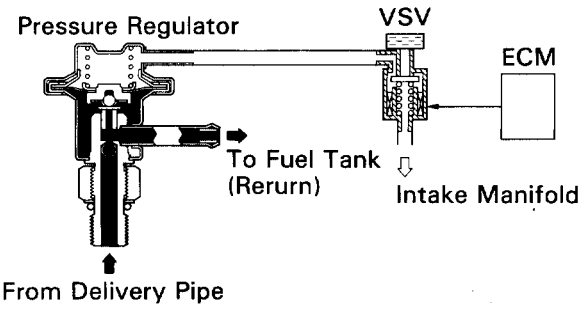
Fuel Pressure Control Circuit

CIRCUIT DESCRIPTION

The ECM turns on a VSV (Vacuum Switching Valve) to draw the air into the diaphragm chamber of the pressure regulator if it detects that the temperature of the engine coolant is too high during engine starting.

The air drawn into the chamber increases the fuel pressure to prevent fuel vapor lock at high engine temperature in order to help the engine start when it is warm.

Fuel pressure control ends approx. 120 sec. after the engine is started.



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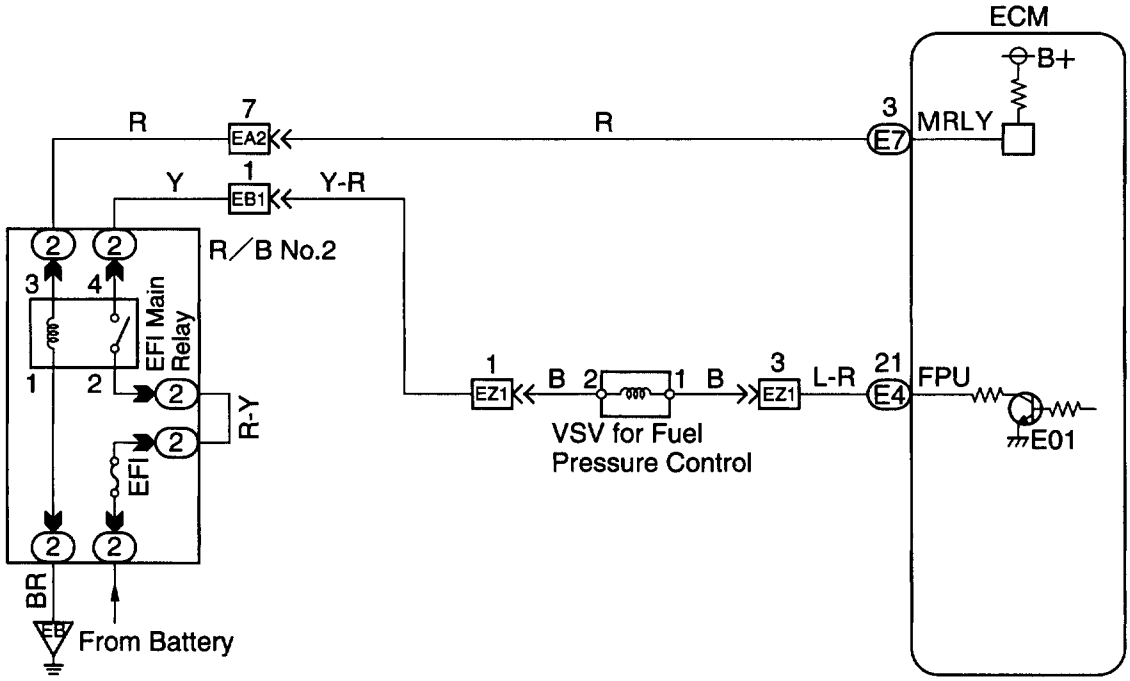
WIRING DIAGRAM



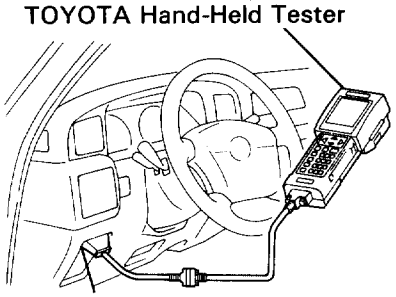
INSPECTION PROCEDURE

Toyota hand–held tester

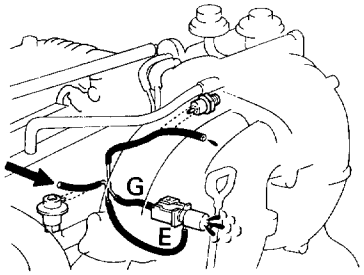
1 Connect the TOYOTA hand–held tester and check operation of VSV for fuel pressure control.

