

DTC	P0441	EVAPORATIVE EMISSION CONTROL SYSTEM INCORRECT PURGE FLOW
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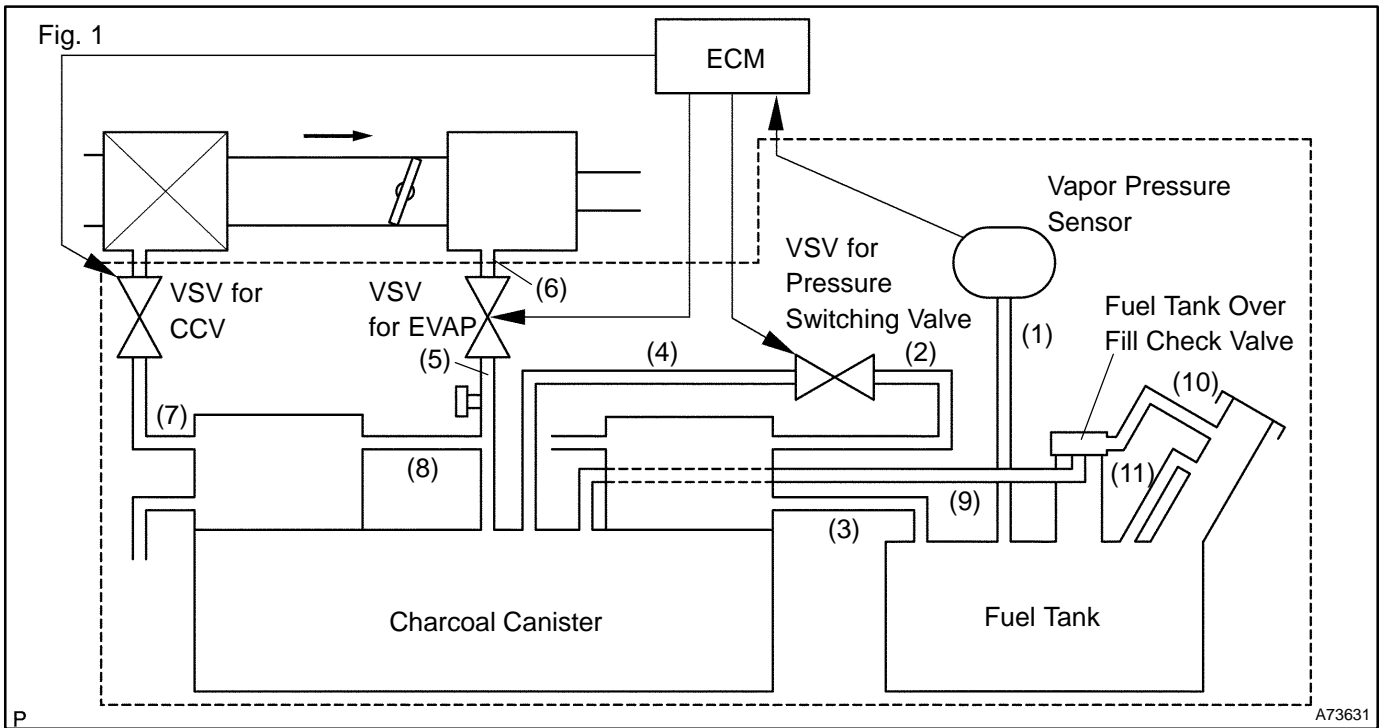
DTC	P0446	EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL CIRCUIT
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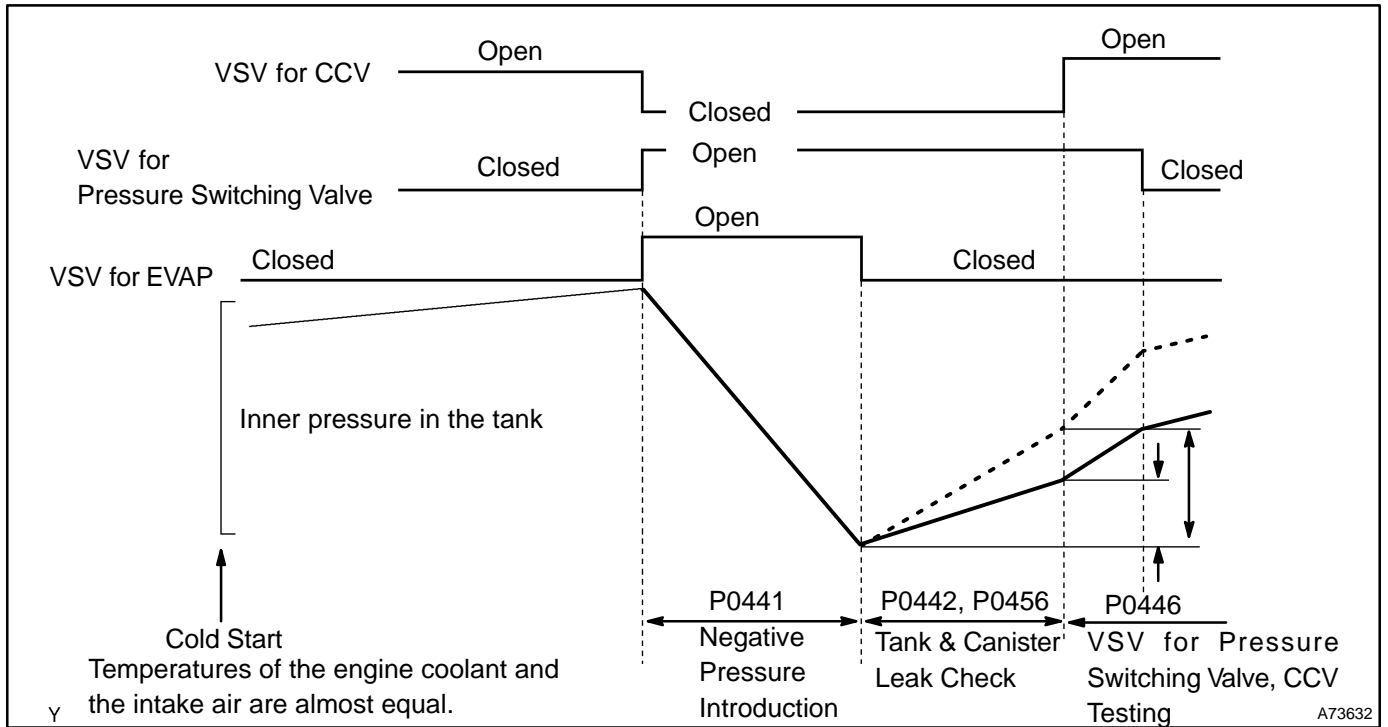
CIRCUIT DESCRIPTION

The vapor pressure sensor, VSV for canister closed valve (CCV), VSV for pressure switching valve 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 malfunction in both VSV for EVAP and VSV for pressure switching valve, or in the vapor pressure sensor itself.





