DTC	C0278/11	OPEN CIRCUIT IN ABS SOLENOID RELAY CIRCUIT

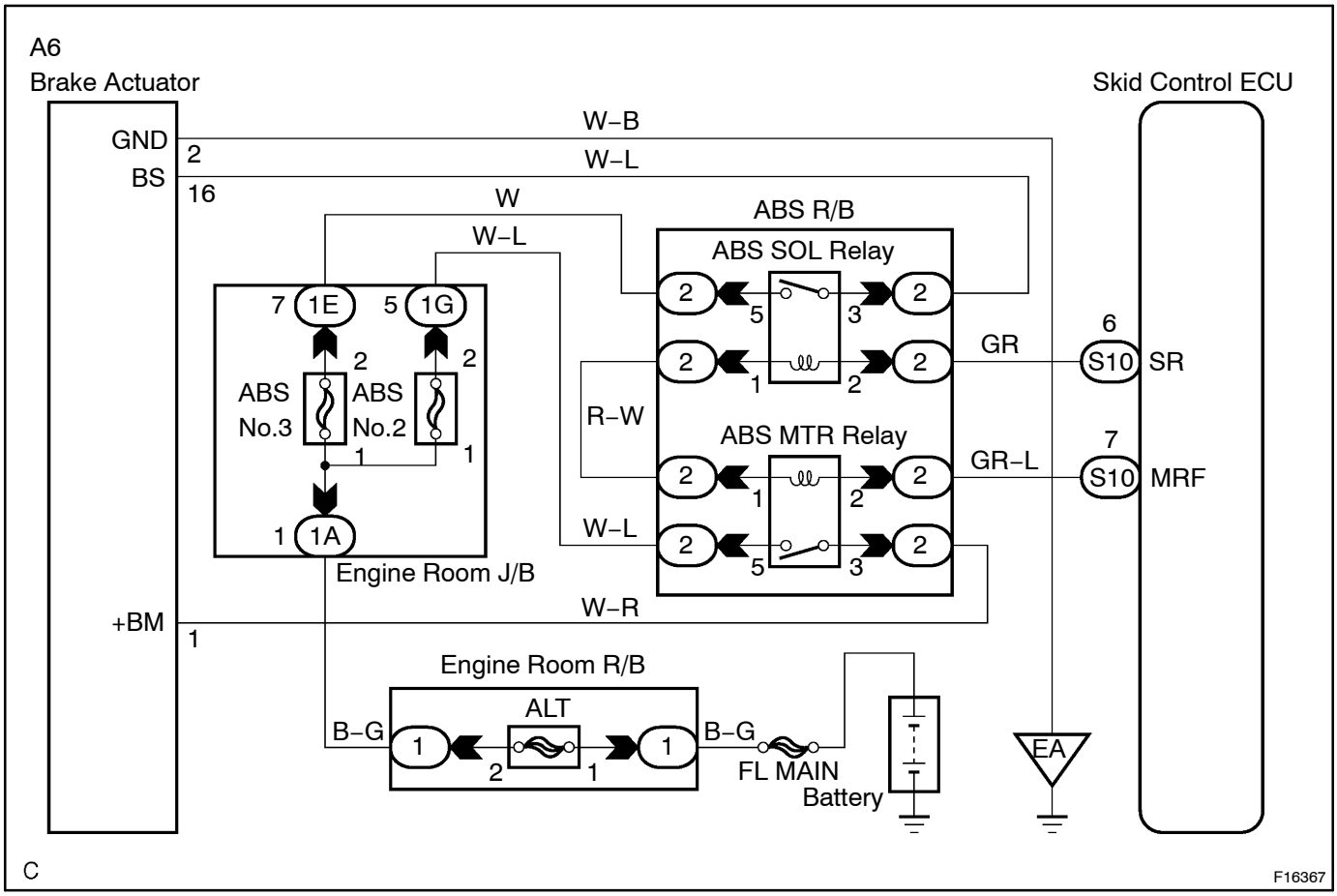
DTC	C0279/12	SHORT CIRCUIT IN ABS SOLENOID RELAY CIRCUIT

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 18.5 V and the solenoid relay is ON, however the contact point of the solenoid relay is OFF. 2. With solenoid relay ON driving, ECU terminal IG1 voltage 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 the condition that the contact point of the solenoid relay 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.

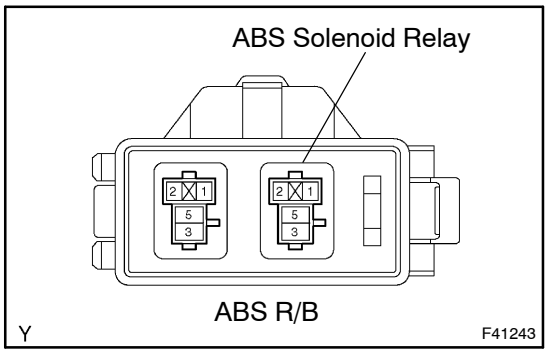
1	PERFORM ACTIVE TEST BY HAND–HELD TESTER(ABS SOLENOID RELAY OPERATION)

(a) Select the item ”ABS SOL RELAY” in the ACTIVE TEST and operate the ABS solenoid relay on the hand–held tester.
(b) Check the operation sound of the ABS solenoid relay when operating it with the hand–held tester.
OK:
The operation sound of the ABS solenoid relay should be heard.

