

<b>DTC</b>	<b>P0441</b>	<b>Evaporative Emission Control System Incorrect Purge Flow</b>
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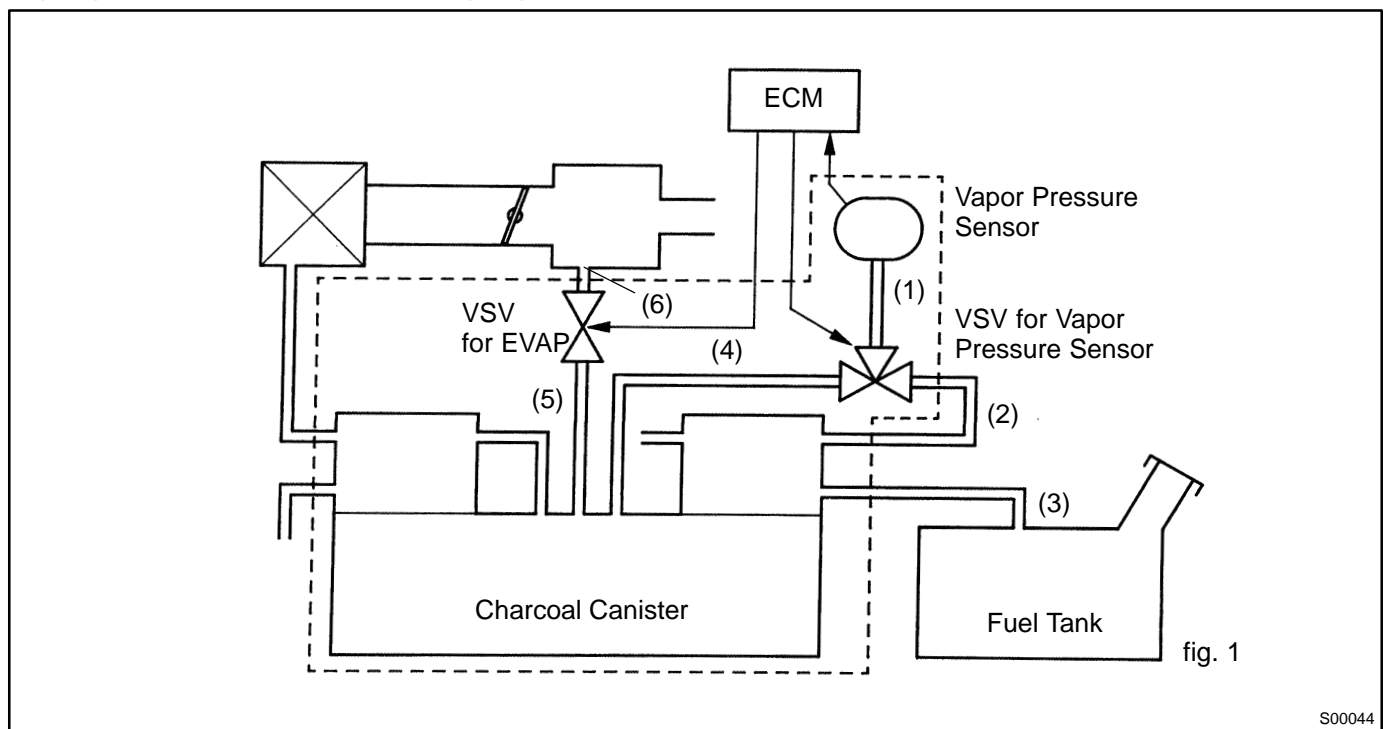
<b>DTC</b>	<b>P0446</b>	<b>Evaporative Emission Control System Vent Control Malfunction</b>
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## CIRCUIT DESCRIPTION

The vapor pressure sensor and VSV for vapor pressure sensor are used to detect abnormalities in the evaporative emission control system.

The ECM decides whether there is an abnormality in the evaporative emission control system based on the vapor pressure sensor signal.

DTCs P0441 and P0446 are recorded by the ECM when evaporative emissions leak from the components within the dotted line in fig. 1 below, or when there is a malfunction in either the VSV for EVAP, the VSV for vapor pressure sensor, or in the vapor pressure sensor itself.



