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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HV BATTERY (for PHEV Model): INSPECTION; 2023 - 2024 MY Prius Prime [03/2023 -]		

INSPECTION

DESCRIPTION

If the vehicle has been subjected to a strong impact, use the following procedure to perform an on-vehicle check.

PROCEDURE

1.	**EXTERNAL INSPECTION**

CAUTION:

Wear insulating gloves and protective glasses when working.

HINT:

- The purpose of the external inspection is to determine the condition of the HV supply battery assembly.
- Perform the external inspection after first cleaning away any dust or mud on the HV supply battery assembly and ensuring an appropriate level of cleanliness.

(a) Remove the service plug grip.

Click here INFO

INSPECTION ITEM	INSPECTION METHOD	IMPORTANT POINTS TO CHECK
Abnormal Odor	Smell for Odors	Get under the vehicle and check for odors (sweet, acrid, or burnt odors)
HV Supply Battery Assembly External Wire Harness/Connector	Visual Inspection	Check the high voltage wire harness and connector condition. Also check for water entry when disconnected.
		Check the low voltage wire harness and connector condition. Also check for water entry when disconnected.
HV Supply Battery Assembly - Frame Bolt Fastening Inspection	Visual Inspection	Check the fastening points with the body for looseness, falling out, damage, or twisting.
HV Supply Battery Assembly Lower Side External Inspection	Visual Inspection	1. Check the condition of the paint on the lower side. 2. Check that there is no deformation or rust. 3. Check that the HV supply battery assembly has no abrasion or other damage. 4. Check that there are no signs of flooding or submersion.
Service Plug Grip Inspection	Visual Inspection	Check that the service plug grip has no deformation or abrasion damage, and that the No. 2 traction battery cover and service plug grip are clean and without foreign matter contamination.

INSPECTION ITEM	INSPECTION METHOD	IMPORTANT POINTS TO CHECK
Coolant Line Supply/Outlet Inspection	Visual Inspection	Check that the coolant line (refrigerant line) hoses, No. 2 discharge hose sub-assembly and No. 1 discharge hose sub-assembly connecting portions have no fluid leakage.
HV Supply Battery Assembly Upper Side Inspection **HINT:** Use a mirror and perform inspection in the areas that are visible.	Visual Inspection	1. Check that there are no cracks, and that the painted surfaces have no bubbling or swelling. 2. Check that the pressure release valve and pressure equalization membrane have no looseness with the body, and that there is no sludge accumulation, deformation, or cracking. 3. Check that there are no signs of flooding or submersion. 4. Check for damage to the No. 1 traction battery carrier and No. 1 traction battery cover (splitting or deformation of the lower and upper seal surfaces, etc.)

(b) If the visual inspection of the HV supply battery assembly reveals deformation/cracking that results in clearly apparent penetration, replace the HV supply battery assembly.

Click here INFO

NEXT

2.	**CHECK FOR AIRTIGHTNESS (ON-VEHICLE)**

Click here INFO

RESULT	PROCEED TO
OK (External Inspection OK, Airtightness Check OK)	A
NG (External Inspection or Airtightness Check NG)	B

A **END**

B

3.	**REMOVE HV SUPPLY BATTERY ASSEMBLY**

Click here INFO

NEXT

4.	**CHECK FOR AIRTIGHTNESS (COMPONENT)**

Click here INFO

RESULT	PROCEED TO
OK (Remove No. 1 traction battery cover.)	NEXT
NG (After identifying airtightness check problem location, remove the No. 1 traction battery cover.)	