DTC No.	DTC Detecting Condition	Trouble Area
P0441	Pressure in charcoal canister and fuel tank does not drop during purge control (2 trip detection logic)	<ul style="list-style-type: none"> • Fuel tank cap incorrectly installed • Fuel tank cap is cracked or damaged • Vacuum hose is cracked, holed, blocked, damaged or disconnected ((1), (2), (3), (4), (5), (6), (7), (8), (9), (10) and (11) in Fig. 1) • Open or short in vapor pressure sensor circuit • Vapor pressure sensor
	During purge cut-off, pressure is very low compared with atmospheric pressure (2 trip detection logic)	
P0446	No rising the fuel tank pressure when commanding the CCV open after an EVAP leak test	<ul style="list-style-type: none"> • Open or short in VSV circuit for EVAP • VSV for EVAP • Open or short in VSV circuit for CCV • VSV for CCV • Open or short in VSV circuit for pressure switching valve • VSV for pressure switching valve • Fuel tank is cracked, holed or damaged • Charcoal canister is cracked, holed or damaged • Fuel tank over fill check valve is cracked or damaged • ECM
	No changing the fuel tank pressure when commanding the pressure switching valve for the check after the EVAP leak test	
	A high negative pressure (vacuum) does not occurs in the system when commanding the VSV for EVAP open with the CCV closed	

HINT:

Typical DTC output of each trouble part.

Trouble part		Typical DTC output (*1)
Small Leak		P0442 and/or P0456 (*2)
Medium Leak (ex: Vacuum hose loose)		P0442
Large Leak (ex: Fuel tank cap loose)		P0441 and P0442 and P0446
VSV for EVAP	Open Malfunction	P0441
	Close Malfunction	P0441 and P0442 and P0446
VSV for CCV	Open Malfunction	P0441 and P0442 and P0446
	Close Malfunction	P0446
VSV for Pressure Switching	Open Malfunction	P0446
	Close Malfunction	P0441 and P0442 and P0446

*1: ECM may output some other DTCs combination.

*2: Refer to P0442 and P0456 on page 05-218.

MONITOR DESCRIPTION

P0441

The ECM checks for a stuck closed malfunction in the VSV for EVAP by commanding it to open with the CCV closed. If a high negative pressure does not develop in the fuel tank, the ECM determines that the VSV for EVAP remains closed. The ECM turns on the MIL and a DTC is set.

The ECM checks for VSV for EVAP "stuck open" fault by commanding both valves (VSV for EVAP and CCV) to close at a time when the fuel tank is at atmospheric pressure. If the fuel tank develops a high negative pressure at this early stage of the test, the ECM determines that the VSV for EVAP is stuck OPEN.

The ECM will turn on the MIL and a DTC is set.

P0446

If there is a malfunction detected in the VSV for evaporative emission (EVAP), the canister closed valve (CCV) and the VSV for bypass valve; the ECM will illuminate the MIL and set a DTC.

This portion of the EVAP diagnosis checks the following EVAP system functions:

(a) CCV stuck closed.

The ECM checks for a CCV "stuck closed" malfunction by commanding the CCV to open after an EVAP leak test. If the fuel tank pressure does not rise (lose vacuum), the ECM determines that the CCV is stuck closed. The ECM will turn on the MIL and a DTC is set.

(b) VSV for pressure switching valve stuck closed.

The ECM checks for a VSV for pressure switching valve "stuck closed" malfunction by commanding the VSV for pressure switching valve to close after an EVAP leak test. If the fuel tank pressure does not change, the ECM determines that the VSV for pressure switching valve is malfunctioning. The ECM will turn on the MIL and a DTC is set.

(c) VSV for EVAP (Purge line to intake manifold) stuck closed.

The ECM checks for a stuck closed malfunction in the VSV for EVAP by commanding it to open with the CCV closed. If a high negative pressure does not develop in the fuel tank, the ECM determines that the VSV for EVAP remains closed. The ECM turns on the MIL and a DTC is set.

MONITOR STRATEGY

DTCs	P0441	VSV for EVAP malfunction
	P0446	Canister close valve stuck closed VSV for pressure switching valve malfunction VSV for EVAP malfunction
Required sensors/components	Main	Vapor pressure sensor
	Sub	Engine coolant temperature sensor, intake air temperature sensor, vehicle speed sensor
Frequency of operation	Once per drive cycle	
Duration	P0441 : 90 seconds P0446 : 10 seconds	
MIL operation	2 drive cycles	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

Item	Criteria	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present	See "List of Disable a Monitor" (On page 05-25)	
The same as that for DTC P0442		

TYPICAL MALFUNCTION THRESHOLDS

P0441

Detection Criteria	Threshold
Following conditions (a) and (b) are met:	-
(a) Fuel tank pressure is -1.6 kPa (-12 mmHg) or more at the vacuum introduction start	-
(b) Difference between the fuel tank pressures at the vacuum introduction start and completion	Less than 0.9 kPa (7 mmHg)
Following conditions are met for 14 seconds	A and B
A. Difference between "minimum fuel tank pressure before leak check" and "fuel tank pressure when 14seconds after leak check"	0.5 kPa or more (3.5 mmHg)
B. Fuel tank pressure at 14 seconds after leak check	Less than - 3.7 kPa (-28 mmHg)

