


 Applies To: **See VEHICLES AFFECTED**
August 9, 2013

Troubleshooting DTC P1456 and P1457

(Supersedes 99-075, dated October 5, 1999, and replaces 99-074, dated August 24, 1999; see REVISION SUMMARY)

REVISION SUMMARY

This service bulletin has been revised extensively; American Honda recommends that you review the entire bulletin.

VEHICLES AFFECTED

1998–02 Accord
 1996–00 Civic
 1998–01 CR-V
 2000–05 Insight
 1999–04 Odyssey
 2003–04 Pilot
 2000–06 S2000

This bulletin updates the troubleshooting procedures for DTC P1456 (EVAP control system leakage [Fuel tank system]) and DTC P1457 (EVAP control system leakage[EVAP canister system]). Depending on the model, there are two individual procedures in this bulletin. Procedure A applies to 1998–02 Accord, 1999–04 Odyssey, 2000–05 Insight, 2003–04 Pilot, and 2000–06 S2000. Procedure B applies to 1996–00 Civic, and 1998–01 CR-V.

In the event you need to call Tech Line or have a comeback, refer to the last section of this bulletin, HANDLING A COMEBACK.

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PROCEDURE A

(Applies to: 1998–02 Accord, 1999–04 Odyssey, 2000–05 Insight, 2003–04 Pilot, and 2000–06 S2000)

Troubleshooting DTC P1456

- Before starting the troubleshooting procedure, run the EVAP FUNCTION TEST with the HDS. If the system passes the test, there is no malfunction with the system in its current condition. If the system fails the test, proceed with the troubleshooting procedure.
- Once you have identified the source of the leak and repaired the vehicle, verify your repair by driving the vehicle until the EVAP monitor has completed successfully.

1. Check the FTP (fuel tank pressure) sensor value.

- Connect the HDS.
- Turn the ignition switch to ON (II) but leave the engine off.
- Go to **PGM_FI**, select **Data List**, and find **FTP SENSOR**.

Is the value greater than 2.7 V or less than 2.3 V?

Yes – The system is currently holding pressure/ vacuum. Go to step 10.

No – The system is at atmospheric pressure, there is a leak in the system. Go to step 2.

2. Check the fuel cap.

- Make sure the fuel cap is tight.
- The fuel cap must be made by Honda (it should have the words “Must be tightened 3 clicks or check engine light may come on” printed on the cap). Make sure you replace the cap if it does not.

Is the fuel cap tight?

Yes – If the fuel cap is tight, remove the fuel cap and inspect the fuel fill neck, the sealing surface, and the threads for any damage. Damage to any of these components can result in a leak and DTC P1456. If no damage is found, leave the fuel cap off. Go to step 3.

No – If the cap is loose, tighten the cap at least three clicks to properly seal the system. Then go to step 10.

3. Check the FTP sensor value on the HDS with the fuel cap removed.

Is the value 2.45 V–2.55 V?

Yes – The FTP sensor is reading correctly. Go to step 4.

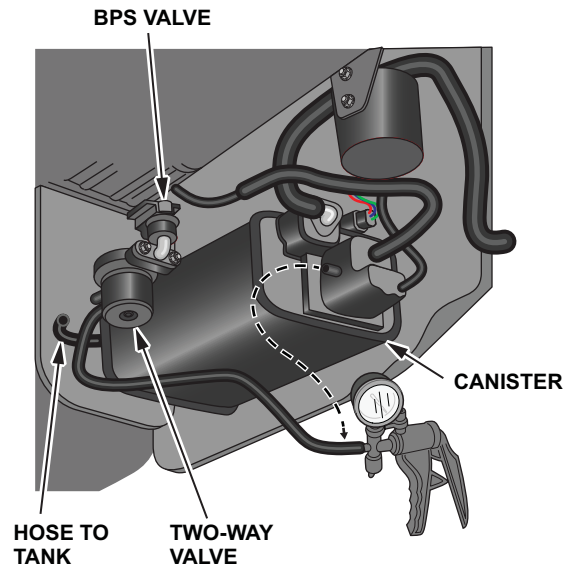
No – The FTP sensor is reading out of its normal range. Disconnect the hoses from the FTP sensor and check the value on the HDS. If the value reads between **2.45 V–2.55 V**, inspect the hoses to the FTP sensor for a restriction. If the value is still not reading **2.45 V–2.55 V**, make sure there is not an open, short, or high resistance in the sensor circuit. If the circuit tests OK, replace the FTP sensor. Go to step 10.

4. Test the BPS (bypass solenoid) valve.

- Disconnect the hose from the EVAP two-way valve that connects to the fuel tank.
- Disconnect the hose from the canister that connects to the two-way valve.

NOTE: If fuel runs out of either hose, the FTVR (fuel tank vapor control) valve is malfunctioning or the fuel tank is being overfilled. A few drops of fuel is normal.

- Connect a vacuum pump to the canister side two-way valve hose.



- Apply about **5 in.Hg** of vacuum to the system.
- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> SINGLE SOLENOID> BYPASS SOLENOID. Click the green check box to turn ON the BPS valve.

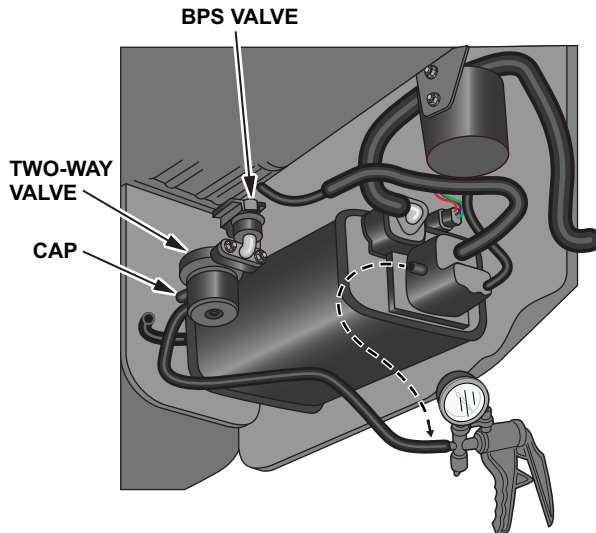


Did the vacuum bleed off when the BPS valve was turned on?

Yes – The BPS valve is operating correctly. Go to step 5.

No – The BPS valve is not operating correctly. Make sure there is not an open, short, or high resistance in the BPS valve circuit, if the circuit tests OK, replace the BPS valve. Go to step 10.

5. Test the EVAP two-way valve.
 - Make sure the BPS valve is still commanded ON with the HDS.
 - Cap the open hose fitting on the two-way valve.



- Watch the FTP sensor value on the HDS, and gently apply vacuum until the value reads approximately **1.50 V** (It takes very little vacuum to reach this value).
- Disconnect the electrical connector from the BPS valve.
- Disconnect the vacuum pump.
- Watch the FTP sensor value on the HDS for 20 seconds.

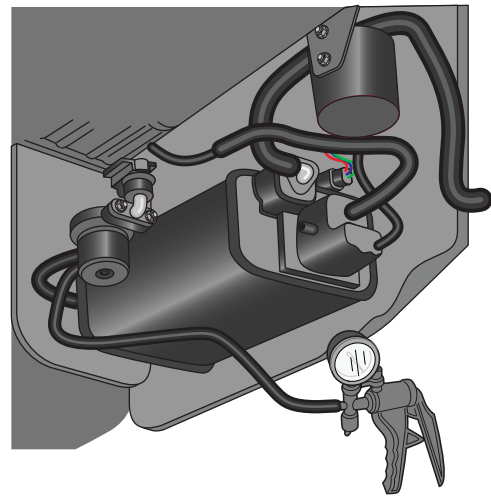
*Did the value increase more than **0.05 V** in 20 seconds?*

Yes – The two-way valve and BPS valve are not operating correctly. Replace the two-way and BPS valve. Go to step 10.

No – The two-way valve and BPS valve are operating correctly. Go to step 6.

6. Test the fuel tank.
 - Reconnect the BPS valve connector.
 - Reconnect the two-way valve hose to the fuel tank.

- Reconnect the vacuum pump.



- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> SINGLE SOLENOID> BYPASS SOLENOID. Click the green check box to turn ON the BPS valve.



- Watch the FTP sensor value on the HDS, apply vacuum until the FTP value reads approximately **2.10V**.

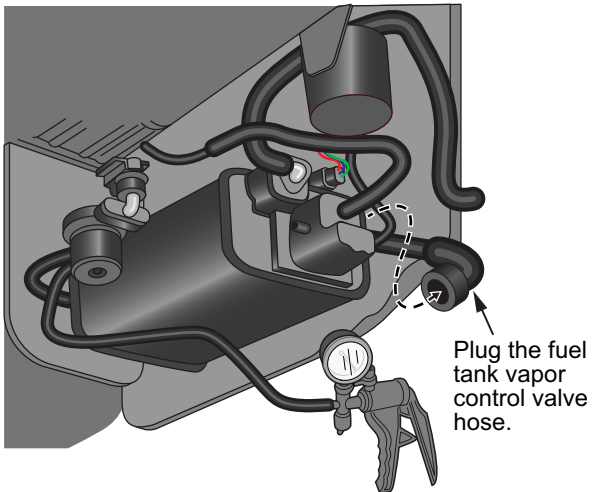
NOTE: You may not be able to pull vacuum if there is a large leak in the system. Answer **Yes** to the question below if you cannot pull vacuum after one minute.

