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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: C126E15; Reservoir Level Switch Circuit Short to Battery or Open; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**C126E15**	**Reservoir Level Switch Circuit Short to Battery or Open**

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 C126E15 is stored.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
C126E15	Reservoir Level Switch Circuit Short to Battery or Open	The brake fluid level warning switch circuit is open for 2 seconds or more.	• Open in brake fluid level warning switch • Open in wire harness • Uneven brake disc rotor wear • Brake fluid leaks • Low brake fluid • No. 1 skid control ECU (brake booster with master cylinder assembly)	Comes on	Brake/EPB	A	• SAE Code: C120F • Output ECU: Both skid control ECUs

MONITOR DESCRIPTION

When the voltage at terminal LBL of the No. 1 skid control ECU (brake booster with master cylinder assembly) is a specific value or more (open circuit judgment range) for a certain amount of time, the No. 2 skid control ECU (brake actuator assembly) judges that there is an open in the fluid level warning switch circuit and illuminates the MIL and stores this DTC.

MONITOR STRATEGY

Related DTCs	C120F: Reservoir level switch open circuit

Required Sensors/Components(Main)	Brake fluid level warning switch
Required Sensors/Components(Related)	-
Frequency of Operation	Continuous
Duration	2 seconds
MIL Operation	Immediately
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	-

TYPICAL MALFUNCTION THRESHOLDS

Brake fluid level warning switch open circuit signal (IC Data)	On

COMPONENT OPERATING RANGE

Brake fluid level warning switch open circuit signal (IC Data)	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 for 3 seconds or more. [*]

   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

Refer to DTC C120200.

Click here INFO

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 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 actuator assembly, brake booster with master cylinder assembly and wheel cylinders).

HINT:

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

Click here INFO

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

OK ▼

2.	**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 ▼

3.	**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

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
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 ▼

4.	**CHECK BRAKE DISC**

Pre-procedure1

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

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

(c) Disconnect the A5 brake pedal stroke sensor assembly connector.

Procedure1

(d) Perform a road test according to Freeze Frame Data or customer problem analysis. While driving, check for abnormal brake pedal vibration caused by brake discs that are worn or have excess runout.

OK:

Brake pedal does not vibrate during braking.

HINT:

- An unevenly worn disc may vibrate the caliper pistons and cause fluctuations in brake line pressure, triggering a malfunction detection condition.
- The brake pedal does not kick back due to caliper piston vibration during electronically controlled brake system control.
- If the brake pedal stroke sensor assembly connector is disconnected, the fail-safe function will prohibit electronically controlled brake system control.
- The Active Test does not prohibit electronically controlled brake system control when the vehicle is being driven, so disconnect the brake pedal stroke sensor assembly connector before continuing with inspection.
- Uneven disc wear can be checked by measuring the disc thickness variation.

for Front Brake: Click here INFO

for Rear Brake: Click here INFO

Post-procedure1

(e) None

NG ▶ **REPLACE BRAKE DISC**

OK

5.	**CLEAR DTC**

Pre-procedure1

(a) Turn the ignition switch off.

(b) Reconnect the A5 brake pedal stroke sensor assembly connector.

Procedure1

(c) Clear the DTCs.

Chassis > Brake Booster > Clear DTCs

Post-procedure1

(d) Turn the ignition switch off.

NEXT

6.	**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
C126E15 is not output	A
C126E15 is output	B

Post-procedure1

(c) None

A **USE SIMULATION METHOD TO CHECK**

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

Click here INFO