Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000028X3W
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: C120200; Master Reservoir Level Malfunction; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**C120200**	**Master Reservoir Level Malfunction**

DESCRIPTION

If the No. 1 skid control ECU (brake booster with master cylinder assembly) detects that the brake fluid level is low or there is an open in the brake fluid level warning switch signal circuit, DTC C120200 is stored.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
C120200	Master Reservoir Level Malfunction	Either of the following is detected: • The brake fluid level warning switch signal circuit is open for a certain period of time. • The reservoir level is low for a certain period of time.	• Open or short in brake fluid level warning switch • Brake fluid leaks • Open or short in wire harness • Low brake fluid • No. 1 skid control ECU (brake booster with master cylinder assembly)	Comes on	Brake/EPB	B	• SAE Code: C1202 • Output ECU: Both skid control ECUs **HINT:** DTC C120200 is cleared when the conditions return to normal.

MONITOR DESCRIPTION

When the ignition switch is turned to ON and the fluid level warning switch is on for a certain amount of time, the No. 2 skid control ECU (brake actuator assembly) judges that the brake fluid level in the reservoir is low and illuminates the MIL and stores this DTC.

MONITOR STRATEGY

Related DTCs	C1202: Reservoir level too low

Required Sensors/Components(Main)	Brake fluid level warning switch No. 2 skid control ECU (brake actuator assembly)
Required Sensors/Components(Related)	No. 2 skid control ECU (brake actuator assembly)
Frequency of Operation	Continuous
Duration	20 seconds
MIL Operation	Immediately
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	C120F: Reservoir level switch open circuit U0129: Lost communication with BSCM (CH1) U025E: Lost communication with BSCM2 (CH1)
Both of the following conditions are met	-
Ignition switch	On

TYPICAL MALFUNCTION THRESHOLDS

Reservoir level switch state	On

COMPONENT OPERATING RANGE

All of the following conditions are met	-
Ignition switch	On
CAN communication fail (U0129, U025E)	Not detected
Reservoir level switch fail (C120F)	Not detected
Reservoir level switch state	Off

CONFIRMATION DRIVING PATTERN

NOTICE:

When performing the normal judgment procedure, make sure that the driver door is closed and is not opened at any time during the procedure.

HINT:

- After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

1. Connect the GTS to the DLC3.
2. Turn the ignition switch to ON and turn the GTS on.
3. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
4. Turn the ignition switch off.
5. Turn the ignition switch to ON (READY) and turn the GTS on.
6. Wait 20 seconds. [*]

HINT:

[*]: Normal judgment procedure.

The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.

7. Enter the following menus: Chassis / Brake/EPB* / Utility / All Readiness.

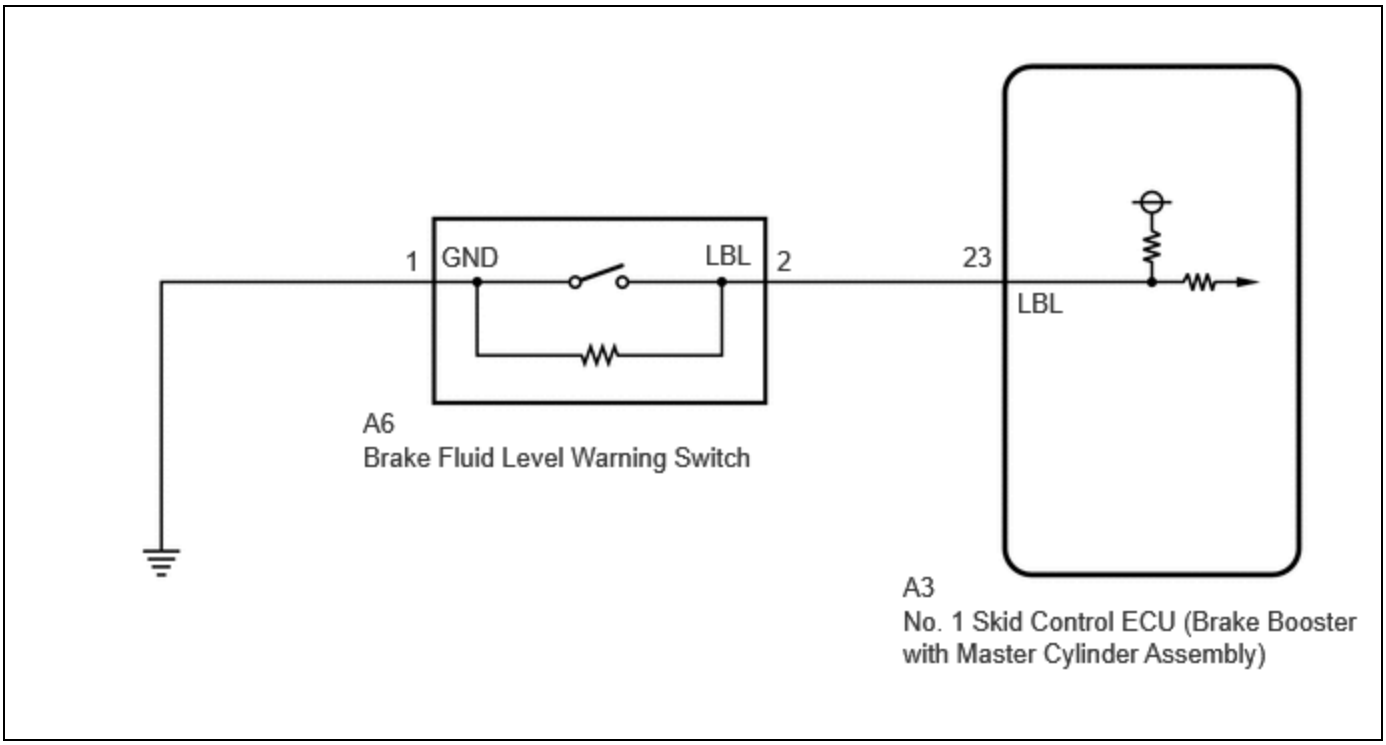
*: Electric Parking Brake System

8. Check the DTC judgment result.

HINT:

- If the judgment result shows NORMAL, the system is normal.
- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE, perform driving pattern again.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

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 DTC**

(a) Check the DTCs that are output.

Chassis > Brake Booster > Trouble Codes

RESULT	PROCEED TO
Only C120200 is output	A
C120200 and other DTCs are output	B

B ▶ **REPAIR CIRCUITS INDICATED BY OUTPUT DTCS**

A ▼

2.	**CHECK DTC**

(a) Check the DTCs that are output.

Chassis > Brake/EPB > Trouble Codes

RESULT	PROCEED TO
DTCs are not output	A
DTCs are output	B

B ▶ **REPAIR CIRCUITS INDICATED BY OUTPUT DTCS**

A ▼

3.	**CHECK BRAKE FLUID LEVEL**

(a) Check that the brake fluid level is sufficient.

HINT:

If the fluid level is low, check for fluid leaks, and repair as necessary.

(1) Check for brake fluid leaks (connection between the brake master cylinder reservoir assembly, brake booster with master cylinder assembly, brake actuator assembly and wheel cylinders).

HINT:

If no leaks exist, add and adjust fluid using the GTS.

Click here INFO

(2) Check the thickness of the brake pad lining.

for Front Brake: Click here INFO

for Rear Brake: Click here INFO

HINT:

If the thickness is less than the standard, replace the brake pads with new ones.

NG ▶ **CHECK AND REPAIR BRAKE FLUID LEAKS OR ADD FLUID**

OK ▼

4.	**INSPECT BRAKE FLUID LEVEL WARNING SWITCH**

Pre-procedure1

(a) Turn the ignition switch off.

Procedure1

(b) Inspect the brake fluid level warning switch.

Click here INFO

OK:

The brake fluid level warning switch is normal.

Post-procedure1

(c) None

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

Click here INFO

OK ▼

5.	**CHECK HARNESS AND CONNECTOR (BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY - BRAKE FLUID LEVEL WARNING SWITCH)**

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

Standard Resistance:

EWD INFO

Click Location & Routing(A3,A6)
Click Connector(A3)
Click Connector(A6)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A3-23 (LBL) - A6-2 (LBL)	Always	Below 1 Ω	Ω
A3-23 (LBL) or A6-2 (LBL)-Body ground	Always	10 kΩ or higher	kΩ
A6-1 (GND) - Body ground	1 minute or more after disconnecting the cable from the negative (-) auxiliary battery terminal	Below 1 Ω	Ω

Post-procedure1

(f) None

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

OK ▼

6.	**INSPECT BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY (SWITCH INPUT)**

Pre-procedure1

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

(b) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(A6)
Click Connector(A6)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A6-2 (LBL) - Body ground	Ignition switch ON	11 to 14 V	V

Post-procedure1

(d) None

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

Click here INFO

OK ▼

7.	**CLEAR DTC**

Pre-procedure1

(a) Turn the ignition switch off.

(b) Reconnect the A6 brake fluid level warning switch connector.

Procedure1

(c) Clear the DTCs.

Chassis > Brake Booster > Clear DTCs

Post-procedure1

(d) Turn the ignition switch off.

NEXT ▼

8.	**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
C120200 is not output	A
C120200 is output	B

Post-procedure1

(c) None

A **USE SIMULATION METHOD TO CHECK**

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

Click here INFO