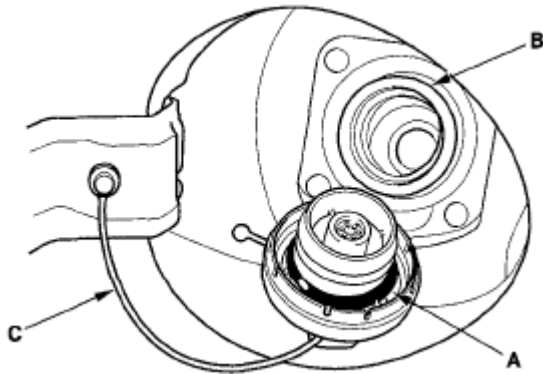
1. Check the fuel fill cap (the cap must say "TIGHTEN TO CLICK"). It should turn 1/4 after it's tight, then it clicks.

*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 13.

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.



**Fig. 38: Identifying Fuel Fill Cap Seal, Fuel Fill Pipe Mating Surface And Fuel Fill Cap Tether Cord**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

**YES** -Replace the fuel fill cap or the fuel fill pipe, then go to step 13.

**NO** -Go to step 3.

3. Reinstall and tighten the fuel fill cap.
4. Clear the DTC with the HDS.
5. 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 for 1 minute.
6. Test drive at 45 mph (72 km/h) for 1 minute or more.

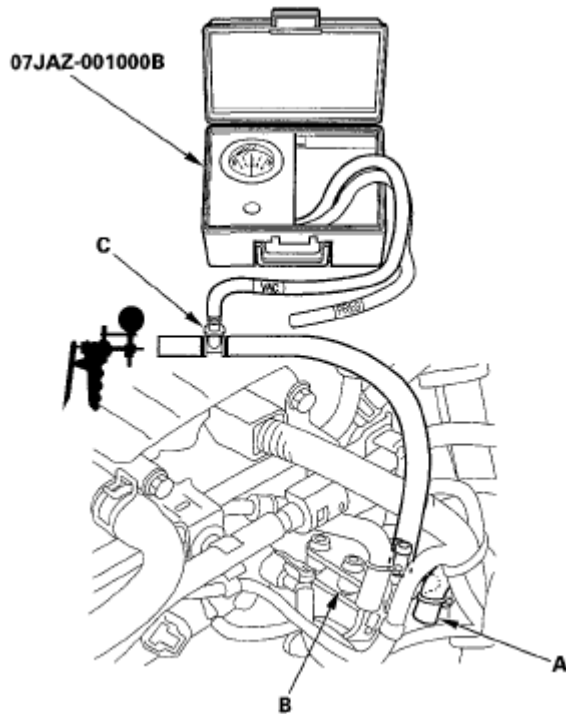
*Does the fuel cap warning message come on?*

**YES** -Go to step 7.



**NO** -Intermittent failure, the system is OK at this time.

7. Turn the ignition switch OFF.
8. 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. 39: Identifying Vacuum Hose And EVAP Canister Purge Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the ignition switch ON (II).
10. Apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.
11. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

*Does the vacuum release immediately?*

**YES** -Check for blockage at the vacuum hose between the EVAP canister purge valve and the EVAP canister, then go to step 12.

**NO** -Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT** ), then go to step 12.

12. Reconnect all hoses.
13. Turn the ignition switch ON (II).
14. Reset the ECM/PCM with the HDS.

15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
16. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 1 minutes.
17. Test drive at 45 mph (72 km/h) for 1 minute or more.

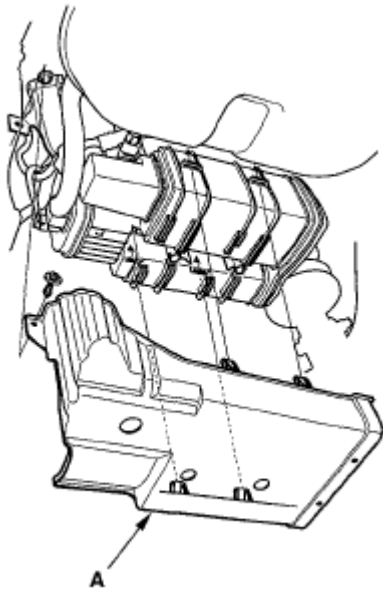
*Does the fuel cap warning message come on?*

