Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BO8V
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (BATTERY / CHARGING): CHARGING SYSTEM: ON-VEHICLE INSPECTION; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

ON-VEHICLE INSPECTION

CAUTION / NOTICE / HINT

PROCEDURE

1. CHECK AUXILIARY BATTERY

(a) Check that the auxiliary battery cables are connected to the correct terminals.

If they are not, connect them properly.

(b) Check the auxiliary battery for damage and deformation. If severe damage, deformation or leakage is found, replace the auxiliary battery.

(c) Check the electrolyte level in each cell.

(1) For maintenance-free batteries:

- If the electrolyte level is below the lower line, replace the battery.

(2) For non-maintenance-free batteries:

- If the electrolyte level is below the lower line, add distilled water to each cell. Then, recharge the auxiliary battery and check the electrolyte specific gravity.

  Standard Specific Gravity:
  1.25 or higher at 20°C (68°F)

2. CHECK AUXILIARY BATTERY VOLTAGE

Pre-procedure1

(a) Turn the ignition switch off and turn on the headlights for 30 seconds. This will remove the surface charge from the auxiliary battery.

Procedure1

(b) Measure the auxiliary battery voltage according to the value(s) in the table below.

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
Positive (+) auxiliary battery terminal - Negative (-) auxiliary battery terminal	20°C (68°F) Ignition switch off	12.0 V or higher	Auxiliary battery is OK
		12.0 V or less	Recharge auxiliary battery

Post-procedure1

(c) None

3. RECHARGE AUXILIARY BATTERY

Pre-procedure1

(a) Recharge the auxiliary battery.

HINT:

- Recharge the auxiliary battery according to the charger's instructions.
- Apply the appropriate charging current according to the type of auxiliary battery shown in the table below.

CHARGE METHOD	CHARGING CURRENT
Normal	Below 5 A

(b) Turn the ignition switch off and turn on the headlights for 30 seconds. This will remove the surface charge from the auxiliary battery.

(c) Turn the headlights off.

Procedure1

(d) Measure the auxiliary battery voltage according to the value(s) in the table below.

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
Positive (+) auxiliary battery terminal - Negative (-) auxiliary battery terminal	20°C (68°F), Ignition switch off	12.0 V or higher	Auxiliary battery is OK
		12.0 V or less	Recharge auxiliary battery

Post-procedure1

(e) None

4. CHECK AUXILIARY BATTERY TERMINAL, FUSIBLE LINK AND FUSE

(a) Check that the auxiliary battery terminals are not loose or corroded.

If a terminal is loose or corroded, tighten or clean the terminal.

Standard:

BATTERY TERMINAL	SPECIFIED CONDITION
Positive (+) terminal	5.6 N*m 57 kgf*cm 50 in.*lbf
Negative (-) terminal	5.4 N*m 55 kgf*cm 48 in.*lbf

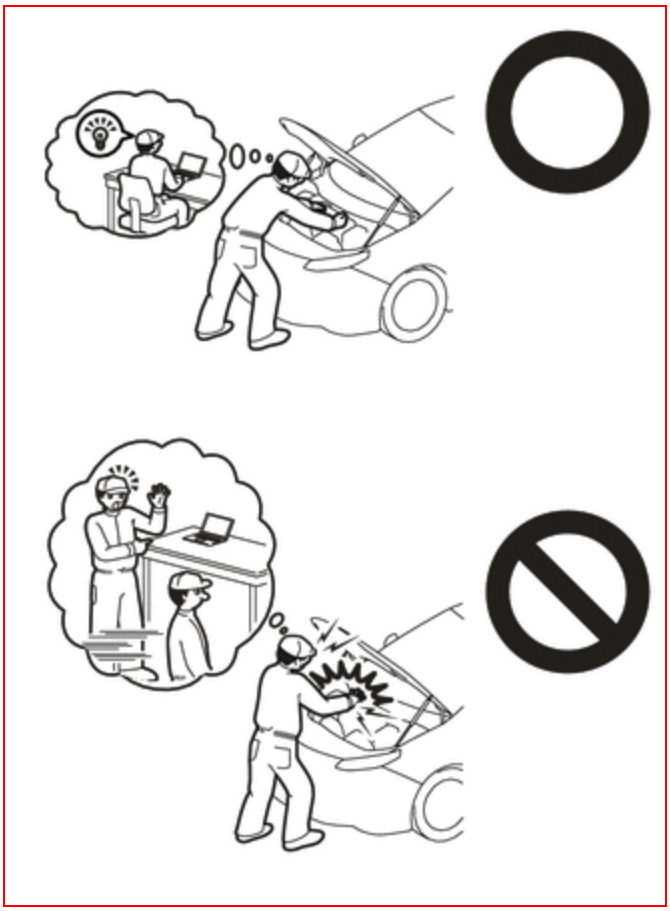
(b) Measure the resistance of each fusible link and fuse for the auxiliary battery charging system.