ON

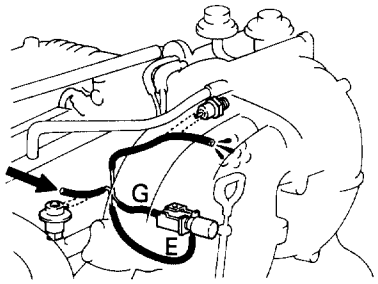
TOYOTA Hand-Held Tester



ON



OFF



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P
(1) Remove the fuse cover on instrument panel.
(2) Connect the TOYOTA hand–held tester to the DLC 3.
(3) Turn ignition switch ON and TOYOTA hand–held tester main switch ON.
(4) Select the ACTIVE TEST mode on the TOYOTA hand–held tester.

C Check operation of VSV when VSV is operated by the TOYOTA hand–held tester.

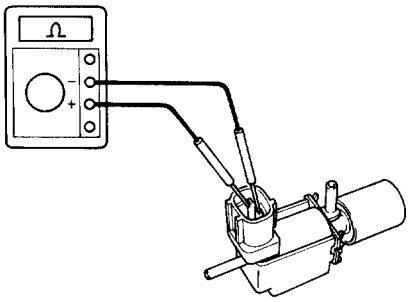
OK
VSV is ON:
Air from pipe E is flowing out through the air filter.

VSV is OFF:
Air from pipe E is flowing out through pipe G.

NG

OK → **Check and repair fuel pressure regulator (See page EG–143).**

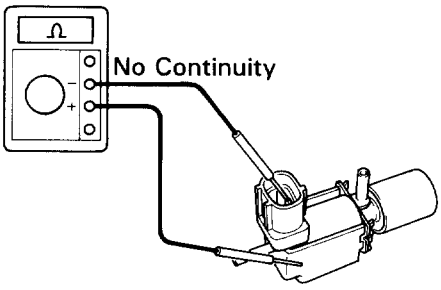
2 Check VSV for fuel pressure control.

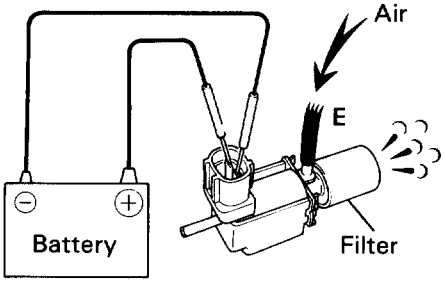


P (1) Remove air intake chamber (See page EG–147).
(2) Disconnect VSV connector.
(3) Remove VSV.

C (1) Measure resistance between terminals.
(2) Measure resistance between each terminal and the body.

OK **(1) Resistance: 37 ~ 44 Ω at 20°C (68°F)**
(2) Resistance: 1 MΩ or higher

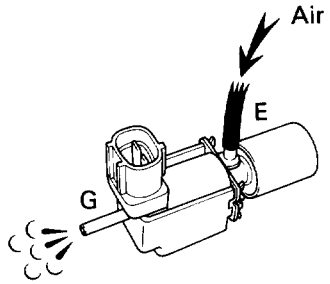




C Check operation of VSV when battery positive voltage is applied and released to the VSV terminals.

OK **Battery positive voltage is applied:**
Air from pipe E is flowing out through the air filter.

Battery positive voltage is not applied:
Air from pipe E is flowing out through pipe G.



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OK

NG **Replace VSV for fuel pressure control.**

3 Check for open and short in harness and connector between EFI main relay and ECM (See page IN–26).

OK

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

Check and replace ECM (See page IN–31).

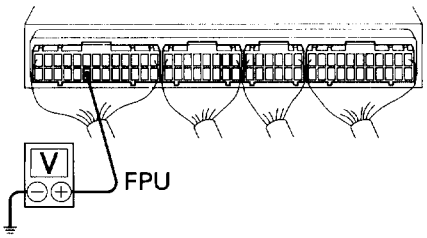
OBDII scan tool (excluding TOYOTA hand–held tester)

1 Check VSV for fuel pressure control (See page EG–347, step [2]).

OK → NG: **Replace VSV for fuel pressure control.**

2 Check voltage between terminal FPU of ECM connector and body ground.

ON



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P (1) Remove instrument panel speaker No. 1 panel (See page EG–173).
(2) Turn ignition switch ON.

C Measure voltage between terminal FPU of ECM connector and body ground.

OK **Voltage: 9 ~ 14 V**

OK → NG: **Check for open and short in harness and connector between EFI main relay and ECM (See page IN–26).**

3 Check fuel pressure regulator (See page EG–143).

OK → NG: **Repair or replace.**

Check and replace ECM (See page IN–31).