**YES** -Go to step 1 and recheck.

**NO** -Troubleshooting is complete.

## **EVAP CANISTER REPLACEMENT**

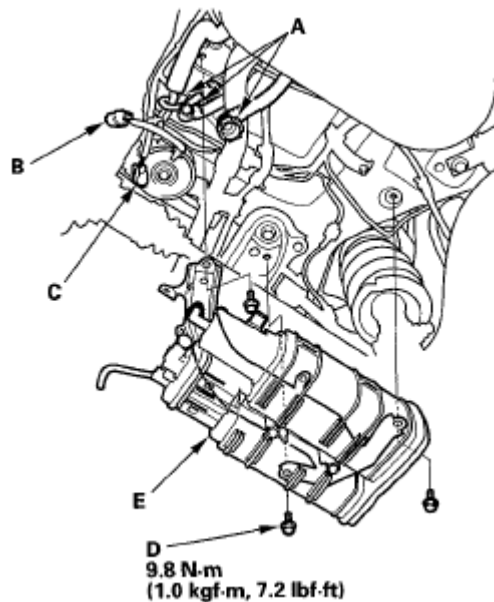
1. Remove the EVAP canister cover (A).



**Fig. 40: Identifying EVAP Canister Cover**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

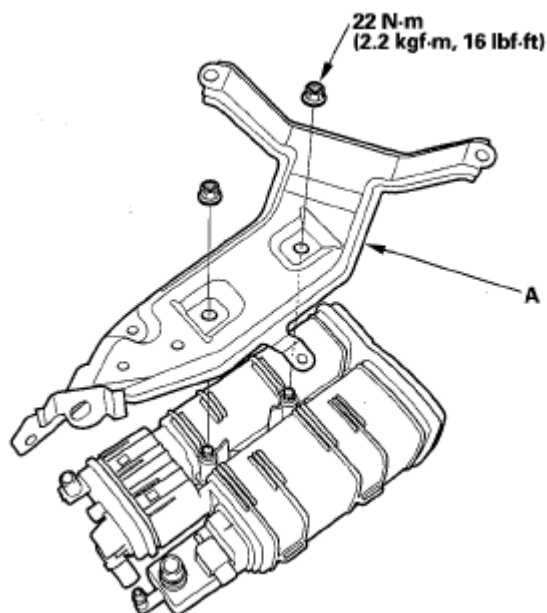
2. Remove the hoses (A), the FTP sensor 3P connector (B), and the EVAP canister vent shut valve 2P connector (C).



**Fig. 41: Identifying FTP Sensor 3P Connector, EVAP Canister Vent Shut Valve 2P Connector And Hose With Torque Specification**

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).



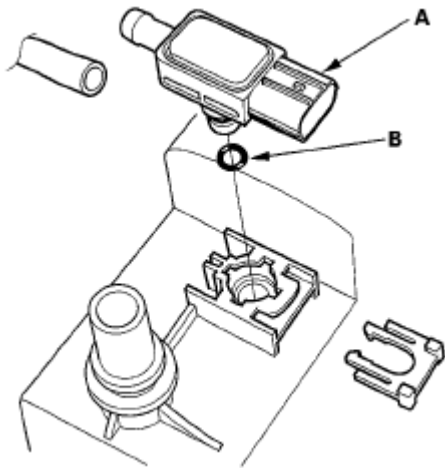
**Fig. 42: Identifying EVAP Canister Bracket With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## **FTP SENSOR REPLACEMENT**

