

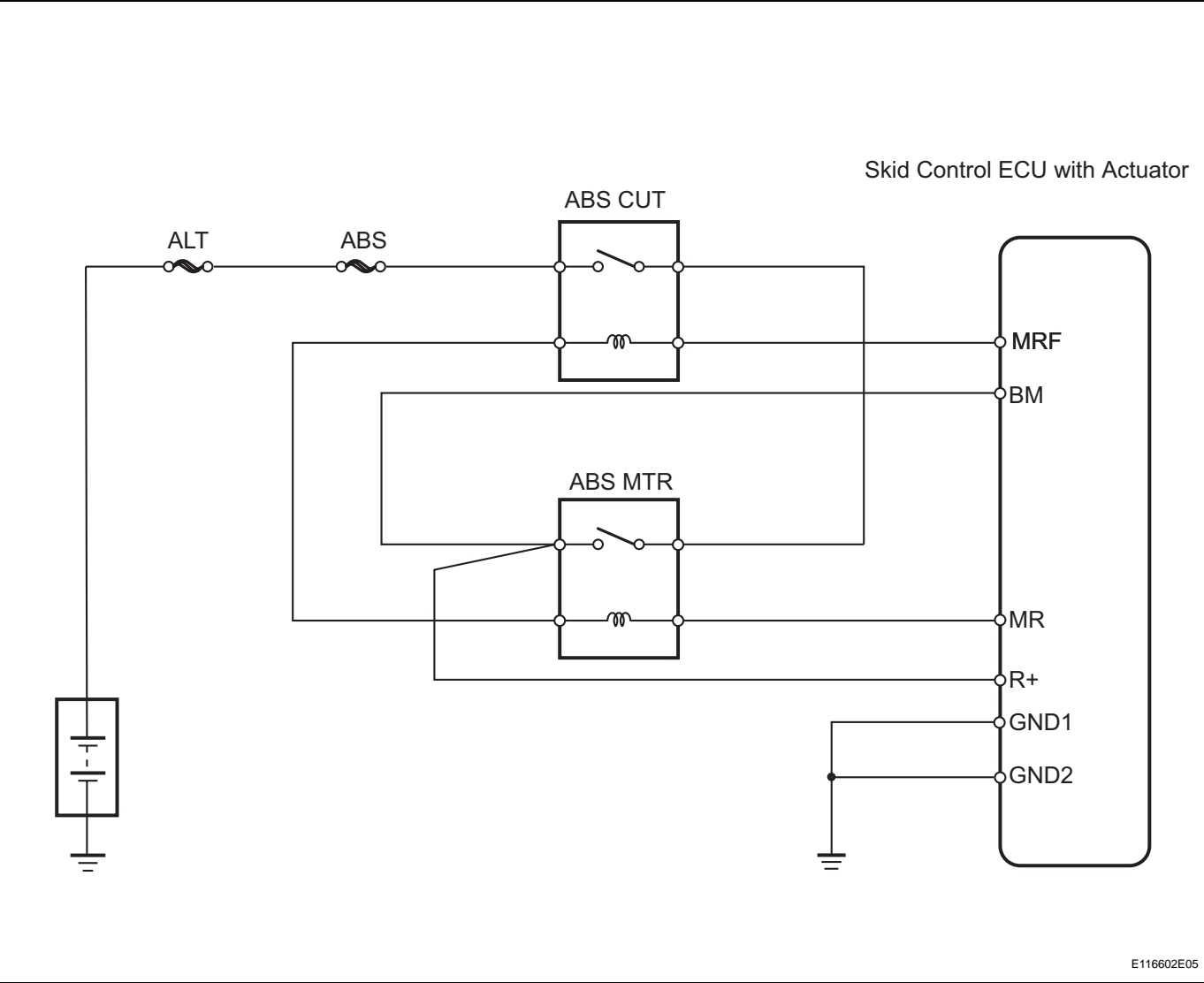
DTC	C0273/13	Open in ABS Motor Relay Circuit
DTC	C0274/14	Short to B+ in ABS Motor Relay Circuit
DTC	C1361/91	Short Circuit in ABS Motor Fail Safe Relay Circuit

DESCRIPTION

The ABS MTR relay supplies power to the ABS pump motor. While the ABS is activated, the ECU turns the ABS MTR relay ON and operates the ABS pump motor.