NEXT

5.	**REMOVE NO. 1 TRACTION BATTERY COVER**

Click here INFO

NEXT

6.	**INSULATION INSPECTION HV SUPPLY BATTERY ASSEMBLY**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

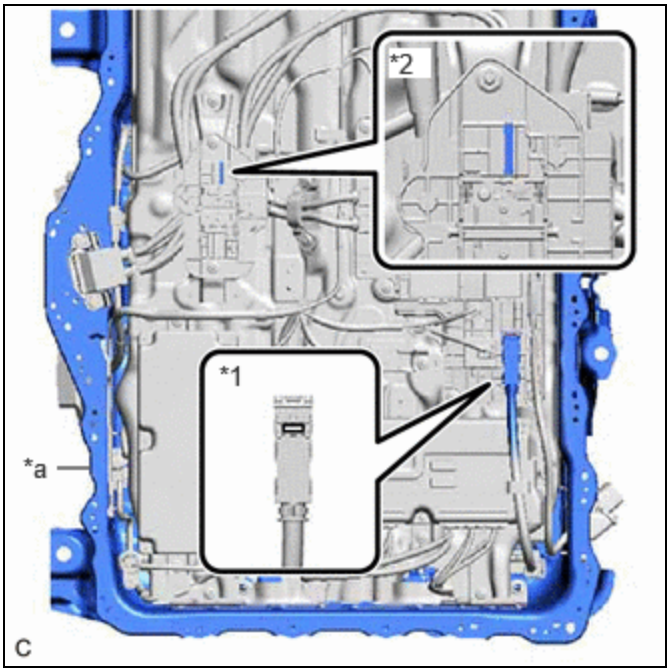
(a) Using a megohmmeter set to 500 V, measure the insulation resistance according to the value(s) in the table below.

NOTICE:

Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A - Battery Outer Case	Always	1 MΩ or higher
B - Battery Outer Case	Always	1 MΩ or higher



*1	HV Battery Main Cable (A)
*2	HV Battery Main Cable (B)
*a	Battery Outer Case

OK ▶ **GO TO STEP 13**

NG ▼

7.	**CHECK NO. 1 TRACTION BATTERY DEVICE BOX**

CAUTION:

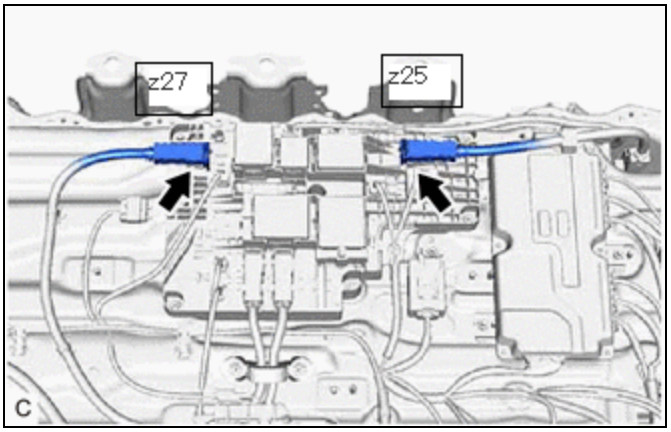
Be sure to wear insulated gloves and protective goggles.

(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 high voltage cable connector of the HV battery from the No. 1 traction battery device box assembly.



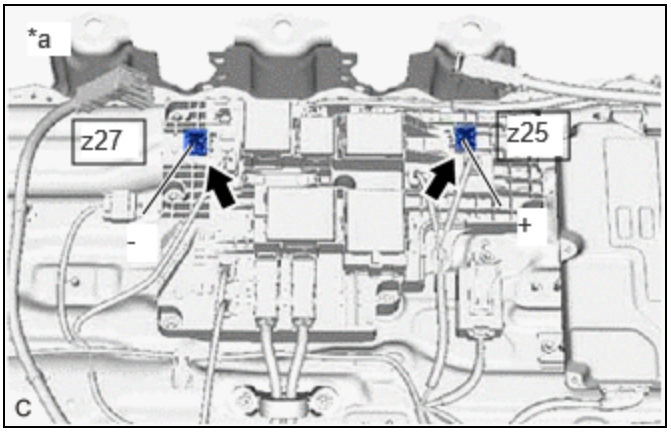
NOTICE:

Insulate each disconnected high-voltage connector with insulating tape. Wrap the connector from the wire harness side to the end of the connector.

(c) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below.

NOTICE:

Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.



*a	Component without harness connected (No. 1 Traction Battery Device Box Assembly)

Standard Resistance:

EWD INFO

Click Location & Routing(z25,z27)
Click Connector(z25)
Click Connector(z27)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
z25-1 (+) - Body ground	Ignition switch off	10 MΩ or higher
z27-1 (-) - Body ground	Ignition switch off	10 MΩ or higher

NG ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX**

OK ▼

8.	**CHECK HV SUPPLY BATTERY ASSEMBLY**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

(a) Check that no electrolyte is leaking from each HV supply battery assembly.