P0446

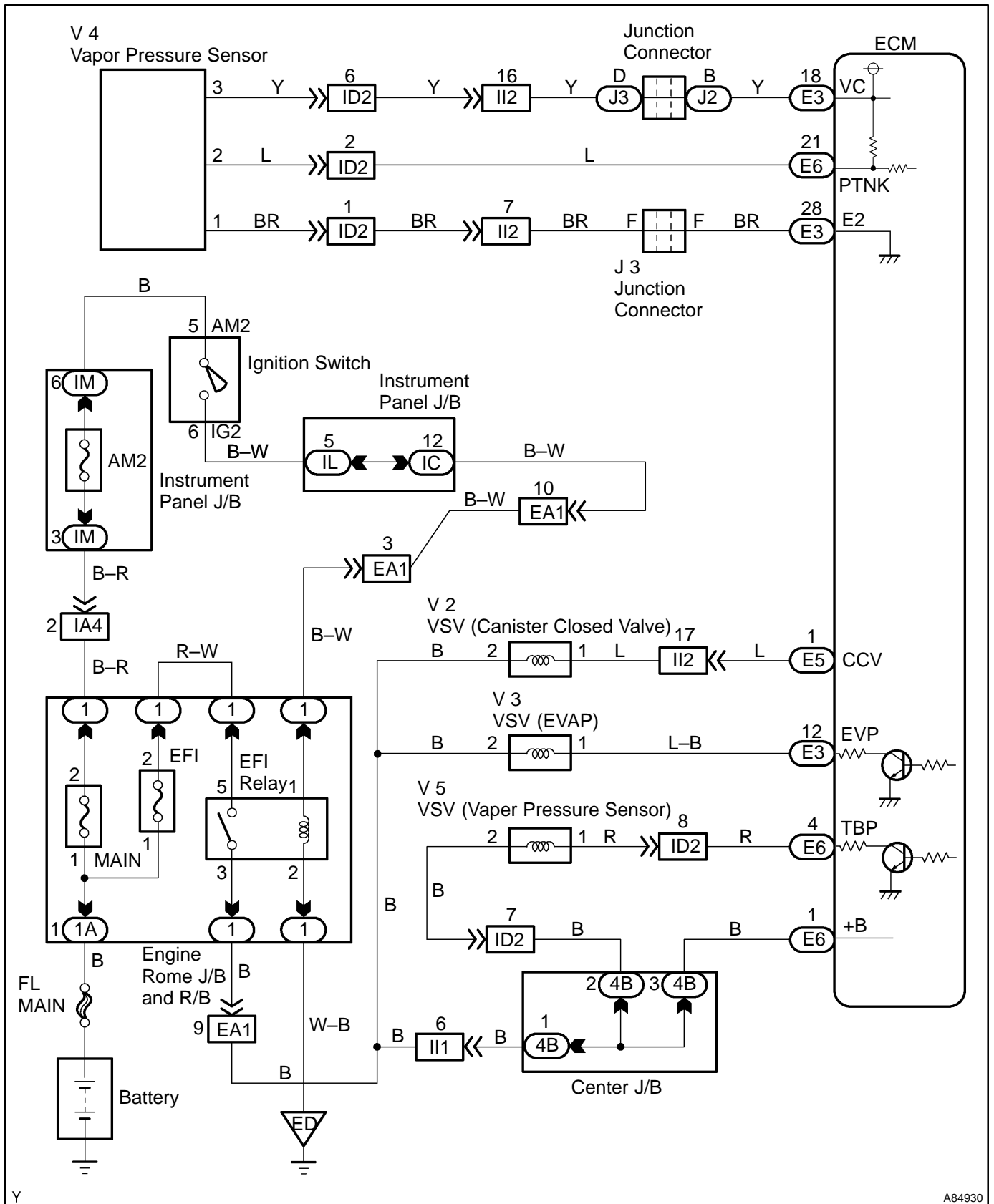
Detection Criteria	Threshold
Case 1: CCV stuck closed	
Fuel tank pressure when the CCV is opened after an EVAP leak check	Not changing
Case 2: VSV for pressure switching valve malfunction	
Fuel tank pressure when the VSV for bypass valve is closed after an EVAP leak check	Not changing
Case 3: VSV for EVAP stuck closed	
Fuel tank pressure after the VSV for EVAP is opened and manifold vacuum is introduced to the fuel tank	Not changing

MONITOR RESULT (MODE 06 DATA)

Test ID	Comp ID	Description of Test Data	Description of Test Limit	Unit	Conversion Factor
\$02	\$81	Tank pressure change value during vacuum introduction	Malfunction criteria for VSV for EVAP	mmHg	Multiply by 0.0916
	\$82	Fuel tank pressure change value at switching over the canister close valve or VSV for pressure switching valve.	Malfunction criteria for canister close valve and VSV for pressure switching valve	mmHg	Multiply by 0.0458 minus 2.930
	\$03	Fuel tank pressure change 5 seconds after the end the vacuum introduction cycle	Malfunction criteria for 0.040 leak	mmHg	Multiply by 0.0458
	\$04	Conditions: • VSV for EVAP: Closed • CCV: Closed • VSV for bypass valve: Open	Malfunction criteria for 0.020 leak	mmHg	Multiply by 0.0458

Refer to page 05-27 for the detailed information on Checking Monitor Status.

WIRING DIAGRAM



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A84930

INSPECTION PROCEDURE

HINT:

- If DTC P0441 (Purge Flow), P0446 (VSV for CCV or VSV for Pressure switching valve), P0451, P0452 or P0453 (See page [05-242](#)) is output with DTC P0442 or P0456 (See page [05-218](#)), first troubleshoot DTC P0441, P0446, P0451, P0452 or P0453. If no malfunction is detected, troubleshoot DTC P0442 or P0456 next.
- Read freeze frame data using the hand-held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.
- When the ENGINE RUN TIME in the freeze frame data is less than 200 seconds, carefully check the vapor pressure sensor.

