

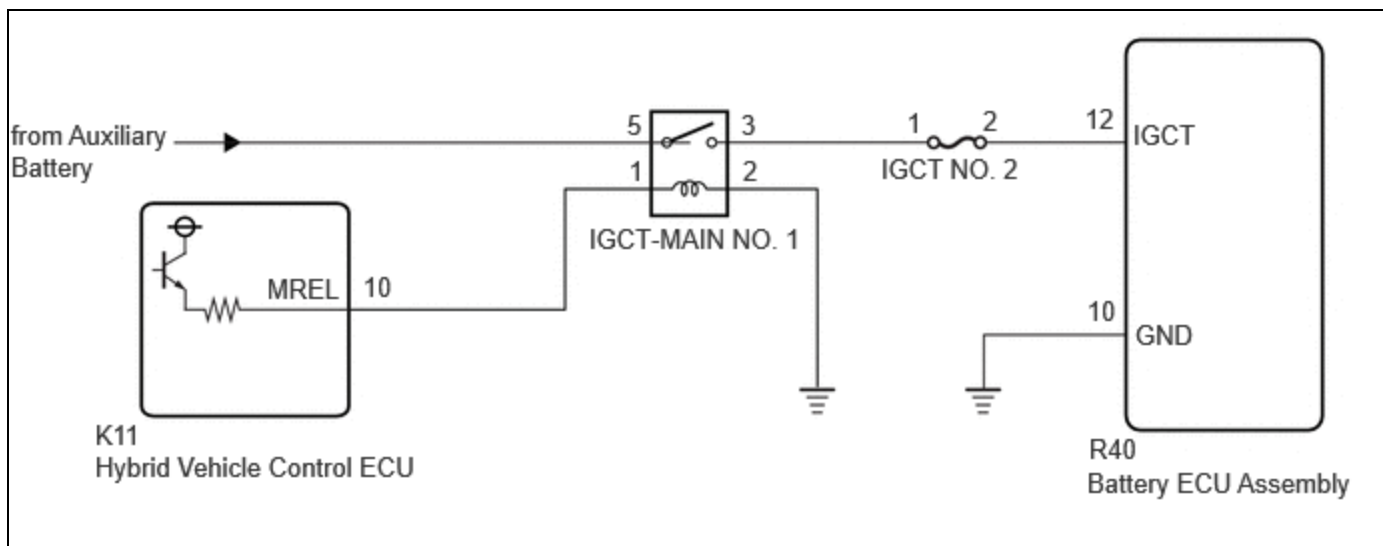
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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): ECU Power Source Circuit; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

ECU Power Source Circuit

DESCRIPTION

If the ignition switch is ON, the hybrid vehicle control ECU applies current to the MREL terminal to turn the IGCT relay on. This supplies power to the IGCT terminals.

WIRING DIAGRAM



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 negative (-) auxiliary 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 BATTERY ECU ASSEMBLY (IGCT VOLTAGE)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

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

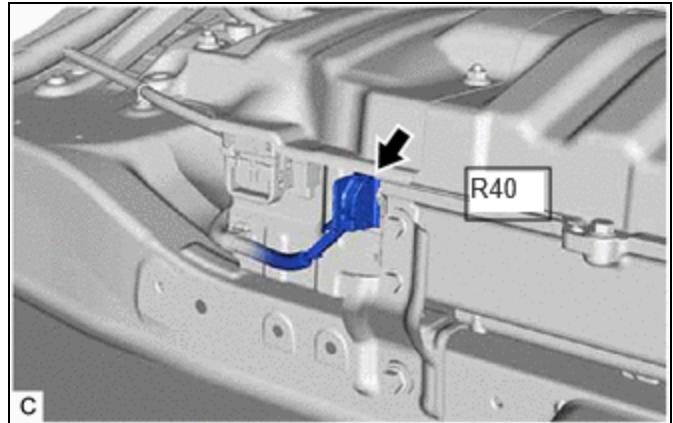
NOTICE:

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) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

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

Standard Voltage:



[Click Location & Routing\(R40\)](#)

[Click Connector\(R40\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R40-12 (IGCT) - Body ground	Ignition switch ON	11 to 14 V

NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.
- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Reconnect the battery ECU assembly connector.

NG  **GO TO STEP 3**

OK


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

CAUTION:

Be sure to wear insulated gloves and protective goggles.

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

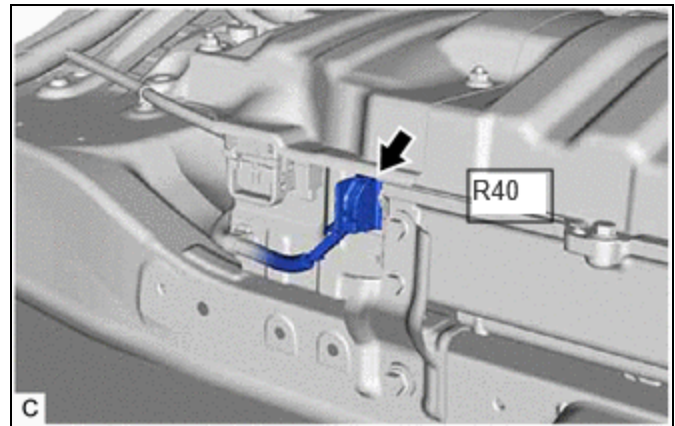
NOTICE:

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

Standard Resistance:



[Click Location & Routing\(R40\)](#)

[Click Connector\(R40\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R40-10 (GND) - Body ground	Always	Below 1 Ω

(d) Reconnect the battery ECU assembly connector.

