DTC	C1252/52	BRAKE BOOSTER PUMP MOTOR ON TIME ABNORMALLY LONG

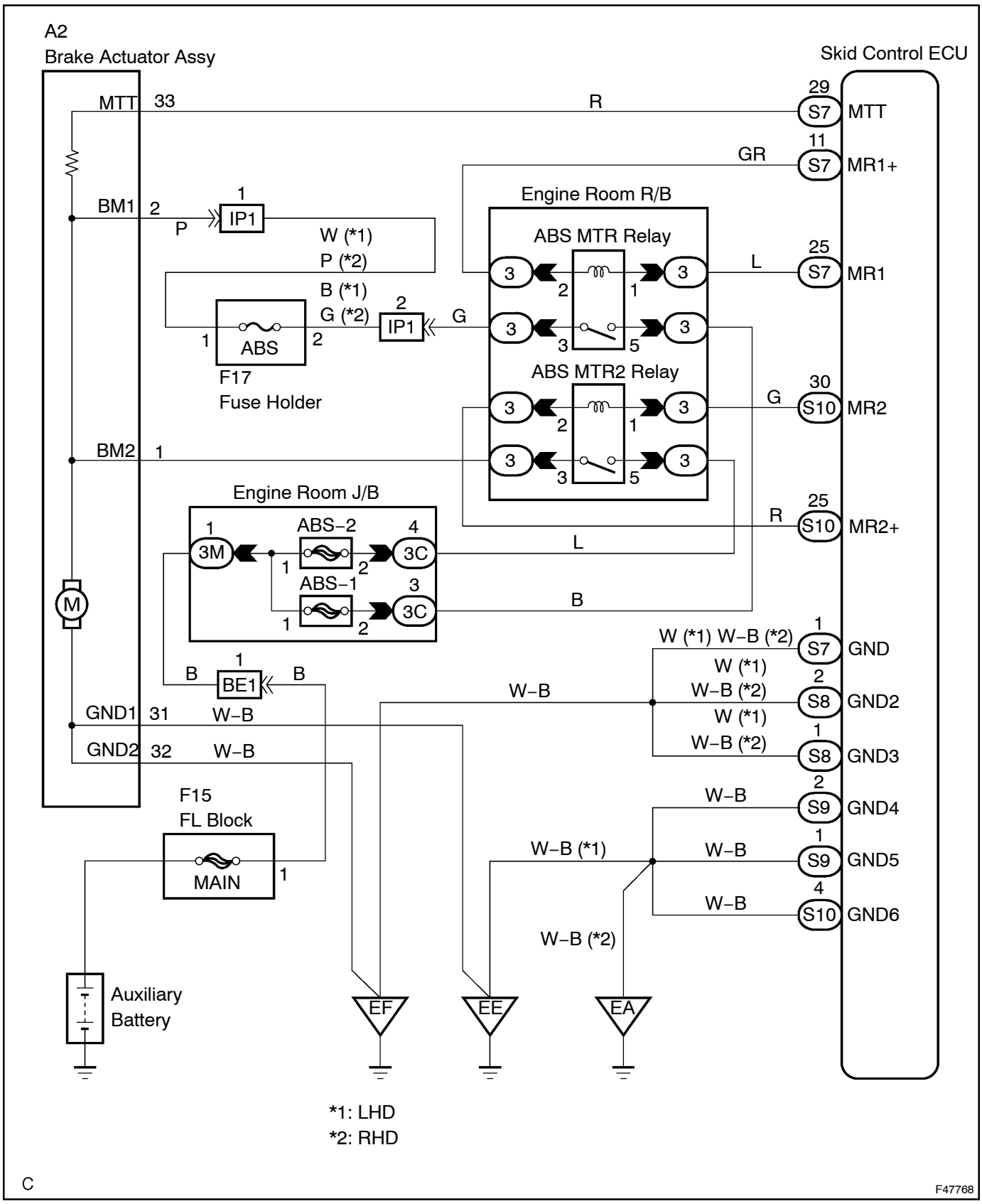
DTC	C1253/53	BRAKE BOOSTER PUMP MOTOR CIRCUIT

CIRCUIT 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 ABS motor relay.
The skid control ECU usually drives the motor relay 1 for ECB control, and the ABS motor relay 2 for ABS control. If either is malfunctioning, the other substitutes.