Hand-held Tester:

1	CHECK FUEL TANK CAP ASSY(CHECK THAT FUEL TANK CAP IS TOYOTA GENUINE PARTS)
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NG →

REPLACE TO TOYOTA GENUINE PARTS

OK

2	CHECK THAT FUEL TANK CAP IS CORRECTLY INSTALLED
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NG →

CORRECTLY INSTALL FUEL TANK CAP

OK

3	INSPECT FUEL TANK CAP ASSY (See page 12-1)
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NG →

REPLACE FUEL TANK CAP ASSY

OK

4	CHECK FILLER NECK FOR DAMAGE
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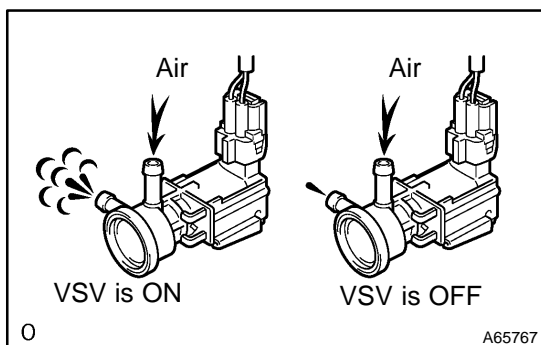
- (a) Remove the fuel tank cap.
- (b) Visually check the fuel inlet pipe for damage.
- (c) Reinstall the fuel tank cap.

NG →

REPLACE FUEL TANK INLET PIPE SUB-ASSY

OK

5 PERFORM ACTIVE TEST BY HAND-HELD TESTER(CHECK FOR EVAP PURGE FLOW)



- Select the item "DIAGNOSIS/ENHANCED OBD II/ACTIVE TEST" mode on the hand-held tester.
- Disconnect the vacuum hose of the VSV for EVAP from the charcoal canister.
- Start the engine.
- Select the item "EVAP VSV (ALON)/ALL" in the ACTIVE TEST and operate EVAP VSV (Press the right or left button).
- When the VSV for the EVAP is operated by the hand-held tester, check whether the disconnected hose applies suction to your finger.

Result:

VSV is ON: Disconnected hose sucks.

VSV is OFF: Disconnected hose does not suck.

- Reconnect the vacuum hose.

OK

Go to step 9

NG

6 CHECK VACUUM HOSES(INTAKE MANIFOLD - VSV FOR EVAP, VSV FOR EVAP - CHARCOAL CANISTER)

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

NG

REPAIR OR REPLACE VACUUM HOSE

OK

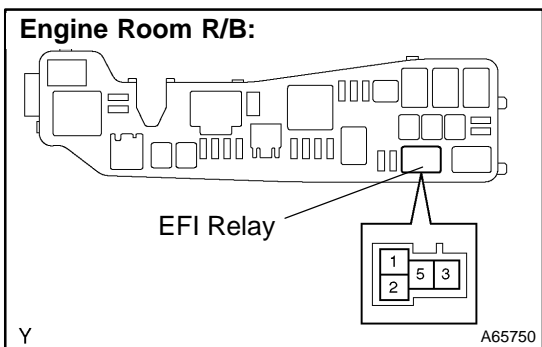
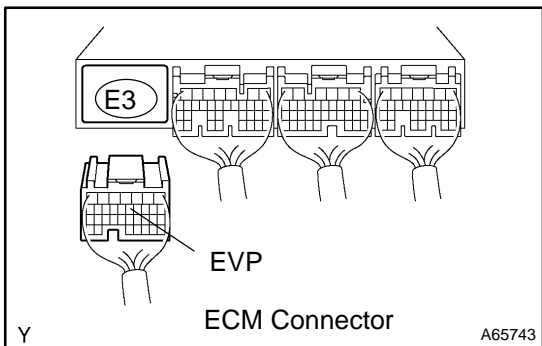
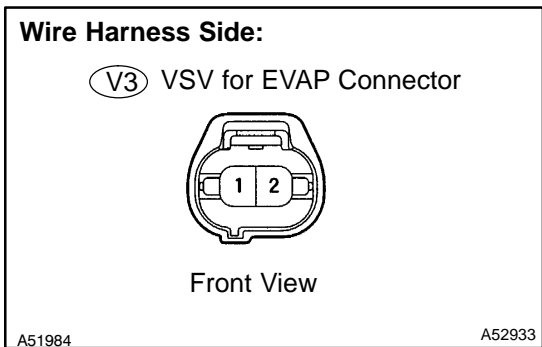
7 INSPECT VSV FOR EVAP(OPERATION) (See page 12-1)

NG

REPLACE VSV FOR EVAP

OK

8 CHECK HARNESS AND CONNECTOR(EFI RELAY - VSV FOR EVAP, VSV FOR EVAP - ECM)



- (a) Check the harness and the connector between the VSV for EVAP and the ECM.
- (1) Disconnect the V3 VSV for EVAP connector.
 - (2) Disconnect the E3 ECM connector.
 - (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
VSV for EVAP (V3-1) - EVP (E3-12)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
VSV for EVAP (V3-1) or EVP (E3-12) - Body ground	10 kΩ or higher

- (4) Reconnect the VSV for EVAP connector.
 - (5) Reconnect the ECM connector.
- (b) Check the harness and the connector between the VSV for EVAP and the EFI relay.
- (1) Disconnect the V3 VSV for EVAP connector.
 - (2) Remove the EFI relay from the engine room R/B.
 - (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
VSV for EVAP (V3-2) - EFI relay (3)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
VSV for EVAP (V3-2) or EFI relay (3) - Body ground	10 kΩ or higher

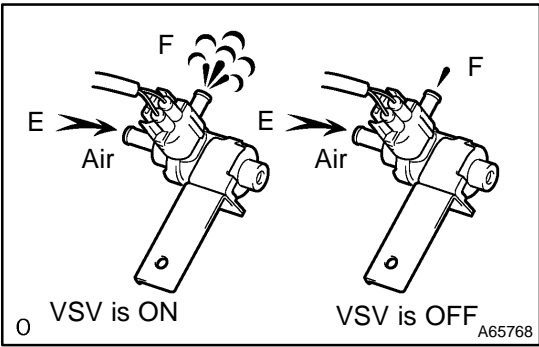
- (4) Reconnect the VSV for EVAP connector.
- (5) Reinstall the EFI relay.

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM (See page 10-11)

9 | PERFORM ACTIVE TEST BY HAND-HELD TESTER(VSV FOR CCV)



- (a) Disconnect the vacuum hose of the VSV for CCV from the charcoal canister.
- (b) Start the engine.
- (c) Select the item "DIAGNOSIS/ENHANCED OBD II/ACTIVE TEST" mode on the hand-held tester.
- (d) Select the item "CAN CTRL VSV/ALL" in the ACTIVE TEST and operate CAN CTRL VSV (Press the right or left button).
- (e) Check the VSV operation when it is operated by the hand-held tester.