RESULT	PROCEED TO
Electrolyte is not leaking from the HV supply battery assembly.	A
Electrolyte is leaking from the HV supply battery assembly.	B

B ▶ **REPLACE HV SUPPLY BATTERY ASSEMBLY (HV supply stack sub-assembly that has a leak of electrolyte)**

A ▼

9.	**CHECK TRACTION BATTERY PLUG CABLE (NO. 1 HV SUPPLY STACK SUB-ASSEMBLY)**

CAUTION:

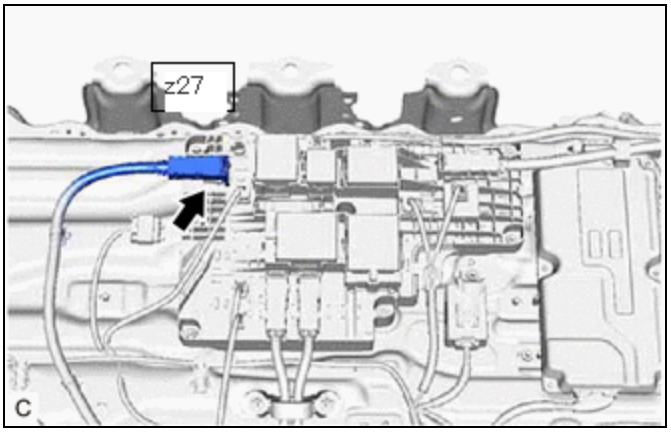
Be sure to wear insulated gloves and protective goggles.

(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 traction battery plug cable (HV supply stack sub-assembly) connector from the No. 1 traction battery device box assembly.



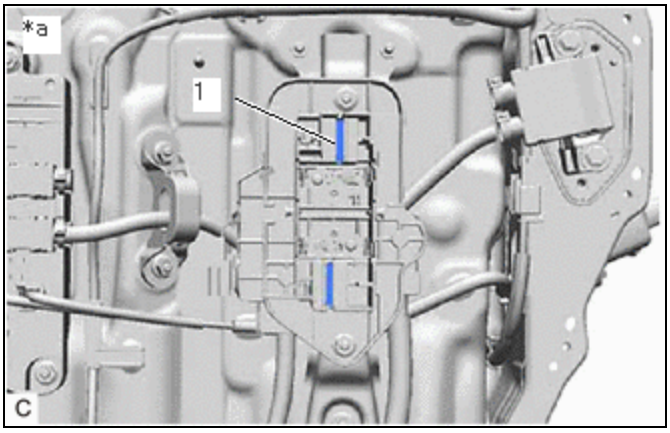
(c) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below.

NOTICE:

Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 - Body ground	Ignition switch off	10 MΩ or higher



*a	Traction Battery Plug Cable Grip

NG ▶ **GO TO STEP 18**

OK ▼

10.	**CHECK NO. 1 HV SUPPLY STACK SUB-ASSEMBLY**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

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

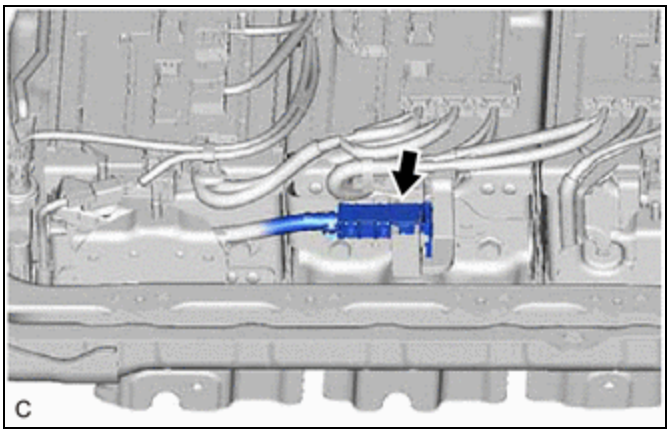
NOTICE:

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 traction battery cable (No. 1 HV supply stack sub-assembly).

NOTICE:

Insulate each disconnected high-voltage connector with insulating tape. Wrap the connector from the wire harness side to the end of the connector.



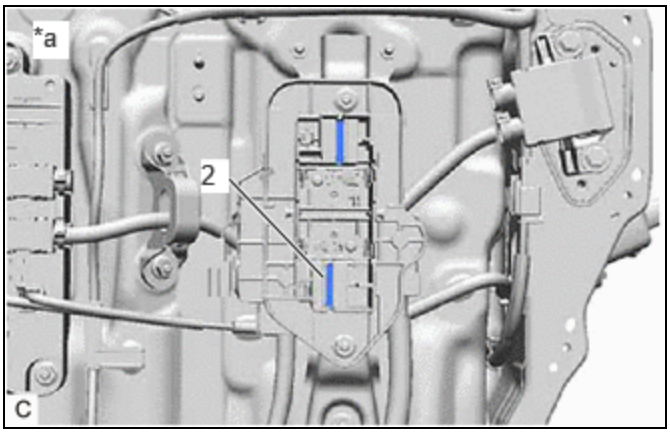
(c) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below.