DTC No.	Detailed Code	DTC Detecting Condition	Trouble Area
C1252/52	130	Motor relay is ON for at least 5 min.	• Brake actuator assy
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 MTR2 relay • Harness and connector • Brake actuator assy
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 MTR2 relay • Harness and connector • Brake actuator assy
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 MTR2 relay • Harness and connector • Brake actuator assy
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 MTR2 relay • Harness and connector • Brake actuator assy
C1253/53	137	Motor relay 2 coil (monitor) is not energized for at least 1 sec. (0.2 sec. during initial check) when main rely 2 monitor (BS2) is 9.5 V or more and motor relay 2 is on.	• ABS MTR relay • ABS MTR2 relay • Harness and connector • Brake actuator assy
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 MTR2 relay • Harness and connector • Brake actuator assy
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 MTR2 relay • Harness and connector • Brake actuator assy

WIRING DIAGRAM



INSPECTION PROCEDURE

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

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the power switch ON (READY).
(c) Select the ACTIVE TEST mode on the intelligent tester II.
(d) Check the operation sound of the ABS motor individually when operating it with the intelligent tester II.

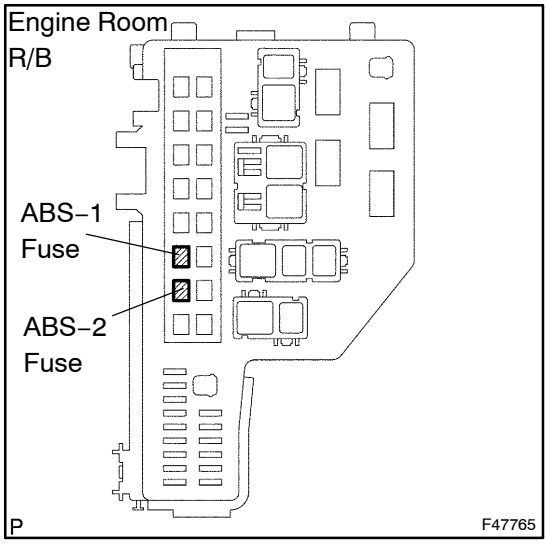
Item	Vehicle Condition / Test Details	Diagnostic Note
Motor Relay 1	Turns MOTOR RELAY 1 ON / OFF	Operation of solenoid (clicking sound) can be heard
Motor Relay 2	Turns MOTOR RELAY 2 ON / OFF	Operation of solenoid (clicking sound) can be heard

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

NG → **Go to step 6**

OK

2	INSPECT FUSE(ABS–1, ABS–2 FUSE)



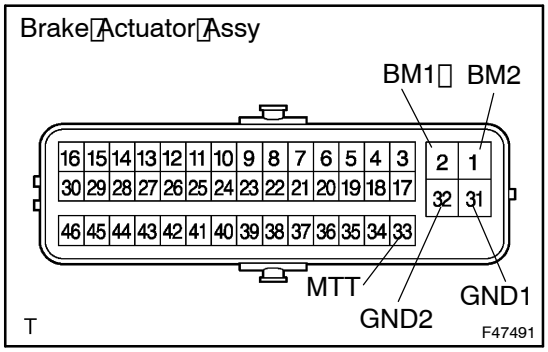
(a) Remove the ABS–1 and ABS–2 fuse from the engine room R/B.
(b) Measure the resistance according to the value(s) in the table below.
Standard:

ABS–1	Below 1 Ω (Continuity)
ABS–2	Below 1 Ω (Continuity)

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

OK

3 INSPECT BRAKE ACTUATOR ASSY



(a) Disconnect the brake actuator assy connector.
(b) Measure the resistance according to the value(s) in the table below.

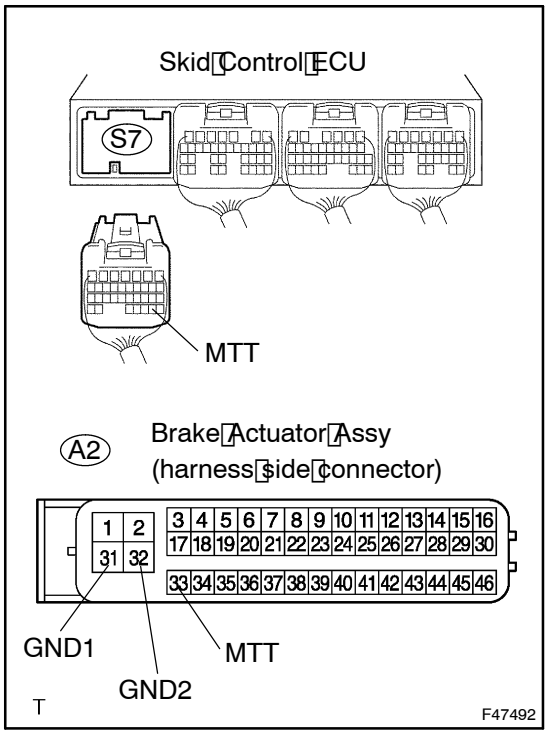
Standard:

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 ASSY (SEE PAGE 32–66)**

OK

4 CHECK HARNESS AND CONNECTOR(SKID CONTROL ECU – BRAKE ACTUATOR ASSY)



(a) Disconnect the skid control ECU connector and brake actuator assy connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

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 OR CONNECTOR**

OK

5	READ VALUE OF INTELLIGENT TESTER II

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the power switch ON (READY).
(c) Select the DTA LIST mode on the intelligent tester II.

Item	Measurement Item / Range (Display)	Normal Condition
Accumulator Sensor 1	Accumulator pressure sensor 1 / min.: 0 V, max.: 5 V	Specified value: 3.2 to 4.0 V

(d) Depress the brake pedal 4 or 5 times to operate the pump motor, and check the output value on the intelligent tester II with the motor stopped (not braking).
OK:
Accumulator (ACC) pressure sensor voltage does not drop.

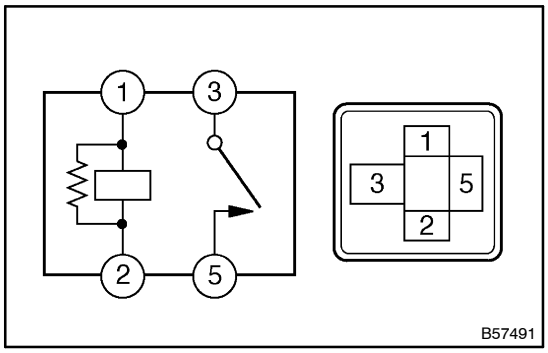
NG → **REPLACE BRAKE ACTUATOR ASSY (SEE PAGE 32–66)**

OK

REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32–81 or 32–82)

NOTICE:
When replacing the skid control ECU assy, perform initialization of linear solenoid valve and calibration (see page 05–721).

6	INSPECT ABS MOTOR RELAY



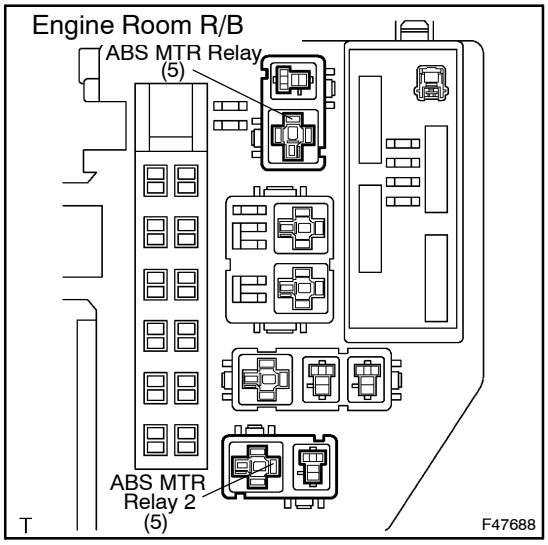
(a) Remove the ABS motor relay and ABS motor relay 2.
(b) Measure the resistance according to the value(s) in the table below.
Standard:

Tester Connection	Connection	Specified Resistance
3 – 5	Always	10 kΩ or higher (No continuity)
3 – 5	Apply B+ between terminal 1 and 2	Below 1 Ω

NG → **REPLACE ABS MOTOR RELAY**

OK

7 CHECK HARNESS AND CONNECTOR



(a) Remove the ABS motor relay and ABS motor relay 2.
(b) Measure the voltage according to the value(s) in the table below.

