Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000028X2E
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: P057100; Brake Switch "A"; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P057100**	**Brake Switch "A"**

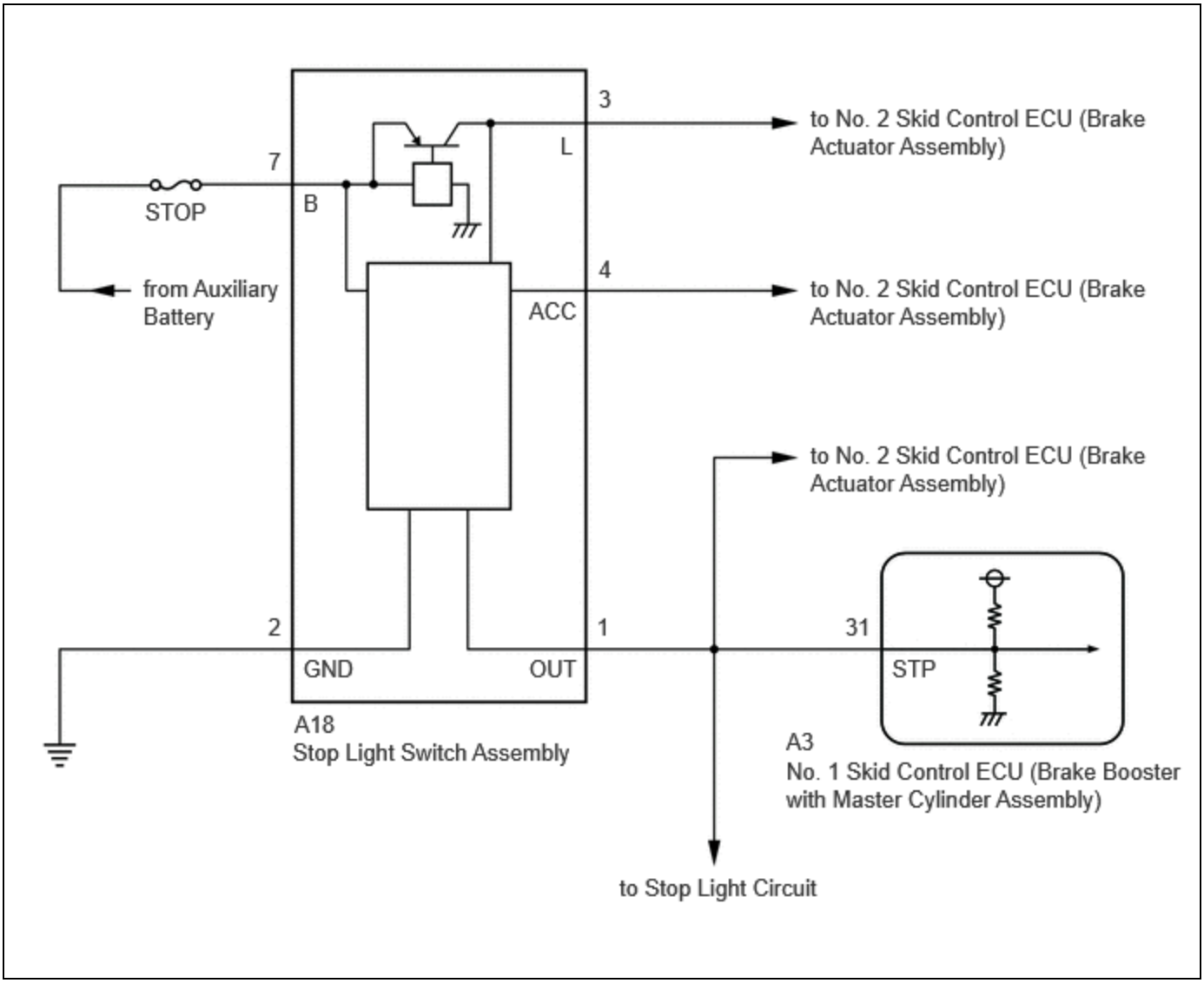
DESCRIPTION

The No. 1 skid control ECU (brake booster with master cylinder assembly) detects the brake operating conditions through a signal transmitted by the stop light switch assembly.