DTC No.	DTC Detecting Condition	Trouble Area
P0441	Pressure in charcoal canister does not drop during purge control (2 trip detection logic)	<ul style="list-style-type: none"> <li>• Open or short in VSV circuit for vapor pressure sensor</li> <li>• VSV for vapor pressure sensor</li> <li>• Open or short in vapor pressure sensor circuit</li> <li>• Vapor pressure sensor</li> <li>• Open or short in VSV circuit for EVAP</li> <li>• VSV for EVAP</li> <li>• Vacuum hose cracks, hole, blocked damaged or disconnected ((1), (4), (5) and (6) in fig. 1)</li> <li>• Charcoal canister cracks, hole or damaged</li> </ul>
	During purge cut-off, pressure in charcoal canister is very low compared with atmospheric pressure (2 trip detection logic)	
P0446	When VSV for vapor pressure sensor is OFF, ECM judges that there is no continuity between vapor pressure sensor and charcoal canister (2 trip detection logic)	
	When VSV for vapor pressure sensor is ON, ECM judges that there is no continuity between vapor pressure sensor and fuel tank. (2 trip detection logic)	
	After purge cut off operates, pressure in charcoal canister is maintained at atmospheric pressure (2 trip detection logic)	

## WIRING DIAGRAM

Refer to Evaporative Emission Control System Malfunction on page [DI-233](#).

## INSPECTION PROCEDURE

HINT:

If DTC P0441, P0446 or P0450 is output after DTC P0440, first troubleshoot DTC P0441, P0446 or P0450. If no malfunction is detected, troubleshoot DTC P0440 next.

### LEXUS hand-held tester:

1	<b>Check VSV connector for EVAP, VSV connector for vapor pressure sensor and vapor pressure sensor connector for looseness and disconnection.</b>
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NG

**Repair or connect VSV or sensor connector.**

OK

2	Check vacuum hose between intake manifold and VSV for EVAP, VSV for EVAP and charcoal canister, charcoal canister and VSV for vapor pressure sensor, and VSV for vapor pressure sensor and vapor pressure sensor.
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**CHECK:**

- (a) Check that vacuum hose is connected correctly.
- (b) Check vacuum hose for looseness and disconnection.
- (c) Check vacuum hose cracks, hole, damage, and blockage.

**NG**

Repair or replace.

**OK**

3	Check voltage between terminals VC and E2 of ECM connector (See page <a href="#">DI-233</a> , step 9).
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**NG**Check and replace ECM (See page [IN-XXX](#)).**OK**

4	Check voltage between terminals PTNK and E2 of ECM connectors (See page <a href="#">DI-233</a> , step 10).
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**OK**

Go to step 6.

**NG**

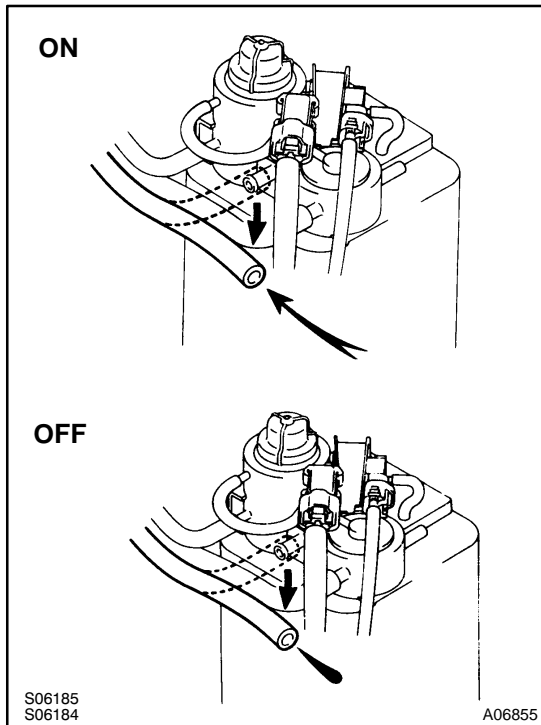
5	Check for open and short in harness and connector between vapor pressure sensor and ECM (See page <a href="#">IN-29</a> ).
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**NG**

Repair or replace harness or connector.

**OK**

Replace vapor pressure sensor.

