

DTC	P1229	FUEL PUMP SYSTEM
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HINT:

- If DTC P1229 is detected, P0093 (Fuel leaks in high-pressurized areas) may be detected simultaneously. This may be due to the extremely high internal fuel pressure in the common rail opening the pressure limiter, and the ECM interpreting this as a fault and setting P0093.
- For more information on the supply pump (suction control valve) and the common rail system, see [page 05-432](#).
- If P1229 is present, refer to the diagnostic trouble codes (DTCs) table for the fuel system on [page 05-432](#).

CIRCUIT DESCRIPTION

Refer to the system description on [page 05-432](#).

DTC No.	DTC Detection Condition	Trouble Area
P1229	<ul style="list-style-type: none"> • Fuel over-feed • Internal fuel pressure is beyond the target fuel pressure despite the ECM closing the suction control valve (1 trip detection logic) 	<ul style="list-style-type: none"> • Short in supply pump (Suction control valve) circuit • Supply pump (Suction control valve) • Supply pump (Suction control valve stuck opened) • ECM

HINT:

When DTC P1229 is detected, check the internal fuel rail pressure of the common rail by selecting Powertrain / Engine and ECT / Data List / Common Rail Pressure on the intelligent tester II.

Reference:

Engine Speed	Fuel Pressure (MPa)
Idling	Approximately 20 to 40
2,500 rpm (No engine load)	Approximately 40 to 80

MONITOR DESCRIPTION**P1229 (Fuel over-feed):**

The ECM will set this DTC if the actual fuel pressure inside the common rail stays higher than the target fuel pressure. This DTC represents a possibility that the suction control valve is stuck open, or there is short in its circuit.

If this DTC is present, the ECM enters fail-safe mode and limits the engine power. The fail-safe mode continues until the ignition switch is turned to OFF.

MONITOR STRATEGY

Required sensors	Fuel pressure sensor
Frequency of operation	Continuous
Duration	1 minute
MIL operation	1 driving cycle

TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
Engine speed	600 rpm	–
The monitor will not run if the fuel pressure sensor is malfunctioning		

TYPICAL MALFUNCTION THRESHOLDS

Threshold
Internal fuel pressure of the common rail stays higher than the target fuel pressure

WIRING DIAGRAM

Refer to DTC P0200 on [page 05-499](#).

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the intelligent tester. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, and other data from the time the malfunction occurred.

1 CHECK OTHER DTC OUTPUT (IN ADDITION TO DTC P1229)

- Connect the intelligent tester to the DLC3.
- Turn the ignition switch to ON and turn the intelligent tester ON.
- Select the following menu items: Powertrain / Engine and ECT / DTC.
- Read DTCs.

Result:

Display (DTC Output)	Proceed To
P1229	A
P1229 and other DTCs	B

HINT:

If any DTCs other than P1229 are output, troubleshoot those DTCs first.

B

GO TO RELEVANT DTC CHART
(See [page 05-458](#))

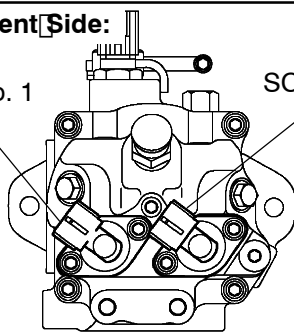
A

2 INSPECT INJECTION OR SUPPLY PUMP ASSY (SUCTION CONTROL VALVE)

Component Side:

SCV No. 1

SCV No. 2



Y

A62207

- Disconnect the S6 and S7 suction control valve connectors.
- Measure the resistance between the terminals of the suction control valve No. 1 and suction control valve No. 2.
Standard: 1.5 to 1.7 Ω at 20°C (68°F)
- Reconnect the suction control valve connectors.