*Did the value increase more than **0.05 V** in 20 seconds?*

Yes – There is a leak in the tank side of the system. Go to step 7.

No – The EVAP system is currently not leaking. Go to step 10.

7. Test the fuel tank vapor control valve.
 - Make sure the BPS valve is still commanded ON with the HDS.
 - Disconnect the fuel tank vapor control valve hose from the canister, and plug the opening.



- Watch the FTP sensor value on the HDS, and gently apply vacuum until the value reads approximately **2.10 V**.

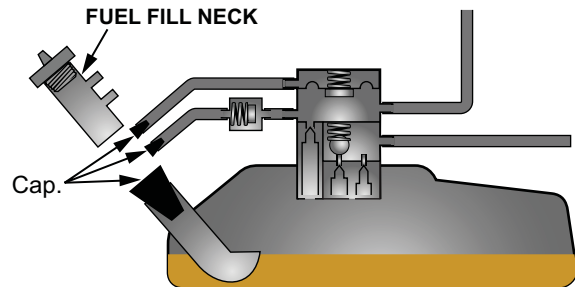
NOTE: You may not be able to pull vacuum if there is a large leak in the system. Answer **Yes** to the question below if you cannot pull vacuum after one minute.

Did the value increase more than 0.05 V in 20 seconds?

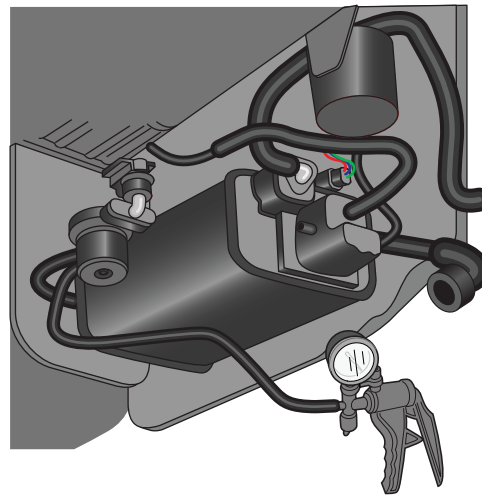
Yes – The fuel tank vapor control valve is not leaking. Go to step 8.

No – The fuel tank vapor control valve is leaking. Replace the fuel tank vapor control valve, then go to step 10.

8. Isolate the fuel fill neck and fuel cap.
 - Make sure the BPS valve is still commanded ON with the HDS.
 - Disconnect the three hoses connected to the fuel fill neck and cap the openings. Rubber cones used to plug exhaust systems for leak testing are ideal to plug the large filler neck hose.



- Watch the FTP sensor value on the HDS, and gently apply vacuum until the value reads approximately **2.10 V**.



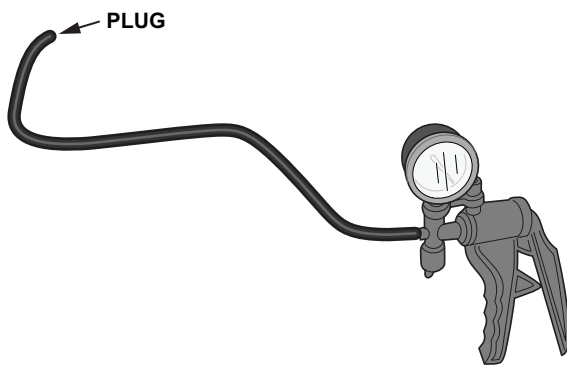
Did the value increase more than 0.05 V in 20 seconds?

Yes – The fuel fill neck and fuel cap are not leaking. Go to step 9.

No – The fuel fill neck or fuel cap is leaking. Replace the fuel fill neck and fuel cap, then go to step 10.

9. Isolate the fuel tank area leak.

- The leak has been isolated to the tank area. Closely inspect all hoses and connections shown in the picture for signs of any cracks, holes, or other signs of leaks. Use a mirror and shop light to inspect as much of the fuel tank as possible.
- If you are unable to locate a leak with a visual inspection, you will need to remove the fuel tank from the vehicle to continue with the diagnosis. Follow the applicable electronic service manual procedures to remove the fuel tank.
- After the fuel tank is removed, test the hoses connected to the fuel tank for leaks by disconnecting the hoses, plugging one end of the hose and then applying vacuum to the other end. If the hose does not hold steady vacuum for 20 seconds, replace the hose.



- Thoroughly inspect the entire exterior shell of the fuel tank for any signs of damage or leakage. If no damage is found, replace the tank seals for the ORVR (onboard refueling vapor recovery) and fuel pump and re-assemble.

10. Confirm the repair.

- Clear the PGM-FI DTCs with the HDS.
- Short the SCS connector with the HDS.
- In the electronic service manual, search for P1456 Advanced Diagnostics. Review the enable conditions for the monitor to run.
- Drive the vehicle within the enable conditions until the EVAP monitor completes or a temporary DTC is set.

THE EVAP MONITOR PASSED – Repair is complete. Return the vehicle to the customer.

A TEMPORARY DTC IS SET – There is a leak in the system. Return to step 1.

NOTE: If a leak is still present, contact Tech Line.

Troubleshooting DTC P1457

- Before starting the troubleshooting procedure, run the EVAP FUNCTION TEST with the HDS. If the system passes the test, there is no malfunction with the system in its current condition. If the system fails the test, proceed with the troubleshooting process.
- Once you have identified the source of the leak and repaired the vehicle, verify your repair by driving the vehicle until the EVAP monitor has completed successfully.

1. Check the FTP (fuel tank pressure) sensor value.

- Remove the fuel cap.
- Connect the HDS.
- Turn the ignition switch to ON (II), but leave the engine off.
- Go to **PGM-FI**, select **Data List**, and find **FTP SENSOR**.

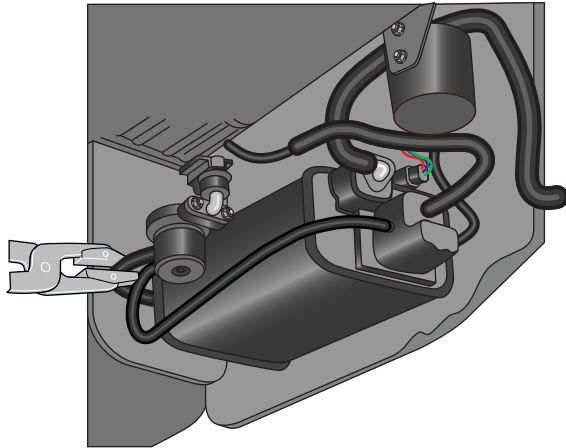
Is the value between 2.45 V–2.55 V?

Yes – The FTP sensor is reading correctly. Go to step 2.

No – The FTP sensor is reading out of its normal range. Disconnect the hoses from the FTP sensor, and check the value on the HDS. If the value reads between **2.45 V–2.55 V**, inspect the hoses to the FTP sensor for a restriction. If the value is still not reading **2.45 V–2.55 V**, make sure there is not an open, short, or high resistance in the sensor circuit. If the circuit tests OK, replace the FTP sensor. Go to step 9.

2. Test for canister side leaks.

- Leave the fuel cap off.
- Pinch the hose between the two-way valve and the fuel tank.

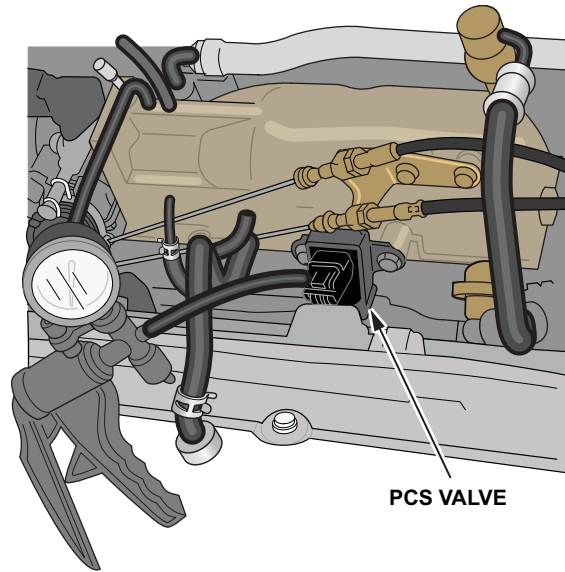


- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.

