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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for M20A-FXS): P0AA649,P1C7C49-P1C7F49,P1C8049; Hybrid/EV Battery Voltage System Isolation Internal Electronic Failure; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	P0AA649	Hybrid/EV Battery Voltage System Isolation Internal Electronic Failure
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DTC	P1C7C49	Hybrid/EV Battery Voltage System Isolation (A/C Area) Internal Electronic Failure
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DTC	P1C7D49	Hybrid/EV Battery Voltage System Isolation (Hybrid/EV Battery Area) Internal Electronic Failure
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DTC	P1C7E49	Hybrid/EV Battery Voltage System Isolation (Transaxle Area) Internal Electronic Failure
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DTC	P1C7F49	Hybrid/EV Battery Voltage System Isolation (Direct Current Area) Internal Electronic Failure
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DTC	P1C8049	Hybrid/EV Battery Voltage System Isolation (Rear Motor Area) Internal Electronic Failure
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DESCRIPTION

The hybrid vehicle control ECU monitors the battery ECU assembly and detects insulation malfunctions in the high-voltage system.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0AA649	Hybrid/EV Battery Voltage System Isolation Internal Electronic Failure	Insulation resistance between the high-voltage circuit and the body has decreased.*2 (1 trip detection logic)	<ul style="list-style-type: none"> Inverter with converter assembly HV floor under wire HV battery junction block assembly Battery ECU assembly HV battery 	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0AA6

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
			<ul style="list-style-type: none"> Hybrid vehicle transaxle assembly Motor cable Air conditioning system HV air conditioning wire Rear traction motor with transaxle assembly*1 					
P1C7C49	Hybrid/EV Battery Voltage System Isolation (A/C Area) Internal Electronic Failure	Insulation resistance of the compressor with motor assembly or air conditioning inverter has decreased.*3 (1 trip detection logic)	Air conditioning system	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0AA6
P1C7D49	Hybrid/EV Battery Voltage System Isolation (Hybrid/EV Battery Area) Internal Electronic Failure	Insulation resistance of the HV battery, battery ECU assembly or SMR has decreased.*3 (1 trip detection logic)	<ul style="list-style-type: none"> HV battery junction block assembly Battery ECU assembly HV battery 	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0AA6
P1C7E49	Hybrid/EV Battery Voltage System Isolation (Transaxle Area) Internal Electronic Failure	Insulation resistance of the hybrid vehicle transaxle assembly or inverter for the generator (MG1) and motor (MG2) has decreased.*3	<ul style="list-style-type: none"> Hybrid vehicle transaxle assembly Motor cable Inverter with converter assembly 	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0AA6

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
		(1 trip detection logic)						
P1C7F49	Hybrid/EV Battery Voltage System Isolation (Direct Current Area) Internal Electronic Failure	Insulation resistance of the inverter for the generator (MG1), motor (MG2) and rear motor (MGR), A/C inverter, SMR or high-voltage direct current wire has decreased.*3 (1 trip detection logic)	<ul style="list-style-type: none"> Inverter with converter assembly HV floor under wire HV battery junction block assembly Air conditioning system HV air conditioning wire 	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0AA6
P1C8049	Hybrid/EV Battery Voltage System Isolation (Rear Motor Area) Internal Electronic Failure	Insulation resistance of the rear motor area has decreased.*3 (1 trip detection logic)	<ul style="list-style-type: none"> Inverter with converter assembly Rear traction motor with transaxle assembly*1 HV floor under wire (rear traction motor cable)*1 	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0AA6

*1: for 4WD

HINT:

- *2: The insulation malfunction detection circuit in the battery ECU assembly monitors the insulation resistance between the high voltage circuits and body. If the insulation resistance decreases, the hybrid vehicle control ECU stores DTC P0AA649 and illuminates the master warning first regardless of malfunction area.

Depending on the vehicle condition, the high voltage circuit insulation resistance may return to normal. So if DTC P0AA649 is output, complete the following steps as soon as possible.

- *3: If the following operations are performed within the same trip after DTC P0AA649 is stored, just one of the related DTCs (P1C7C49, P1C7D49, P1C7E49, P1C7F49 or P1C8049) will be stored.
 - Apply the parking brake firmly.

