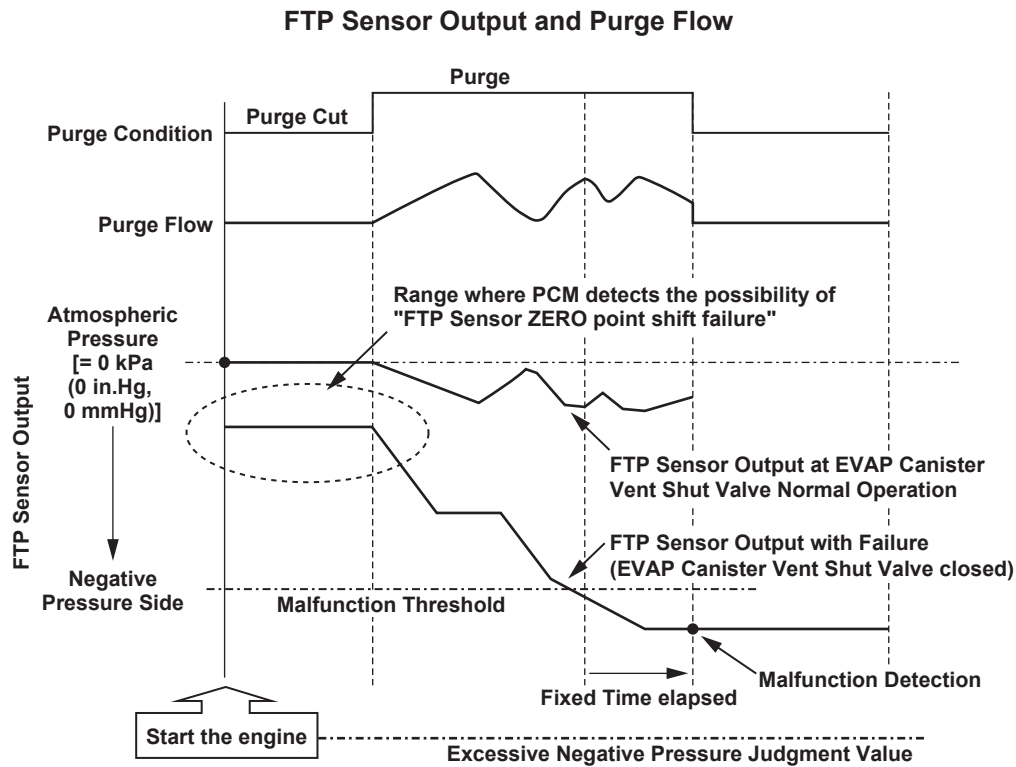


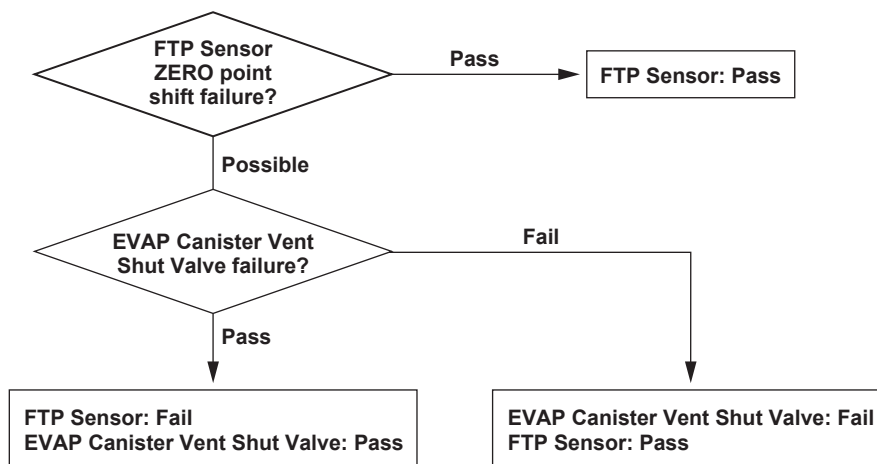
Advanced Diagnostics

DTC P2422: Evaporative Emission (EVAP) Canister Vent Shut Valve Stuck Closed Malfunction



P2422-0373

Malfunction Judgment Flowchart of FTP Sensor and EVAP Canister Vent Shut Valve



P1454-0371

General Description

The fuel tank pressure (FTP) sensor output indicates about atmospheric pressure 0 kPa (0 in.Hg, 0 mmHg) before purge starts since the evaporative emission (EVAP) canister vent shut valve is normally open (open to the atmosphere). The sensor indicates a negative pressure value (vacuum) during purging.

When the FTP sensor indicates vacuum after starting the engine, there is the possibility of an FTP sensor zero point shift failure or an EVAP canister vent shut valve stuck closed failure. So the powertrain control module (PCM) monitors the FTP sensor output after purge starts. The PCM detects a malfunction of the EVAP canister vent shut valve if the output indicates excessive vacuum.

However, if the fuel tank internal pressure is below the specified value (excessive vacuum is detected) when starting the engine, the malfunction detection should be done as follows because it is difficult to distinguish the FTP sensor range problem (P1454) from the EVAP canister vent shut valve stuck closed (P2422).

1. If neither Temporary DTC (P1454 nor P2422) is stored, both DTCs are stored.
2. If both Temporary DTCs (P1454 and P2422) are stored and excessive vacuum is detected, both DTCs are stored.
3. If either Temporary DTC (P1454 or P2422) is stored and excessive vacuum is detected, the PCM stores the DTC of the Temporary DTC that was stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

Execution	Once per driving cycle
Sequence	P0452, P0453 are judged as OK
Duration	1.04*, 8** seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

* : Elapsed time after the FTP sensor output exceeds the malfunction threshold.

** : Excessive negative pressure is detected.

Enable Conditions

Condition	Minimum	Maximum
Elapsed time after starting the engine**	10 seconds	—
Engine coolant temperature***	140 °F (60 °C)	—
Battery voltage	10.5 V	—
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0300, P0301, P0302, P0303, P0304, P0335, P0339, P0443, P0451, P0452, P0496, P0497, P0498, P0499, P1128, P1129, P1157, P1172, P145C, P2195, P2227, P2228, P2229, P2238, P2252	
Others	The EVAP canister vent shut valve has not been closing	
	Stopping the purge control	

*** : Condition to start the purge control.

Malfunction Threshold

The output from the fuel tank pressure sensor is -4 kPa (-1.0 in.Hg, -25 mmHg)*, -2 kPa (-0.4 in.Hg, -10 mmHg)** or less for at least 1.04*, 8** seconds.

* : Elapsed time after the FTP sensor output exceeds the malfunction threshold.

** : Excessive negative pressure is detected.

Confirmation Procedure with the HDS

Do the EVAP CVS ON in the INSPECTION MENU with the HDS.

Driving Pattern

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.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.