DTC	C0278/11	OPEN CIRCUIT IN ABS SOLENOID RELAY CIRCUIT

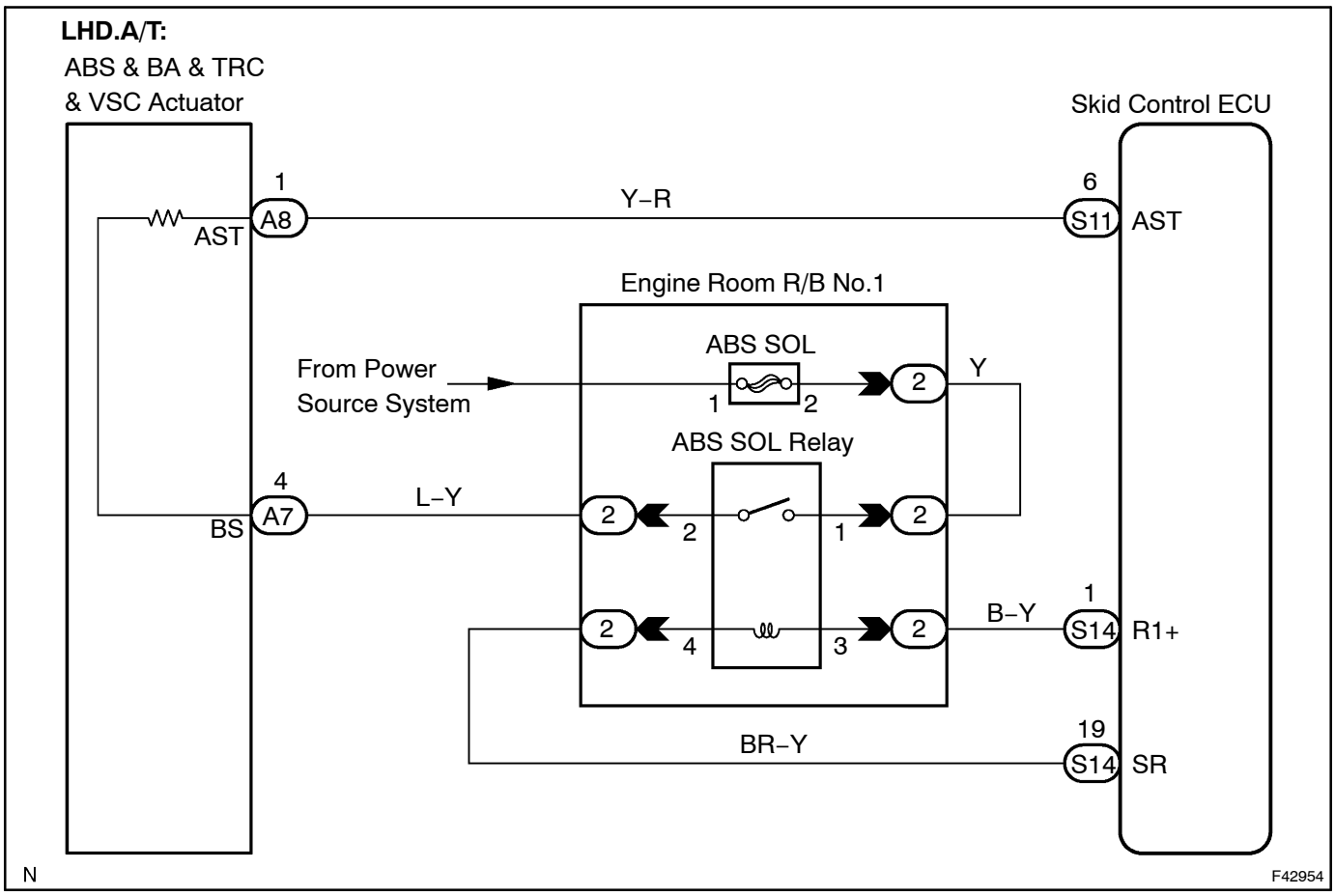
DTC	C0279/12	SHORT CIRCUIT IN ABS SOLENOID RELAY CIRCUIT