NOTICE:

Perform this test with the AUTO function (shift-linked function) of the electric parking brake system off.

HINT:

When the parking brake indicator (red) is illuminated after the electric parking brake switch assembly has been pulled to the lock side, the maximum amount of braking force is applied if the electric parking brake switch assembly is pulled to the lock side one more time.

- b. Wait for 1 minute or more with the vehicle stopped, the brake pedal firmly depressed, the ignition switch ON (READY), shift lever in D and the air conditioning system on (Lo/MAX COOL, blower speed HI).
- c. Turn the ignition switch off and wait for 2 minutes or more.

HINT:

- DTCs and freeze frame data are useful information in determining the malfunctioning part. Before performing diagnosis, make sure to check and make a note of all output DTCs and freeze frame data. (Even if a high-voltage insulation malfunction cannot be reproduced, once stored, insulation malfunction DTCs will not be cleared unless the clear operation is performed.)
 - When the insulation resistance of the HV battery area decreases and the ignition switch is turned to ON, DTC P1C7D49 is stored within 2 minutes.
- When measuring insulation resistance using a megohmmeter, measure the resistance while jiggling the high voltage wire harness.

CONFIRMATION DRIVING PATTERN

CONFIRMATION AFTER REPLACING PARTS

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. (Do not turn the ignition switch off (READY off) during this inspection.)

Click here [INFO](#)

1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Turn the ignition switch off and wait for 2 minutes or more.
3. Apply the parking brake and secure the wheels using chocks.

NOTICE:

Perform this test with the AUTO function (shift-linked function) of the electric parking brake system off.

HINT:

When the parking brake indicator (red) is illuminated after the electric parking brake switch assembly has been pulled to the lock side, the maximum amount of braking force is applied if the electric parking brake switch assembly is pulled to the lock side one more time.

4. When the vehicle is stationary, turn the ignition switch to ON (READY) with shift lever in P and wait for 1 minute or more.
5. Turn the air conditioning system on (MAX COLD, blower speed HI).
6. While depressing the brake pedal without depressing the accelerator pedal, move the shift lever to D and wait for 5 minutes.

- If step A is performed within the same trip after DTC P0AA649 is stored, the parts with insufficient insulation resistance will be determined and a DTC (P1C7C49, P1C7D49, P1C7E49, P1C7F49 or P1C8049) will be stored.

- If no DTCs are output, proceed to the next step.

7. Drive the vehicle for approximately 5 minutes referring to the following freeze frame data items: "Vehicle Speed", "Shift Position", "Accelerator Position", "Engine Speed", "Coolant Temperature", "Master Cylinder Control Torque", "Inverter Coolant Water Temperature", "Generator Inverter Calculated Temperature" and "Motor Inverter Temperature"