DTC No.	DTC Detection Condition	Trouble Area
C0273/13	When any of the following (1 or 2) is detected: 1. All of following conditions continue for 0.12 seconds or more – IG1 terminal voltage is between 9.5 to 17.2 V – During initial check or ABS, BA, TRAC, and VSC are in operation – Relay contact is open when relay is ON 2. Both of following conditions continue for 0.12 seconds or more – IG1 terminal voltage is 9.5 V or less – Relay contact remains open when relay is ON	<ul style="list-style-type: none"> • ABS MTR relay • ABS MTR relay circuit • ABS MTR relay power source circuit • ABS NO. 2 H-fuse
C0274/14	When motor relay is OFF, motor relay remains closed for 4 seconds or more	<ul style="list-style-type: none"> • ABS MTR relay • ABS MTR relay circuit • ABS MTR relay power source circuit • ABS NO. 2 H-fuse
C1361/91	All of following conditions continue for at least 4 seconds: <ul style="list-style-type: none"> • Immediately after turning ignition switch ON • Relay contact is closed when fail-safe relay is OFF 	<ul style="list-style-type: none"> • ABS MTR relay • ABS MTR relay circuit • ABS MTR relay power source circuit • ABS NO. 2 H-fuse

WIRING DIAGRAM



1

CHOOSE DIAGNOSIS METHOD

(a) Choose the diagnosis MTRhod.

MTRhod

MTRhod	Proceed to
Using intelligent tester	A
Not using intelligent tester	B

A

B

Go to step 3

2

PERFORM ACTIVE TEST BY INTELLIGENT TESTER (ABS MOTOR RELAY)

(a) Select the ACTIVE TEST, generate a control command, and then check that the ABS motor relay operates.

Skid control ECU with actuator

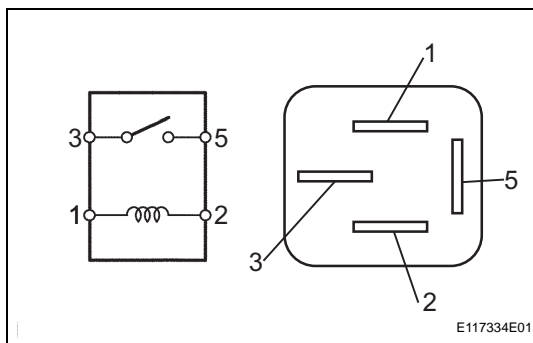
Item	Measurement Item / Range (Display)	Diagnostic Note
ABS MOT RELAY	Turns ABS motor relay ON / OFF	Operation sound of motor can be heard

OK:**Operation sound of motor can be heard.****HINT:**

When replacing the skid control ECU with actuator, perform the zero point calibration (see page [BC-11](#)).

OK**REPLACE BRAKE ACTUATOR ASSEMBLY****NG****3****INSPECT FUSE (ABS, ALT)**

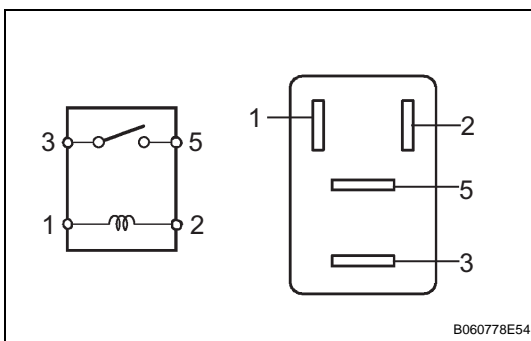
- Remove the ABS and ALT H-fuses from the fusible link block.
- Measure the resistance of the H-fuses.

Standard resistance:**Below 1 Ω** **NG****REPLACE FUSE****OK****4****INSPECT RELAY (Marking: ABS MTR)**

- Remove the ABS MTR relay from the ABS relay block.
- Measure the resistance of the relay.

Standard resistance

Tester Connection	Specified Condition
3 - 5	10 k Ω or higher
	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

NG**REPLACE RELAY****OK****5****INSPECT RELAY (Marking: ABS CUT)**

- Remove the ABS CUT relay from the ABS relay block.
- Measure the resistance of the relay.

