DTC	C0273/13	Open or Short Circuit in ABS Motor Relay Circuit

DTC	C0274/14	Short to B+ in ABS Motor Relay Circuit

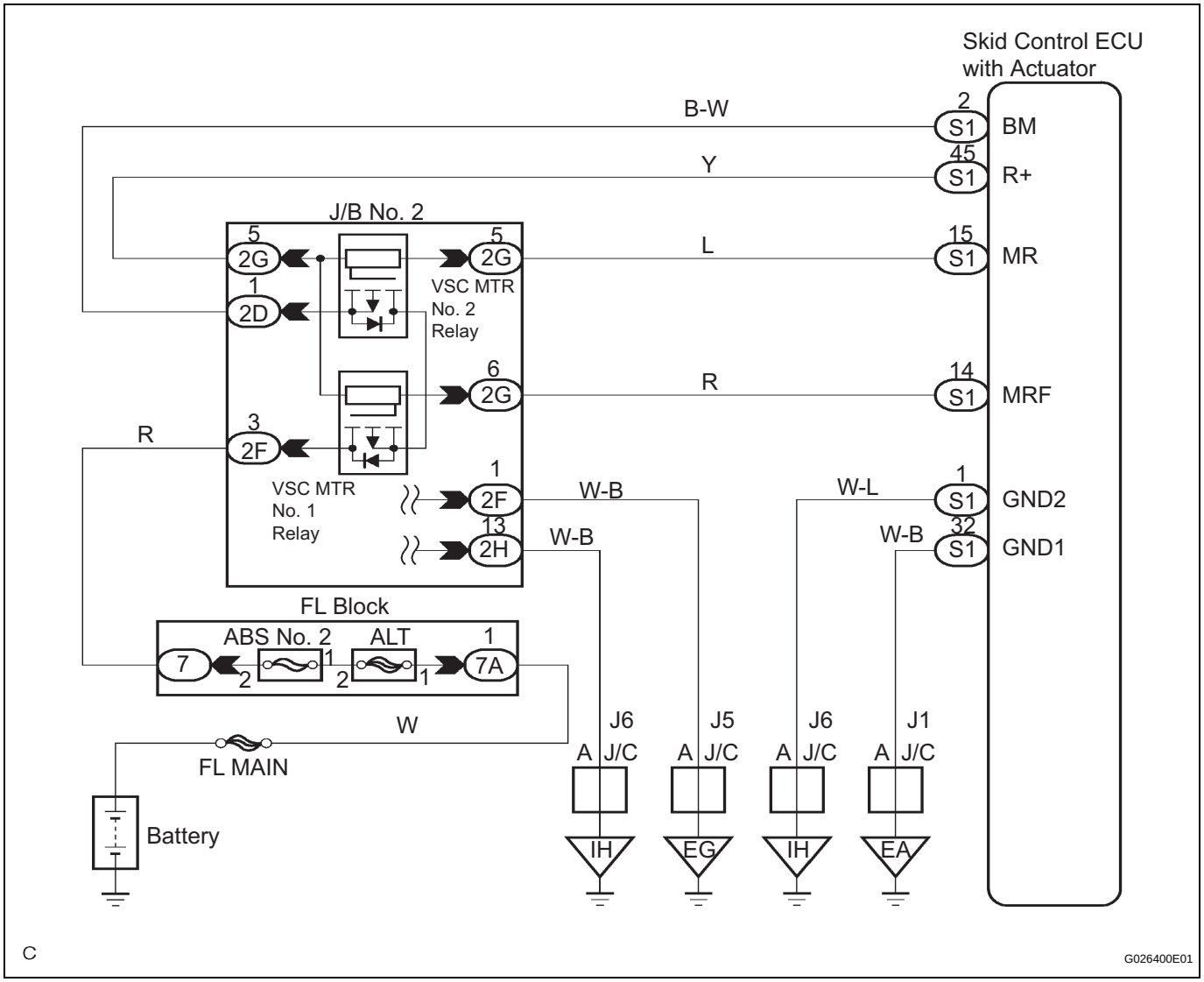
DTC	C1361/91	Short Circuit in ABS Motor Fail Safe Relay Circuit

DESCRIPTION

- The ABS motor relays consist of the 2 semiconductor relays and are included in the J/B No. 2.
- The ABS motor relay 1 is turned on after turning the ignition switch to the ON position. If the DTCs in the ABS pump motor circuit are memorized, the ABS motor relay 1cuts off the power supply to the ABS motor relay 2 and performs the fail safe.
- While any of the ABS, BA, TRAC and VSC is operating, the skid control ECU (included in the actuator) turns the ABS motor relay 2 on to operate the actuator pump motor.
- If the voltage applied to the ABS motor relays (+BM) drops below the condition that detects the DTCs due to the shortage of the battery or alternator output, the DTCs may be memorized.