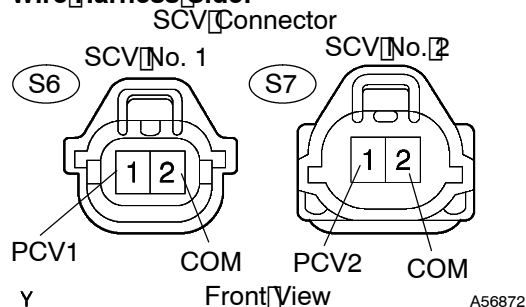
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REPLACE INJECTION OR SUPPLY PUMP ASSY (SCV) (See page 11-31 of Pub. No. RM864E AVENSIS VERSO/ PICNIC REPAIR MANUAL)

OK

3 CHECK HARNESS AND CONNECTOR (SUCTION CONTROL VALVE - ECM)

Wire Harness Side:



- Disconnect the S6 and S7 suction control valve connectors.
- Disconnect the E11 ECM connector.
- Check the resistance.

Standard (Check for open):

Tester Connection	Specified Condition
PCV1 (S6-1) - PCV1 (E11-9)	Below 1 Ω
PCV2 (S7-1) - PCV2 (E11-8)	
COM (S6-2) - COM (E11-7)	
COM (S7-2) - COM (E11-7)	

Standard (Check for short):

Tester Connection	Specified Condition
PCV1 (S6-1) or PCV1 (E11-9) - Body Ground	10 k Ω or higher
PCV2 (S7-1) or PCV2 (E11-8) - Body Ground	
COM (S6-2) or COM (E11-7) - Body Ground	
COM (S7-2) or COM (E11-7) - Body Ground	

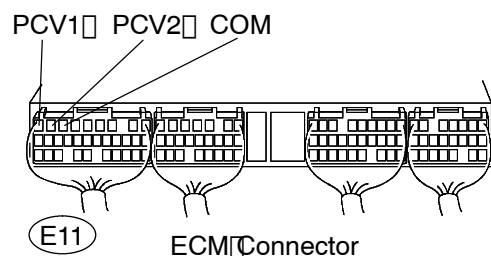
- Reconnect the ECM connector.
- Reconnect the suction control valve connectors.

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REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

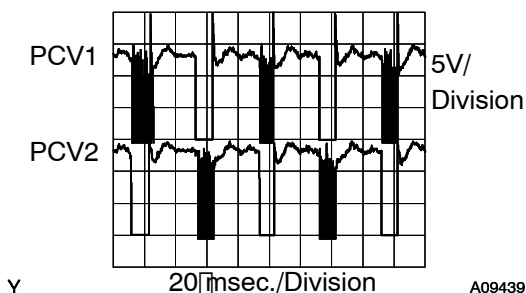
4 INSPECT ECM (PCV VOLTAGE)



- Inspect using the oscilloscope.
- During cranking or idling, check the waveform between the specified terminals of the E11 ECM connector.

Standard

Tester Connection	Specified Condition
PCV1 (S6-1) - COM (E11-7)	Correct waveform is as shown
PCV2 (S7-1) - COM (E11-7)	



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REPLACE ECM (See page 10-30)

OK

5 READ OUTPUT DTC

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON and turn the intelligent tester ON.
- (c) Select the following menu items: Powertrain / Engine and ECT / DTC / Clear.
- (d) Clear the DTC(s).
- (e) Drive the vehicle at 50 km/h (31 mph) for 5 minutes.
- (f) Select the following menu items: Powertrain / Engine and ECT / DTC.
- (g) Read DTCs.

Result:

Display (DTC Output)	Proceed To
P1229	A
No output	B

B
CHECK FOR INTERMITTENT PROBLEMS
 (See page 05-440)
A
6 REPLACE INJECTION OR SUPPLY PUMP ASSY (SUCTION CONTROL VALVE)
 (See page 11-31 of Pub. No. RM864E AVENSIS VERSO/ PICNIC REPAIR MANUAL)
GO**CHECK IF DTC OUTPUT RECURS (DTC P1229 OUTPUT AGAIN)****HINT:**

After clearing the DTC, drive the vehicle at 50 km/h (31 mph) for 5 minutes, and then confirm that P1229 is not set again.