

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.

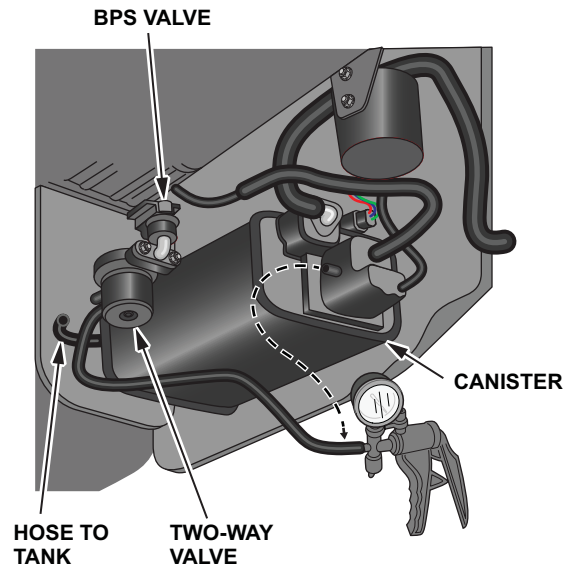
No – The FTP sensor is reading out of its normal range. Disconnect the hoses from the FTP sensor and check the value on the HDS. If the value reads between **2.45 V–2.55 V**, inspect the hoses to the FTP sensor for a restriction. If the value is still not reading **2.45 V–2.55 V**, make sure there is 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.

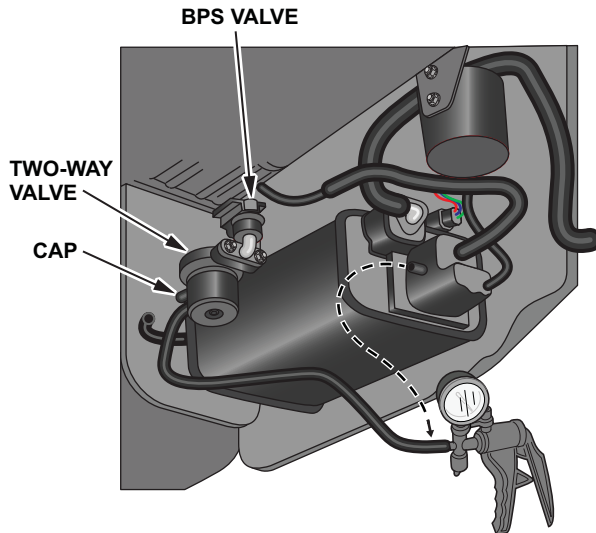


Did the vacuum bleed off when the BPS valve was turned on?

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.

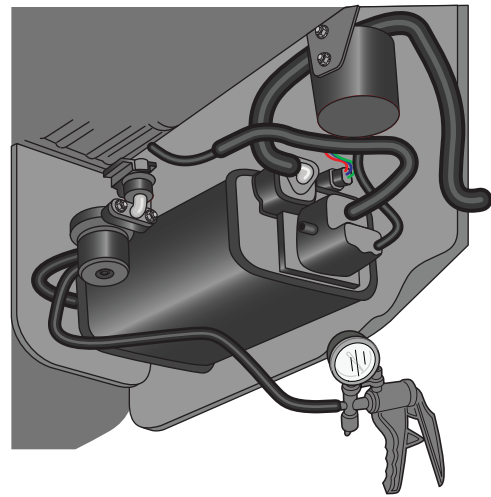
*Did the value increase more than **0.05 V** in 20 seconds?*

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.

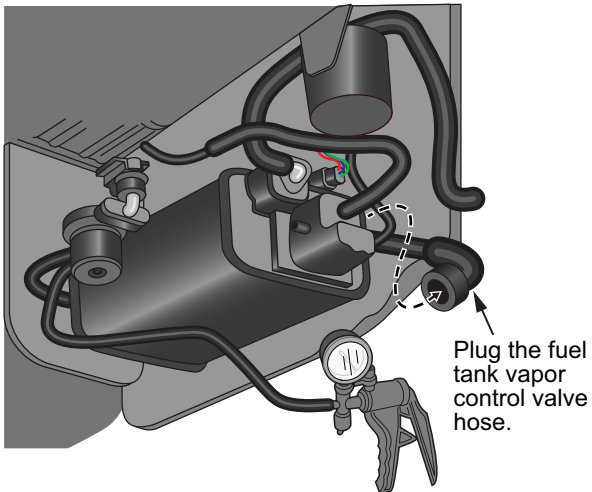
*Did the value increase more than **0.05 V** in 20 seconds?*

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.

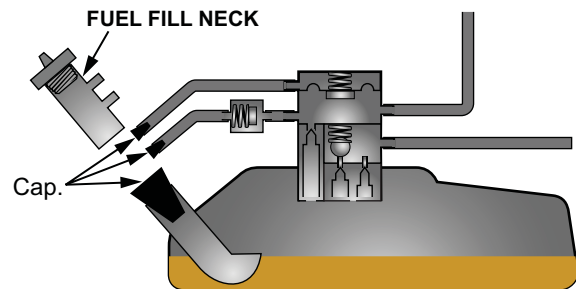
Did the value increase more than 0.05 V in 20 seconds?