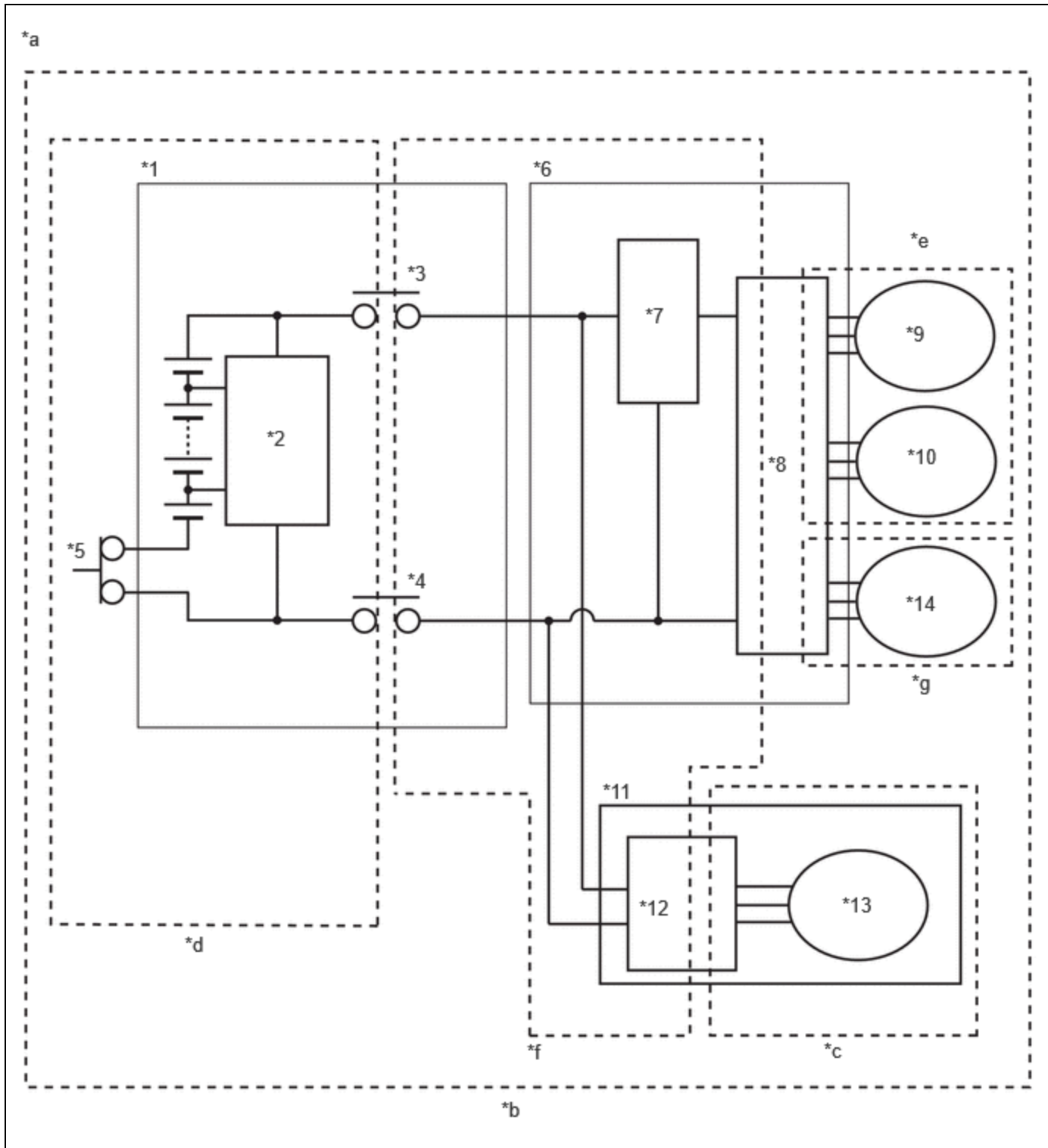
(If the freeze frame data item "Vehicle Speed" is 10 km/h (6 mph) or less, drive the vehicle at 10 km/h (6 mph) or more.)

- If step A is performed within the same trip after DTC P0AA649 is stored, the parts with insufficient insulation resistance will be determined and a DTC (P1C7C49, P1C7D49, P1C7E49, P1C7F49 or P1C8049) will be stored.
 - If DTC P0AA649 is output, complete Step A immediately as quickly as possible.
8. Wait for 1 minute or more with the vehicle stopped, the ignition switch ON (READY), shift lever in P and the air conditioning system on (Lo/COOL MAX, blower speed HI), then turn the ignition switch off and wait for 2 minutes or more. (Step A)
 9. Enter the following menus: Powertrain / Hybrid Control / Utility / All Readiness.
 10. Check the DTC judgment result.

HINT:

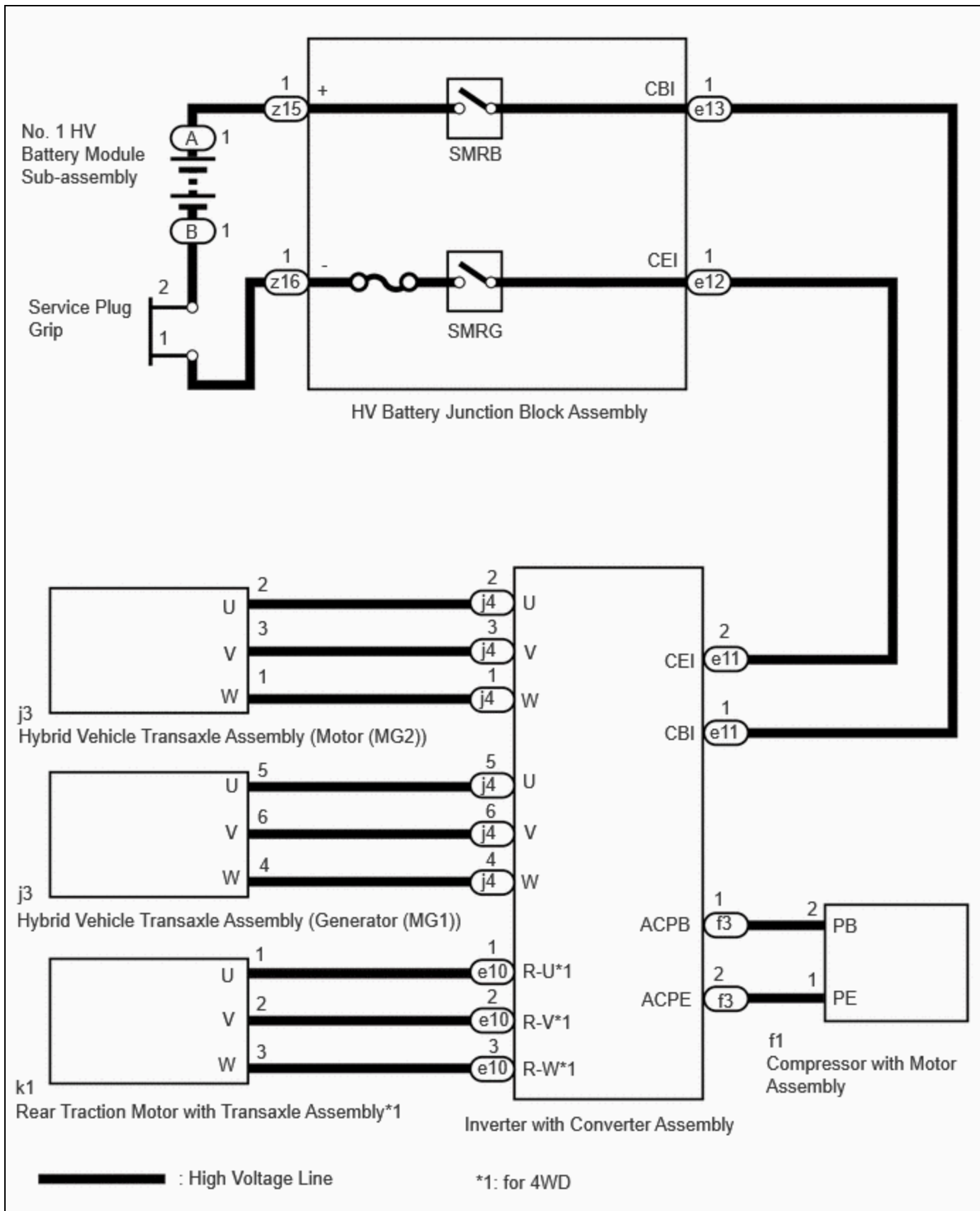
- o If the judgment result shows NORMAL, the system is normal.
- o If the judgment result shows ABNORMAL, the system has a malfunction.
- o If the judgment result shows INCOMPLETE, perform driving pattern again.

WIRING DIAGRAM



*1	HV Battery	*2	Battery ECU assembly
*3	SMRB	*4	SMRG
*5	Service Plug Grip	*6	Inverter with Converter Assembly
*7	Boost Converter	*8	Inverter
*9	Generator (MG1)	*10	Motor (MG2)
*11	Compressor with Motor Assembly	*12	A/C Inverter
*13	A/C Motor	*14	Rear Motor (MGR) (for AWD)
*a	High-voltage Areas	*b	DTC P0AA649 Vehicle Insulation Resistance Reduction Area

*c	DTC P1C7C49 Air Conditioning System Area	*d	DTC P1C7D49 HV Battery Area
*e	DTC P1C7E49 Hybrid Vehicle Transaxle Assembly Area or Inverter with Converter Assembly AC (Alternation Current) Section Area	*f	DTC P1C7F49 High Voltage Direct Current Area
*g	DTC P1C8049 Rear Motor Area	-	-



SYSTEM DESCRIPTION

HINT:

If a decrease in insulation resistance cannot be confirmed using a megohmmeter, check "Short Wave Highest Value Level" in the Data List.