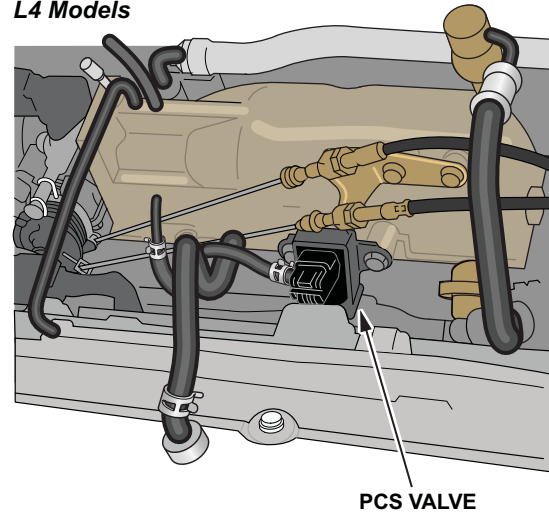


- Make sure that you can hear and feel all of the solenoids operate.

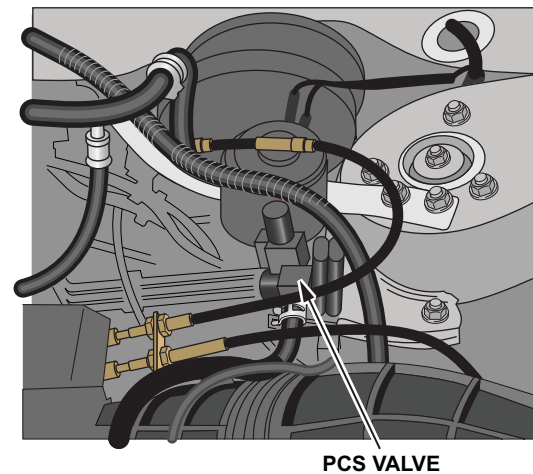
- Attach a vacuum pump to the engine side of the PCS valve.



L4 Models



V6 Models



- Apply vacuum to the system while monitoring the FTP sensor value on the HDS. Stop when the value reads approximately **1.50 V**.
- Watch the value on the HDS for 20 seconds.

NOTE: If after 1 minute of attempting to pull vacuum (on any test) the value does not decrease, there is a large leak, select **YES**.

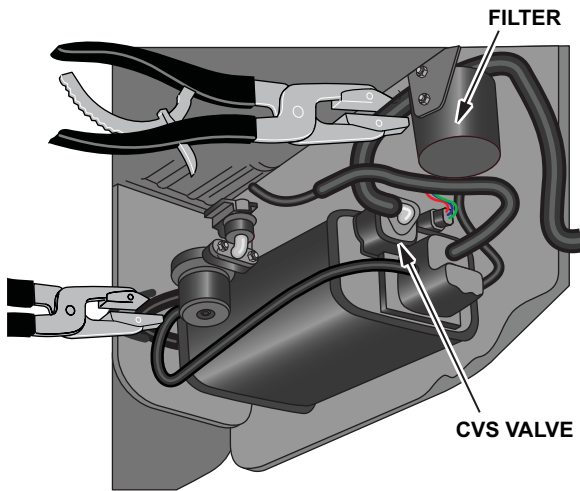
Did the value increase more than 0.05 V in 20 seconds?

Yes – There is a leak in the system. Go to step 3.

No – The system is not leaking. Go to step 9.

3. Test the CVS (canister vent shut) valve.

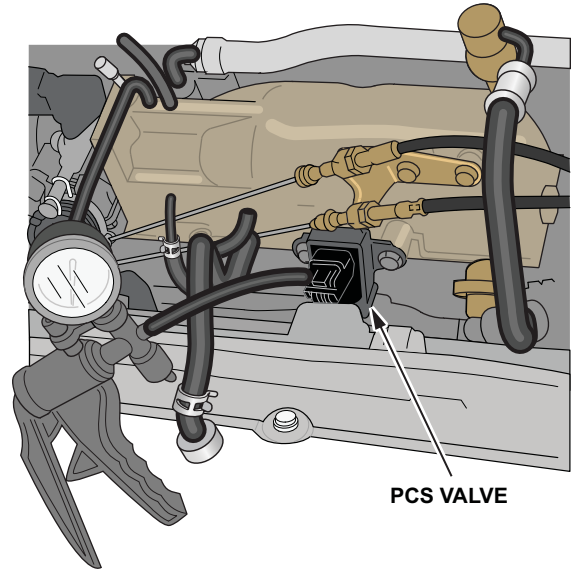
- Pinch the hose between the two-way valve and the fuel tank.
- Pinch the hose between the CVS valve and EVAP filter.



- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST>MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.



- Apply vacuum to the system while monitoring the FTP sensor value reading on the HDS. Stop when the value reads approximately **1.50 V**.



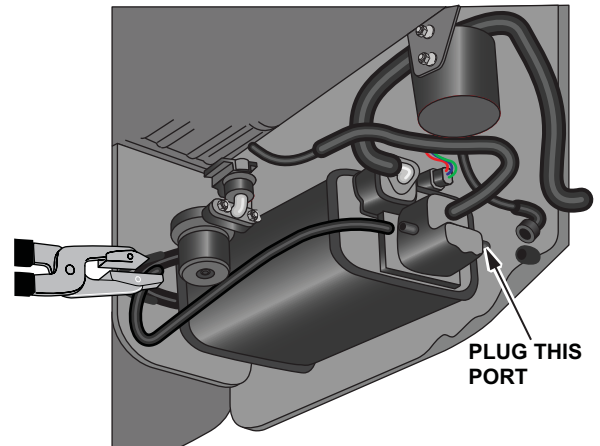
- Watch the value on the HDS for 20 seconds.
- Did the value increase more than 0.05 V in 20 seconds?*

Yes – The CVS valve is not leaking. Go to step 4.

No – The CVS valve is leaking. Inspect the CVS valve O-ring; If damaged, replace the O-ring and retest; otherwise, replace the CVS . Go to step 9.

4. Test the fuel tank vapor control valve.

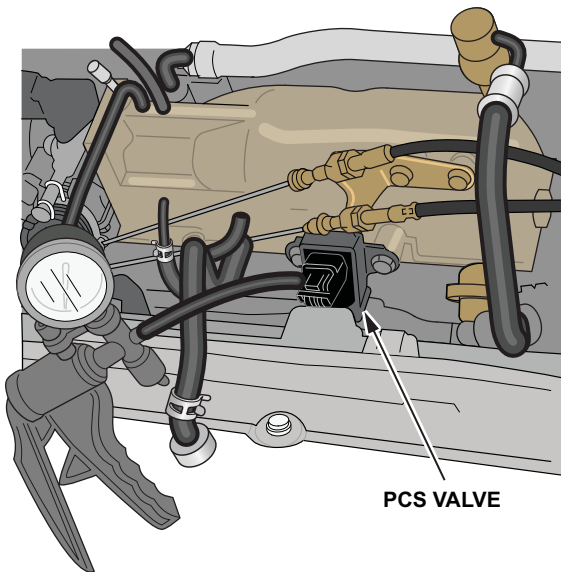
- Disconnect the clamping pliers on the canister vent hose.
- Disconnect the fuel tank vapor control hose from the canister, and plug the fitting on the canister.



- Enter the HDS PGM-FI menu, select INSPECTION> EVAP TEST> MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.



- Apply vacuum to the system while monitoring the FTP sensor value reading on the HDS. Stop when the value reads approximately **1.50 V**.



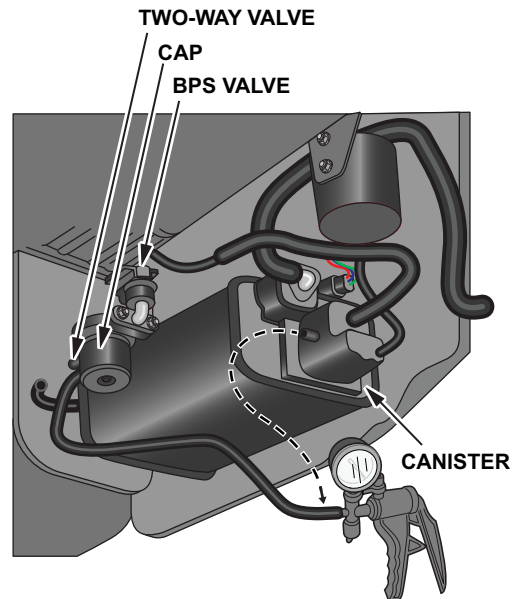
- Watch the value on the HDS for 20 seconds.
Did the value increase more than 0.05 V in 20 seconds?
Yes – The fuel tank vapor control valve is not leaking. Go to step 5.
No – The fuel tank vapor control valve or hose is leaking and needs to be replaced. Once the leaking component has been identified and replaced, go to step 9.

5. Test the two-way valve and BPS (bypass solenoid) valve.

- Remove the vacuum pump, reconnect the hoses, and remove the clamping pliers.
- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> SINGLE SOLENOID> BYPASS SOLENOID. Click the green check box to turn ON the BPS valve.



