TOYOTA

Technical Service BULLETIN

July 12, 2002

Title:

M.I.L. "ON" P0440, P0441 & P0446

Models:

'98 – '99 Camry & Solara

TSB

Introduction

Under certain driving conditions, some 1998 – 1999 model year Camry and Solara vehicles may exhibit a M.I.L. "ON" with DTCs P0440, P0441 and P0446 stored due to an inoperative Vapor Pressure Sensor 3 way Vacuum Switching Valve (VSV). An improved Vapor Pressure Sensor VSV has been developed to correct this condition.

Applicable Vehicles

- **1998 – 1999** model year **Camry & Solara** vehicles.

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
90910–12109	90910–12271	Vapor Pressure Sensor VSV	1

Required Tools & Material

TOOLS & MATERIAL	PART NUMBER	QUANTITY
Toyota Diagnostic Tester Kit* 	01001271	1
12 Megabyte Diagnostic Tester Program Card with version 9.01a Software (or later)* 	01002593-005	1
Hand Operated Vacuum Pump	N/A	1
Digital Volt Ohm Meter (DVOM)	09082–00050 (Or Equivalent)	1

* Essential SSTs.

NOTE:

Additional Diagnostic Tester Kits, Program Cards or SSTs may be ordered by calling OTC at 1-800-933-8335.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
178011	R & R Vacuum Switching Valve (4 Cylinder)	0.4	90910–12109	72	83
	R & R Vacuum Switching Valve (6 Cylinder)	0.2			

Applicable Warranty*:

This repair is covered under the Toyota Comprehensive Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date.

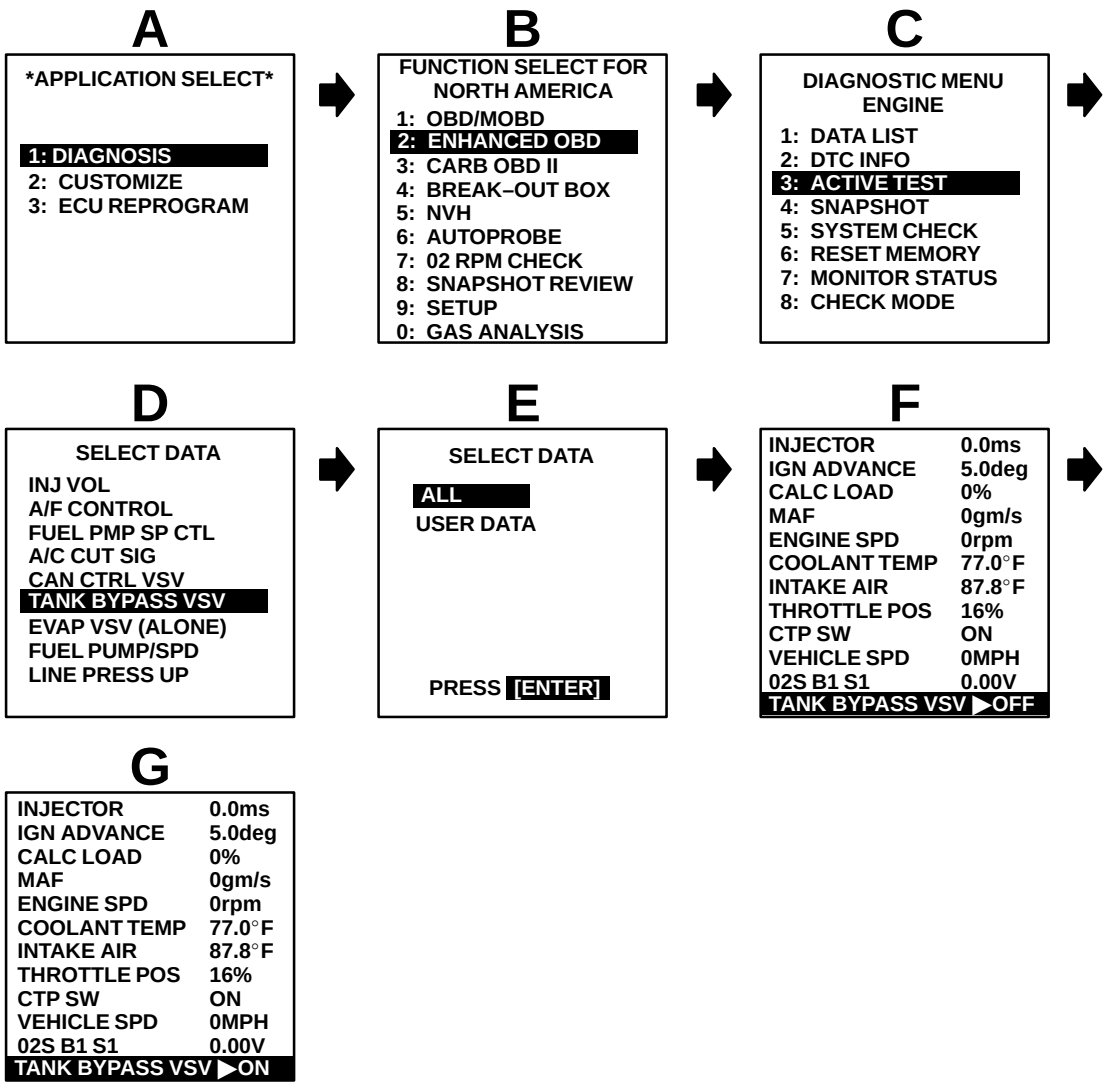
* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