The No. 1 skid control ECU (brake booster with master cylinder assembly) incorporates a circuit to detect an open circuit. This DTC is output when an open circuit is detected in the stop light signal input line.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P057100	Brake Switch "A"	An open in the stop light switch circuit continues for 10 seconds or more.	• Wire harness and connector • Stop light switch assembly • STP circuit • No. 1 skid control ECU (brake booster with master cylinder assembly)	Does not come on	Brake Booster	A	Output ECU: No. 1 skid control ECU (brake booster with master cylinder assembly)

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following procedure.
- Make sure to wait 5 minutes or more with the ignition switch turned off before removing the integration control supply or disconnecting any supply power circuit from the integration control supply, in order for the voltage to be discharged and self-diagnosis to run.

PROCEDURE

1.	**CHECK STOP LIGHT OPERATION**

(a) Check that the stop lights come on when the brake pedal is depressed.

RESULT	PROCEED TO
All stop lights illuminate when the brake pedal is depressed and turn off when the brake pedal is released.	A

RESULT	PROCEED TO
All stop lights do not illuminate when the brake pedal is depressed.	B
One or more stop lights illuminate when the brake pedal is depressed but remain on when the brake pedal is released.	C

B ▶ **GO TO STEP 10**

C ▶ **GO TO STEP 6**

A

2.	**READ VALUE USING GTS (STOP LIGHT SW)**

(a) Check the value of Stop Light SW when the brake pedal is depressed.

Chassis > Brake Booster > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Stop Light SW	Stop light switch assembly (STP terminal input)	OFF / ON	OFF: Brake pedal released ON: Brake pedal depressed	**HINT:** The brake pedal state is determined using the voltage at terminal STP

Chassis > Brake Booster > Data List

TESTER DISPLAY
Stop Light SW

RESULT	PROCEED TO
The value of Stop Light SW is ON	A
None of the above conditions are met	B

B ▶ **GO TO STEP 9**

A

3.	STOP LIGHT SWITCH ASSEMBLY OUTPUT CIRCUIT INSPECTION

Pre-procedure1

(a) Turn the ignition switch off.

Procedure1

(b) Make sure that there is no looseness at the locking part and the connecting part of the connector.

OK:
The connector is securely connected.

Pre-procedure2

(c) Turn the ignition switch to ON.

Procedure2

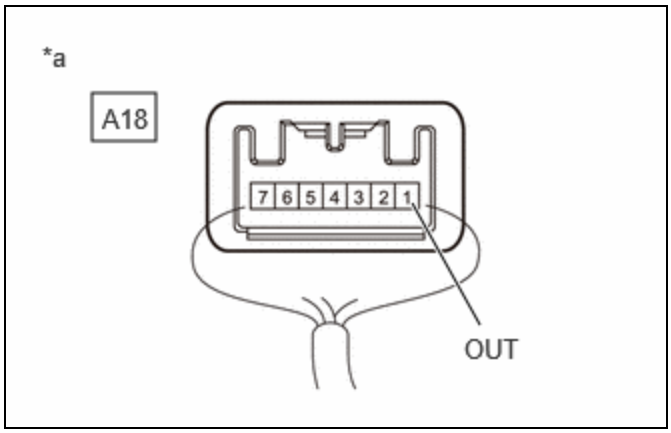
(d) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(A18)
Click Connector(A18)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A18-1 (OUT) - Body ground	• Ignition switch ON • The headlights are on • The blower motor switch is in the HI position • The rear window defogger is turned on • Stop light switch assembly	Below 1.5 V	V



*a	Component with harness connected (Stop Light Switch Assembly)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
	off (Brake pedal released)		

Result:

PROCEED TO
OK
NG

Post-procedure1

(e) None

NG ▶ **GO TO STEP 6**

OK ▼

4.	**CLEAR DTC**

Pre-procedure1

(a) None

Procedure1

(b) Clear the DTCs.