- Disconnect the hose on the two-way valve that goes to the fuel tank and cap the hose fitting on the two-way valve.
- Disconnect the hose from the canister that connects to the two-way valve.
- Connect a vacuum pump to the canister side two-way valve hose.



- Watch the FTP sensor value on the HDS, gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).

- Watch the value on the HDS for 20 seconds.

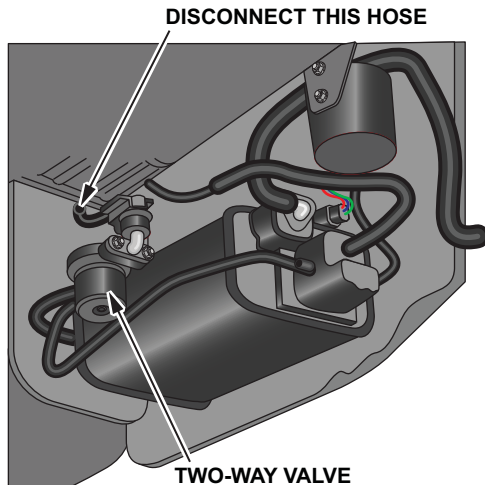
Did the value increase more than 0.05 V in 20 seconds?

Yes – The two-way valve and BPS valve or FTP sensor is leaking. Go to step 6.

No – The two-way valve, the BPS valve, and the FTP sensor are not leaking. Go to step 7.

6. Test the FTP sensor.

- Disconnect the FTP sensor hose from the two-way valve.



- Connect the vacuum pump to the FTP sensor hose.
- Watch the value on the HDS, gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).

- Watch the value on the HDS for 20 seconds.

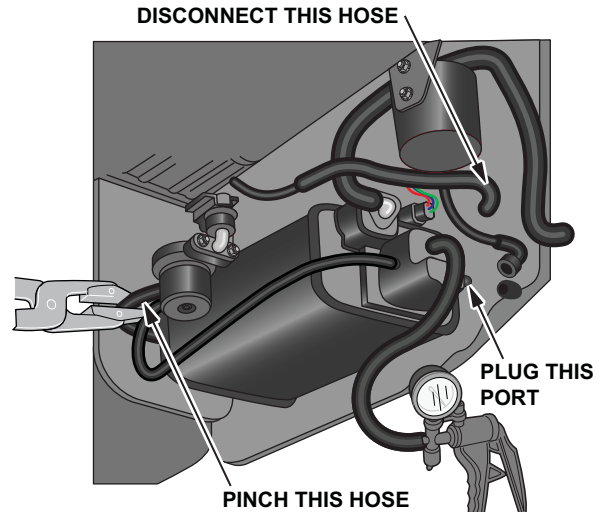
Did the value increase more than 0.05 V in 20 seconds?

Yes – The FTP sensor or hose is leaking. Replace the FTP sensor and hose. Go to step 9.

No – The two-way valve and BPS valve assembly are leaking. Replace the two-way valve and BPS valve assembly. Go to step 9.

7. Test the canister and hoses.

- Reconnect any disconnected hoses.
- Disconnect the fuel tank vapor control hose from the canister, and plug the fitting on the canister.
- Pinch the hose between the two-way valve and the fuel tank.
- Disconnect the purge hose from the canister, and connect a vacuum pump to the canister fitting.



- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.



- Watch the FTP sensor value on the HDS, and gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).

- Watch the value on the HDS for 20 seconds.

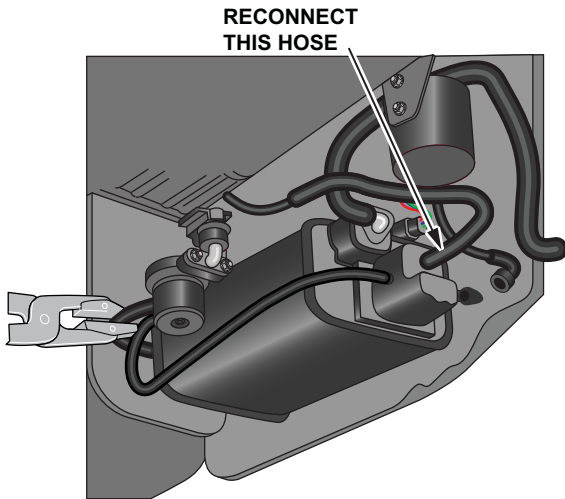
Did the value increase more than 0.05 V in 20 seconds?

Yes – The EVAP canister is leaking. Replace the EVAP canister. Go to step 9.

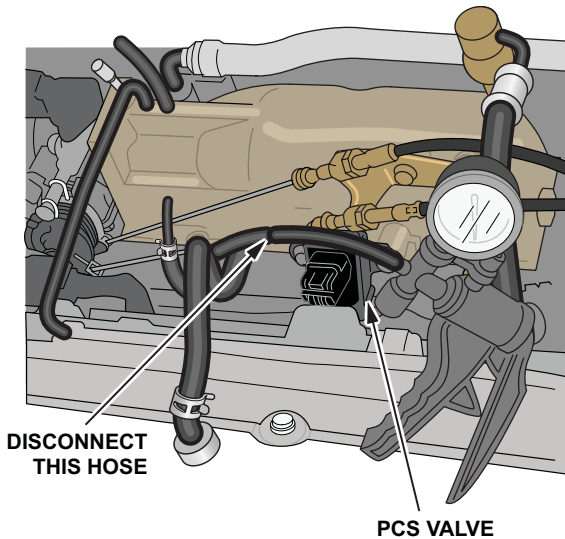
No – The EVAP canister is not leaking. Go to step 8.

8. Test the purge hose.

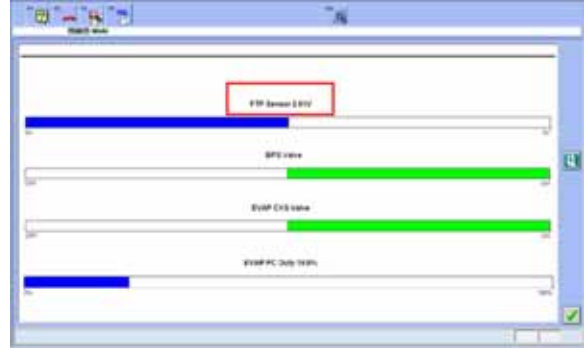
- Leave the fuel tank vapor control hose disconnected from the canister but make sure it is still plugged.
- Leave the hose between the two-way valve and the fuel tank pinched.
- Reconnect the purge hose to the canister.



- Disconnect the purge hose from the PCS valve that leads to the canister, and connect the vacuum pump.



- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> MULTI SOLENOIDS. PCS ON> CVS ON> BPS ON.

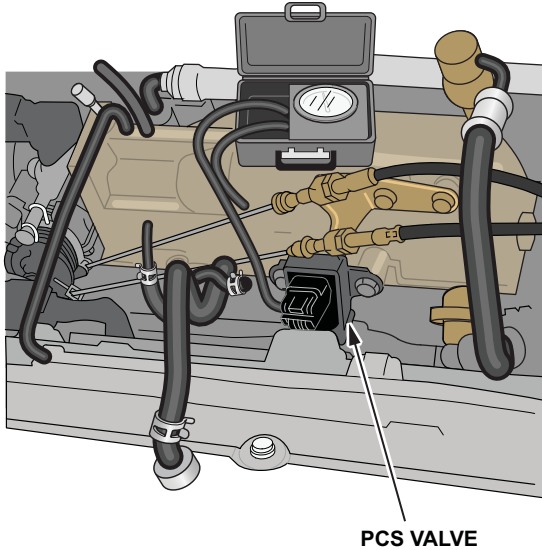


- Watch the FTP sensor value on the HDS, and apply vacuum until the value reads approximately **1.50 V**.
- Watch the value on the HDS for 20 seconds.
Did the value increase more than 0.05 V in 20 seconds?
Yes – The purge hose/line is leaking. Replace the purge hose/line that is leaking. Go to step 9.
No – The purge hose/line is not leaking. Go to step 9.

9. Test the PCS valve.

- Reconnect all of the hoses disconnected under the vehicle.
- Disconnect the hose leading to the PCS valve from the canister.
- Connect a Mini Helic vacuum gauge to the PCS valve.

- Start the engine.



Does the vacuum gauge show vacuum?

Yes – The PCS valve is leaking. Replace the PCS valve. Go to step 10.

No – No leak has been found in the system. Go to step 10.

10. Confirm the repair.

- Clear the PGM-FI DTCs with the HDS.
- Short the SCS connector with the HDS.
- In the electronic service manual, search for P1457 Advanced Diagnostics. Review the enable conditions for the monitor to run.
- Drive the vehicle within the enable conditions until the EVAP monitor completes or a temporary DTC is set.

THE EVAP MONITOR PASSED – Repair is complete. Return the vehicle to the customer.

A TEMPORARY DTC IS SET – Go to step 1.

NOTE: If a leak is still present, contact Tech Line.