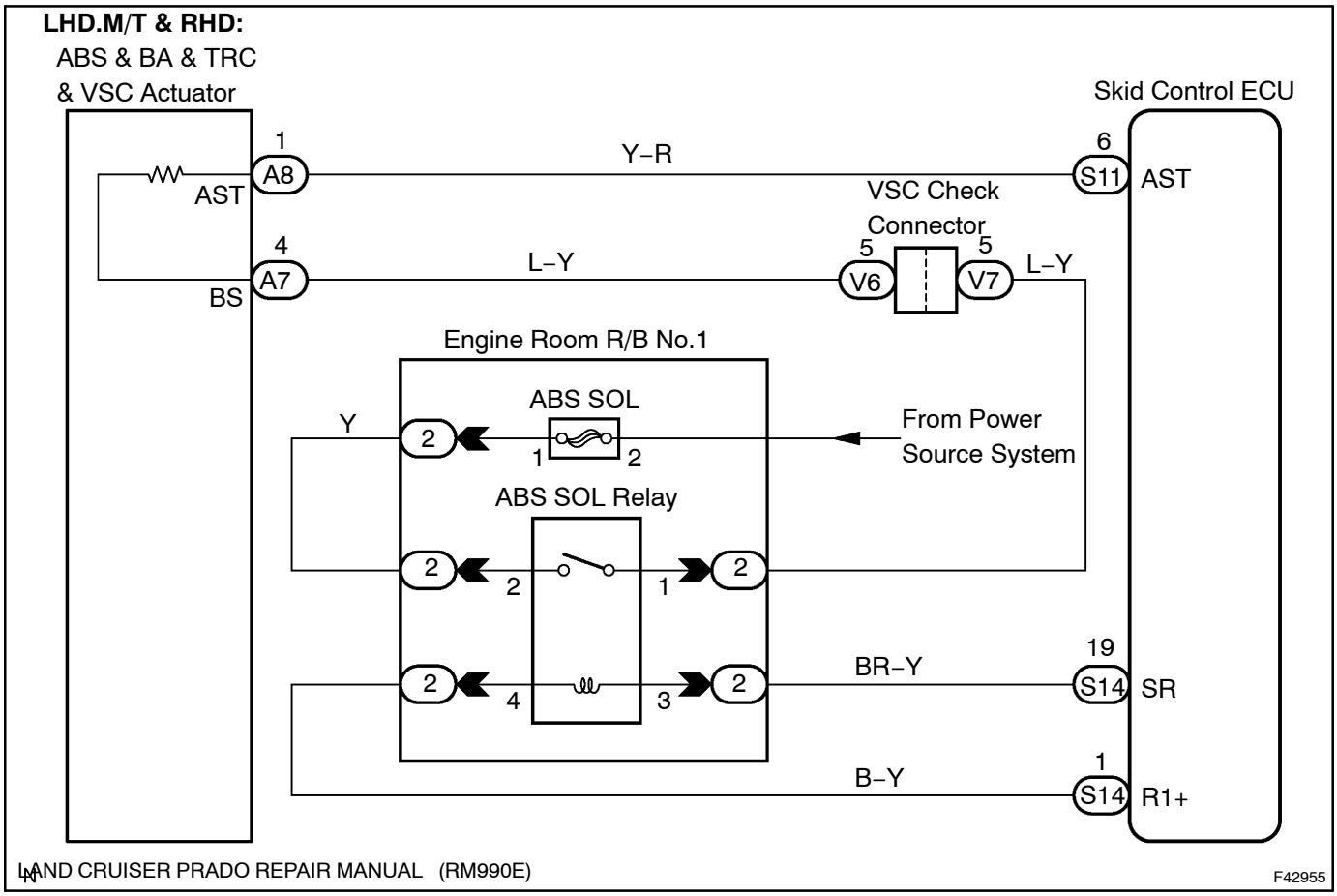
CIRCUIT DESCRIPTION

This relay supplies power to each ABS solenoid. After the ignition switch is turned ON, if the initial check is OK, the relay goes on.

DTC No.	DTC Detecting Condition	Trouble Area
C0278/11	Conditions 1. and 2. continue for 0.2 sec. or more: 1. ECU terminal IG1 voltage is 9.5 V to 17.0 V and the solenoid relay is ON, however, the contact point of the solenoid relay is OFF. 2. With solenoid relay ON, ECU terminal IG1voltage becomes 9.5 V or less and the contact point of the solenoid relay does not become ON.	• ABS solenoid relay • ABS solenoid relay circuit
C0279/12	Immediately after ECU terminal IG1 becomes ON, and solenoid relay is OFF, however, when the condition that the solenoid relay due to the contact point is ON continues for 0.2 sec. or more.	

WIRING DIAGRAM





INSPECTION PROCEDURE

HINT:
Start the inspection from step 1 in case of using the hand–held tester and start from step 2 in case of not using the hand–held tester.

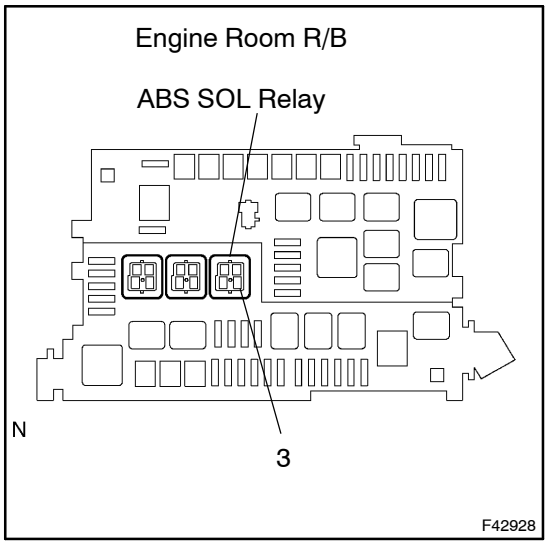
1	PERFORM ACTIVE TEST BY SKID CONTROL RELAY

(a) Check the operation sound of the ABS SOL relay when operating it with the hand–held tester.
OK:
The operation sound of the ABS SOL relay should be heard.

