DTC	C0273/13	OPEN CIRCUIT IN ABS MOTOR RELAY CIRCUIT

DTC	C0274/14	B+ SHORT CIRCUIT IN ABS MOTOR RELAY CIRCUIT

CIRCUIT DESCRIPTION

The ABS motor relay (Marking: ABS MTR) supplies power to the ABS pump motor. While the ABS is activated, the ECU switches the motor relay ON and operates the ABS pump motor.

DTC No.	DTC Detection Condition	Trouble Area
C0273/13	Conditions 1. and 2. continue for 0.2 sec. or more: 1. ECU terminal IG1 voltage is 19 V to 36 V in initial check or ABS operation, and motor relay is ON, however, the contact point of the motor relay is OFF 2. ECU terminal IG1 is 19 V or less, and motor relay is ON, but contact point of the motor relay does not become ON	• ABS motor relay(Marking: ABS MTR) • ABS motor relay circuit • Battery
C0274/14	When motor relay is OFF and terminal MT open for 4 sec. or more, condition that contact point of motor relay is ON continues for 4 sec. or more	

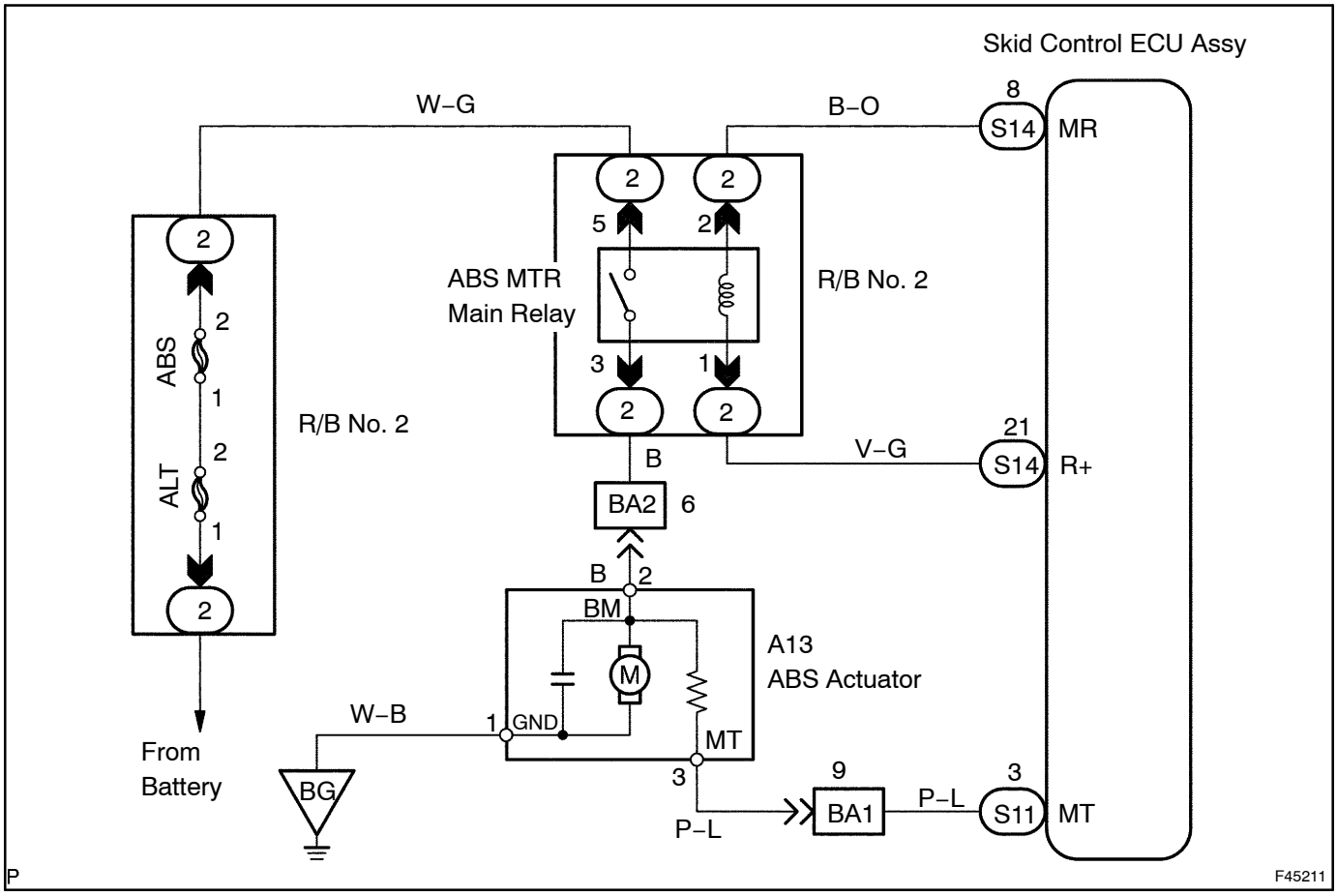
Fail–safe function:

If any trouble occurs in the ABS motor relay circuit, the ECU will cut off the current to the ABS solenoid relay and prohibit the ABS controls and BRAKE ASSIST.

HINT:

If the brake pedal is depressed firmly, the brake force may be lowered.

WIRING DIAGRAM



INSPECTION PROCEDURE

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

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

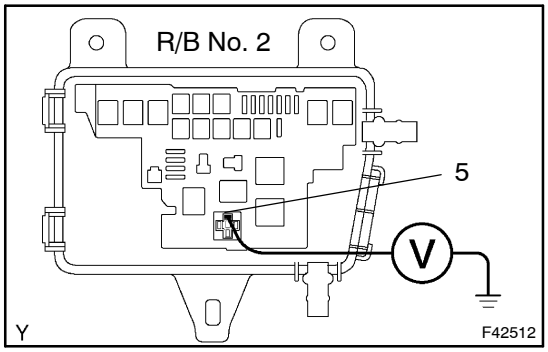
(a) Select the item ”ABS MOT RELAY” in the ACTIVE TEST and operate the ABS motor relay using the hand–held tester.

(b) Check the operation sound of the ABS motor relay using the hand–held tester.
Standard:
The operation sound of the ABS pump motor is heard.

OK → **Go to step 4**

NG

2 CHECK ABS MOTOR RELAY (VOLTAGE)

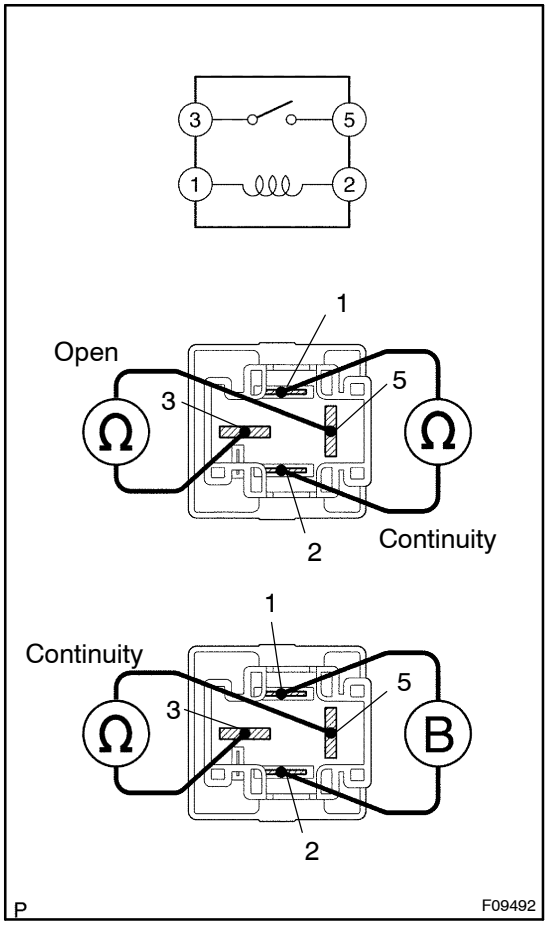


(a) Remove the ABS motor main relay from the R/B No. 2.
(b) Measure the voltage between terminal 5 of the R/B No. 2 (for ABS motor relay) and the body ground.
Standard:
Voltage: 20 – 28 V