**6 Check purge flow.****PREPARATION:**

- Connect LEXUS hand-held tester to the DLC3.
- Select ACTIVE TEST mode on LEXUS hand-held tester.
- Disconnect VSV vacuum hose for EVAP from the charcoal canister.
- Start engine.

**CHECK:**

When VSV for EVAP is operated by LEXUS hand-held tester, check whether disconnected hose applies suction to your finger.

**OK:**

**VSV is ON:**

**Disconnected hose applies suction to your finger.**

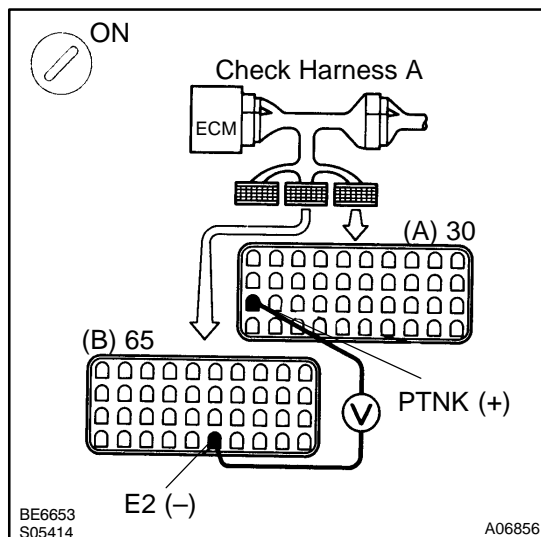
**VSV is OFF:**

**Disconnected hose applies no suction to your finger.**

**OK****Go to step 10.****NG****7 Check vacuum hose between intake manifold and VSV for EVAP, and VSV for EVAP and charcoal canister.****CHECK:**

- Check that vacuum hose is connected correctly.
- Check vacuum hose for looseness and disconnection.
- Check vacuum hose for cracks, hole, damage, and blockage.

**NG****Repair or replace.****OK**

**8 Check operation of VSV for EVAP (See page EC-6).****NG****Replace VSV.****OK****9 Check for open and short in harness and connector between EFI main relay (Marking: EFI MAIN) and VSV for EVAP and ECM (See page IN-29).****NG****Repair or replace harness or connector.****OK****Check and replace ECM (See page IN-29).****10 Connect LEXUS hand-held tester, when VSV connector for vapor pressure sensor is disconnected and VSV for EVAP is ON, measure voltage between terminals PTNK and E2 of ECM connectors.****PREPARATION:**

- Connect LEXUS hand-held tester to the DLC3.
- Disconnect VSV connector for vapor pressure sensor.
- Select ACTIVE TEST mode on the LEXUS hand-held tester.
- Start the engine.

**CHECK:**

Measure voltage between terminals PTNK and E2 of ECM connectors, when VSV for EVAP is ON, using LEXUS hand-held tester.

**OK:****Voltage: 2.0 V or less****OK****Go to step 12.****NG**

- |    |   |
|----|---|
| 11 | Check vacuum hose between charcoal canister and VSV for vapor pressure sensor, and vapor pressure sensor and VSV for vapor pressure sensor. |
|----|---|

**CHECK:**

- (a) Check that vacuum hose is connected correctly.
- (b) Check vacuum hose for looseness and disconnection.
- (c) Check vacuum hose for cracks, hole, damage, and blockage.

**NG****Repair or replace.****OK**

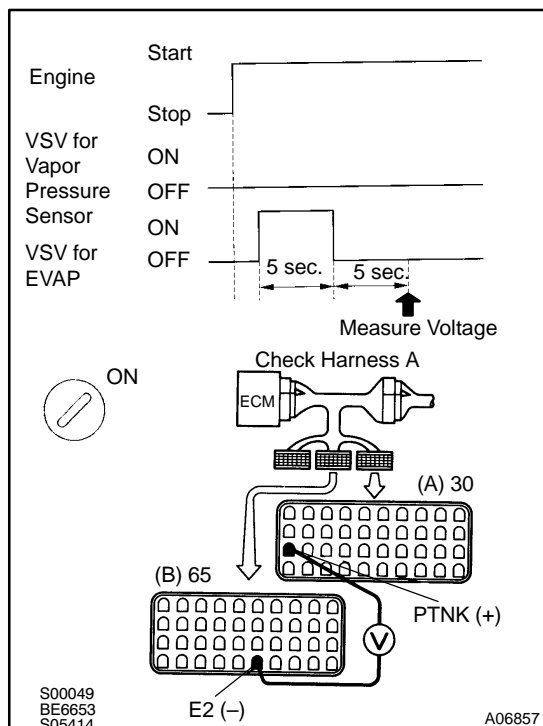
- |    |   |
|----|---|
| 12 | Check operation of VSV for vapor pressure sensor. |
|----|---|