Result:

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 13

NG

10 | CHECK VACUUM HOSES(VSV FOR CCV - CHARCOAL CANISTER)

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

NG → REPAIR OR REPLACE VACUUM HOSES

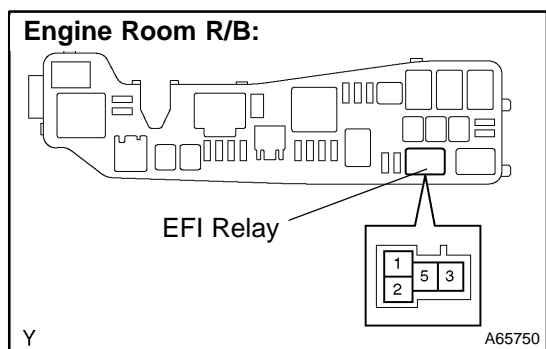
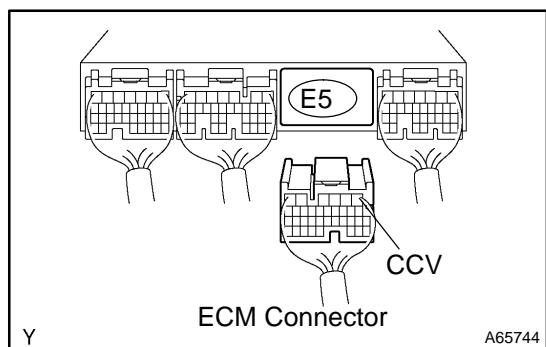
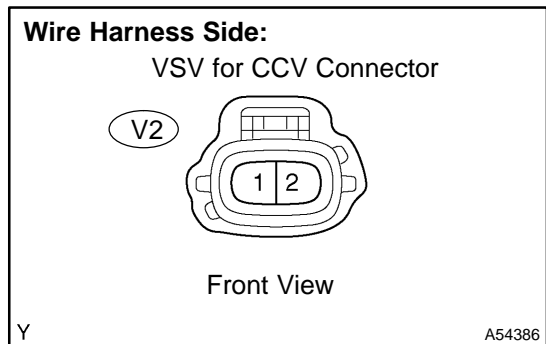
OK

11 | INSPECT VSV FOR CCV(OPERATION) (See page 12-6)

NG → REPLACE VSV FOR CCV

OK

12 CHECK HARNESS AND CONNECTOR(EFI RELAY – VSV FOR CCV, VSV FOR CCV – ECM)



(a) Check the harness and connector between the VSV for CCV and ECM.

- (1) Disconnect the V2 VSV for CCV connector.
- (2) Disconnect the E5 ECM connector.
- (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
VSV for CCV (V2-1) – CCV (E5-1)	Below 1 Ω

Tester Connection	Specified Condition
VSV for CCV (V2-1) or CCV (E5-1) – Body ground	10 kΩ or higher

- (4) Reconnect the VSV for CCV connector.
- (5) Reconnect the ECM connector.

(b) Check the harness and the connector between the VSV for CCV and the EFI relay.

- (1) Disconnect the V2 VSV for CCV connector.
- (2) Remove the EFI relay from the engine room R/B.
- (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
VSV for CCV (V2-2) – EFI relay (3)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
VSV for CCV (V2-2) or EFI relay (3) – Body ground	10 kΩ or higher

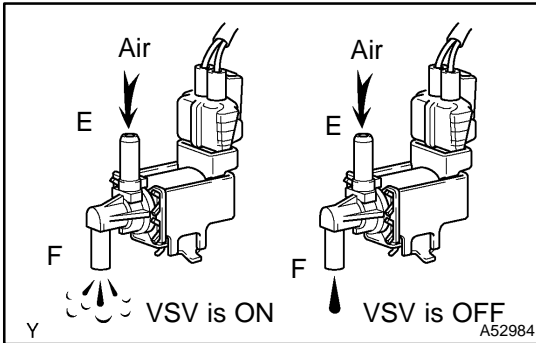
- (4) Reconnect the VSV for CCV connector.
- (5) Reinstall the EFI relay.

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM (See page 10-11)

13	PERFORM ACTIVE TEST BY HAND-HELD TESTER(VSV FOR PRESSURE SWITCHING VALVE)
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- (a) Select the item "DIAGNOSIS/ENHANCED OBD II/ACTIVE TEST" mode on the hand-held tester.
- (b) Select the item "TANK BYPASS VSV/ALL" in the ACTIVE TEST and operate TANK BYPASS VSV (Press the right or left button).
- (c) Check the VSV operation when it is operated by the hand-held tester.

Result:**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 16

NG

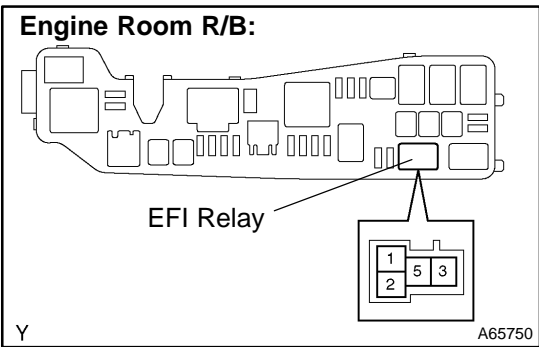
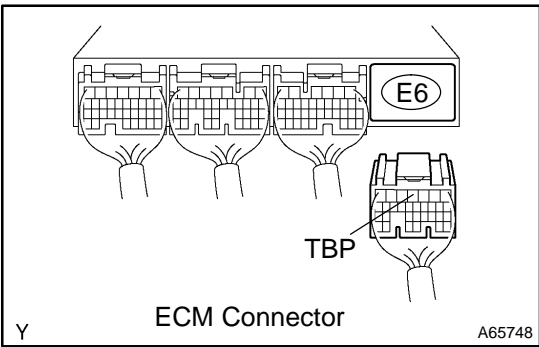
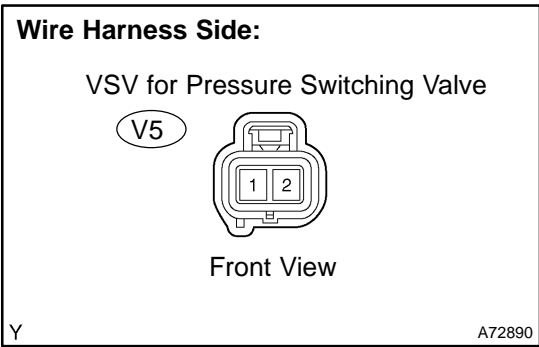
14	INSPECT VSV FOR PRESSURE SWITCHING VALVE(OPERATION)
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NG