OK → **Go to step 4**

NG

2	CHECK TERMINAL VOLTAGE(ABS SOLENOID RELAY TERMINAL 5 OF ABS R/B)

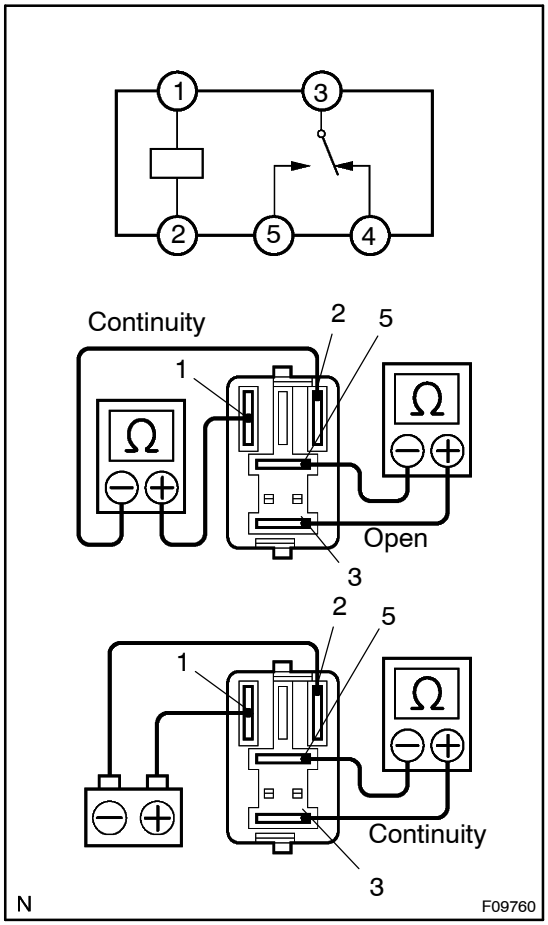


(a) Remove the ABS solenoid relay from ABS R/B .
(b) Measure the voltage between terminal 5 of ABS R/B (for ABS solenoid relay) and body ground.
OK: 10 – 14 V

NG → **Go to step 8**

OK

3 INSPECT ABS SOLENOIDO RELAY



(a) Check continuity between each terminal of ABS solenoid relay.
OK:

Terminals 1 and 2	Continuity (Reference value 62 Ω)
Terminals 3 and 5	Open

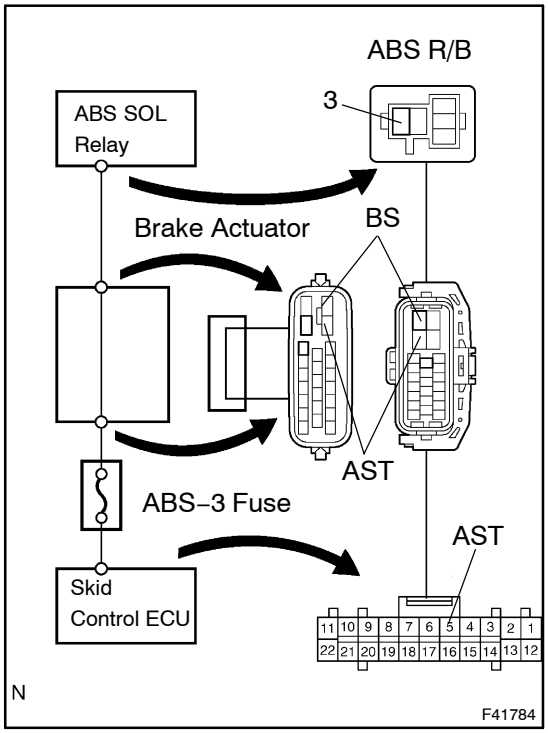
(b) Apply battery positive voltage between terminals 1 and 2.
(c) Check continuity between terminals 3 and 5 of ABS solenoid relay.
OK:

Terminals 3 and 5	Continuity

NG → **REPLACE ABS SOLENOIDO RELAY**

OK

4	CHECK CONTINUITY(ABS SOLENOID RELAY – SKID CONTROL ECU ASSY)



(a) Disconnect the connector from the skid control ECU.
(b) Check continuity between terminal 3 of ABS R/B (for ABS solenoid relay) and terminal AST of skid control ECU
OK: Continuity

OK	CHECK AND REPLACE BRAKE ACTUATOR ASSY

NG

5	CHECK HARNESS AND CONNECTOR(ABS SOLENOID RELAY – SKID CONTROL ECU ASSY)(See page 01–31)

NG	REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6	RECONFIRM DTC(See page 05–451)

A	Malfunction Code
B	Normal Code

B	END

A

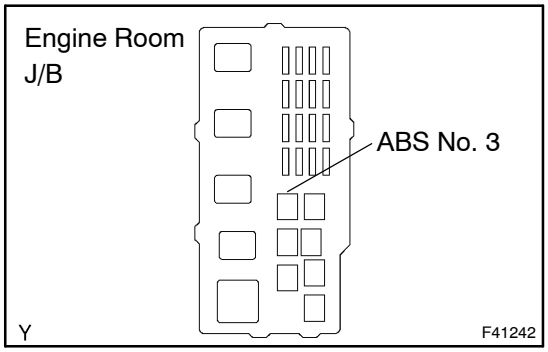
7	CHECK CONTACT CONDITION(EACH CONNECTION)

OK	CHECK AND REPLACE SKID CONTROL ECU ASSY

NG

CHECK AND REPAIR HARNESS AND CONNECTOR

8	INSPECT FUSE(ABS NO.3 OF ENGINE ROOM J/B)



(a) Remove ABS No. 3 fuse from the engine room J/B.
(b) Check continuity of fuse.
OK: Continuity

NG → **REPLACE FUSE**

OK

CHECK AND REPAIR HARNESS OR CONNECTOR