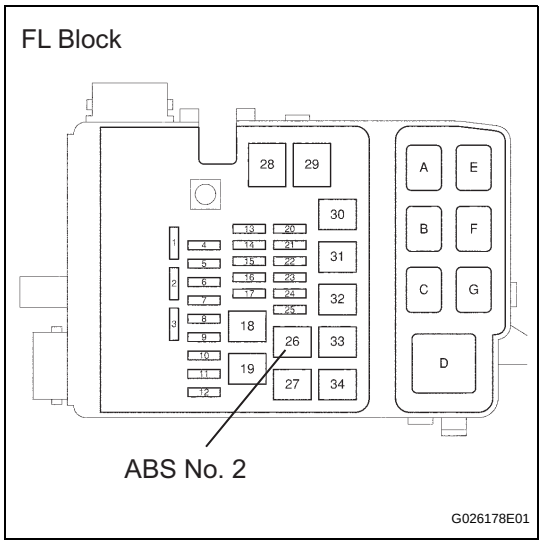
DTC No.	DTC Detection Condition	Trouble Area
C0273/13	• With IG1 terminal voltage at 9.5 to 17.2 V, during initial check, ABS control, TRAC control, VSC control and BA control, when ABS motor relay is turned on and the relay contact is "OFF" for 0.12 sec. or more. • With IG1 terminal voltage at 9.5 V or less, when ABS motor relay is turned on and the relay contact is not "ON" for 0.12 sec. or more.	• ABS No. 2 fuse • ABS MTR relay • ABS MTR relay circuit • J/B No. 2
C0274/14	when ABS motor relay is turned off, contact is "ON" for 4 sec. or more.	
C1361/91	Immediately after IG1 terminal is turned on, when ABS motor fail safe relay is tuned of and the relay contact is "ON" for 4 sec. or more.	

WIRING DIAGRAM



1	**INSPECT FUSE**

(a) Remove the ABS No. 2 fuse from the FL block.



(b) Measure the resistance according to the value(s) in the table below.

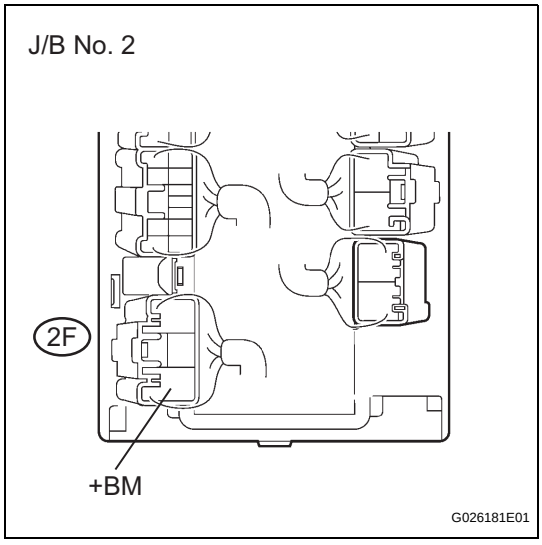
Resistance

Tester Connection	Specified Condition
ABS No. 2 fuse	Below 1 Ω

NG → **REPLACE FUSE**

OK

2 CHECK ENGINE ROOM JUNCTION BLOCK



(a) With the ignition switch OFF, remove the J/B No. 2 with the wire harness still connected.

(b) Measure the voltage according to the value(s) in the table below.

Voltage

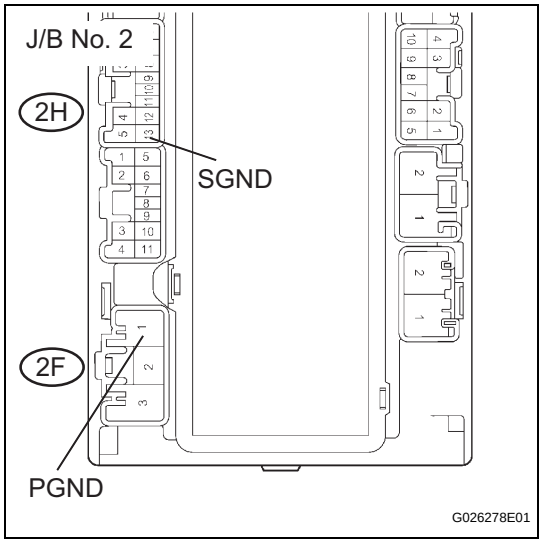
Tester Connection	Specified Condition
2F-3 (+BM) - Body ground	10 to 14 V

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

OK

3 CHECK ENGINE ROOM JUNCTION BLOCK

(a) With the ignition switch off, remove the J/B No. 2 with the wire harness still connected.



(b) Measure the resistance according to the value(s) in the table below.

