DTC P0627/78 FUEL PUMP CONTROL CIRCUIT / OPEN

HINT:
For more information on the supply pump (suction control valve) and the common rail system, refer to the system description (see page 05–422).

CIRCUIT DESCRIPTION

Refer to the system description (see page 05–422).

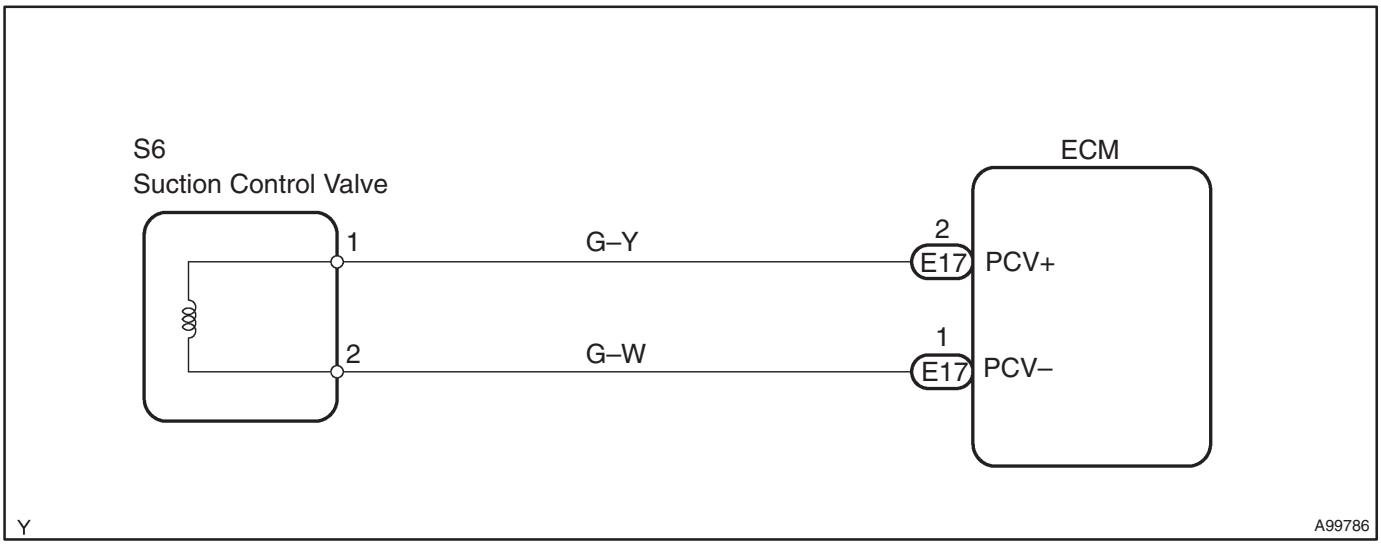
DTC No.	DTC Detection Condition	Trouble Area
P0627/78	Open or short in suction control valve circuit for more than 0.5 seconds (1 trip detection logic)	• Open or short in suction control valve circuit • Suction control valve • ECM

HINT:
When DTC P0627/78 is set, check the internal fuel pressure of the common rail by entering the following menus on the intelligent tester II: Powertrain / Engine / Data List / Fuel Press.

Reference:

Engine Speed	Fuel Pressure
Idling	Approximately 30,000 to 40,000 kPa
3,000 rpm (No engine load)	Approximately 50,000 to 70,000 kPa

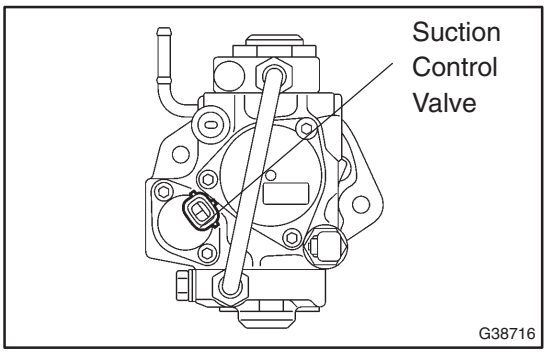
WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
Read freeze frame data using the intelligent tester II. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, and other data from the time the malfunction occurred.