Inspection & Repair Procedure

Test VSV Operation Using ACTIVE TEST on the Toyota Diagnostic Tester

1. Test operation of the Vapor Pressure Sensor VSV using the Toyota Diagnostic Tester in ACTIVE TEST (see screen flow in Figure 1).

Figure 1: Testing Operation of Vapor Pressure Sensor VSV using ACTIVE TEST



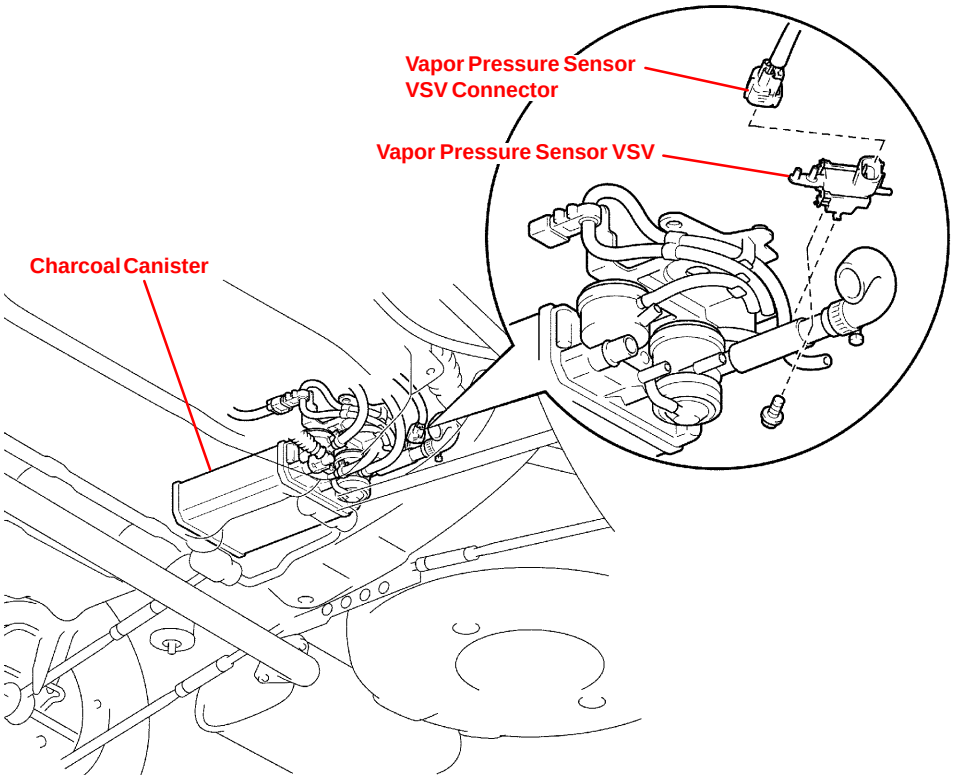
NOTE:

Vapor Pressure Sensor VSV is listed as TANK BYPASS VSV on the Diagnostic Tester.

Inspection & Repair Procedure (Continued)

2. Locate Vapor Pressure Sensor VSV as shown in Figure 2 (or see **SFI** section of 1998 or 1999 Camry or Solara Repair Manual).

