DTC	C1252/52	Brake Booster Pump Motor on Time Abnormally Long

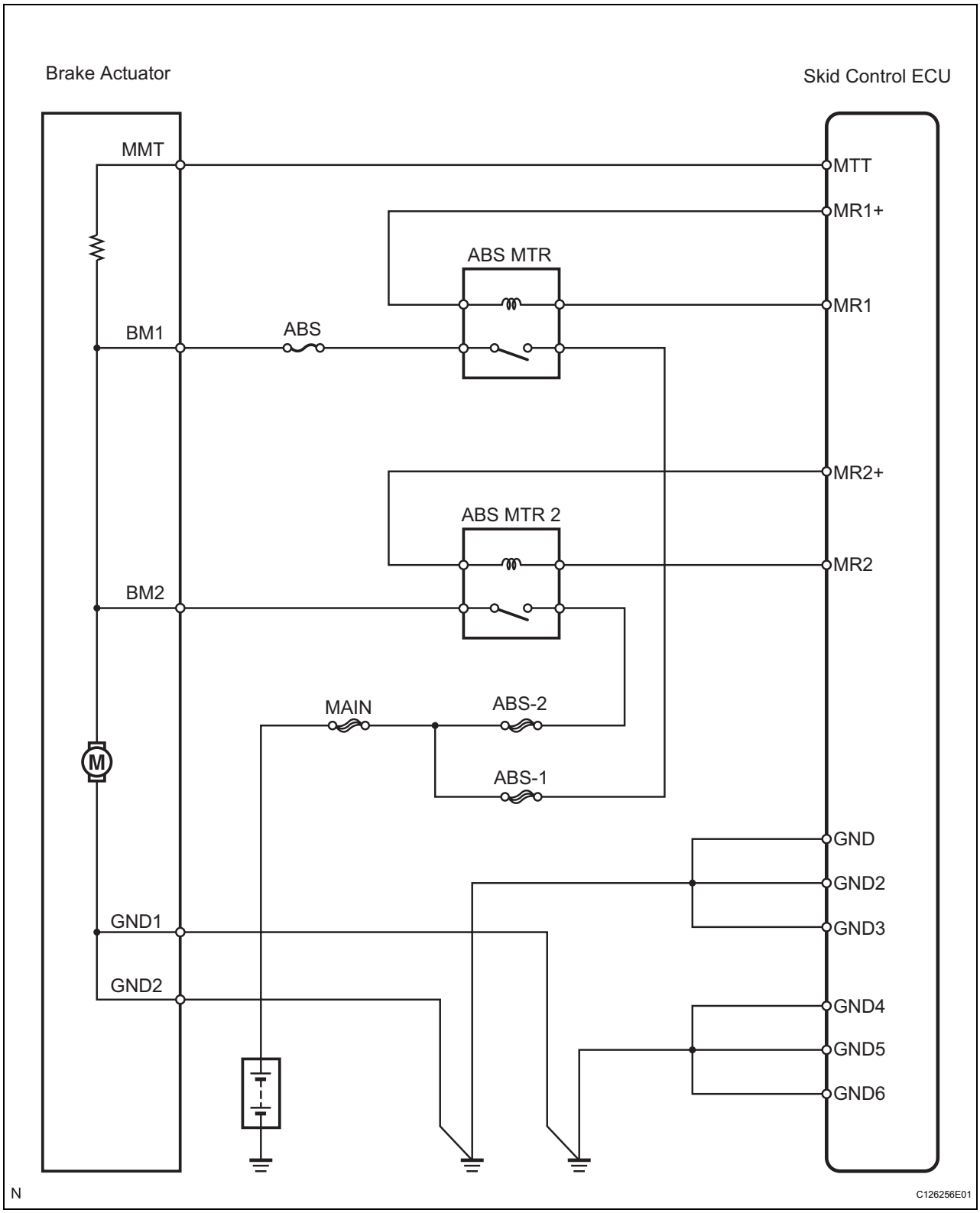
DTC	C1253/53	Hydro Booster Pump Motor Relay Malfunction

DESCRIPTION

The skid control ECU detects decreases in the accumulator pressure according to the data from the accumulator pressure sensor, and then starts and stops the pump motor by operating the motor relay. The skid control ECU usually drives the motor relay 1 (ABS HTR) for ECB control, and the motor relay 2 (ABS MTR 2) for ABS control. If either is malfunctioning, the other substitutes.