OK	Go to step 4

NG

2	INSPECT ENGINE ROOM RELAY BLOCK

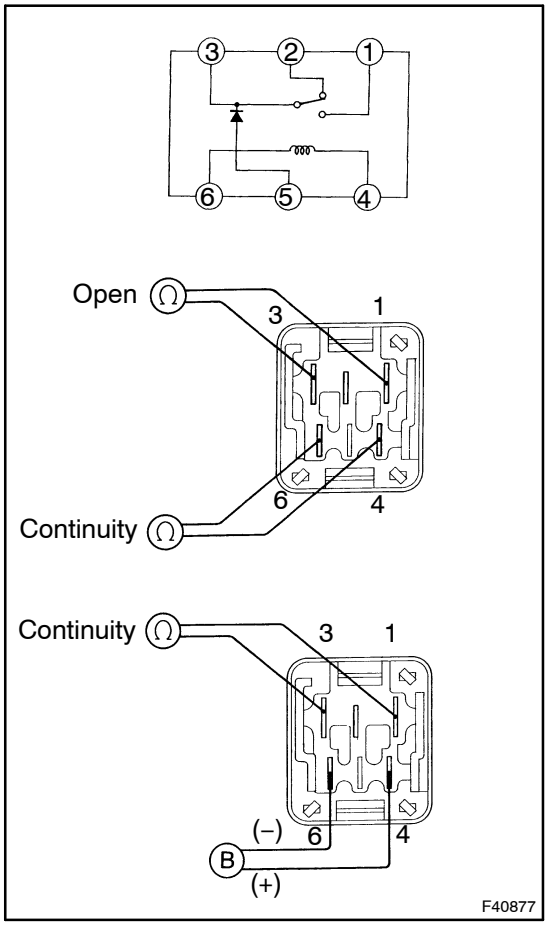


(a) Remove the ABS SOL relay from the engine room R/B.
(b) Measure the voltage between terminal 3 of engine room R/B (for ABS SOL relay) and body ground.
OK:
Voltage: 10 – 14V

NG	CHECK AND REPLACE HARNESS AND CONNECTOR

OK

3 CHECK SKID CONTROL RELAY



(a) Check continuity between each terminal of ABS SOL relay.

OK:

Terminals 4 and 6	Continuity (Reference value 80 Ω)
Terminals 1 and 3	Open

(b) Apply battery positive voltage between terminals 4 and 6.

(c) Check continuity between each terminal of ABS SOL relay.

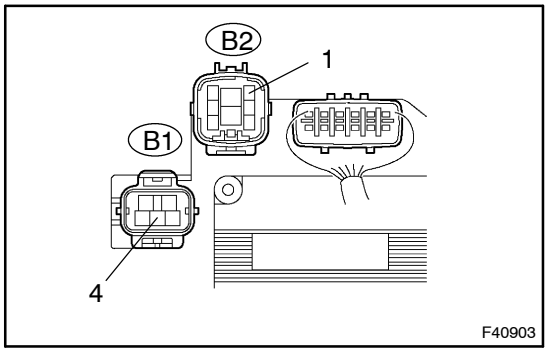
OK:

Terminals 1 and 3	Continuity

NG → **REPLACE SKID CONTROL RELAY**

OK

4 INSPECT BRAKE MASTER CYLINDER



(a) Disconnect the 2 connectors (B1 and B2) from the brake master cylinder.

(b) Check continuity between terminal B1 – 4 and B2 – 1 of brake master cylinder.

OK:

Continuity

HINT:

This is a resistance of 30 – 36 Ω

NG → **REPLACE BRAKE MASTER CYLINDER**

OK

5	CHECK HARNESS AND CONNECTOR(ENGINE ROOM R/B – BRAKE MASTER CYLINDER)

(a) Check for open and short circuit in harness and connector between terminal BS of brake master cylinder and engine room R/B (See page 01–36).

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

6	CHECK HARNESS AND CONNECTOR(BRAKE MASTER CYLINDER – SKID CONTROL ECU)

(a) Check for open and short circuit in harness and connector between terminal AST of brake master cylinder and skid control ECU (See page 01–36).

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

CHECK EACH CONNECTION IF SAME CODE IS STILL OUTPUT AFTER DTC DELETION (IF NORMAL, THE SKID CONTROL ECU MAY BE DEFECTIVE)