Standard resistance:
Below 1 Ω

5. CHECK AMD TERMINAL

CAUTION:

- Orange wire harnesses and connectors indicate high-voltage circuits. To prevent electric shock, always follow



the procedure described in the repair manual.

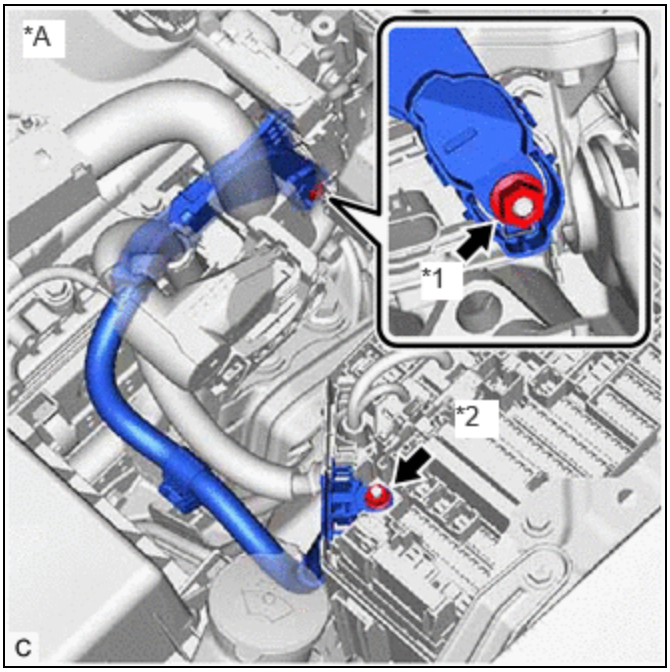
Click here INFO

- To prevent electric shock, wear insulated gloves when working on wire harnesses and components of the high

voltage system.

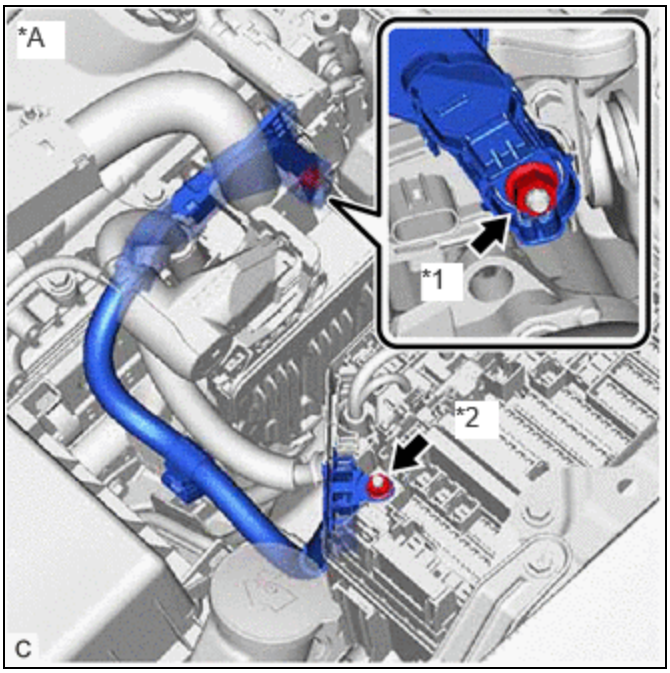
(a) Remove the service plug grip.

(b) Check that the AMD terminal is connected securely, and there is no contact problem.



*A	for HEV model
*1	AMD Terminal (Inverter with Converter Assembly Side)
*2	AMD Terminal (No. 1 Engine Room Relay Block and No. 1 Junction Block Assembly Side)

If there are any arc marks, replace the affected parts.