DTC No.	INF Code	DTC Detection Condition	Trouble Area
C1252/52	130	Motor relay is ON for at least 5 min.	Brake actuator assembly
C1253/53	132	Motor relay 1 coil (monitor) is energized for at least 1 sec. when main relay 1 monitor (BS1) is 9.5 V or more and motor relay 1 is off.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly
C1253/53	133	Motor relay 1 coil (monitor) is not energized for at least 1 sec. when main relay 1 monitor (BS1) is 9.5 V or more and motor relay 1 is on.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly
C1253/53	134	MTT input is 3.5 V or less for at least 0.2 sec. when main relay 1 monitor (BS1) is 9.5 V or more and motor relay 1 is on.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly
C1253/53	136	Motor relay 2 coil (monitor) is energized for at least 1 sec. when main relay 2 monitor (BS2) is 9.5 V or more and motor relay 2 is off.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly
C1253/53	137	Motor relay 2 coil (monitor) is not energized for at least 1 sec. (0.2 sec. during initial check) when main relay 2 monitor (BS2) is 9.5 V or more and motor relay 2 is on.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly
C1253/53	138	MTT input is 3.5 V or less for at least 1 sec. (0.2 sec. during initial check) when main relay 1 monitor (BS1) is 9.5 V or more and motor relay 2 is on.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly
C1253/53	140	MTT input is 3.5 V or more for at least 2 sec. when motor relay 1 and 2 are off.	• ABS MTR relay • ABS MTR 2 relay • Harness and connector • Brake actuator assembly

WIRING DIAGRAM



BC

INSPECTION PROCEDURE

NOTICE:
When replacing the skid control ECU, perform initialization of linear solenoid valve and calibration (see page BC-19).

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER (ABS MOTOR RELAY OPERATION)

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

Skid control ECU

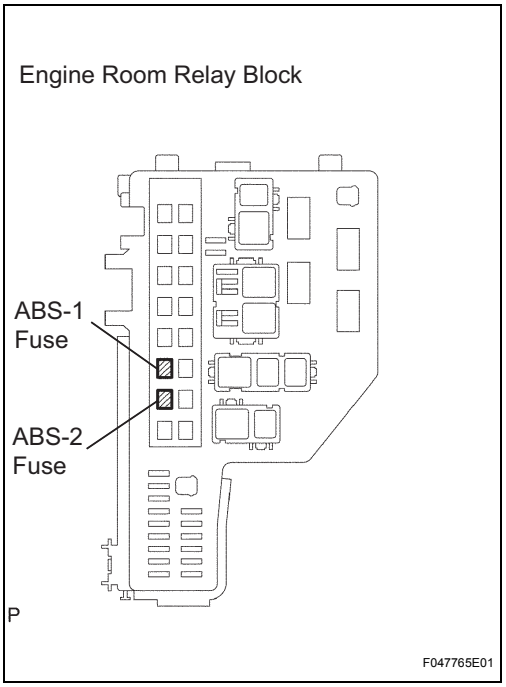
Item	Test Details	Diagnostic Note
MOTOR RELAY 1	Turns MOTOR RELAY 1 ON / OFF	Operation of solenoid (clicking sound) can be heard
MOTOR RELAY 2	Turns MOTOR RELAY 2 ON / OFF	Operation of solenoid (clicking sound) can be heard

OK:
The operation sound of the ABS motor should be heard.