**NG****Replace VSV.****OK**

- |    |   |
|----|---|
| 13 | Check for open and short in harness and connector between EFI main relay (Marking: EFI MAIN) and VSV for vapor pressure sensor and ECM (See page <a href="#">IN-29</a> ). |
|----|---|

**NG****Repair or replace harness or connector.****OK**

# 14 Check charcoal canister.



## PREPARATION:

- Connect LEXUS hand-held tester to the DLC3.
- Remove fuel tank cap.
- Disconnect VSV connector for vapor pressure sensor.
- Select ACTIVE TEST mode on the LEXUS hand-held tester.
- Start the engine.
- VSV for EVAP is ON by LEXUS hand-held tester and remains on for 5 seconds.

## CHECK:

Measure voltage between terminals PTNK and E2 of ECM connectors seconds after switching VSV for EVAP from ON to OFF.

## OK:

Voltage: 2.5 V or less

NG

Replace charcoal canister.

OK

Check and replace ECM (See page [IN-29](#)).

## OBDII scan tool (excluding LEXUS hand-held tester):

- 1 Check VSV connector for EVAP, VSV connector for vapor pressure sensor and vapor pressure sensor connector for looseness and disconnection.

NG

Repair or connect VSV or sensor connector.

OK

2	Check vacuum hose between intake manifold and VSV for EVAP, VSV for EVAP and charcoal canister, charcoal canister and VSV for vapor pressure sensor, and VSV for vapor pressure sensor and vapor pressure sensor.
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**CHECK:**

- (a) Check that vacuum hose is connected correctly.
- (b) Check vacuum hose for looseness and disconnection.
- (c) Check vacuum hose for cracks, hole, damage, and blockage.

**NG**

Repair or replace.

**OK**

3	Check voltage between terminals VC and E2 of ECM connector (See page <a href="#">DI-233</a> , step 9).
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**NG**Check and replace ECM (See page [IN-29](#)).**OK**

4	Check voltage between terminals PTNK and E2 of ECM connector (See page <a href="#">DI-233</a> , step 10).
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**NG**

Go to step 6.

**OK**

5	Check for open and short in harness and connector between vapor pressure sensor and ECM (See page <a href="#">IN-29</a> ).
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**NG**

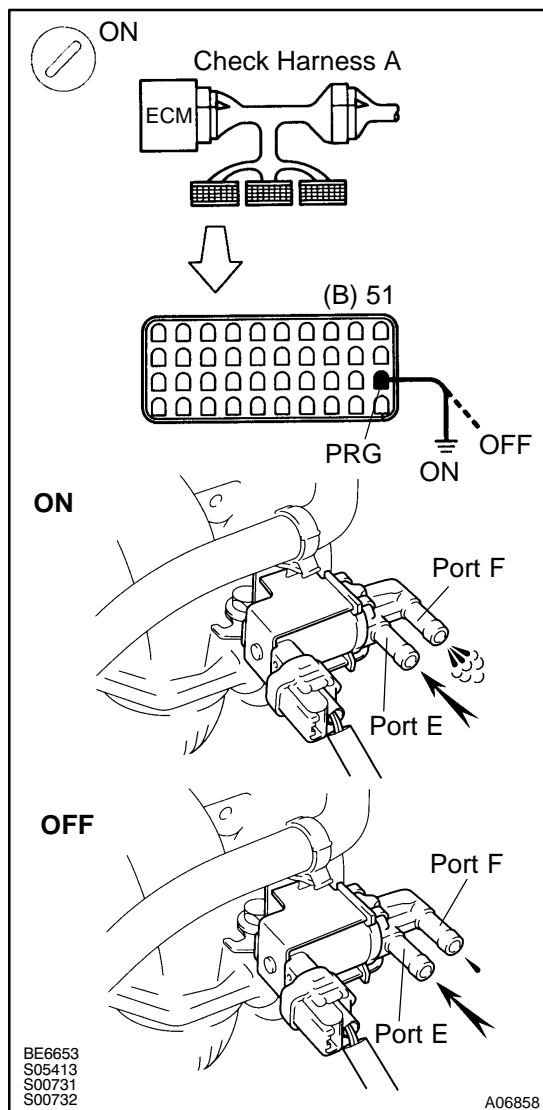
Repair or replace harness or connector.