REPLACE VSV FOR PRESSURE SWITCHING VALVE

OK

15 CHECK HARNESS AND CONNECTOR(EFI RELAY – VSV FOR PRESSURE SWITCHING VALVE, VSV FOR PRESSURE SWITCHING VALVE – ECM)



- (a) Check the harness and the connector between the VSV for pressure switching valve and the ECM.
- (1) Disconnect the V5 VSV for pressure switching valve connector.
 - (2) Disconnect the E6 ECM connector.
 - (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
VSV for pressure switching valve (V5-1) – TBP (E6-4)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
VSV for pressure switching valve (V5-1) or TBP (E6-4) – Body ground	10 kΩ or higher

- (4) Reconnect the VSV for pressure switching valve connector.
 - (5) Reconnect the ECM connector.
- (b) Check the harness and the connector between the VSV for pressure switching valve and the EFI relay.

- (1) Disconnect the V5 VSV for pressure switching valve connector.
- (2) Remove the EFI relay from the engine room R/B.
- (3) Check the resistance between the wire harness side connectors.

Standard (Check for open):

Tester Connection	Specified Condition
VSV for pressure switching valve (V5-2) – EFI relay (3)	Below 1 Ω

Standard (Check for short):

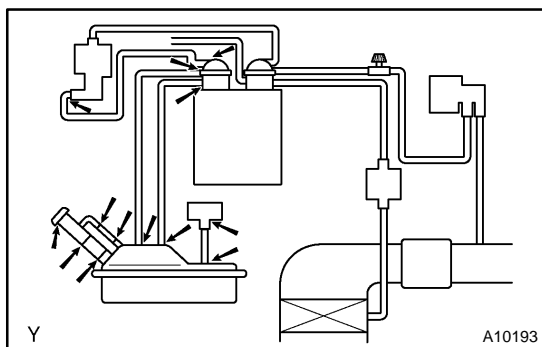
Tester Connection	Specified Condition
VSV for pressure switching valve (V5-2) or EFI relay (3) – Body ground	10 kΩ or higher

- (4) Reconnect the VSV for pressure switching valve connector.
- (5) Reinstall the EFI relay.

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM (See page 10-11)

16 CHECK FOR EVAPORATIVE EMISSIONS LEAK(NEAR FUEL TANK)

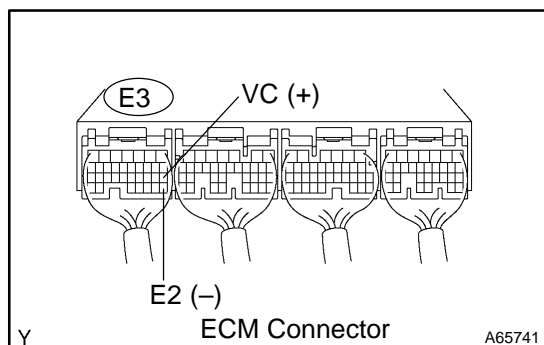
- (a) Check whether hoses close to the fuel tank have been modified, and check if there are signs of any accident near the fuel tank.
- (1) Check the following parts for cracks, deformation or loose connection:
- Fuel tank
 - Fuel tank filler pipe
 - Hoses and tubes around fuel tank

NG**REPAIR OR REPLACE EVAPORATIVE EMISSIONS LEAK PART****OK****17 CHECK VACUUM HOSES(VAPOR PRESSURE SENSOR – FUEL TANK, CHARCOAL CANISTER – VSV FOR PRESSURE SWITCHING VALVE)**

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

NG**REPAIR OR REPLACE VACUUM HOSE****OK****18 CHECK HOSE AND TUBE(FUEL TANK – CHARCOAL CANISTER)**

- (a) Check the connection between the fuel tank and fuel EVAP pipe, the fuel EVAP pipe and under-floor fuel tube, the under-floor fuel tube and charcoal canister.
- (b) Check the hose and the tube for cracks, hole and damage.

NG**REPAIR OR REPLACE HOSE AND TUBE****OK****19 INSPECT ECM(VC VOLTAGE)**

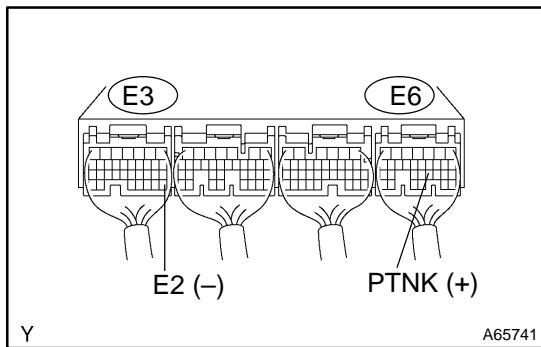
- (a) Turn the ignition switch ON.
- (b) Measure the voltage between the terminals of the E3 ECM connector.

Standard:

Tester Connection	Specified Condition
VC (E3-18) – E2 (E3-28)	4.5 to 5.5 V

NG**REPLACE ECM (See page 10-11)****OK**

20 INSPECT ECM(PTNK VOLTAGE)



- (a) Turn the ignition switch ON.
- (b) Measure the voltage between terminals of the E3 and E6 ECM connectors.
 - (1) Disconnect the vacuum hose from the vapor pressure sensor.

Standard (1):

Tester Connection	Specified Condition
PTNK (E6-21) - E2 (E3-28)	2.9 to 3.7 V

NOTICE:

The vacuum applied to the vapor pressure sensor must be less than 66.7 kPa (500 mmHg, 19.7 in.Hg).