NG → **Go to step 6**

OK

2	INSPECT FUSE (ABS-1, ABS-2)



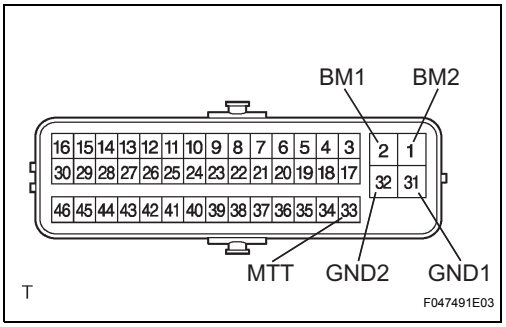
(a) Remove the ABS-1 and ABS-2 fuses from the engine room relay block.
(b) Measure the resistance of the fuses.
Standard resistance:
Below 1 Ω

NG → **CHECK FOR SHORTS IN ALL HARNESS AND CONNECTOR CONNECTED TO FUSE AND REPLACE FUSE**

OK

BC

3	INSPECT BRAKE ACTUATOR ASSEMBLY



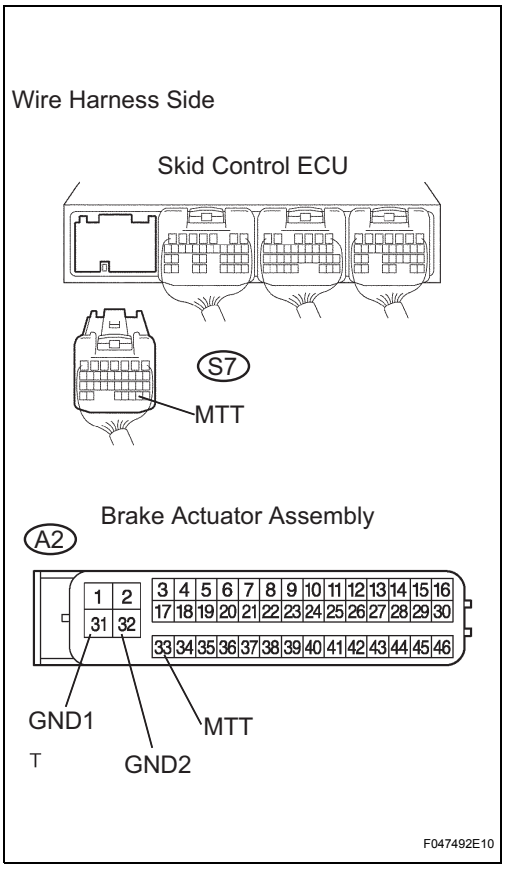
(a) Disconnect the brake actuator connector.
(b) Measure the resistance of the actuator.
Standard resistance

Tester Connection	Specified Condition
1 (BM2) - 31 (GND1)	Below 10 Ω
2 (BM1) - 31 (GND1)	Below 10 Ω
1 (BM2) - 2 (BM1)	Below 1 Ω
31 (GND1) - 32 (GND2)	Below 1 Ω
1 (BM2) - 33 (MTT)	About 33 Ω
2 (BM1) - 33 (MTT)	About 33 Ω

NG → **REPLACE BRAKE ACTUATOR ASSEMBLY**

OK

4	CHECK WIRE HARNESS (SKID CONTROL ECU - BRAKE ACTUATOR ASSEMBLY)



(a) Disconnect the S7 ECU connector.
(b) Disconnect the A2 actuator connector.
(c) Measure the resistance of the wire harness side connectors.
Standard resistance

Tester Connection	Specified Condition
S7-29 (MTT) - A2-33 (MTT)	Below 1 Ω
A2-31 (GND1) - Body ground	Below 1 Ω
A2-32 (GND2) - Body ground	Below 1 Ω

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

OK

BC

5	READ VALUE OF INTELLIGENT TESTER (ACCUMULATOR PRESSURE SENSOR)

(a) Check the DATA LIST for proper functioning of the accumulator pressure sensor.
(b) Depress the brake pedal 4 or 5 times to operate the pump motor, and check the output value on the intelligent tester with the motor stopped (not braking).