SHORT WAVE HIGHEST VALUE LEVEL

(a) "Short Wave Highest Value Level" shows a decrease in insulation resistance. When insulation resistance decreases, "Insulation Lower" will be displayed. However, even though the insulation resistance of the vehicle is normal, "Short Wave Highest Value Level" may decrease, so that "Not Judge" will be displayed for any of the following conditions.

- Within approximately 1 minute since the ignition switch was turned to ON.
- When the system voltages ("Hybrid/EV Battery Voltage", "VL-Voltage before Boosting", "VL-Voltage before Boosting for Rear Motor" and "VH-Voltage after Boosting") are changing.
- During boosting. If the Data List item "Boost Ratio" is not 0% or within a few seconds of it becoming 0%. (The values of "Hybrid/EV Battery Voltage", "VL-Voltage before Boosting", "VL-Voltage before Boosting for Rear Motor" and "VH-Voltage after Boosting" are about the same when not boosting.)
- When "No" is displayed for any of the following Data List items:
 - Short Wave Highest Value Availability just after MG Inv On/Off
 - Short Wave Highest Value Availability just after A/C Inv On/Off
 - Short Wave Highest Value Availability just after SMR On/Off
 - Short Wave Highest Value Availability just after Rear Motor Inv On/Off

(b) When "Short Wave Highest Value Level" shows "Insulation Lower LV3", insulation resistance will be close to 0 Ω . In this case, damage to a high-voltage cable or hybrid component (high-voltage), or a short to body ground due to intrusion of foreign matter, such as metal particles, can be suspected.

If problem symptoms cannot be reproduced and a malfunction still exists after replacing a part as instructed, checking the following freeze frame data can help determine a trouble area.

Items to be Checked Using Freeze Frame Data:

FREEZE FRAME DATA	DIAGNOSTIC NOTE
Short Wave Highest Value Level	Indicates that the insulation resistance has decreased.
<ul style="list-style-type: none"> • VL-Voltage before Boosting • VL-Voltage before Boosting for Rear Motor • VH-Voltage after Boosting • Hybrid/EV Battery Voltage • Boost Ratio 	During boosting (when "Boost Ratio" is not 0%), or when "VL-Voltage before Boosting", "VL-Voltage before Boosting for Rear Motor", "VH-Voltage after Boosting" or "Hybrid/EV Battery Voltage" is varying, "Short Wave Highest Value Level" may decrease even though the insulation resistance is normal.

FREEZE FRAME DATA	DIAGNOSTIC NOTE
<ul style="list-style-type: none"> • SMRB Status • SMRG Status 	<p>When "SMRB Status" and "SMRG Status" are all OFF, the insulation malfunction detection circuit detects a decrease in insulation resistance in the HV battery area ((*d) in the wiring diagram).</p> <p>Example:</p> <p>When the ignition switch is turned to ON (not ON (READY)), all 2 system main relays are off and it is suspected that the HV battery assembly is disconnected from the high voltage circuits. If "Short Wave Highest Value Level" decreases a few minutes after the ignition switch is turned to ON (not ON (READY)), the HV battery assembly may have an insulation malfunction.</p>
Motor Inverter Shutdown Status	<p>When "Motor Inverter Shutdown Status" is ON, the insulation malfunction detection circuit cannot detect a decrease in insulation resistance in the motor system AC (alternating current) section (motor (MG2) side of (*e) in the wiring diagram). The motor system AC (alternating current) section includes the motor (MG2) in the hybrid vehicle transaxle assembly, motor cables and the AC (alternating current) section of the motor drive circuit in the inverter with converter assembly.</p>
Generator Inverter Shutdown Status	<p>When "Generator Inverter Shutdown Status" is ON, the insulation malfunction detection circuit cannot detect a decrease in insulation resistance in the generator system AC (alternating current) section (generator (MG1) side of (*e) in the wiring diagram). The generator system AC (alternating current) section includes the generator (MG1) in the hybrid vehicle transaxle assembly, generator cables and the AC (alternating current) section of the generator drive circuit in the inverter with converter assembly.</p>
Rear Motor Inverter Shutdown Status	<p>When "Rear Motor Inverter Shutdown Status" is ON, the insulation malfunction detection circuit cannot detect a decrease in insulation resistance in the rear motor system AC (alternating current) section ((*g) in the wiring diagram). The rear motor system AC (alternating current) section includes the rear motor (MGR) in the rear traction motor with transaxle assembly, rear traction motor cables and the AC (alternating current) section of the rear motor drive circuit in the inverter with converter assembly.</p>
A/C Consumption Power	<p>The compressor with motor assembly AC (alternating current) section ((*c) in the wiring diagram) includes the air conditioning motor, wiring between the air conditioning motor and air conditioning inverter, and the AC (alternating current) section of the air conditioning motor drive circuit in the air conditioning inverter.</p> <p>With the vehicle stopped, turn on/off the air conditioning system and observe "Short Wave Highest Value Level" to use as a diagnosis reference.</p>

