Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BHVU
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for PHEV Model): P0D1111; Hybrid/EV Battery Charging System Negative Contactor Control Circuit Short to Ground; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P0D1111**	**Hybrid/EV Battery Charging System Negative Contactor Control Circuit Short to Ground**

DESCRIPTION

Refer to the description for DTC P0D0A11.

Click here INFO

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0D1111	Hybrid/EV Battery Charging System Negative Contactor Control Circuit Short to Ground	Short to ground in the CHRG circuit: Primary circuit of CHR (-) is malfunctioning. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on / Does not come on	Master Warning: Comes on	HV Battery	A	SAE Code: P0D13

MONITOR DESCRIPTION

If the battery ECU assembly detects a malfunction of its HV battery charging system negative contactor control circuit (CHRG), the battery ECU assembly illuminates the MIL and stores a DTC.

MONITOR STRATEGY

Related DTCs	P0D13 (INF P0D1111): Battery Charging System Negative Contactor Control Circuit
Required sensors/components	Charge relay
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not stored	TMC's intellectual property
Other conditions belong to TMC's intellectual property	-

TYPICAL MALFUNCTION THRESHOLDS

TMC's intellectual property	-

COMPONENT OPERATING RANGE

Battery ECU assembly	DTC P0D13 (INF P0D1111) is not detected

CONFIRMATION DRIVING PATTERN

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.

  Click here INFO
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

  Click here INFO

1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Enter the following menus: Powertrain / HV Battery / Data List.[*1]
3. Check that "Hybrid/EV Battery SOC" shows 70% or less.[*2]
4. Turn the ignition switch off and wait for 2 minutes or more.[*3]
5. Connect the electric vehicle charger cable assembly, plug-in charge the vehicle for at least 5 seconds.[*4]

HINT:

[*1] to [*4]: Normal judgment procedure.

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

6. Enter the following menus: Powertrain / HV Battery / Utility / All Readiness.
7. 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 or N/A, perform the normal judgment procedure again.

WIRING DIAGRAM

Refer to the wiring diagram for DTC P0D0A11.

Click here INFO

CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

NOTICE:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the auxiliary negative (-) battery terminal.

  Click here INFO

- When disconnecting and reconnecting the auxiliary battery.

  HINT:

  When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

  Click here INFO

PROCEDURE

1.	**CHECK CONNECTOR CONNECTION CONDITION (BATTERY ECU ASSEMBLY)**

Click here INFO

NG ▶ **CONNECT SECURELY**

OK ▼

2.	**CHECK HARNESS AND CONNECTOR (BATTERY ECU ASSEMBLY - BODY GROUND)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

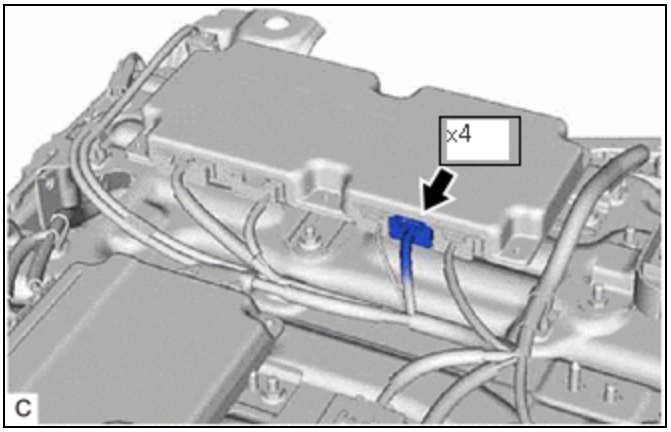
NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the battery ECU assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



Procedure1

(c) Measure the resistance according to the value(s) in the tables below.

Standard Resistance:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
x4-6 (CHRG) - Body ground	Ignition switch off	20.6 to 40.8 Ω	Ω

Post-procedure1

(d) Reconnect the battery ECU assembly connector.

