A L L Diagnostic Trouble Codes (DTC): P Code Charts
P0455

DTC P0455

Diagnostic Instructions

* Perform the Diagnostic System Check - Vehicle (See: Testing and Inspection/Initial Inspection and Diagnostic Overview/Diagnostic System Check - Vehicle) prior to using this diagnostic procedure.
* Review Strategy Based Diagnosis (See: Testing and Inspection/Initial Inspection and Diagnostic Overview/Strategy Based Diagnosis) for an overview of the diagnostic approach.
* Diagnostic Procedure Instructions (See: Testing and Inspection/Initial Inspection and Diagnostic Overview/Diagnostic Procedure Instructions) provides an overview of each diagnostic category.

DTC Descriptor

DTC P0455
- Evaporative Emission (EVAP) System Large Leak

Circuit/System Description

The engine control module (ECM) tests the evaporative emission (EVAP) system for a large leak or restriction in the purge path. When the conditions for running are met, the ECM commands the EVAP canister purge solenoid valve OPEN and the EVAP vent solenoid valve CLOSED allowing engine vacuum to enter the EVAP system. The ECM monitors the fuel tank pressure (FTP) sensor signal to verify that the EVAP system is able to reach a predetermined vacuum level within a set amount of time.

Conditions for Running the DTC

* DTCs P0106, P0107, P0108, P0112, P0113, P0116, P0117, P0118, P0121, P0122, P0123, P0222, P0223, P0128, P0443, P0449, P0452, P0453, P0454, P0502, P0503 are not set.
* The engine is running.
* The ignition voltage is between 10-18 volts.
* The barometric pressure (BARO) is more than 74 kPa.
* The fuel level is between 15-85 percent.
* The start-up intake air temperature (IAT) is between 4-30°C (39-86°F).
* The start-up engine coolant temperature (ECT) is less than 30°C (86°F).
* The start-up ECT and IAT are within 8°C (14.4°F) of each other.
* DTC P0455 runs once per cold start within 17 minutes of start-up.

Conditions for Setting the DTC

The EVAP system is not able to achieve or maintain vacuum before purge has reached a calibrated volume.

Action Taken When the DTC Sets

DTC P0455 is a Type B DTC.

Conditions for Clearing the MIL/DTC

DTC P0455 is a Type B DTC.

Diagnostic Aids

* Inspect for a loose, missing, incorrect, or damaged fuel fill cap.
* Verify that the fuel filler neck sealing surface is not distorted or damaged.
* To help locate intermittent leaks, use the J 41413-200 to introduce smoke into the EVAP system. Move all EVAP components while observing smoke with the J 41413-SPT .
* Reviewing the Failure Records vehicle mileage since the diagnostic test last failed may help determine how often the condition that caused the DTC to be set occurs. This may assist in diagnosing the condition.
* A condition may exist where a leak in the EVAP system only exists under a vacuum condition. By using the scan tool Purge/Seal function to create a vacuum, seal the system and observe the FTP parameter for the vacuum decay, this type of leak may be detected.
* If a small leak is difficult to find, it may be necessary to remove the EVAP components and leak test them one at a time using the adapters in the J 41413-300 .

Reference Information

Schematic Reference

* Engine Controls Schematics (See: Diagrams/Electrical Diagrams/Powertrain Management/System Diagram)
* Evaporative Emissions Hose Routing Diagram (See: Diagrams/Vacuum and Vapor Hose Diagrams/Emission Control Systems)

Connector End View Reference

Component Connector End Views (See: Diagrams/Connector Views)

Description and Operation Reference

Evaporative Emission Control System Description (See: Powertrain Management/Computers and Control Systems/Description and Operation/Evaporative Emission Control System Description)

Electrical Information Reference

* Circuit Testing (See: Testing and Inspection/Component Tests and General Diagnostics/Circuit Testing/Circuit Testing)
* Testing for Intermittent Conditions and Poor Connections (See: Testing and Inspection/Component Tests and General Diagnostics/Circuit Testing/Testing for Intermittent Conditions and Poor Connections)
* Wiring Repairs (See: Testing and Inspection/Component Tests and General Diagnostics/Wiring Repairs/Wiring Repairs)

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions (See: Diagnostic Trouble Code Descriptions/Powertrain Diagnostic Trouble Code (DTC) Type Definitions)

Scan Tool Reference

Programming and Relearning (See: Testing and Inspection/Programming and Relearning) for scan tool information

Special Tools

* CH-48096 EVAP Service Access Port Tool
* GE-41415-50 Fuel Tank Cap Adapter
* J 41413-200 Evaporative Emission System Tester (EEST)
* J 41413-300 EVAP Cap and Plug Kit
* J 41413-311 EVAP Plug
* J 41413-SPT High Intensity White Light
* J 41413-VLV EVAP Port Vent Fitting Tool

Circuit/System Testing

Important:

* **Larger volume fuel tanks and/or those with lower fuel levels may require several minutes for the floating indicator to stabilize.**

* **Refer to the J 41413-200 operation manual for detailed instructions in Evaporative Emission System Diagnosis** (See: Powertrain Management/Computers and Control Systems/Testing and Inspection/Component Tests and General Diagnostics/Evaporative Emission System Diagnosis)**.**

1. Disconnect the purge tube at the quick connector on the EVAP canister side of the purge solenoid valve and install the CH-48096 . Connect the J 41413-200 to the CH-48096 .
2. Use a scan tool to seal the system and use the flow meter on the J 41413-200 , calibrated to 0.51 mm (0.020 in) to determine that there is no leak in the EVAP system.

   ‹› If a leak is detected use the J 41413-200 to apply smoke to the EVAP system at the service port or the filler neck until the leak is located.

3. Connect the J 41413-200 nitrogen/smoke hose to the J 41413-311 brass cone adapter. Disconnect the hose at the fuel cap end of the GE-41415-50 . Connect the J 41413-311 to the disconnected hose on the GE-41415-50 . Install the GE-41415-50 filler neck end only to the vehicle.
4. Start the engine.
5. Allow the engine to idle.
6. Use the Purge/Seal function to seal the system with a scan tool.
7. Command the EVAP canister purge solenoid valve to 20 percent.
8. The vacuum/pressure gauge on the J 41413-200 and the FTP parameter on the scan tool should both show vacuum.

   ‹› If the vacuum/pressure gauge shows vacuum but the FTP parameter does not show vacuum, replace the FTP sensor.
   ‹› If neither the FTP parameter nor the vacuum/pressure gauge shows vacuum, repair the restriction in the purge path.

9. Verify that the vacuum increases to the abort limit on the scan tool or more than 3.2 volts, and the value is similar between the scan tool and the

vacuum/pressure gauge on the J 41413-200 .

‹› If the values are not similar or the voltage did not reach 3.2 volts, replace the FTP sensor.

Repair Instructions

Perform the Diagnostic Repair Verification (See: Verification Tests) after completing the diagnostic procedure.

* Fuel Tank Pressure Sensor Replacement (See: Powertrain Management/Computers and Control Systems/Fuel Tank Pressure Sensor/Service and Repair)
* Programming and Relearning (See: Testing and Inspection/Programming and Relearning) for engine ECM replacement, setup, and programming