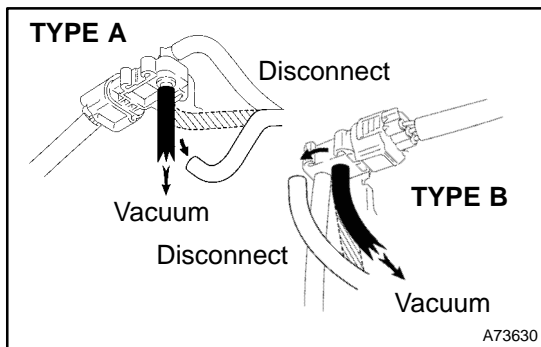
- (2) Using the MITYVAC (Hand-held Vacuum Pump), apply a vacuum of 4.0 kPa (30 mmHg, 1.18 in.Hg) to the vapor pressure sensor.

Standard (2):

Tester Connection	Specified Condition
PTNK (E6-21) - E2 (E3-28)	0.5 V or less

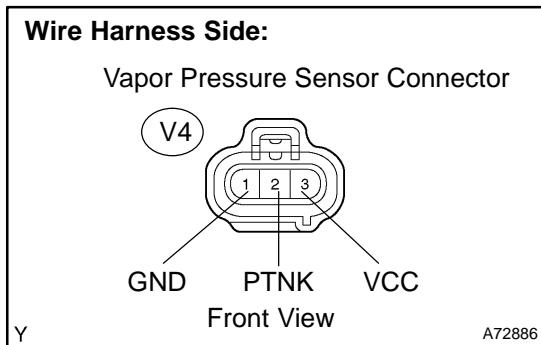
- (3) Reconnect the vacuum hose.

OK → Go to step 22



NG

21 CHECK HARNESS AND CONNECTOR(VAPOR PRESSURE SENSOR - ECM)



- (a) Disconnect the V4 vapor pressure sensor connector.
- (b) Disconnect the E3 and E6 ECM connectors.
- (c) Check the resistance between the wire harness side connectors.

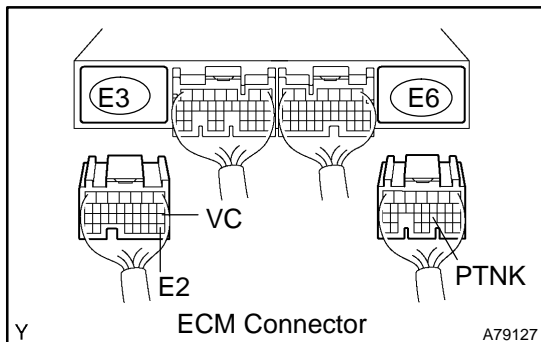
Standard (Check for open):

Tester Connection	Specified Condition
PTNK (V4-2) - PTNK (E6-21)	Below 1 Ω
GND (V4-1) - E2 (E3-28)	
VCC (V4-3) - VC (E3-18)	

Standard (Check for short):

Tester Connection	Specified Condition
PTNK (V4-2) or PTNK (E6-21) - Body ground	10 kΩ or higher
VCC (V4-3) or VC (E3-18) - Body ground	

- (d) Reconnect the vapor pressure sensor connector.
- (e) Reconnect the ECM connectors.



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM (See page 10-11)

22 INSPECT FUEL TANK INLET VALVE ASSY

NG → REPLACE FUEL TANK INLET VALVE ASSY

OK

23 INSPECT FUEL TANK ASSY

NG → REPLACE FUEL TANK ASSY

OK

24 INSPECT CHARCOAL CANISTER ASSY(CRACKS, HOLE AND DAMAGE)

NG → REPAIR OR REPLACE CHARCOAL CANISTER ASSY

OK

REPLACE ECM (See page 10-11)

OBDII scan tool (excluding Hand-held Tester):

1 CHECK FUEL TANK CAP ASSY(CHECK THAT FUEL TANK CAP IS TOYOTA GENUINE PARTS)

NG → REPLACE TO GENUINE PARTS

OK

2 CHECK THAT FUEL TANK CAP IS CORRECTLY INSTALLED

NG → CORRECTLY INSTALL FUEL TANK CAP

OK

3 INSPECT FUEL TANK CAP ASSY (See page 12-1)

NG → REPLACE FUEL TANK CAP ASSY

OK

4	CHECK FILLER NECK FOR DAMAGE
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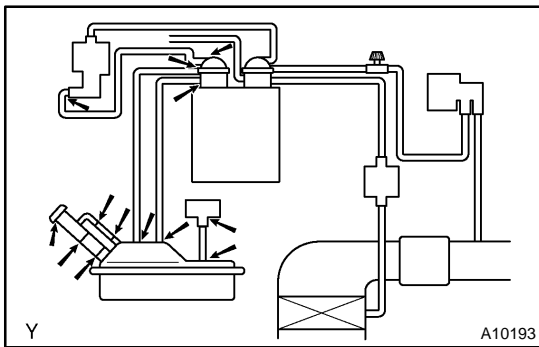
- (a) Remove the fuel tank cap.
 (b) Visually check the fuel inlet pipe for damage.

NG

REPLACE FUEL TANK INLET PIPE SUB-ASSY

OK

5	CHECK FOR EVAPORATIVE EMISSIONS LEAK(NEAR FUEL TANK OR CHARCOAL CANISTER)
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- (a) Check whether hoses close to the fuel tank have been modified, and check if there are signs of any accident near the fuel tank or the charcoal canister.
- (1) Check the following parts for cracks, deformation or loose connection:
- Fuel tank
 - Charcoal canister
 - Fuel tank filler pipe
 - Hoses and tubes around fuel tank and charcoal canister

NG

REPAIR OR REPLACE EVAPORATIVE EMISSIONS LEAK PART

OK

6	CHECK VACUUM HOSES(VAPOR PRESSURE SENSOR – FUEL TANK, CHARCOAL CANISTER – VSV FOR PRESSURE SWITCHING VALVE)
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- (a) Check that the vacuum hose is connected correctly.
 (b) Check the vacuum hose for looseness and disconnection.
 (c) Check the vacuum hose for cracks, hole and damage.

NG

REPAIR OR REPLACE VACUUM HOSE

OK

7	CHECK HOSE AND TUBE(FUEL TANK – CHARCOAL CANISTER)
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- (a) Check the connection between the fuel tank and fuel EVAP pipe, the fuel EVAP pipe and under floor fuel tube, the under floor fuel tube and charcoal canister.
 (b) Check the hose and the tube for cracks, hole and damage.