Skid control ECU

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
ACC PRESS SENS 1	Accumulator pressure sensor 1 / Min.: 0 V, Max.: 5 V	Specified value: 3.2 to 4.0 V	-

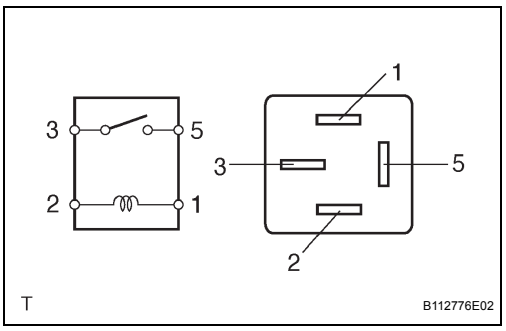
OK:
Accumulator pressure sensor voltage does not drop.

NG → **REPLACE BRAKE ACTUATOR ASSEMBLY**

OK

REPLACE SKID CONTROL ECU

6	INSPECT RELAY (Marking: ABS MTR, ABS MTR 2)



(a) Remove the ABS MTR and ABS MTR 2 relays from the engine room relay block.
(b) Measure the resistance of the relays.
Standard resistance

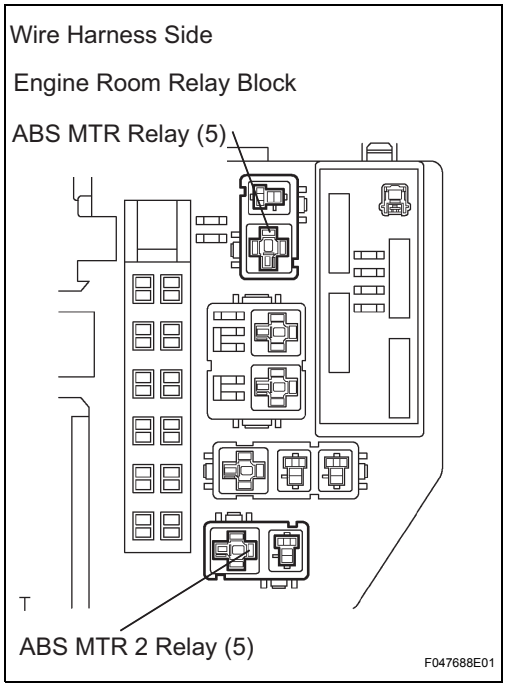
Tester Connection	Specified Condition
3 - 5	**10 kΩ or higher**
3 - 5	**Below 1 Ω (when battery voltage is applied to terminals 1 and 2)**

NG → **REPLACE RELAY**

OK

BC

7	CHECK WIRE HARNESS (ENGINE ROOM RELAY BLOCK - BATTERY)



(a) Remove the ABS MTR and MTR 2 relays from the engine room relay block.
(b) Measure the voltage of the wire harness side connectors.

Standard voltage

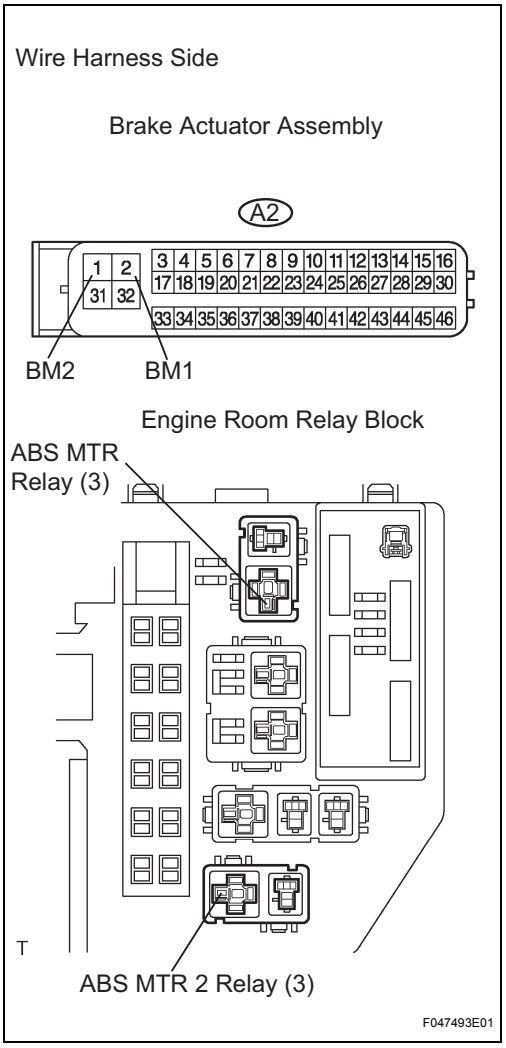
Tester Connection	Specified Condition
ABS MTR relay terminal 5 - Body ground	10 to 14 V
ABS MTR 2 relay terminal 5 - Body ground	10 to 14 V