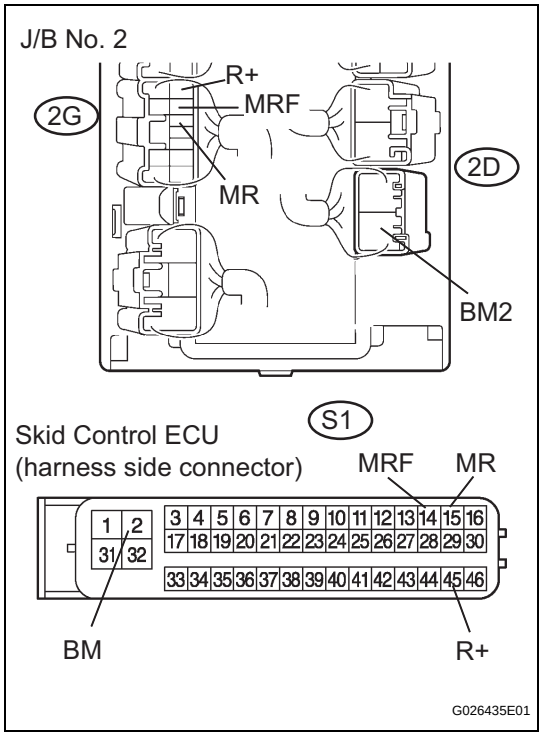
Resistance

Tester Connection	Specified Condition
2F-1 (PGND) - Body ground	Below 1 Ω
2H-13 (SGND) - Body ground	

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

OK

4 CHECK WIRE HARNESS



(a) With the ignition switch OFF, disconnect the skid control ECU connector S1 and the J/B No. 2 connectors.

(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Specified Condition
S1-45 (R+) - 2G-5 (R+)	Below 1 Ω
S1-14 (MRF) - 2G-6 (MRF)	
S1-15 (MR) - 2G-7 (R+)	
S1-2 (BM) - 2D-1 (BM2)	

(c) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Specified Condition
S1-45 (R+) - Body ground	10 kΩ or higher
S1-14 (MRF) - Body ground	
S1-15 (MR) - Body ground	
S1-2 (BM) - Body ground	

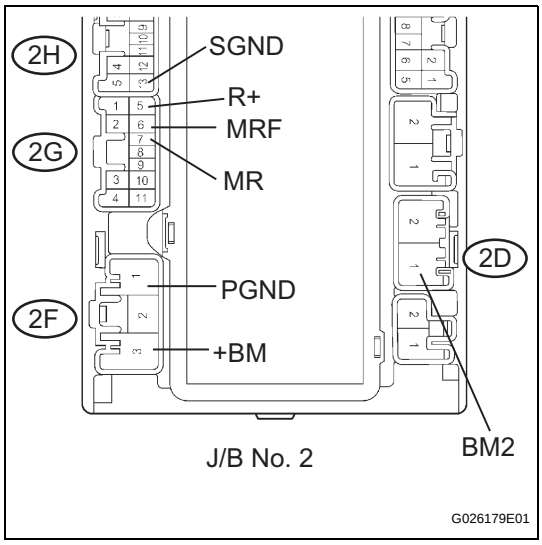
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5 CHECK JUNCTION BLOCK NO.2

(a) With the ignition switch off, remove the J/B No. 2.

BC



(b) Connect the battery positive lead to terminal +BM of the J/B No. 2 and the negative lead to terminal SGND, PGND, MRF and MR.

Battery lead Connection	Specified Condition
2F-3 (+BM)	Positive
2H-13 (SGND)	Negative
2F-1 (PGND)	Negative
2G-6 (MRF)	Negative
2G-7 (MR)	Negative

(c) Measure the voltage according to the value(s) in the table below.
Voltage

Tester Connection	Specified Condition
2D-1 (BM2) - Battery negative terminal	**0 V**

(d) Connect the battery positive lead to terminal R+ of the J/B No. 2 in addition to terminal +BM.

Battery lead Connection	Specified Condition
2G-5 (R+)	Positive

(e) Measure the voltage according to the value(s) in the table below.
Voltage

Tester Connection	Specified Condition
2D-1 (BM2) - Battery negative terminal	**10 to 14 V**

NG → **REPLACE JUNCTION BLOCK NO.2**

OK

6 RECONFIRM DTC

(a) Clear the DTCs.
(b) Drive the vehicle at a speed of 6 km/h (4 mph) or more.
(c) Check if the same DTCs are recorded. (See page BC-21)

Result

Result	Proceed to
DTC is output	**A**
DTC is not output	**B**

HINT:
- The skid control ECU inspects the motor relay circuit when the stop light switch is turned off and the vehicle is running at a speed of 6 km/h (4mph) or more.
- It is suspect that the DTCs output was caused by the poor connection of the connector terminal.

B → **END**

A

REPLACE JUNCTION BLOCK NO.2