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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: Zero Point Calibration of Steering Angle Sensor Malfunction (X20D7); 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

Zero Point Calibration of Steering Angle Sensor Malfunction (X20D7)

DESCRIPTION

CODE	TESTER DISPLAY	MEASUREMENT ITEM	TROUBLE AREA	OUTPUT ECU
X20D7	Zero Point Calibration of Steering Angle Sensor Malfunction	History of the steering angle sensor zero point calibration position differing from the stored value	• Poor adjustment of the center position of the steering wheel • Poor adjustment of wheel alignment	No. 2 skid control ECU (brake actuator assembly)

CAUTION / NOTICE / HINT

NOTICE:

After performing the inspection, check and clear the vehicle control history (RoB).

PROCEDURE

1.	**CHECK DTC (HEALTH CHECK)**

(a) Perform the Health Check using the GTS.

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

B ▶ **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A ▼

2.	**CLEAR VEHICLE CONTROL HISTORY (RoB)**

(a) Using the GTS, clear the Vehicle Control History (RoB).

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

NEXT

3.	**CLEAR ZERO POINT VALUE FOR YAW RATE AND ACCELERATION SENSOR**

(a) Clear the zero point value for the yaw rate and acceleration sensor.

Click here INFO

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Reset Memory

NEXT

4.	**PERFORM ZERO POINT CALIBRATION OF YAW RATE AND ACCELERATION SENSOR**

(a) Perform zero point calibration of the yaw rate and acceleration sensor.

Click here INFO

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Calibration

NEXT

5.	**CHECK ZERO POINT CALIBRATION OF STEERING ANGLE SENSOR**

(a) Drive the vehicle straight ahead at 35 km/h (22 mph) or more for at least 5 seconds.

(b) Drive the vehicle at 15 km/h (9 mph) or more for at least 60 seconds.

(c) Check that the centered position of the steering wheel is correctly set while driving straight ahead.

OK:
The steering wheel is centered correctly.

NG ▶ **GO TO STEP 8**

OK ▼

6.	**INSPECT STEERING SYSTEM**

Click here INFO

OK:
Normal.

OK ▶ **USE SIMULATION METHOD TO CHECK**

NG ▼

7.	**REPAIR OR REPLACE MALFUNCTIONING PART**

NEXT ▶ **GO TO STEP 9**

8.	**ADJUST WHEEL ALIGNMENT**

for Front: Click here INFO

for Rear: Click here INFO

NEXT ▼

9.	**CLEAR VEHICLE CONTROL HISTORY (RoB)**

(a) Using the GTS, clear the Vehicle Control History (RoB).

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

NEXT

10.	**CLEAR ZERO POINT VALUE FOR YAW RATE AND ACCELERATION SENSOR**

(a) Clear the zero point value for the yaw rate and acceleration sensor.

Click here INFO

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Reset Memory

NEXT

11.	**PERFORM ZERO POINT CALIBRATION OF YAW RATE AND ACCELERATION SENSOR**

(a) Perform zero point calibration of the yaw rate and acceleration sensor.

Click here INFO

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Calibration

NEXT

12.	**PERFORM ZERO POINT CALIBRATION OF STEERING ANGLE SENSOR**

(a) Drive the vehicle straight ahead at 35 km/h (22 mph) or more for at least 5 seconds.

(b) Drive the vehicle at 15 km/h (9 mph) or more for at least 60 seconds.

NEXT

13.	**CHECK VEHICLE CONTROL HISTORY (RoB)**

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

(b) Using the GTS, check for Vehicle Control History (RoB).

Chassis > Brake/EPB > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

RESULT	PROCEED TO
Vehicle Control History (RoB) is not output.	A
Vehicle Control History (RoB) is output.	B

A ▶ **END**

B ▶ **GO TO VEHICLE CONTROL HISTORY (RoB)**