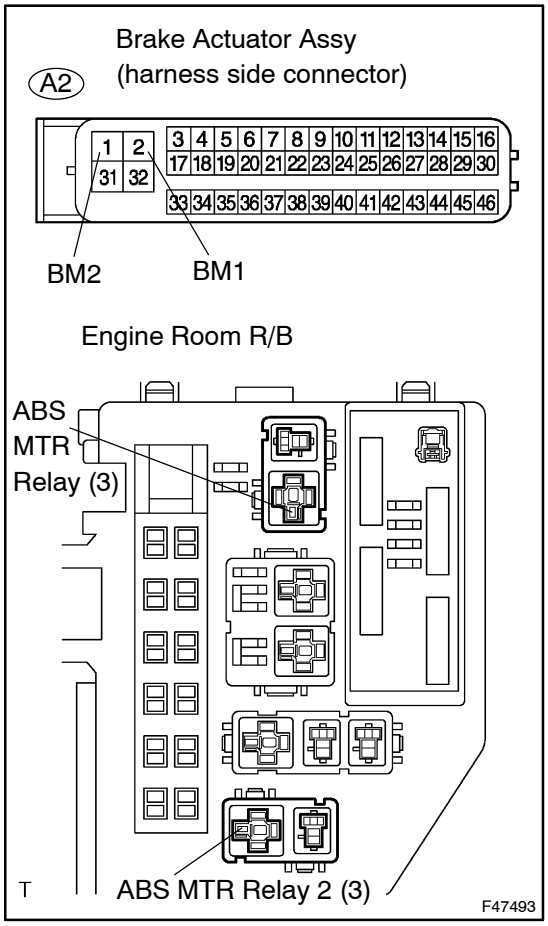
Standard:

Tester Connection	Specified Condition
ABS Motor Relay (5) – Body ground	10 to 14 V
ABS Motor Relay 2 (5) – Body ground	10 to 14 V

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

OK

8 CHECK HARNESS AND CONNECTOR(ENGINE ROOM R/B – BRAKE ACTUATOR)



(a) Disconnect the Brake actuator assy connector.
(b) Remove the ABS MTR Relay and ABS MTR Relay 2.
(c) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Specified Condition
A2–1 (BM2) – ABS MTR Relay 2 (3)	Below 1 Ω
A2–2 (BM1) – ABS MTR Relay (3)	Below 1 Ω

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

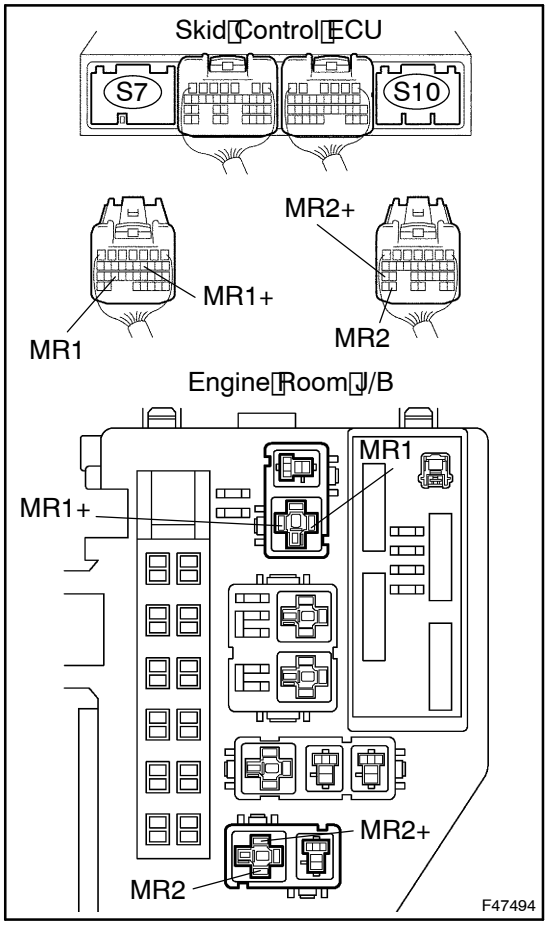
Standard:

Tester Connection	Specified Condition
A2–1 (BM2) – Body ground	10 kΩ or higher
A2–2 (BM1) – Body ground	10 kΩ or higher

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

OK

9	CHECK HARNESS AND CONNECTOR(ENGINE ROOM R/B – SKID CONTROL ECU)



(a) Disconnect the skid control ECU connector.
(b) Remove the ABS MTR Relay and ABS MTR Relay 2.
(c) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Specified Condition
S7–11 (MR1+) – ABS MTR Relay (2)	Below 1 Ω
S7–25 (MR1) – ABS MTR Relay (1)	Below 1 Ω
S10–25 (MR2+) – ABS MTR 2 Relay (2)	Below 1 Ω
S10–30 (MR2) – ABS MTR 2 Relay (1)	Below 1 Ω

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

Standard:

Tester Connection	Specified Condition
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 OR CONNECTOR**

OK →

REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32–81 or 32–82)

NOTICE:
When replacing the skid control ECU assy, perform initialization of linear solenoid valve and calibration (see page 05–721).