DTC	C0278/11	OPEN OR SHORT CIRCUIT IN ABS SOLENOID RELAY CIRCUIT

DTC	C0279/12	+B SHORT CIRCUIT IN ABS SOLENOID RELAY CIRCUIT

CIRCUIT DESCRIPTION

The ABS solenoid relay is built in the master cylinder solenoid. This relay supplies power to each ABS solenoid. If the initial check is OK, after the ignition switch is turned to the ON position, the relay goes on.

DTC No.	DTC Detection Condition	Trouble Area
C0278/11	When either of the following conditions is detected: 1. Both of the following conditions continue for at least 0.2 seconds. • IG voltage is between 9.5 and 17 V. • Relay contact is open when the relay is ON. 2. Both of the following conditions continue for at least 0.2 seconds. • IG voltage is 9.5 V or less when the relay is ON. • Relay contact remains open.	• ABS SOL fuse • ABS solenoid relay • ABS solenoid relay circuit • Master cylinder solenoid
C0279/12	The following condition continues for at least 0.2 seconds. • Relay contact is closed immediately after turning IG switch to the ON position when the relay is OFF.	• ABS SOL fuse • ABS solenoid relay • ABS solenoid relay circuit • Master cylinder solenoid

WIRING DIAGRAM

Refer to DTC C0226/21, C0236/22, C0246/23, C0256/24, C1225/25, C1226/26, C1227/27, and C1228/28 on page 05–797.

INSPECTION PROCEDURE

NOTICE:

When replacing the master cylinder solenoid, perform zero point calibration (see page 05–744).

1	INSPECT FUSE (ABS SOL FUSE)

(a) Remove the ABS SOL fuse from the engine room R/B.

(b) Check the ABS SOL fuse.

Standard:

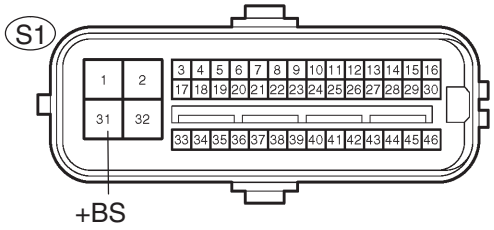
Below 1 Ω

NG → **CHECK FOR SHORT IN ALL HARNESS AND CONNECTOR CONNECTED TO FUSE AND REPLACE FUSE**

OK

2 INSPECT SKID CONTROL ECU (+BS TERMINAL VOLTAGE)

Skid Control ECU (Wire Harness Side)
Connector Front View:



(a) Install the ABS SOL fuse.
(b) Disconnect the skid control ECU connector.
(c) Measure the voltage according to the value(s) in the table below.

Standard:

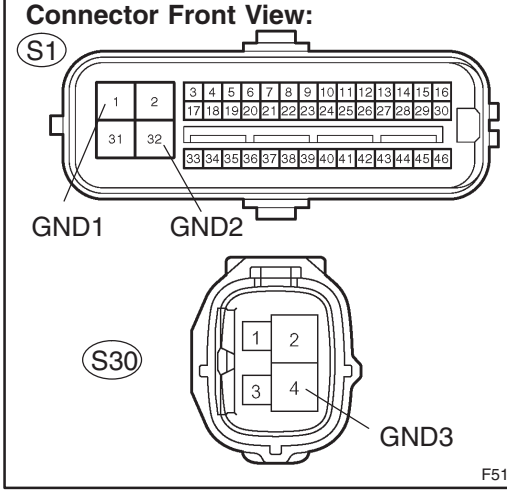
Tester Connection	Condition	Specified Condition
S1–31 (+BS) – Body ground	Always	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (+BS CIRCUIT)**

OK

3 INSPECT SKID CONTROL ECU (GND TERMINAL CONTINUITY)

Skid Control ECU (Wire Harness Side)
Connector Front View:



(a) Disconnect the skid control ECU (S30) connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Specified Condition
S1–1 (GND1) – Body ground	Below 1 Ω
S1–32 (GND2) – Body ground	Below 1 Ω
S30–4 (GND3) – Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (GND CIRCUIT)**

OK

4	RECONFIRM DTC

HINT:
These codes are detected when a problem is determined in the master cylinder solenoid.
The ABS solenoid relay is in the master cylinder solenoid.
Therefore, solenoid relay circuit inspection and relay unit inspection cannot be performed. Be sure to check if any DTC is output before replacing the master cylinder solenoid.
(a) Clear the DTCs (see page 05–766).
(b) Check if the same DTCs are detected (see page 05–766).
HINT:
Reinstall the sensors, connectors, etc. and restore the previous vehicle conditions before rechecking for DTCs.
Result:

DTC is output	A
DTC is not output	B

B → END

A

REPLACE MASTER CYLINDER SOLENOID (SEE PAGE 32–12)