P0443

DTC P0443

CIRCUIT DESCRIPTION
An ignition voltage is supplied directly to the evaporative emission (EVAP) canister purge solenoid valve. The EVAP canister purge solenoid valve is pulse width modulated (PWM). The scan tool displays the amount of ON time as a percentage. The control module monitors the status of the driver. The control module controls the EVAP canister purge solenoid valve ON time by grounding the control circuit via an internal switch called a driver. If the control module detects an incorrect voltage for the commanded state of the driver, this DTC sets.

DTC DESCRIPTOR
This diagnostic procedure supports the following DTC:
DTC P0443 Evaporative Emission (EVAP) Purge Solenoid Control Circuit

CONDITIONS FOR RUNNING THE DTC

- The engine speed is more than **400 RPM** .
- The system voltage is between **6-18 volts** .
- DTC P0443 runs continuously once the above conditions are met.

CONDITIONS FOR SETTING THE DTC

- The control module detects that the commanded state of the driver and the actual state of the control circuit do not match.
- The above conditions are present for a minimum of **5 seconds** .

ACTION TAKEN WHEN THE DTC SETS

- The control module illuminates the malfunction indicator lamp (MIL) on the second consecutive ignition cycle that the diagnostic runs and fails.
- The control module records the operating conditions at the time the diagnostic fails. The first time the diagnostic fails, the control module stores this information in the Failure Records. If the diagnostic reports a failure on the second consecutive ignition cycle, the control module records the operating conditions at the time of the failure. The control module writes the operating conditions to the Freeze Frame and updates the Failure Records.

CONDITIONS FOR CLEARING THE MIL/DTC

- The control module turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
- A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- Clear the MIL and the DTC with a scan tool.

TEST DESCRIPTION

Step	Action	Yes	No
1	Did you perform the Diagnostic System Check – Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn ON the ignition, with the engine OFF. 2. Command the evaporative emission (EVAP) canister purge solenoid valve to 50 percent and then to 0 percent with a scan tool. Do you hear or feel a clicking from the EVAP canister purge solenoid valve when it is commanded to 50 percent?	Go to Step 3	Go to Step 4
3	1. Observe the Freeze Frame/Failure Records for this DTC. 2. Turn OFF the ignition for 30 seconds. 3. Turn ON the ignition, with the engine OFF. 4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records. Did the DTC fail this ignition?	Go to Step 4	Go to Intermittent Conditions
4	1. Turn OFF the ignition. 2. Disconnect the EVAP canister purge solenoid valve harness connector. 3. Turn ON the ignition, with the engine OFF. 4. Probe the ignition 1 voltage circuit of the EVAP canister purge solenoid valve with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to Step 5	Go to Step 11
5	1. Connect a test lamp between the control circuit of the EVAP canister purge solenoid valve and the ignition 1 voltage circuit of the EVAP canister purge solenoid valve. 2. Command the EVAP canister purge solenoid valve to 0 percent with a scan tool. Does the test lamp illuminate?	Go to Step 8	Go to Step 6
6	Command the EVAP canister purge solenoid valve to 50 percent with a scan tool. Does the test lamp illuminate or pulse when the EVAP canister purge solenoid valve is commanded to 50 percent?	Go to Step 9	Go to Step 7
7	Test the control circuit of the EVAP canister purge solenoid valve for an open or short to voltage. Did you find and correct the condition?	Go to Step 14	Go to Step 10
8	Test the control circuit of the EVAP canister purge solenoid valve for a short to ground. Did you find and correct the condition?	Go to Step 14	Go to Step 13
9	Test for an intermittent and for a poor connection at the EVAP canister purge solenoid valve. Did you find and correct the condition?	Go to Step 14	Go to Step 12
10	Test for an intermittent and for a poor connection at the control module. Did you find and correct the condition?	Go to Step 14	Go to Step 13
11	Repair the open or short to ground in the ignition 1 voltage circuit. Replace the fuse if necessary. Did you complete the repair?	Go to Step 14	—

Steps 1-11

Step	Action	Yes	No
12	Replace the EVAP canister purge solenoid valve. Did you complete the replacement?	Go to Step 14	—
13	Replace the PCM. Did you complete the replacement?	Go to Step 14	—
14	1. Clear the DTCs with a scan tool. 2. Turn OFF the ignition for 30 seconds. 3. Start the engine. 4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records. Did the DTC fail this ignition?	Go to Step 2	Go to Step 15
15	Observe the Capture Info with a scan tool. Have any DTCs not been diagnosed?	Go to Diagnostic Trouble Code (DTC) List - Vehicle in Vehicle DTC Information	System OK

Steps 12-15

The numbers below refer to the step numbers on the diagnostic table.

2. This step tests if the concern is active. The EVAP canister purge solenoid valve is PWM. A clicking should be heard or felt when the EVAP canister purge solenoid valve is commanded to **50 percent** and should stop when the EVAP canister purge solenoid valve is commanded to **0 percent** . The rate at which the EVAP canister purge solenoid valve cycles should increase as the commanded state is increased and decrease as the commanded state is decreased. Repeat the commands as necessary.

5. This step tests if a ground is constantly being applied to the EVAP canister purge solenoid valve.
6. This step verifies that the control module is providing ground to the EVAP canister purge solenoid valve.