1 INSPECT SUPPLY PUMP ASSY (SUCTION CONTROL VALVE)

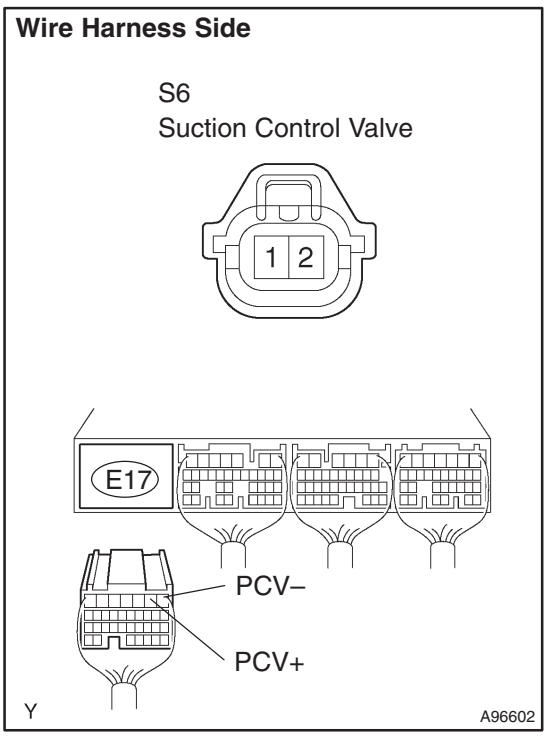


(a) Disconnect the S6 valve connector.
(b) Measure the resistance of the suction control valve.
Standard:
1.9 to 2.3 Ω at 20°C (68°F)

NG → **REPLACE SUPPLY PUMP ASSY**
(See page 11–63)

OK

2 CHECK WIRE HARNESS (SUCTION CONTROL VALVE – ECM)



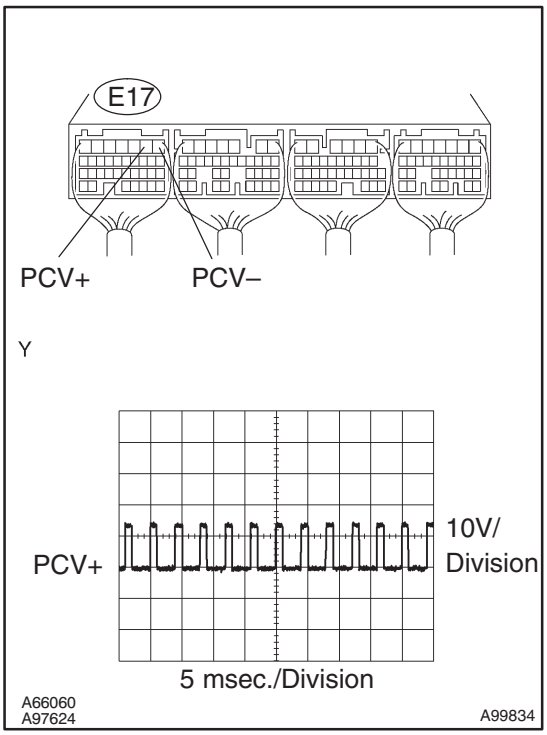
(a) Disconnect the S6 valve connector.
(b) Disconnect the E17 ECM connector.
(c) Measure the resistance of the wire harness side connectors.
Standard:

Tester Connection	Specified Condition
S6–1 – E17–2 (PCV+)	Below 1 Ω
S6–2 – E17–1 (PCV–)	Below 1 Ω
S6–1 or E17–2 (PCV+) – Body ground	10 kΩ or higher
S6–2 or E17–1 (PCV–) – Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

3 CHECK ECM (PCV SIGNAL)



(a) While cranking or idling the engine, check the waveform of the ECM connector using an oscilloscope.

Standard:

Tester Connection	Specified Condition
E17–2 (PCV+) – E17–1 (PCV–)	Correct waveform is shown

NG → **REPLACE ECM (See Pub. No. RM990E, page 10–34)**

NOTICE:
After replacing the ECM, allow for ECM learning start the engine and idle it until it is fully warmed up.

OK

CHECK FOR INTERMITTENT PROBLEMS (See page 05–439)