Chassis > Brake Booster > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off.

NEXT ▼

5.	**RECONFIRM DTC**

Pre-procedure1

(a) Based on the Freeze Frame Data and interview with the customer, attempt to reproduce the conditions when the malfunction occurred.

Procedure1

(b) Check if the same DTC is output.

Chassis > Brake Booster > Trouble Codes

RESULT	PROCEED TO
P057100 is not output	A
P057100 is output	B

Post-procedure1

(c) None

A ▶ **USE SIMULATION METHOD TO CHECK**

B ▶ **REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY**

Click here INFO

6.	**CHECK STOP LIGHT SWITCH ASSEMBLY**

Pre-procedure1

(a) Turn the ignition switch off.

Procedure1

(b) Make sure that there is no looseness at the locking part and the connecting part of the connector.

OK:
The connector is securely connected.

Pre-procedure2

(c) Disconnect the A18 stop light switch assembly connector.

Procedure2

(d) Check both the connector case and the terminals for deformation and corrosion.

OK:
No deformation or corrosion.

Procedure3

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

Standard Voltage:

EWD INFO

Click Location & Routing(A18)
Click Connector(A18)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A18-1 (OUT) - Body ground	Stop light switch assembly off (Brake pedal released)	Below 1.5 V	V

Post-procedure1

(f) None

OK ▶ **REPLACE STOP LIGHT SWITCH ASSEMBLY**

NG ▼

7.	CHECK BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY

Procedure1

(a) Make sure that there is no looseness at the locking part and the connecting part of the connector.

OK:

The connector is securely connected.

Pre-procedure1

(b) Disconnect the A3 No. 1 skid control ECU (brake booster with master cylinder assembly) connector.

Procedure2

(c) Check both the connector case and the terminals for deformation and corrosion.

OK:

No deformation or corrosion.

Procedure3

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

Standard Voltage:

EWD INFO

Click Location & Routing(A18)
Click Connector(A18)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A18-1 (OUT) - Body ground	Stop light switch assembly off (Brake pedal released)	Below 1.5 V	V

Post-procedure1

(e) None

OK ▶ **REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY**

Click here INFO

NG ▼

8.	**CHECK FOR SHORT TO +B IN STP CIRCUIT**

(a) Check that there is no short to +B in the STP circuit (wire harnesses, connectors, ECUs and stop lights).

OK:
No short to +B.

OK ▶ **USE SIMULATION METHOD TO CHECK**

NG ▶ **REPAIR OR REPLACE MALFUNCTIONING PART**

9.	**CHECK HARNESS AND CONNECTOR (STP TERMINAL)**

Pre-procedure1

(a) Turn the ignition switch off.

Procedure1

(b) Make sure that there is no looseness at the locking part and the connecting part of the connector.

OK:
The connector is securely connected.

Pre-procedure2

(c) Disconnect the A3 No. 1 skid control ECU (brake booster with master cylinder assembly) connector.

Procedure2

(d) Check both the connector case and the terminals for deformation and corrosion.

OK:
No deformation or corrosion.

Procedure3

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

Standard Voltage:

EWD INFO

Click Location & Routing(A3)
Click Connector(A3)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A3-31 (STP) - Body ground	Stop light switch assembly on (Brake pedal depressed)	11 to 14 V	V

Post-procedure1

(f) None

OK ▶ **REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY**

Click here INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

10.	**CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH ASSEMBLY - STOP LIGHT)**

(a) Check that there is no open in the wire harnesses and connectors from terminal OUT of the stop light switch assembly to the stop lights.

OK:

No open.

OK ▶ **REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY**

Click here INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**