NG

REPAIR OR REPLACE HOSE AND TUBE

OK

8 CHECK VACUUM HOSES((5), (6), (7), (8) AND (9) IN FIG. 1 IN CIRCUIT DESCRIPTION)

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

NG REPAIR OR REPLACE VACUUM HOSES

OK

9 CHECK EACH VSV CONNECTOR FOR LOOSENESS AND DISCONNECTION(VSV FOR EVAP, VSV FOR CCV, VSV FOR PRESSURE SWITCHING VALVE)

NG REPAIR OR CONNECT VSV AND SENSOR CONNECTOR

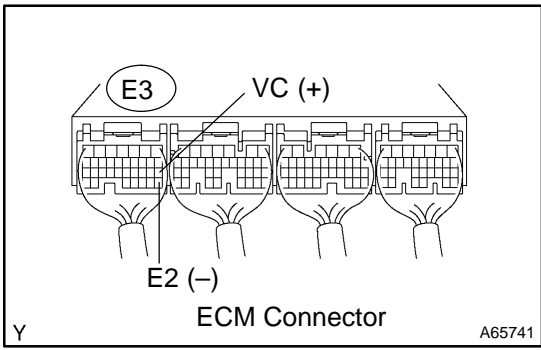
OK

10 INSPECT CHARCOAL CANISTER ASSY(CRACKS, HOLE AND DAMAGE)

NG CHECK AND REPLACE CHARCOAL CANISTER ASSY

OK

11 INSPECT ECM(VC VOLTAGE)



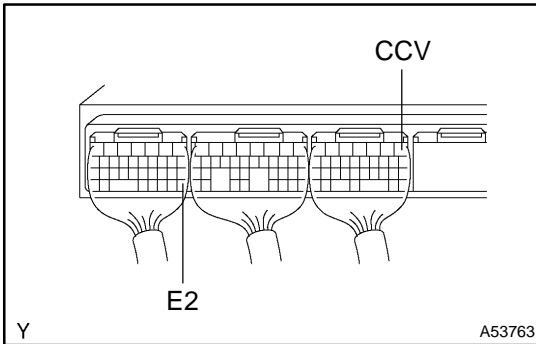
- (a) Turn the ignition switch ON.
 - (b) Measure voltage between the terminals of the E3 ECM connector.
- Standard:**

Tester Connection	Specified Condition
VC (E3-18) – E2 (E3-28)	4.5 to 5.5 V

NG REPLACE ECM (See page 10-11)

OK

17 INSPECT VSV FOR CCV(FUNCTION)



- (a) Turn the ignition switch ON.
- (b) Check the VSV function.
 - (1) Connect between terminals CCV and E2 of the ECM connector (VSV ON).

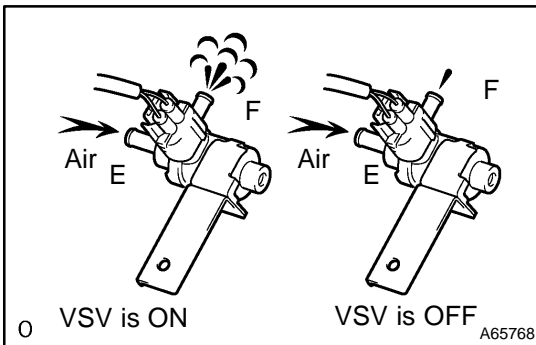
VSV is ON:

Air from port E flows out through port F

- (2) Disconnect between terminals CCV and E2 of the ECM connector (VSV OFF).

VSV is OFF:

Air does not flow from port E to port F



OK → Go to step 20

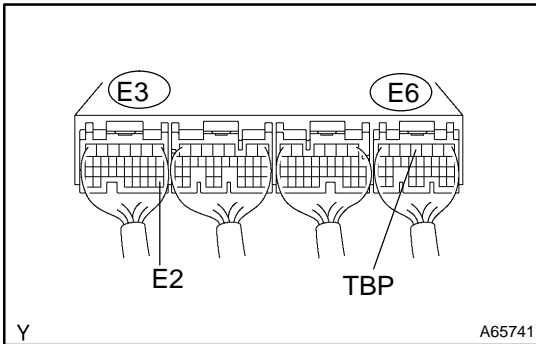
NG

18 INSPECT VSV FOR CCV(OPERATION) (See page 12-6)

NG → REPLACE VSV FOR CCV

OK

20	INSPECT VSV FOR PRESSURE SWITCHING VALVE(FUNCTION)
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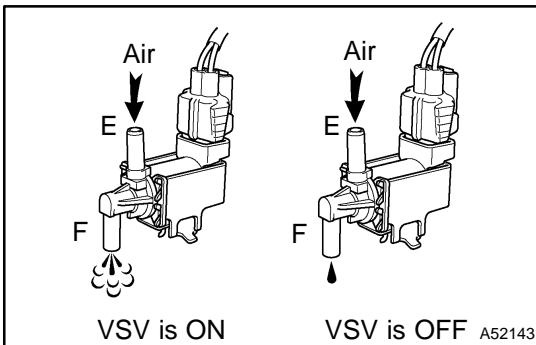


- (a) Turn the ignition switch ON.
- (b) Check the VSV function.
 - (1) Connect between terminals TBP and E2 of the ECM connector (VSV ON).

VSV is ON: Air from port E flows out through port F

- (2) Disconnect between terminals TBP and E2 of the ECM connector (VSV OFF).

VSV is OFF: Air does not flow from port E to port F



OK Go to step 23

NG

21	INSPECT VSV FOR PRESSURE SWITCHING VALVE(OPERATION) (See page 12-6)
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NG REPLACE VSV FOR PRESSURE SWITCHING VALVE

OK

23	INSPECT FUEL TANK INLET VALVE ASSY
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NG	REPLACE FUEL TANK INLET VALVE ASSY
----	------------------------------------

OK

24	INSPECT FUEL TANK ASSY
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NG	REPLACE FUEL TANK ASSY
----	------------------------

OK

IT IS LIKELY THAT VEHICLE USER DID NOT PROPERLY CLOSE FUEL TANK CAP