PROCEDURE B

(Applies to: 1996–00 Civic, and 1998–01 CR-V)

Troubleshooting DTC P1456

- Before starting the troubleshooting procedure, run the EVAP FUNCTION TEST with the HDS. If the system passes the test, there is no malfunction with the system in its current condition. If the system fails the test, proceed with the troubleshooting process.
- Once you have identified the source of the leak and repaired the vehicle, verify your repair by driving the vehicle until the EVAP monitor has completed successfully.

1. Check the FTP (fuel tank pressure) sensor value.

- Connect the HDS.
- Turn the ignition switch to ON (II) but leave the engine off.
- Go to **PGM_FI**, select **Data List**, and find **FTP SENSOR**.

Is the value greater than 2.7 V or less than 2.3 V?

Yes – The system is currently holding pressure/ vacuum. Go to step 10.

No – The system is at atmospheric pressure, there is a leak in the system. Go to step 2.

2. Check the fuel cap.

- Check that the fuel cap is tight.
- The fuel cap must be made by Honda. It should have the words “Must be tightened 3 clicks or check engine light may come on” printed on the cap. Make sure you replace the cap if it does not.

Is the fuel cap tight?

Yes – If the cap is tight, remove the cap and inspect the fuel fill neck, the sealing surface, and the threads for any damage. Damage to any of these components can result in a leak and DTC P1456. If no damage is found leave the fuel cap off. Go to step 3.

No – If the cap is loose, tighten the cap at least three clicks to properly seal the system. Go to step 10.

3. Check the FTP sensor value on the HDS with the fuel cap removed.

Is the value 2.45 V–2.55 V?

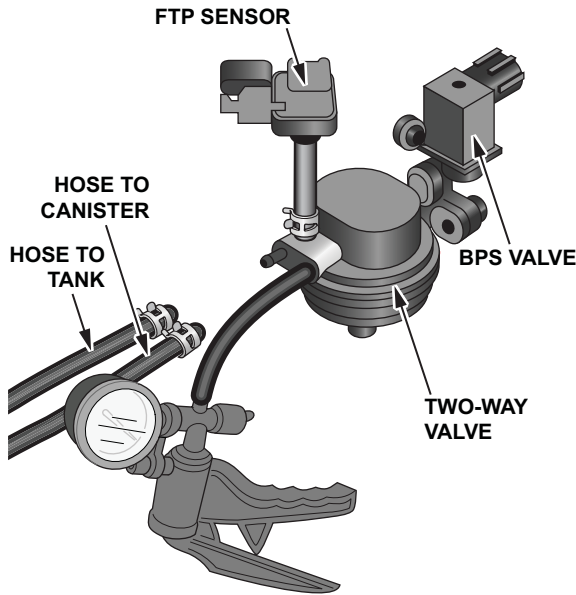
Yes – The FTP sensor is reading correctly. Go to step 4.

No – The FTP sensor is reading out of its normal range. Disconnect the hoses from the FTP sensor, and recheck the value on the HDS. If the value reads between **2.45 V–2.55 V**, inspect the hoses to the FTP sensor for a restriction. If the value still is not reading **2.45 V–2.55 V**, verify there is not an open, short, or high resistance in the sensor circuit. If the circuit tests OK, replace the FTP sensor. Go to step 10.

4. Test the BPS (bypass solenoid) valve.
 - Disconnect the hose from the two-way valve that connects to the fuel tank.
 - Disconnect the hose from the canister that connects to the two-way valve.

NOTE: If fuel runs out of either hose, the FTVR (fuel tank vapor recovery) valve is malfunctioning or the fuel tank is being overfilled. A few drops of fuel is normal.

- Connect a vacuum pump to the canister side two-way valve hose.



- Apply about **5 in.Hg** of vacuum to the system.
- Enter HDS PGM-FI menu, and select INSPECTION> EVAP TEST> SINGLE SOLENOID> BYPASS SOLENOID. Click the green check box to turn ON the BPS valve.



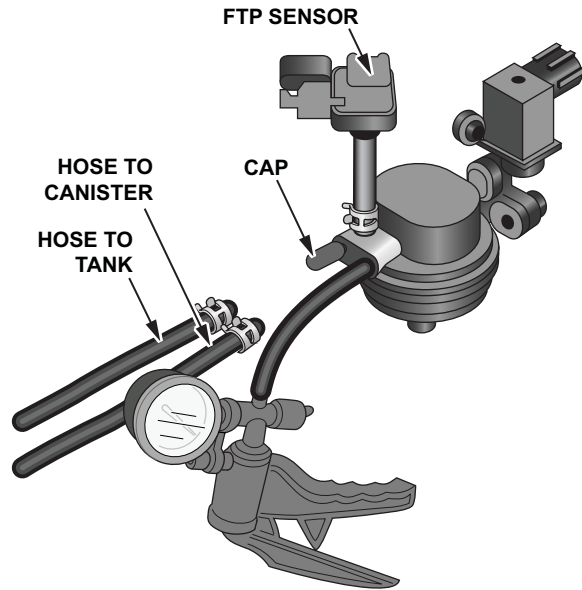
Did the vacuum bleed off when the BPS valve was turned on?

Yes – The BPS valve is operating correctly. Go to step 5.

No – The BPS valve is not operating correctly. Make sure there is not an open, short, or high resistance in the BPS valve. If the circuit tests OK, replace the BPS valve. Go to step 10.

5. Test the two-way valve.

- Make sure the BPS valve is still commanded ON with the HDS.
- Cap the open hose fitting on the two-way valve.



- Watch the FTP sensor value on the HDS, gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).
- Disconnect the electrical connector from the BPS valve.
- Disconnect the vacuum pump.
- Watch the FTP sensor value on the HDS for 20 seconds.

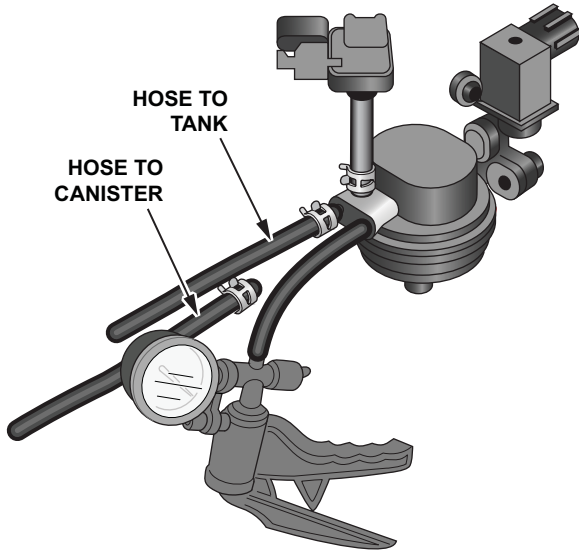
*Did the value increase more than **0.05 V** in 20 seconds?*

Yes – The two-way valve and BPS valve assembly are leaking. Replace the two-way valve and BPS valve assembly. Go to step 10.

No – The two-way valve and BPS valve assembly are not leaking. Go to step 6.

6. Test the fuel tank.

- Make sure the BPS valve is still commanded ON with the HDS.
- Reconnect the BPS valve connector.
- Reconnect the two-way valve hose coming from the fuel tank.
- Reconnect the vacuum pump.



- Watch the FTP sensor value on the HDS, apply vacuum until the value reads approximately **2.10V**.

NOTE: If after 1 minute of attempting to pull vacuum (on any test) the value does not decrease, there is a large leak, select **YES**.

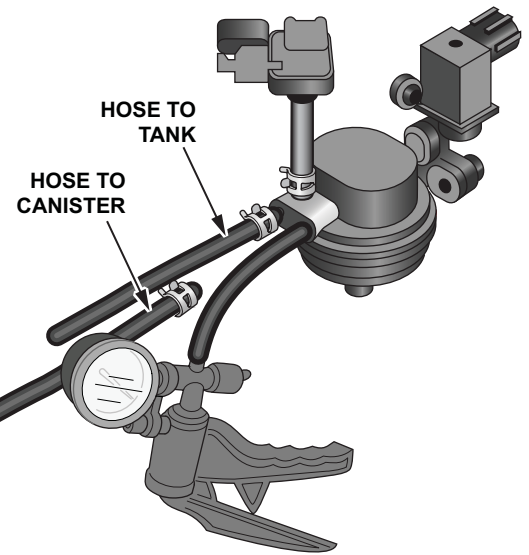
Did the value increase more than 0.05 V in 20 seconds?

Yes – There is a leak in the tank side of the system. Go to step 7.

No – No leak has been found in the system. Go to step 10.

7. Test the fuel tank vapor control valve.

- Make sure the BPS valve is still commanded ON with the HDS.
- Disconnect the fuel tank vapor control valve hose from the canister, and plug the opening.



- Watch the FTP sensor value on the HDS, apply vacuum until the value reads approximately **2.10 V**.

NOTE: You may not be able to pull vacuum if there is a large leak in the system. Answer yes to the question below if you cannot pull vacuum after one minute.