RELATED FREEZE FRAME DATA

HINT:

- Reproducing the vehicle conditions the moment a DTC was stored according to the freeze frame data and results of the customer problem analysis helps ensure that the same DTC is stored again.

Driving Status

ITEM	DIAGNOSTIC NOTE
Vehicle Speed	-
Accelerator Position Sensor No.1 Voltage %	-
Engine Speed	-
Shift Position	-

ITEM	DIAGNOSTIC NOTE
Master Cylinder Control Torque	-
Coolant Temperature	-

Operation Conditions

ITEM	DIAGNOSTIC NOTE
Motor Temperature	If any liquid leaks into the ATF, insulation resistance may decrease only when the temperature is high. The motor temperature is likely to increase if the motor speed is low and output torque is high such as when cruising uphill slowly or accelerating from a low speed.
Generator Temperature	If any liquid leaks into the ATF, insulation resistance may decrease only when the temperature is high. The generator temperature is likely to increase under repeat acceleration and deceleration while the vehicle is driven in the mid speed range (60 to 80 km/h (37 to 50 mph)).
Rear Motor Temperature	If any liquid leaks into the ATF, insulation resistance may decrease only when the temperature is high. The rear motor temperature is likely to increase if the motor speed is low and output torque is high such as when cruising uphill slowly or accelerating from a low speed.

- Customer Problem Analysis

Ask the customer about the operating conditions and environment when the malfunction occurred.

ITEM	DIAGNOSTIC NOTE
Driving Condition (acceleration, deceleration, turning, etc.)	Changes in the insulation of the parts with insufficient insulation due to changes in G force or vibration are suspected.
Road Condition (unpaved, etc.)	
Weather (rain, snow, etc.)	
Washing the vehicle (Whether the malfunction occurred after washing the vehicle?)	Water intrusion is suspected

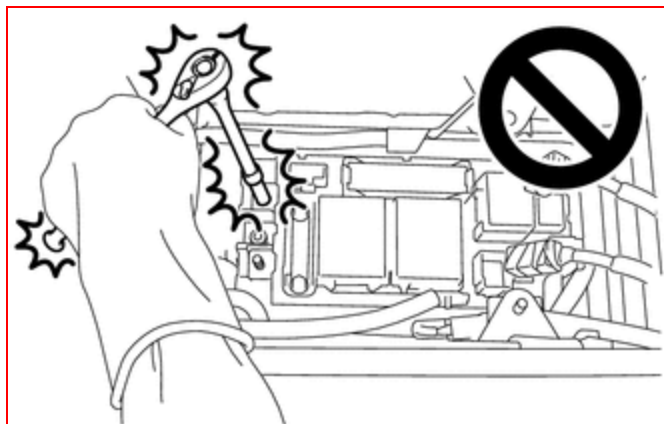
CAUTION / NOTICE / HINT

CAUTION:

- Refer to the precautions before inspecting high voltage circuit.

Click here [INFO](#)

- When troubleshooting DTC P0AA649, use either a tool wrapped with vinyl insulation tape or an insulated tool. (It is extremely dangerous when a high-voltage charge passes through a non-insulated tool causing a short.)