NOTICE:

Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2 - Body ground	Ignition switch off	10 MΩ or higher



*a	Traction Battery Plug Cable Grip

NG ▶ **GO TO STEP 17**

OK ▼

11.	CHECK NO. 3 HV SUPPLY STACK SUB-ASSEMBLY

CAUTION:

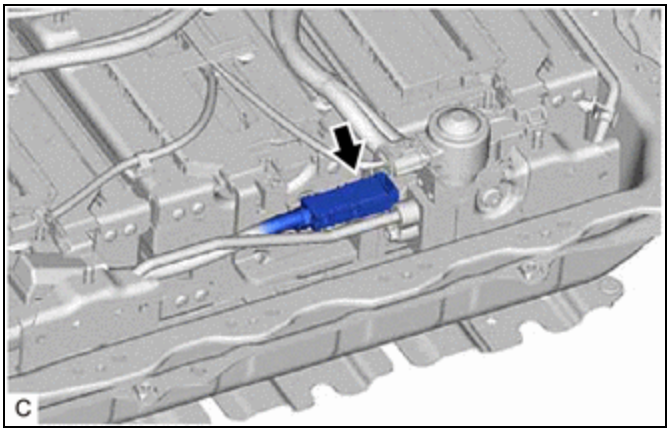
Be sure to wear insulated gloves and protective goggles.

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

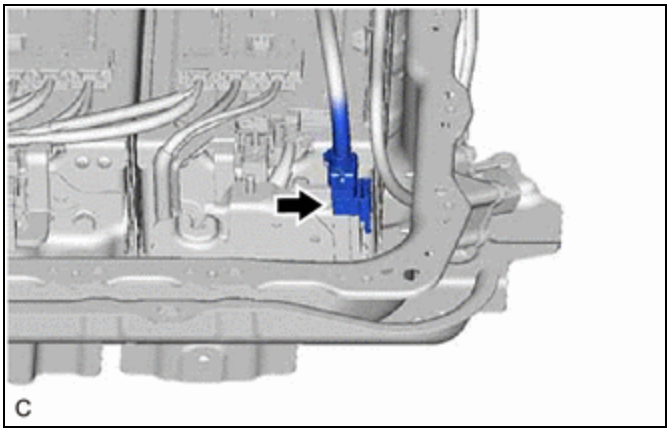
NOTICE:

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 traction battery cable (No. 3 HV supply stack sub-assembly).



(c) Disconnect the traction battery cable connector.



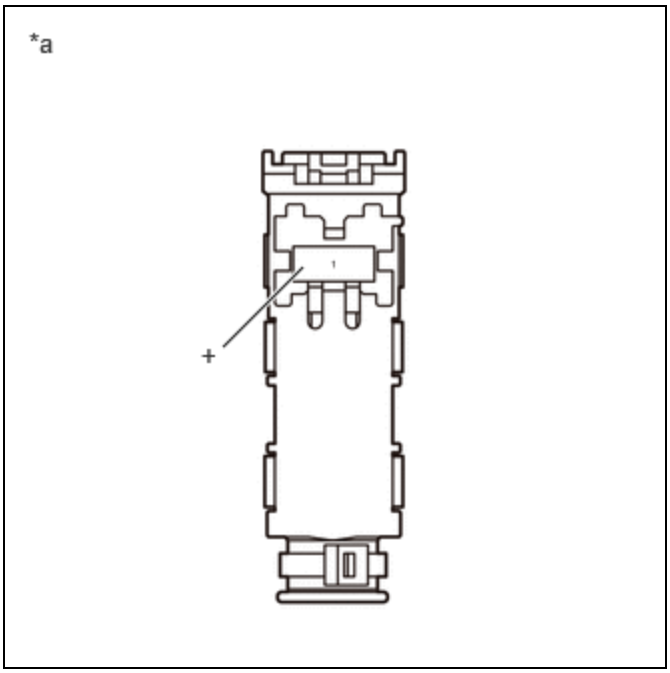
(d) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below.