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

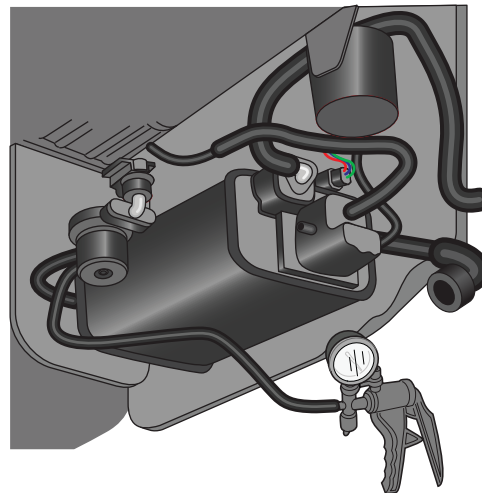
No – The fuel tank vapor control valve is leaking. Replace the fuel tank vapor control valve, then go to step 10.

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**.



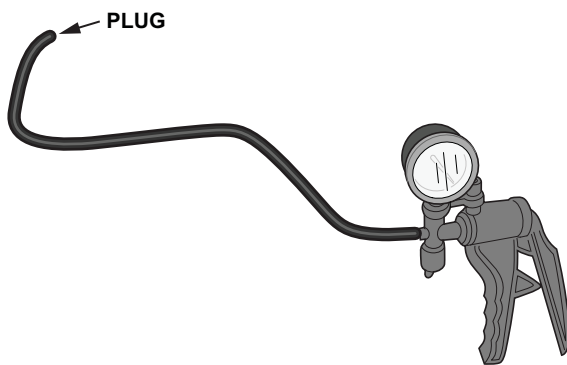
Did the value increase more than 0.05 V in 20 seconds?

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**.

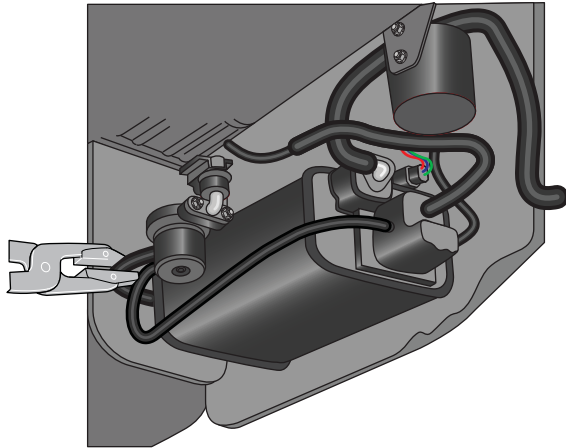
Is the value between 2.45 V–2.55 V?

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.

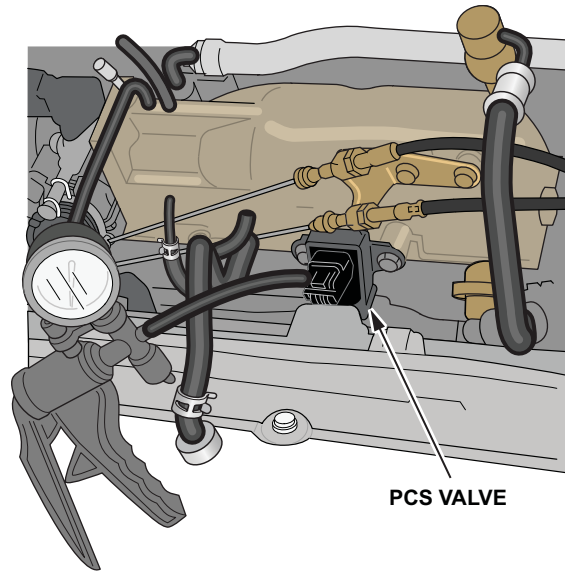


- Enter the HDS PGM-FI menu, and select INSPECTION> EVAP TEST> MULTI SOLENOIDS> PCS ON> CVS ON> BPS ON.

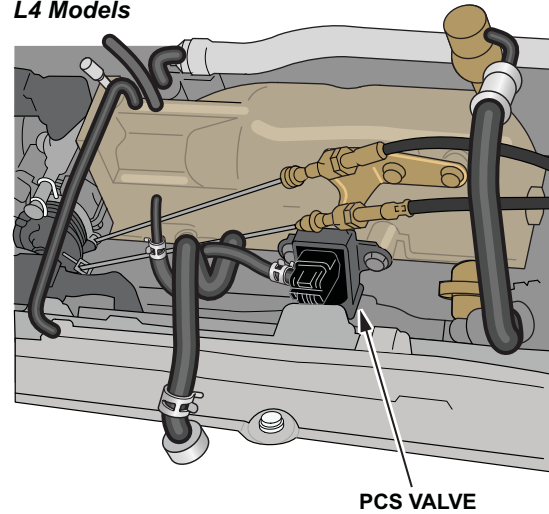


- Make sure that you can hear and feel all of the solenoids operate.

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



L4 Models



V6 Models