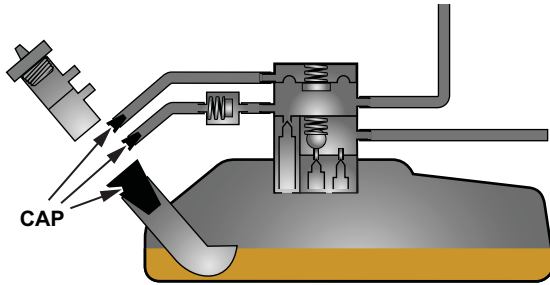
Did the value increase more than 0.05 V in 20 seconds?

Yes – The fuel tank vapor control valve is not leaking. Go to step 8.

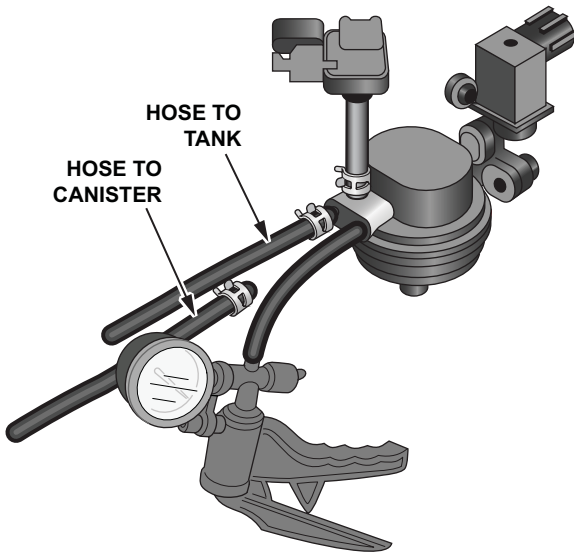
No – The fuel tank vapor control valve is leaking. Replace the fuel tank vapor control valve. Go to step 10.

8. Isolate the fuel fill neck and fuel cap.

- Make sure the BPS valve is still commanded ON with the HDS.
- Disconnect the three hoses connected to the fuel fill neck and cap the openings. Rubber cones used to plug exhaust systems for leak testing are ideal to plug the large fuel fill neck hose.



- Watch the FTP sensor value on the HDS, apply vacuum until the value reads approximately **2.10 V**.



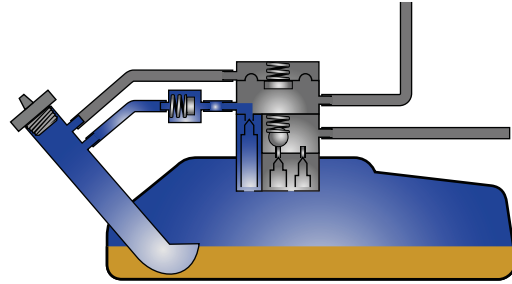
*Did the value increase more than **0.05 V** in 20 seconds?*

Yes – The fuel fill neck and fuel cap are not leaking. Go to step 9.

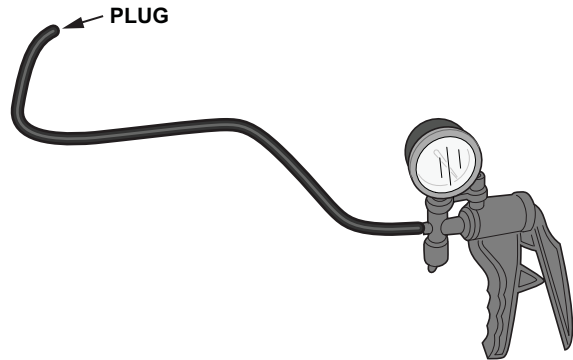
No – The fuel fill neck or fuel cap is leaking. Replace the fuel fill neck and the fuel cap. Go to step 10.

9. Isolate the fuel tank area leak.

- Reconnect all of the hoses that are disconnected.



- The leak has been isolated to the tank area. Closely inspect all hoses and connections shown in the picture for signs of any cracks, holes, or other signs of leaks. Use a mirror and shop light to inspect as the fuel tank for any damage, cracks or signs of leaks.
- If you are unable to locate a leak with a visual inspection, you will need to remove the fuel tank from the vehicle to continue with the diagnosis. Follow the electronic service manual procedures for your vehicle to remove the fuel tank.
- Once the fuel tank is removed, test the hoses connected to the fuel tank for leaks by disconnecting the hoses, plugging one end of the hose and then applying vacuum to the other end. If the hose does not hold steady vacuum for 20 seconds, replace the hose.



- Thoroughly inspect the fuel tank for any signs of damage or leakage. If no damage is found, replace the tank seals for the ORVR (onboard refueling vapor recovery) and fuel pump and re-assemble.

10. Confirm the repair.

- Run Function Test.
or
- Clear the PGM-FI DTCs with the HDS.
- Short the SCS connector with the HDS.
- In the electronic service manual, search for P1456 Advanced Diagnostics. Review the enable conditions for the monitor to run.
- Drive the vehicle within the enable conditions until the EVAP monitor completes or a temporary DTC is set.

THE EVAP MONITOR PASSED- Repair is complete. Return the vehicle to the customer.

A TEMPORARY DTC IS SET- There is a leak in the system. Return to step 1.

NOTE: If a leak is still present, contact Tech Line.

Troubleshooting DTC P1457

- Before starting the troubleshooting procedure, run the EVAP FUNCTION TEST with the HDS. If the system passes the test, there is no malfunction with the system in its current condition. If the system fails the test, proceed with the troubleshooting process.
- Once you have identified the source of the leak and repaired the vehicle, verify your repair by driving the vehicle until the EVAP monitor has completed successfully.

1. Check FTP (fuel tank pressure) sensor value.

- Remove the fuel cap.
- Connect the HDS.
- Turn the ignition switch to ON (II), but leave the engine off.
- Go to **PGM-FI**, select **Data list**, and find **FTP SENSOR**.

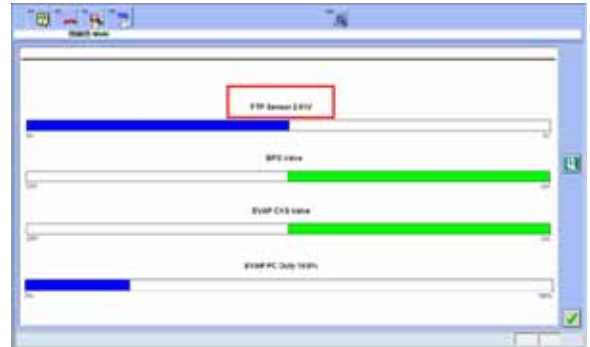
Is the value between 2.45 V–2.55 V?

Yes – The FTP sensor is reading correctly. Go to step 2.

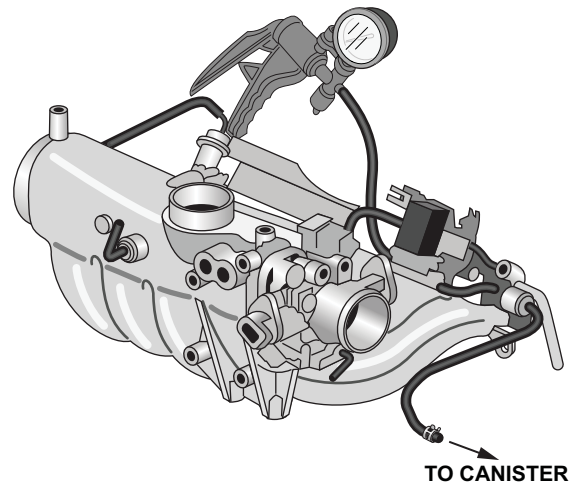
No – The FTP sensor is reading out of its normal range. Disconnect the hoses from the FTP sensor, and recheck the value on the HDS. If the value reads between **2.45 V–2.55 V**, inspect the hoses to the FTP sensor for a restriction. If the value is still not reading **2.45 V–2.55 V**, make sure there is not an open, short, or high resistance in the sensor circuit. If the circuit tests OK replace the FTP sensor. Go to step 9.

2. Test for canister side leaks.

- Leave the fuel cap off.
- Pinch the hose between the two-way valve and the fuel tank.
- Enter HDS PGM-FI menu, and select **INSPECTION> EVAP TEST> MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON**.



- Make sure that you can hear and feel all of the solenoids operate.
- Attach a vacuum pump to the engine side of the PCS (purge control solenoid) valve.
- Apply vacuum to the system while monitoring the FTP sensor on the HDS. Stop when the value reads approximately **1.50 V**.



- Watch the value on the HDS for 20 seconds.

NOTE: If after 1 minute of attempting to pull vacuum (on any test) the value does not decrease, there is a large leak, select **YES**.

Did the value increase more than 0.05 V in 20 seconds?