Figure 2: Vapor Pressure Sensor VSV Components



3. Using the Diagnostic Tester ACTIVE TEST, switch the Vapor Pressure Sensor VSV (TANK BYPASS VSV) to **ON** using the arrow keys.

4. Does the Vapor Pressure Sensor VSV make a "click" noise when switched to **ON**?
   - **YES** ▶ Go to "Test VSV for Vacuum Leaks" (page 4 and 5 of this TSB).
   - **NO** ▶ Go to Step 5.

5. Is the wiring harness connector properly connected to the Vapor Pressure Sensor VSV?
   - **YES** ▶ Go to Step 6.
   - **NO** ▶ Fix the connector, then return to Step 3.

6. Disconnect the wiring harness connector for the Vapor Pressure Sensor VSV.

7. Using a DVOM test at Pin 1 to a known good ground. (Red wire on Solara, black and yellow wire on Camry).

   Is battery voltage (B+) present at Pin 1 of the Vapor Pressure Sensor VSV connector when the TANK BYPASS VSV ACTIVE TEST is switched to **ON**?
   - **YES** ▶ Go to Step 8.
   - **NO** ▶ Perform diagnosis of power circuit.

Inspection & Repair Procedure (Continued)

8. Using a DVOM test at Pin 2 to a known good ground. The ECM provides ground when the VSV is switched **ON**. (White and red wire on Solara, violet wire on Camry).

   Is there continuity to ground at Pin 2 of the Vapor Pressure Sensor VSV connector when the TANK BYPASS VSV ACTIVE TEST is switched to **ON**?

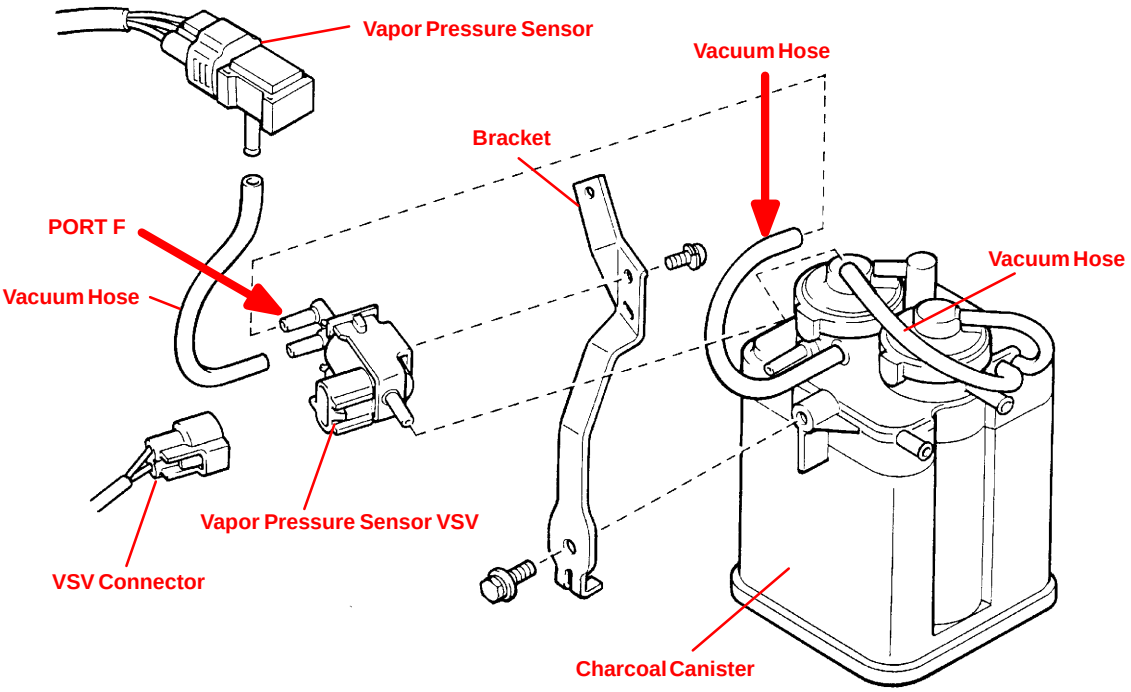
   YES ▶ Replace the Vapor Pressure Sensor VSV.

   NO ▶ Perform diagnosis of ground circuit.