OK  **GO TO PROBLEM SYMPTOMS TABLE**

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

3. CHECK FUSE (IGCT NO. 2)

- (a) Remove the IGCT NO. 2 fuse from the No. 1 engine room relay block and No. 1 junction block assembly.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
IGCT NO. 2 fuse	Always	Below 1 Ω

- (c) Install the IGCT NO. 2 fuse.

NG  **GO TO STEP 6**

OK



4. CHECK HARNESS AND CONNECTOR (NO. 1 ENGINE ROOM RELAY BLOCK AND NO. 1 JUNCTION BLOCK ASSEMBLY - BATTERY ECU ASSEMBLY)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

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

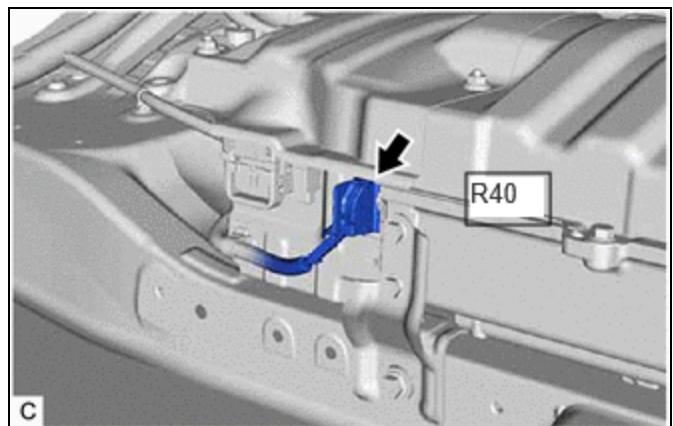
NOTICE:

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) Remove the IGCT NO. 2 fuse from the No. 1 engine room relay block and No. 1 junction block assembly.
- (d) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(R40\)](#)

[Click Connector\(R40\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R40-12 (IGCT) - 2 (IGCT NO. 2 fuse holder)	Always	Below 1 Ω

(e) Install the IGCT NO. 2 fuse.

(f) Reconnect the battery ECU assembly connector.

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



5.	CHECK HARNESS AND CONNECTOR (NO. 1 ENGINE ROOM RELAY BLOCK AND NO. 1 JUNCTION BLOCK ASSEMBLY)
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(a) Remove the IGCT-MAIN NO. 1 relay and IGCT NO. 2 fuse from the No. 1 engine room relay block and No. 1 junction block assembly.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (IGCT-MAIN NO. 1 relay holder) - 1 (IGCT NO. 2 fuse holder)	Always	Below 1 Ω

(c) Install the IGCT-MAIN NO. 1 relay and IGCT NO. 2 fuse.

OK ► CHECK ECU Power Source Circuit (HYBRID CONTROL SYSTEM)

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

6.	CHECK HARNESS AND CONNECTOR (NO. 1 ENGINE ROOM RELAY BLOCK AND NO. 1 JUNCTION BLOCK ASSEMBLY - BATTERY ECU ASSEMBLY)
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CAUTION:

Be sure to wear insulated gloves and protective goggles.

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

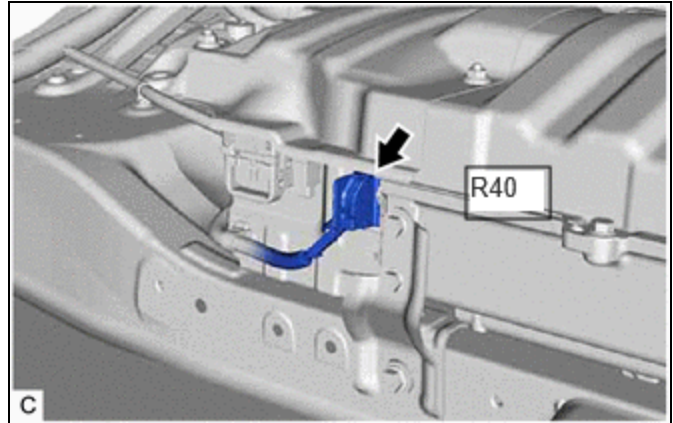
NOTICE:

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) Remove the IGCT NO. 2 fuse from the No. 1 engine room relay block and No. 1 junction block assembly.

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

Standard Resistance:



[Click Location & Routing\(R40\).](#)

[Click Connector\(R40\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R40-12 (IGCT) or 2 (IGCT NO. 2 fuse holder) - Body ground and other terminals	Always	10 kΩ or higher

(e) Install the IGCT NO. 2 fuse.

(f) Reconnect the battery ECU assembly connector.

OK ► REPLACE FUSE (IGCT NO. 2)

NG



7.	REPAIR OR REPLACE HARNESS OR CONNECTOR
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NEXT ► REPLACE FUSE (IGCT NO. 2)