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



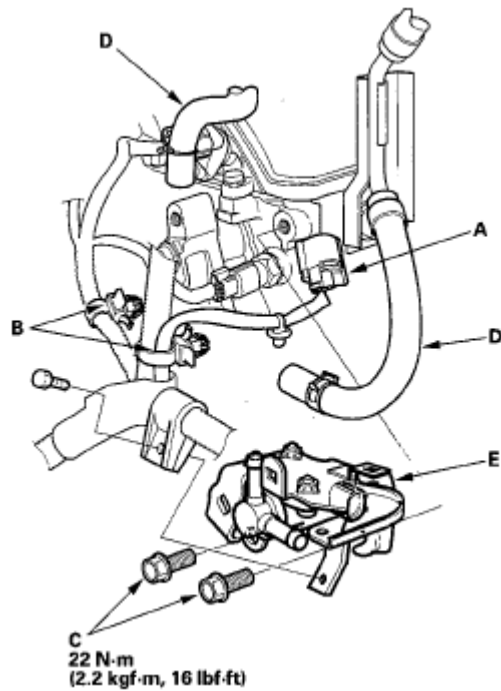
**Fig. 43: Identifying FTP Sensor**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

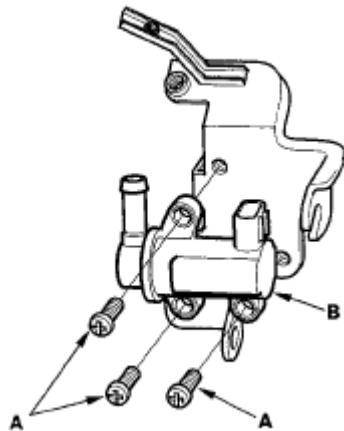
## **EVAP CANISTER PURGE VALVE REPLACEMENT**

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



**Fig. 44: Identifying EVAP Canister Purge Valve Components With Torque Specification**  
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).



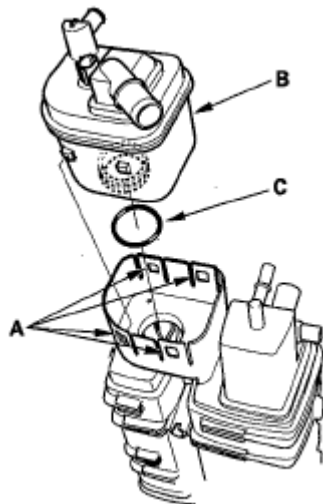
**Fig. 45: Identifying EVAP Canister Purge Valve And Screws**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the EVAP canister purge valve (B) from the bracket.
5. Install the parts 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.



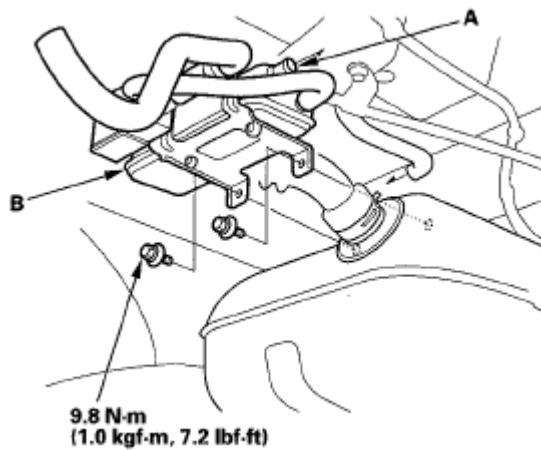
**Fig. 46: Identifying EVAP Canister Vent Shut Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

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

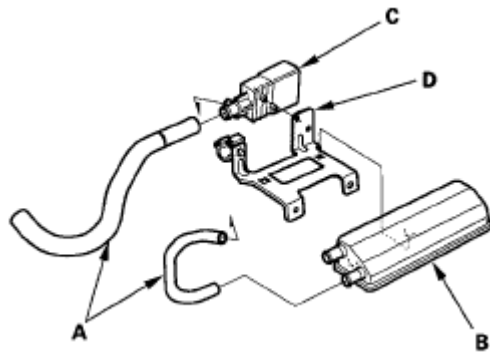
## EVAP CANISTER FILTER REPLACEMENT

1. Remove the EVAP canister (see EVAP CANISTER REPLACEMENT ).
2. Disconnect the hose (A).



**Fig. 47: Identifying EVAP Canister And Hose With Torque Specification**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the EVAP canister filter and bracket (B).
4. Disconnect the hoses (A).



**Fig. 48: Identifying EVAP Canister Filter, Screws And Bracket**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the EVAP canister filter (B) from the joint (C) and bracket (D).
6. Install the parts in the reverse order of removal.