Test VSV for Vacuum Leaks

1. Locate the vacuum hose going from charcoal canister to Port F of the Vapor Pressure Sensor VSV (see Figure 3).

Figure 3



2. Remove vacuum hose from Port F of the Vapor Pressure Sensor VSV and connect a hand–held vacuum pump to Port F using a short length of vacuum hose.

3. Apply at least 10 mm Hg vacuum to the VSV.
   Is a vacuum held for at least 1 minute?

   YES ▶ Go to Step 4.

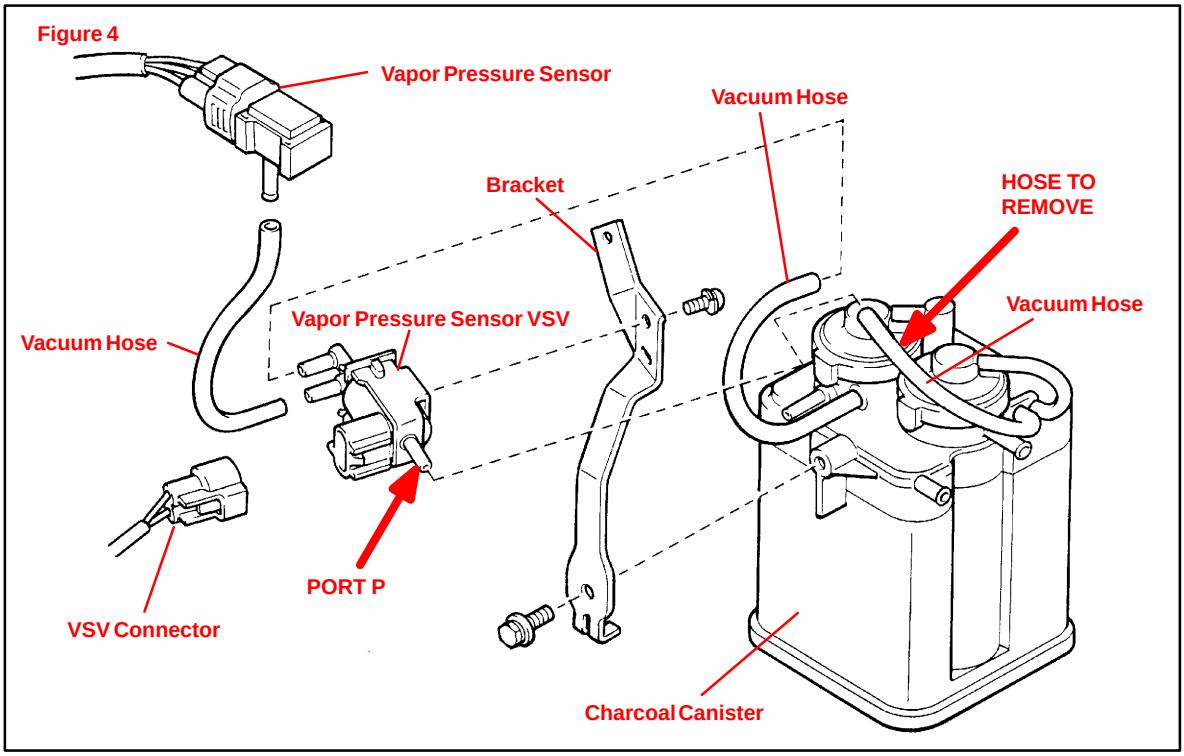
   NO ▶ Replace the Vapor Pressure Sensor VSV.

4. Disconnect the hand–held vacuum pump and reconnect the vacuum hose from the canister to the Vapor Pressure Sensor VSV.

Inspection & Repair Procedure (Continued)

5. Locate the vacuum hose going from charcoal canister to Port P of the Vapor Pressure Sensor VSV (see Figure 4).

Figure 4



6. Remove the vacuum hose from Port P of the Vapor Pressure Sensor VSV and connect a hand–held vacuum pump to Port P using a short length of vacuum hose.

7. Apply at least 10 mm Hg vacuum to the VSV.
   Is a vacuum held for at least 1 minute?
   YES ▶ Go to Step 8.
   NO ▶ Replace the Vapor Pressure Sensor VSV.

8. Disconnect the hand–held vacuum pump and reconnect the vacuum hose from the canister to the Vapor Pressure Sensor VSV.

9. Continue diagnosis of the EVAP system.
   Reference TSB EG005–01, "EVAP System Operation Information."