*A	for PHEV model
*1	AMD Terminal (Inverter with Converter Assembly Side)
*2	AMD Terminal (No. 1 Engine Room Relay Block and No. 1 Junction Block Assembly Side)

(c) Check that the nut for the AMD terminal is tightened to the specified torque.

Torque:

Inverter with converter assembly side

T=16 N*m (163 kgf*cm, 12 ft.*lbf)

No. 1 engine room relay block and No. 1 junction block assembly side

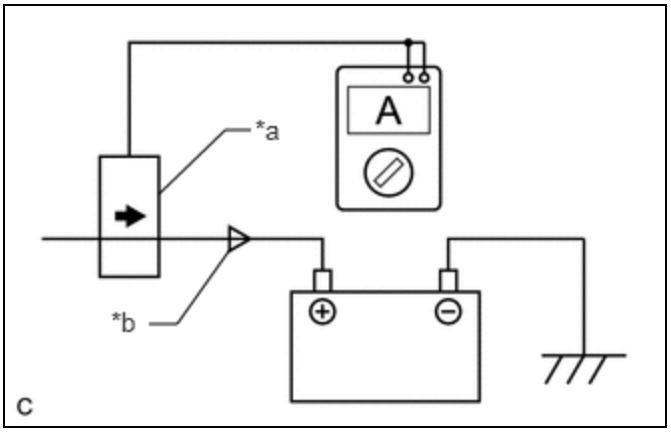
T=8.4 N*m (86 kgf*cm, 74 in.*lbf)

If there are no arc marks and the AMD terminal connection is faulty, connect the AMD terminal securely.

(d) Install the service plug grip.

6. CHECK DC/DC CONVERTER FUNCTION

(a) Connect the AC/DC 400 A probe to the positive (+) auxiliary battery cable.



*a	Probe Direction
*b	Current Flowing into Auxiliary Battery

(b) Turn the ignition switch on (READY) and leave the vehicle as is until the electric current flowing to the auxiliary battery becomes 10 A or less.

(c) Turn on the high beam headlights, and turn the blower motor switch to the HI position and the rear window defogger on.

(d) Measure the current and voltage according to the value(s) in the table below.

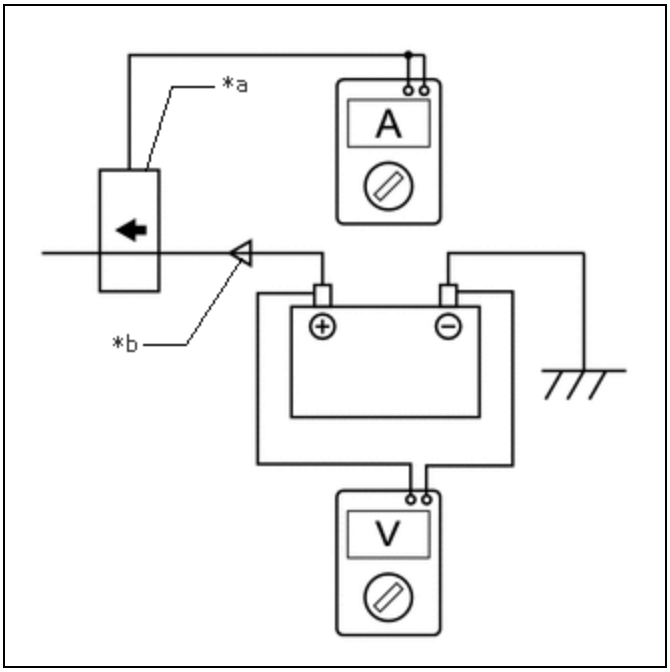
Result:

Current flowing from auxiliary battery

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
Positive (+) auxiliary battery cable	Ignition switch on (READY) (The high beam headlights are on, the blower motor switch is in the HI position, and the rear window defogger is turned on.)	0 A or less (No current from auxiliary battery)

Auxiliary battery voltage

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
Positive (+) auxiliary battery terminal - Negative (-) auxiliary battery terminal	Ignition switch on (READY) (The high beam headlights are on, the blower motor switch is in the HI position, and the rear window defogger is turned on.)	12.5 to 15 V



*a	Probe Direction
*b	Current Flowing from Auxiliary Battery