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](#)

HINT:

- When measuring insulation resistance using a megohmmeter, set the megohmmeter to 500 V.
- P0AA649, P1C7C49, P1C7D49, P1C7E49, P1C7F49 or P1C8049 may be output as a result of the malfunction indicated by the DTCs in table below.

- The chart above is listed in inspection order of priority.
- Check DTCs that are output at the same time by following the listed order. (The main cause of the malfunction can be determined without performing unnecessary inspections.)

MALFUNCTION CONTENT	SYSTEM	RELEVANT DTC	
Microcomputer malfunction	Hybrid control system	P060647	Hybrid/EV Powertrain Control Module Processor Watchdog / Safety MCU Failure
		P060A29	Hybrid/EV Powertrain Control Module Monitoring Processor Signal Invalid
		P060A44	Hybrid/EV Powertrain Control Module Monitoring Processor Data Memory Failure
		P060A45	Hybrid/EV Powertrain Control Module Monitoring Processor Program Memory Failure
		P060A49	Hybrid/EV Powertrain Control Module Monitoring Processor Internal Electronic Failure
		P060B1C	Hybrid/EV Powertrain Control Module A/D Processing Voltage Out of Range
		P060B71	Hybrid/EV Powertrain Control Module A/D Processing Actuator Stuck
		P1CE31C	Hybrid/EV Powertrain Control Module Monitoring Processor A/D Processing Voltage Out of Range
		P1CE349	Hybrid/EV Powertrain Control Module Monitoring Processor A/D Processing Internal Electronic Failure
		P1CE371	Hybrid/EV Powertrain Control Module Monitoring Processor A/D Processing Actuator Stuck
	Hybrid battery system	P060687	Hybrid/EV Battery Energy Control Module Processor to Monitoring Processor Missing Message
		P060A47	Hybrid/EV Battery Energy Control Module Monitoring Processor Watchdog / Safety MCU Failure
		P060A87	Hybrid/EV Battery Energy Control Module Processor from Monitoring Processor Missing Message

MALFUNCTION CONTENT	SYSTEM	RELEVANT DTC	
		P060B49	Hybrid/EV Powertrain Control Module A/D Processing Internal Electronic Failure
		P062F46	Hybrid/EV Battery Energy Control Module EEPROM Calibration / Parameter Memory Failure
Power Source Circuit Malfunction	Hybrid control system	P06881F	ECM/PCM Power Relay Sense Circuit Intermittent
System malfunction	Hybrid control system	P1C9E9F	Hybrid/EV System Reset Stuck Off

PROCEDURE

1.	CHECK DTC OUTPUT (HYBRID CONTROL)
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Pre-procedure1

(a) None.

Procedure1

(b) Check for DTCs.

Powertrain > Hybrid Control > Trouble Codes

NOTICE:

- DTC P1C7C49, P1C7D49, P1C7E49, P1C7F49 and P1C8049 are not stored with P0AA649 at the same time. If a drop in insulation resistance is detected and DTC P0AA649 is output, wait for 1 minute with the ignition switch ON (READY), the shift lever in D and the air conditioning system on within the same trip, then turn the ignition switch off and wait for 2 minutes to determine the DTC (P1C7C49, P1C7D49, P1C7E49, P1C7F49 or P1C8049).
- If only DTC P0AA649 is output, perform the diagnostic procedure for DTC P0AA649 to inspect all of the high voltage circuits.
- When any other DTC indicating parts which the insulation resistance dropped are output, perform the diagnostic procedure for each DTC.

RESULT	PROCEED TO
P0AA649 (decrease in the insulation resistance of the high-voltage circuit) only is output.	A
P0AA649 and P1C7C49 (decrease in the insulation resistance of the air conditioning system area) are output.	B
P0AA649 and P1C7D49 (decrease in the insulation resistance of the HV battery area) are output.	C
P0AA649 and P1C7E49 (decrease in the insulation resistance of the hybrid vehicle transaxle assembly area) are output.	D
P0AA649 and P1C7F49 (decrease in the insulation resistance of the high-voltage direct current area) are output.	E

RESULT	PROCEED TO
P0AA649 and P1C8049 (decrease in the insulation resistance of the rear motor area) are output.	F

Post-procedure1

(c) Turn the ignition switch off.