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

OK

BC

8	**CHECK WIRE HARNESS (ENGINE ROOM RELAY BLOCK - BRAKE ACTUATOR)**



(a) Disconnect the A2 actuator connector.
(b) Remove the ABS MTR and ABS MTR 2 relays from the engine room relay block.
(c) Measure the resistance of the wire harness side connectors.

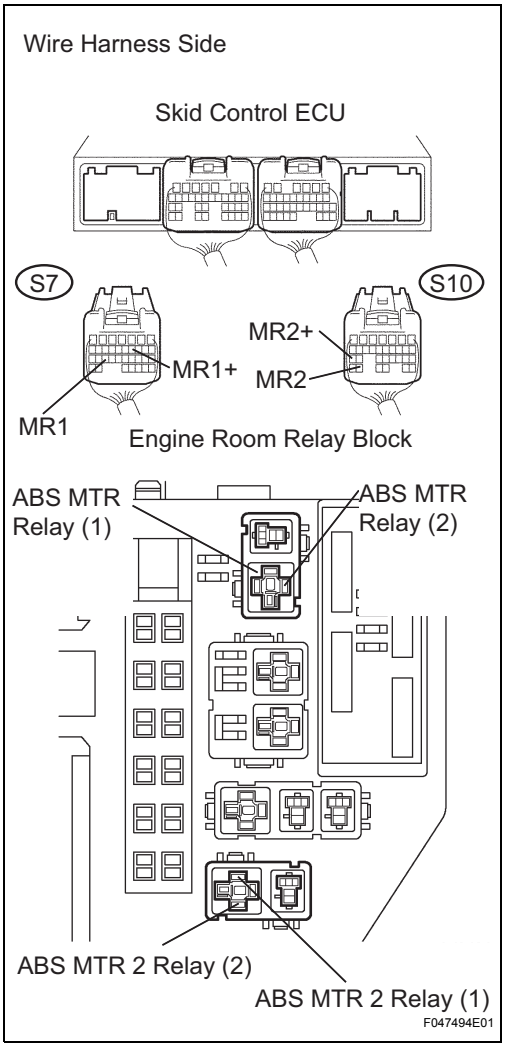
Standard resistance

Tester Connection	Specified Condition
A2-1 (BM2) - ABS MTR 2 relay terminal 3	Below 1 Ω
A2-2 (BM1) - ABS MTR relay terminal 3	Below 1 Ω
A2-1 (BM2) - Body ground	10 kΩ or higher
A2-2 (BM1) - Body ground	10 kΩ or higher

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

OK

9	CHECK WIRE HARNESS (ENGINE ROOM RELAY BLOCK - SKID CONTROL ECU)



(a) Disconnect the S7 and S10 ECU connectors.
(b) Remove the ABS MTR and MTR 2 relays from the engine room relay block.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
S7-11 (MR1+) - ABS MTR relay terminal 2	Below 1 Ω
S7-25 (MR1) - ABS MTR relay terminal 1	Below 1 Ω
S10-25 (MR2+) - ABS MTR 2 relay terminal 2	Below 1 Ω
S10-30 (MR2) - ABS MTR 2 relay terminal 1	Below 1 Ω
S7-11 (MR1+) - Body ground	10 kΩ or higher
S7-25 (MR1) - Body ground	10 kΩ or higher
S10-25 (MR2+) - Body ground	10 kΩ or higher
S10-30 (MR2) - Body ground	10 kΩ or higher

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

OK

REPLACE SKID CONTROL ECU