**OK**

Replace vapor pressure sensor.



## 6 Check VSV for EVAP.



### PREPARATION:

- Connect the check harness A.
- Turn ignition switch ON.

### CHECK:

Check VSV function.

- Connect between terminal PRG of ECM and body ground.
- Disconnect between terminal PRG of ECM and body ground.

### OK:

**VSV is ON:**

**Air from port E flows out through port F.**

**VSV is OFF:**

**Air does not flow from port E to port F.**

**OK**

**Go to step 8.**

**NG**

## 7 Check operation of VSV for EVAP.

**NG**

**Replace VSV.**

**OK**

## 8 Check for open and short in harness and connector between EFI main relay (Marking: EFI MAIN) and VSV for EVAP and ECM (See page [IN-29](#)).

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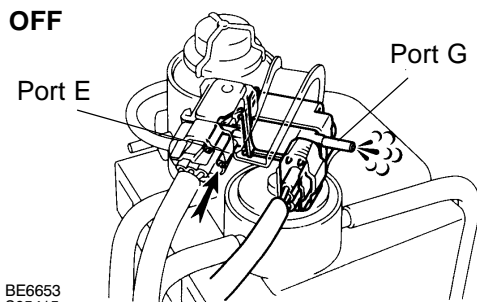
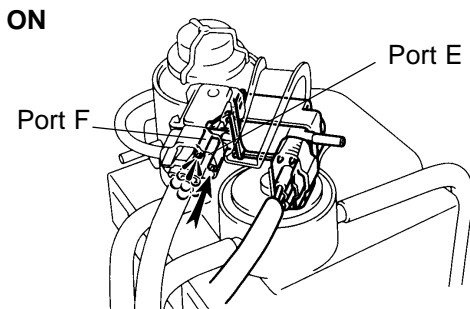
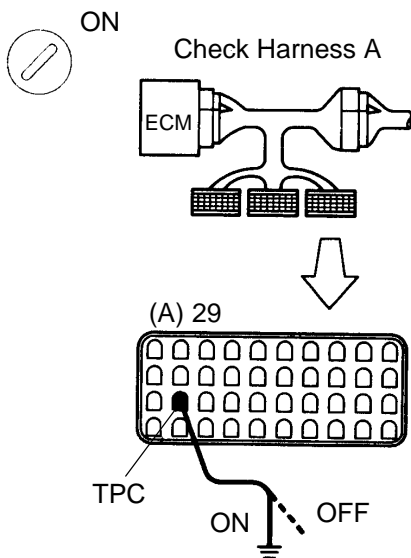
Repair or replace harness or connector.

OK

Check and replace ECM (See page [IN-29](#)).

9

Check VSV for vapor pressure sensor.



BE6653  
S05415  
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A06859

**PREPARATION:**

- (a) Connect the check harness A.
- (b) Turn ignition switch ON.

**CHECK:**

Check VSV function.

- (1) Connect between terminal TPC of ECM and body ground.
- (2) Disconnect between terminal TPC of ECM and body ground.

**OK:****VSV is ON:**

Air from port E flows out through port F.

**VSV is OFF:**

Air from port E flows out through port G.

OK

Check and replace charcoal canister.

NG

10

Check operation of VSV for vapor pressure sensor.

NG

Replace VSV.

OK

11

Check for open and short in harness and connector between EFI main relay (Marking: EFI MAIN) and VSV for vapor pressure sensor and ECM (See page [IN-29](#)).NG

Repair or replace harness or connector.

OKCheck and replace ECM (See page [IN-29](#)).