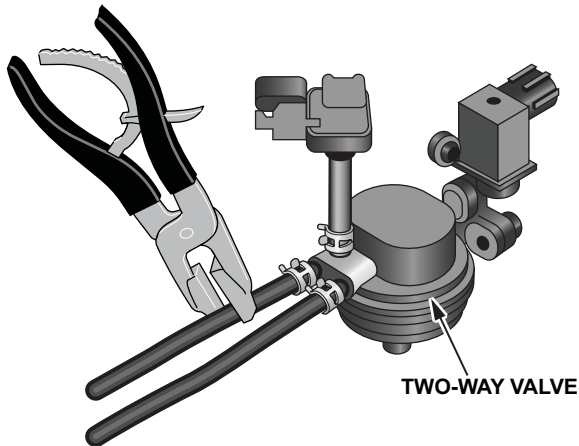
Yes – There is a leak in the system. Go to step 3.

No – The system is not leaking. Go to step 8.

3. Test the CVS (canister vent shut) valve.

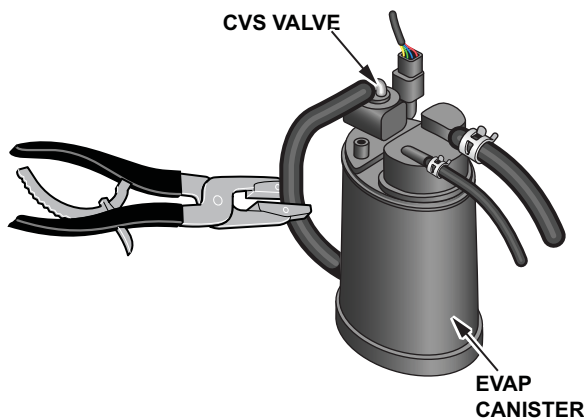
- Pinch the hose between the two-way valve and the fuel tank.

Rear of vehicle.

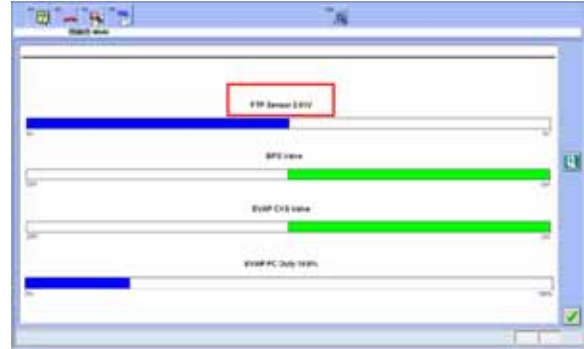


- Pinch the hose between the CVS valve and EVAP filter.

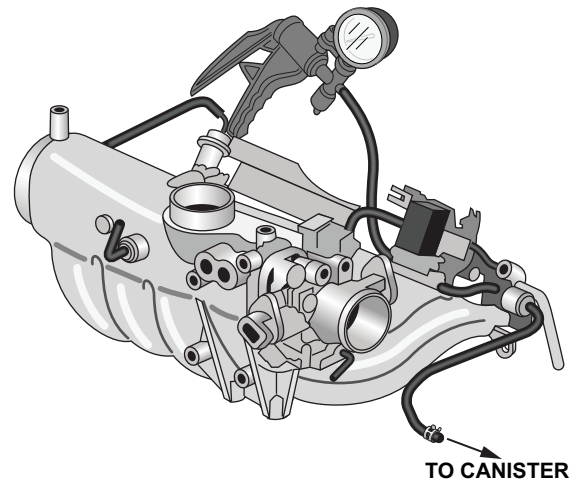
Front of vehicle.



- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST>MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.



- Apply vacuum to the system while monitoring the FTP sensor value on the HDS. Stop when the value reads approximately **1.50 V**.



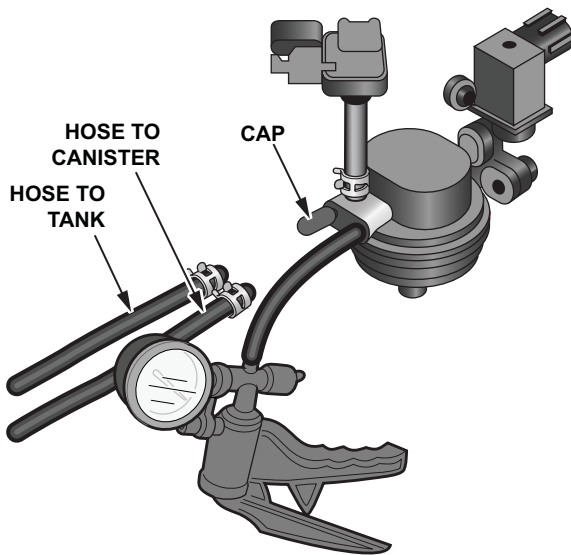
- Watch the value on the HDS for 20 seconds.
Did the value increase more than 0.05 V in 20 seconds?
Yes – The CVS valve is not leaking. Go to step 4.
No – The CVS valve is leaking. Inspect the CVS valve O-ring. If damaged replace the O-ring and retest; otherwise replace the CVS valve.

4. Test the two-way and BPS (bypass solenoid) valve.

- Remove the vacuum pump, reconnect the hoses, and remove the clamping pliers.
- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> SINGLE SOLENOID> BYPASS SOLENOID. Click the green check box to turn ON the BPS valve.



- Disconnect the hose on the two-way valve that goes to the fuel tank, and cap the hose fitting on the two-way valve.
- Disconnect the hose from the canister that connects to the two way valve.
- Connect a vacuum pump to the canister side two-way valve hose.



- Watch the FTP sensor value on the HDS, gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).

- Watch the value on the HDS for 20 seconds.

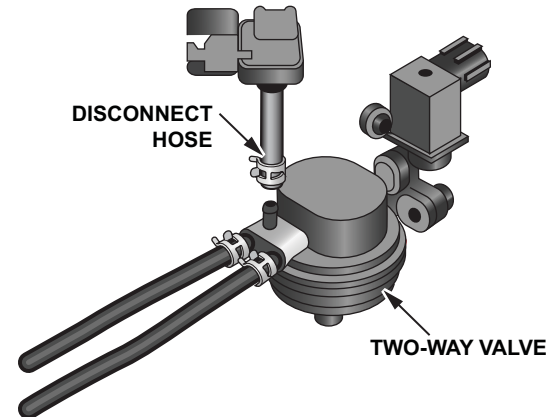
*Did the value increase more than **0.05 V** in 20 seconds?*

Yes – The two-way valve and BPS valve or FTP sensor is leaking. Go to step 5.

No – The two-way valve, the BPS valve, and the FTP sensor are not leaking. Go to step 6.

5. Test the FTP sensor.

- Disconnect the FTP sensor hose from the two-way valve.

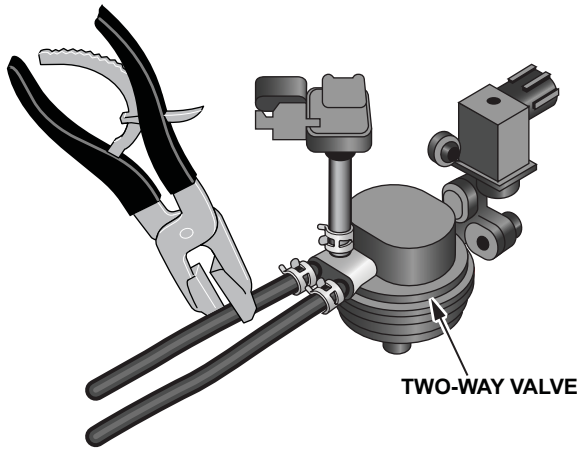


- Connect the vacuum pump to the FTP sensor hose.
- Watch the FTP sensor value on the HDS, then gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).
- Watch the value on the HDS for 20 seconds.
*Did the value increase more than **0.05 V** in 20 seconds?*
Yes – The FTP sensor or hose is leaking. Replace the FTP sensor and hose. Go to step 9.
No – The two-way valve or BPS valve is leaking. Replace the two-way valve and BPS valve. Go to step 9.

6. Test the canister and hoses.

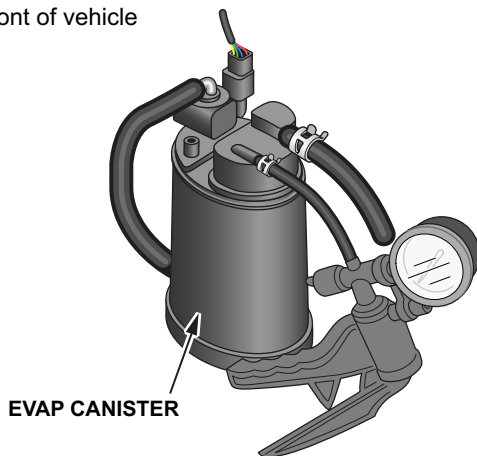
- Reconnect any disconnected hoses.
- Pinch the hose between the two-way valve and the fuel tank.

Rear of vehicle.



- Disconnect the purge hose from the canister and connect a vacuum pump to the canister fitting.