OK ▶ **REPLACE BATTERY ECU ASSEMBLY**

NG
▼

3.	**CHECK CONNECTOR CONNECTION CONDITION (NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

Procedure1

(b) Check the connections of the No. 1 traction battery device box assembly.

HINT:

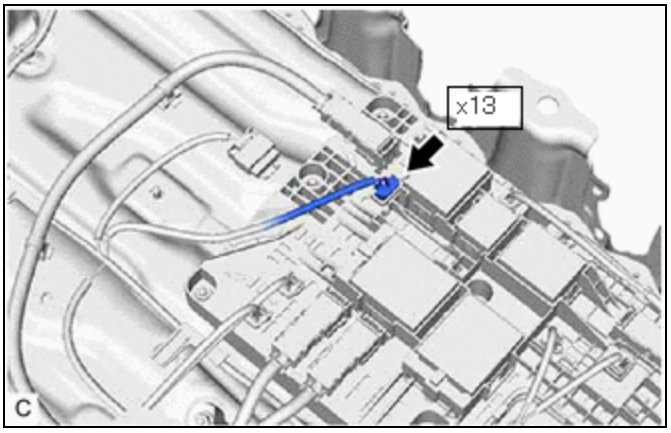
Click here INFO

OK:

The connector is connected securely and there are no contact problems.

Result:

PROCEED TO
OK
NG



Post-procedure1

(c) None

NG ▶ **CONNECT SECURELY**

OK ▼

4.	**CHECK HARNESS AND CONNECTOR (BATTERY ECU ASSEMBLY - NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

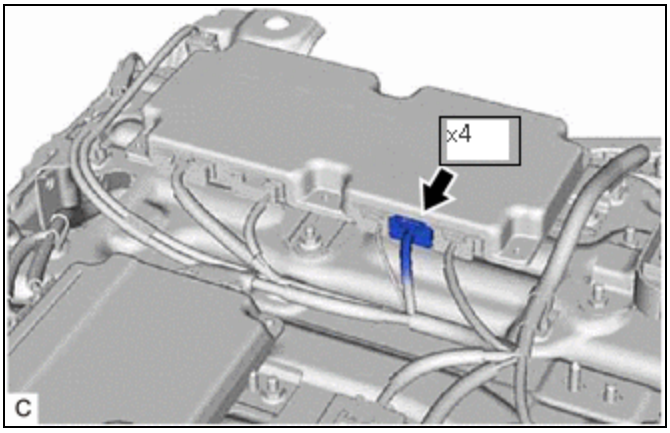
NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the battery ECU assembly connector.

NOTICE:

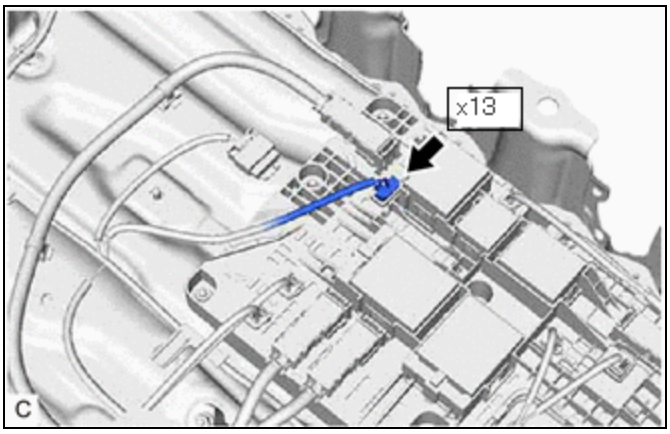
Before disconnecting the connector, check that it is not loose or disconnected.



(c) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



Procedure1

(d) Measure the resistance according to the value(s) in the tables below.

Standard Resistance:

EWD INFO

Click Location & Routing(x13,x4)
Click Connector(x13)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
x13-1 (CHRG) and x4-6 (CHRG) - Body ground and other terminals	Ignition switch off	10 kΩ or higher	kΩ

Post-procedure1

(e) Reconnect the No. 1 traction battery device box assembly connector.

(f) Reconnect the battery ECU assembly connector.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

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