Standard resistance

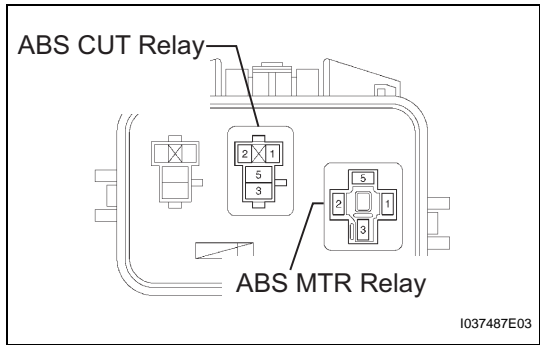
Tester Connection	Specified Condition
3 - 5	10 k Ω or higher
	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

NG**REPLACE RELAY**

OK

6

CHECK WIRE HARNESS (ABS CUT RELAY - ABS MTR RELAY AND BATTERY)



- (a) Remove the ABS CUT relay and ABS MTR relay from the ABS relay block.
- (b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
ABS CUT relay terminal 5 - Body ground	10 to 14 V

- (c) Measure the resistance of the wire harness side connector.
Standard resistance

Tester Connection	Specified Condition
ABS CUT relay terminal 3 - ABS MTR relay terminal 5	Below 1 Ω
ABS CUT relay terminal 1 - ABS MTR relay terminal 1	

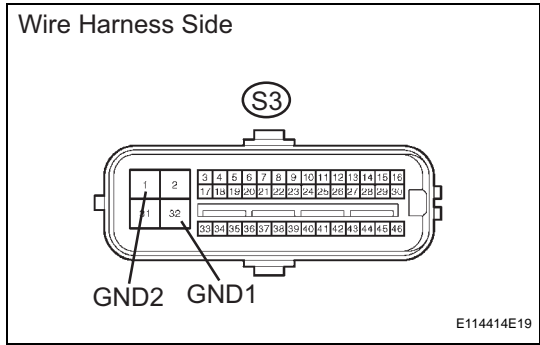
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

7

CHECK WIRE HARNESS (SKID CONTROL ECU - BODY GROUND)



- (a) Disconnect the S3 ECU connector.
- (b) Measure the resistance of the wire harness side connector.
Standard resistance

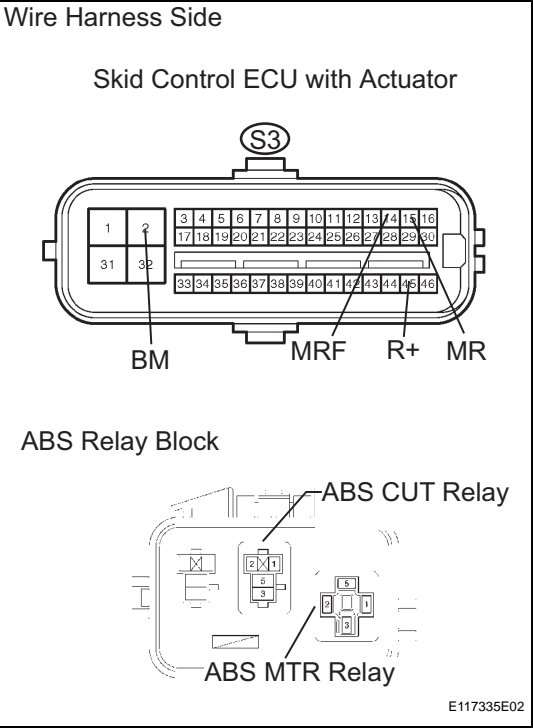
Tester Connection	Specified Condition
S3-32 (GND1) - Body ground	Below 1 Ω
S3-1 (GND2) - Body ground	

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

8 CHECK WIRE HARNESS (SKID CONTROL ECU - ABS CUT RELAY AND ABS MTR RELAY)



- (a) Disconnect the S3 ECU connector.
 (b) Remove the ABS CUT relay and ABS MTR relay from the ABS relay block.
 (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
S3-14 (MRF) - ABS CUT relay terminal 2	Below 1 Ω
S3-2 (BM) - ABS MTR relay terminal 3	
S3-15 (MR) - ABS MTR relay terminal 2	
S3-45 (R+) - ABS MTR relay terminal 3	

HINT:
 When replacing the skid control ECU with actuator, perform the zero point calibration (see page [BC-11](#)).

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE BRAKE ACTUATOR ASSEMBLY