NOTICE:

Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (+) - Body ground	Ignition switch off	10 MΩ or higher



*a	No. 3 HV Supply Stack Sub-assembly Connector (No. 2 HV Supply Stack Sub-assembly Side)

NG ▶ **GO TO STEP 16**

OK ▼

12.	**REPLACE NO. 2 HV SUPPLY STACK SUB-ASSEMBLY**

Click here INFO

NOTICE:

When replacing components, also replace any other components that need to be replaced with new ones at the same time.

NEXT

13.	PERFORM INTERNAL INSPECTION OF HV SUPPLY BATTERY ASSEMBLY

CAUTION:

Wear insulating gloves and protective glasses when working.

NOTICE:

If an obvious sign of water intrusion is found, replace the HV supply battery assembly.

(a) Check the following items to determine whether there has been water entry into the HV supply battery assembly. If problems are found, replace the malfunctioning components.

PROCEDURE	INSPECTION METHOD	IMPORTANT POINTS TO CHECK
Inspect for condensation on the inside of the upper cover.	Visual Inspection	Check that the inside of the upper cover has a good appearance, has no condensation, and has no signs that water droplets were present.
Inspect for water entry inside the HV supply battery assembly.	Visual Inspection	Check the condition of the top and sides of the HV battery stack.
		Check the condition of the heater relay.
		Check the condition of the junction block.
		Check the condition of the lower case.
		Check the ECU and SBM condition.
Inspect the appearance and connector connection status of the low voltage wire harness inside the HV supply battery assembly.	Visual Inspection	Check that the external appearance is good, there is no wear or degradation, and the connector is not loose. Check that the harness insulation does not have wear, and has no abnormal discoloration or blackening.
Inspect the high voltage wire harness (including electrical connector) inside the HV supply battery assembly.	Visual Inspection	Check that the external appearance is good, there is no wear or degradation, and the connector is not loose. Check that the harness insulation does not have wear, and has no abnormal discoloration or blackening.
Inspect the torque of the brass high voltage bolts.	Inspection Using Tools	Check for looseness in the torque of all bus bar fastening locations. Tighten to the specified torque.
Inspect the external appearance of the water cooling plate.	Visual Inspection	Check that the coolant line (refrigerant line) hoses/hard type connections are in good condition.
		Check that the water cooling plate (refrigerant) has no deformation.
Inspect the cleanliness of the HV supply battery assembly.	Visual Inspection	Check that the cleanliness of the interior is good, and that there is no foreign matter remaining.

PROCEDURE	INSPECTION METHOD	IMPORTANT POINTS TO CHECK
Replace the No. 2 HV battery seal.	Component Replacement	Replace the No. 2 HV battery seal.
Inspect the lower surface of the No. 1 traction battery carrier.	Visual Inspection	Check for rust on the lower surface of the No. 1 traction battery carrier.
Inspect the lower surface of the first stage HV battery stack.	Visual Inspection	Check for rust on the lower surface of the first stage HV battery stack.

(b) If any abnormalities are found, replace the affected part(s).

NG ▶ **REPLACE REPAIR OR REPLACE MALFUNCTIONING PARTS**

OK

▼

14.	INSTALL NO. 1 TRACTION BATTERY COVER

(a) After replacing the airtightness check problem location, install the No. 1 traction battery cover.

Click here INFO

NEXT

▼

15.	CHECK FOR AIRTIGHTNESS (COMPONENT)

Click here INFO

OK ▶ **INSTALL HV SUPPLY BATTERY ASSEMBLY**

NG ▶ **REPAIR OR REPLACE MALFUNCTIONING PARTS**

(a) Identify the leak locations(s) and replace the affected part(s).

16.	REPLACE NO. 3 HV SUPPLY STACK SUB-ASSEMBLY

Click here INFO

NOTICE:

When replacing components, also replace any other components that need to be replaced with new ones at the same time.

NEXT ▶ **GO TO STEP 13**

17.	**REPLACE NO. 1 HV SUPPLY STACK SUB-ASSEMBLY**

Click here INFO

NOTICE:

When replacing components, also replace any other components that need to be replaced with new ones at the same time.

NEXT ▶ **GO TO STEP 13**

18.	**REPLACE NO. 1 HV SUPPLY STACK SUB-ASSEMBLY**

Click here INFO

NOTICE:

When replacing components, also replace any other components that need to be replaced with new ones at the same time.

NEXT ▶ **GO TO STEP 13**