NG → **Go to step 8**

OK

3 INSPECT ABS MOTOR RELAY (ABS MTR)



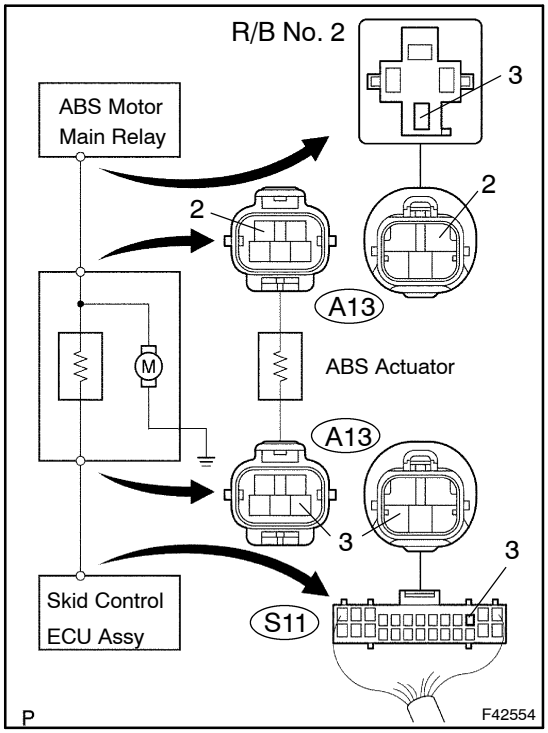
(a) Remove the ABS motor main relay from the R/B No. 2.
(b) Check the relay continuity.
Standard:

Terminal No.	Condition	Specified Condition
1 ⇔ 2	Constant	Continuity (Reference value 150 ± 30 Ω)
3 ⇔ 5	Apply B+ between terminals 1 and 2	Continuity

NG → **REPLACE ABS MOTOR RELAY**

OK

4	CHECK WIRE HARNESS (ABS MOTOR RELAY ⇔ SKID CONTROL ECU ASSY)



(a) Check the continuity between terminal 3 of the R/B No. 2 (for ABS motor relay) and terminal MT (S11–3) of the skid control ECU.

Standard: Continuity

HINT:

There is a resistance of 33 ± 1.65 Ω between terminals A13–2 and 3 of the ABS actuator.

NG → **REPAIR OR REPLACE HARNESS, CONNECTOR OR ABS ACTUATOR**

OK

5	CHECK WIRE HARNESS (ABS MOTOR RELAY ⇔ SKID CONTROL ECU ASSY)

(a) Check for open and short circuit in the harness and connector between the relay and S14 ECU connectors (See page 01–27).

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

OK

6	RECONFIRM DTC

(a) Check the DTC (See page 05–205).

HINT:

After erasing the DTC and driving the vehicle more than 7 km/h (4 mph), Check for DTC.

A	Malfunction Code
B	Normal Code

B → NO PROBLEM

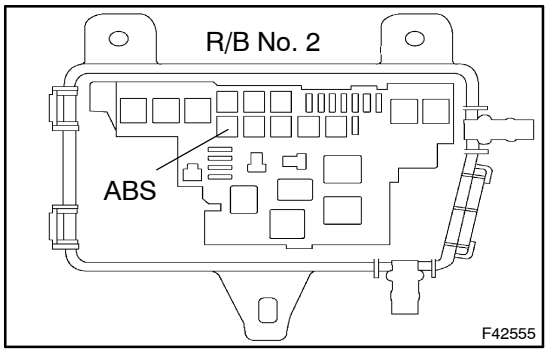
A

7	CHECK CONTACT CONDITION (EACH CONNECTION)

OK → CHECK AND REPLACE SKID CONTROL ECU ASSY (See page 01–27)

NG

8	CHECK FUSE (ABS)



(a) Remove the ABS fuse from the R/B No. 2.

(b) Check the continuity.

Standard: Continuity

NG → REPLACE FUSE

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR