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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: C12B419; Electronic Brake Booster Motor "A" Circuit Current Above Threshold; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**C12B419**	**Electronic Brake Booster Motor "A" Circuit Current Above Threshold**

DESCRIPTION

The pump motor is built into the No. 1 skid control ECU (brake booster with master cylinder assembly). The No. 1 skid control ECU (brake booster with master cylinder assembly) monitors each phase current value output from the pump motor.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
C12B419	Electronic Brake Booster Motor "A" Circuit Current Above Threshold	When current monitor continues to be overcurrent status.	No. 1 skid control ECU (brake booster with master cylinder assembly)	Comes on	Brake/EPB	A	• SAE Code: C12B4 (Case 2) • Output ECU: Both skid control ECUs

MONITOR DESCRIPTION

The pump motor and rotation angle sensor are built into the No. 1 skid control ECU (brake booster with master cylinder assembly).

If the rotation angle sensor is normal, the brake pedal is ON, and the required pump motor rotation speed is 430 rpm or more and the pump motor rotation speed is less than 100 rpm for 0.36 seconds or more, the No. 2 skid control ECU (brake actuator assembly) determines that there is a pump motor malfunction, the MIL is illuminated and a DTC is stored.

MONITOR STRATEGY

Related DTCs	C12B4 (Case 2): Brake booster motor performance (motor current)
Required Sensors/Components(Main)	No. 2 skid control ECU (brake actuator assembly) Brake booster with master cylinder assembly
Required Sensors/Components(Related)	-
Frequency of Operation	Continuous
Duration	0.004 seconds
MIL Operation	Immediately

Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	C129B: Rotation angle sensor range/performance C12B4 (Case 2): Brake booster motor performance (motor current) C12BF (Case 1): Brake booster motor performance (motor upper circuit) C13BB: Brake booster motor range/performance C14C8: Brake system voltage circuit high
All of the following conditions are met	-
Command to motor failsafe relay	ON
Absolute value of the sum of U-phase current, V-phase current, and W-phase current	35 A or less
BM voltage	7.1 V or higher
+BS cut MOS voltage	Higher than 7.8 V

TYPICAL MALFUNCTION THRESHOLDS

Either of the following conditions is met	-
Absolute value of U-phase current	Higher than 160 A
Absolute value of V-phase current	Higher than 160 A
Absolute value of W-phase current	Higher than 160 A

COMPONENT OPERATING RANGE

All of the following conditions are met	-
Command to motor failsafe relay	ON
Absolute value of the sum of U-phase current, V-phase current, and W-phase current	35 A or less
Absolute value of U-phase current	Below 130 A
Absolute value of V-phase current	Below 130 A
Absolute value of W-phase current	Below 130 A

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 2 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.

PROCEDURE

1.	**REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY**

HINT:

Click here INFO

NEXT END