Front of vehicle



- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.



- Watch the FTP value on the HDS, gently apply vacuum until the value reads approximately **1.50 V** (it takes very little vacuum to reach this value).

- Watch the value on the HDS for 20 seconds.

Did the value increase more than 0.05 V in 20 seconds?

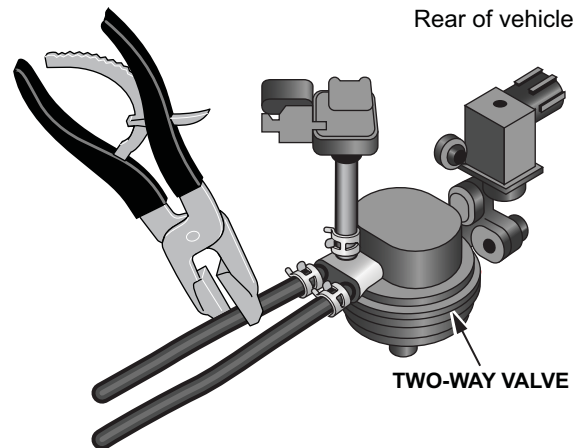
Yes – The EVAP canister is leaking. Replace the EVAP canister. Go to step 9.

No – The EVAP canister is not leaking. Go to step 7.

7. Test the purge hose.

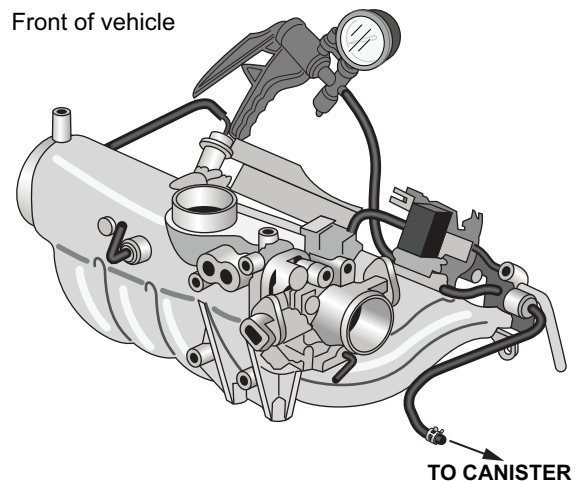
- Leave the hose between the two-way valve and the fuel tank pinched.

Rear of vehicle

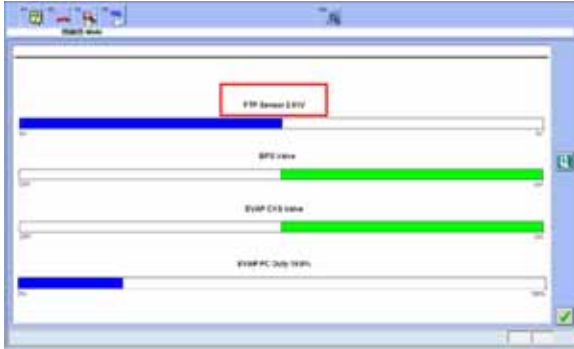


- Reconnect the purge hose to the canister.
- Disconnect the purge hose from the PCS valve that leads to the canister, and connect the vacuum pump.

Front of vehicle

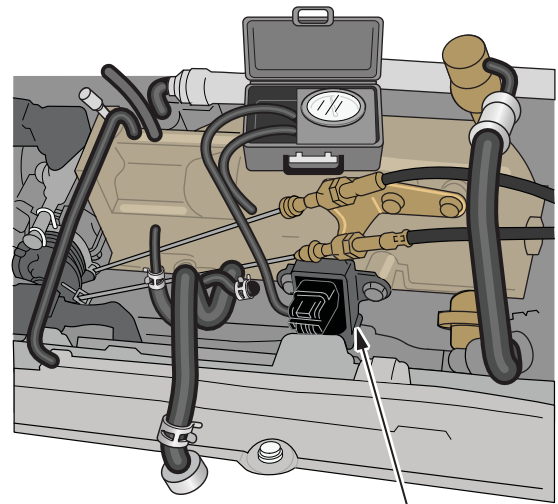


- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> MULTI SOLENOIDS. PCS ON> CVS ON> BPS ON.



- Watch the FTP sensor value on the HDS, apply vacuum until the value reads approximately **1.50 V**.
- Watch the value on the HDS for 20 seconds.
*Did the value increase more than **0.05 V** in 20 seconds?*
Yes – The purge hose/line is leaking. Replace the purge hose/line that is leaking. Go to step 9.
No – The purge hose/line is not leaking. Go to step 8.

8. Test the PCS valve.
 - Reconnect all of the hoses disconnected.
 - Disconnect the hose leading to the PCS valve from the canister.
 - Connect a Mini Helic vacuum gauge to the PCS valve hose.



- Start the engine.
Does the vacuum gauge show vacuum?
Yes – The PCS valve is leaking. Replace the PCS valve. Go to step 9.
No – No leak has been found in the system. Go to step 9.
9. Confirm the repair.
 - Clear the PGM-FI DTCs with the HDS.
 - Short the SCS connector with the HDS.
 - In the electronic service manual, search for P1457 Advanced Diagnostics. Review the enable conditions for the monitor to run.
 - Drive the vehicle within the enable conditions until the EVAP monitor completes or a temporary DTC is set.

THE EVAP MONITOR PASSED - Repair is complete. Return the vehicle to the customer.

A TEMPORARY DTC IS SET - Go to step 1.

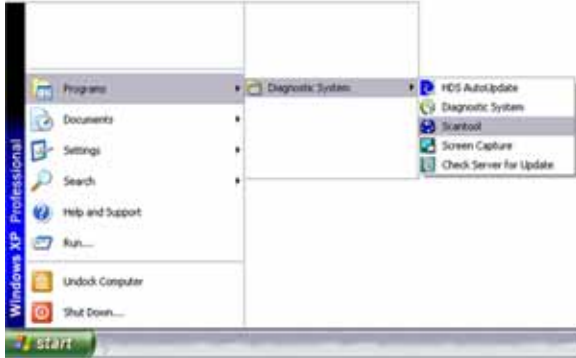
NOTE: If a leak is still present, contact Tech Line.

HANDLING A COMEBACK

If the vehicle comes back to your dealership more than twice for the same DTC (either P1456 or P1457), and the EVAP FUNCTION TEST does not show a problem in the EVAP system, call Tech Line. Call only after you have done the function test and written down or printed out the TID (Test ID) information as instructed. When you call Tech Line, make sure you have this information on hand:

- Current set DTC.
- TID information retrieved from the vehicle. You can access this through the generic scan tool program.

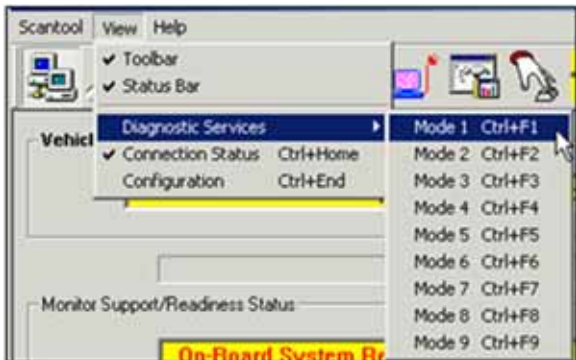
1. Open the generic scan tool program.



2. Connect the scan tool interface device to the vehicle, and select Connect.



3. Select View> Diagnostic Services> Mode 6.



4. Locate the TIDs listed below.

Component	Test ID	Min	Max	Current	Unit
Diagnose Sensor (Evaporator) Bank 1 - Sensor 1	0451	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 2	0452	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 3	0453	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 4	0454	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 5	0455	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 6	0456	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 7	0457	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 8	0458	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 1 - Sensor 9	0459	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 1	0460	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 2	0461	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 3	0462	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 4	0463	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 5	0464	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 6	0465	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 7	0466	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 8	0467	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 2 - Sensor 9	0468	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 1	0469	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 2	0470	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 3	0471	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 4	0472	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 5	0473	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 6	0474	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 7	0475	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 8	0476	0.000	0.012	0.010	Volts
Diagnose Sensor (Evaporator) Bank 3 - Sensor 9	0477	0.000	0.012	0.010	Volts

Write down or print the minimum, maximum, and current values for TID\$2D, TID\$2E, TID\$2F, TID\$3E, and TID\$29.

- Result from the EVAP FUNCTION TEST.
- If the system passed the test, include how many times you ran the test and under what conditions.
- If you ran the function test several times, but the system did not fail the test each time (for example, it failed it once out of five tries), include what components the HDS indicated should be checked.
- Results from any additional testing you may have done.
- Previous repair history for the vehicle (what was repaired or replaced during earlier servicing).
- The date the last repair attempt was done (the R.O. date of earlier repairs for the same DTC).
- Aftermarket accessories installed and dates of installation (important if the installation could be related to the EVAP system problem).
- Collision history (important if damage from the collision could be related to the EVAP system problem).