B ► GO TO STEP 11

C ► GO TO STEP 14

D ► GO TO STEP 18

E ► GO TO STEP 23

F ► GO TO STEP 32

A
▼

2.	CHECK HYBRID VEHICLE TRANSAXLE ASSEMBLY (MOTOR CABLE (FOR MG2))
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CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

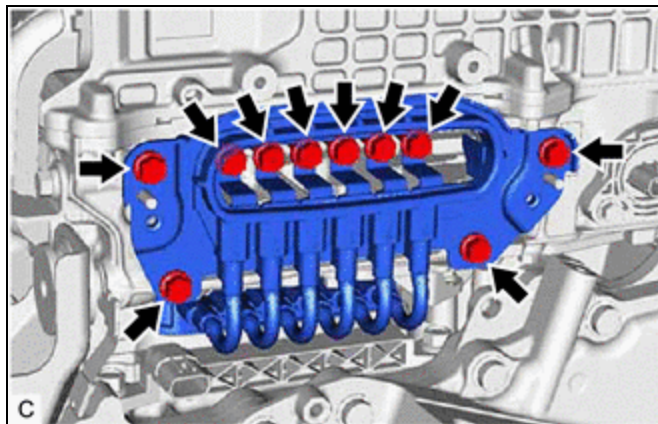
NOTICE:

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 motor cable from the inverter with converter assembly.

HINT:

Make sure that no foreign matter, coolant or water enters the inverter with converter assembly.



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

(d) Turn the ignition switch to ON.

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes DTCs to be stored. Clear the DTCs after performing this inspection.

(e) Move the shift lever to N and lift the vehicle.

(f) Turn the ignition switch off.

Procedure1

(g) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below while rotating the front wheels 2 revolutions in the same direction simultaneously.

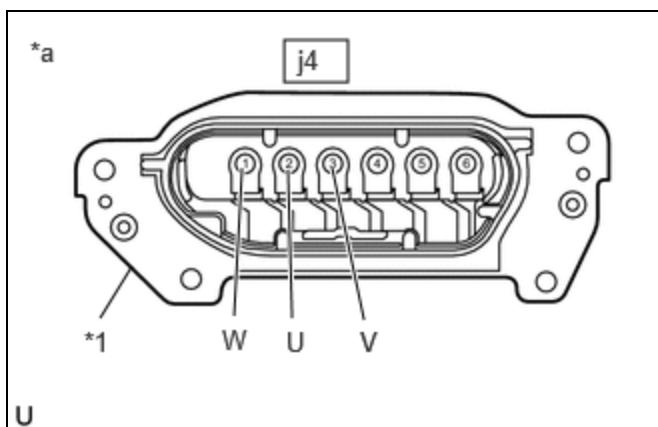
NOTICE:

- Carefully perform this inspection as the motor (MG2) may generate current when the front wheels are rotated by hand.
- 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.

HINT:

As the insulation resistance may vary when motor (MG2) rotates, perform this inspection while rotating the front wheels.

Standard Resistance:



*1	Shield Ground
*a	Motor Cable (for MG2) (Inverter with Converter Assembly Side)



[Click Location & Routing\(j4\).](#)

[Click Connector\(j4\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
j4-2 (U) - Body ground and shield ground	Ignition switch ON	100 MΩ or higher
j4-3 (V) - Body ground and shield ground	Ignition switch ON	100 MΩ or higher
j4-1 (W) - Body ground and shield ground	Ignition switch ON	100 MΩ or higher

Result:

PROCEED TO
OK
NG

Post-procedure1

- (h) Lower the vehicle and move the shift lever to P.
- (i) Disconnect the cable from the negative (-) auxiliary battery terminal.

NG ► **GO TO STEP 8**

OK



3. CHECK HYBRID VEHICLE TRANSAXLE ASSEMBLY (MOTOR CABLE (FOR MG1))

CAUTION:

Be sure to wear insulated gloves.

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) Connect the cable to the negative (-) auxiliary battery terminal.
- (c) Turn the ignition switch to ON.

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes DTCs to be stored. Clear the DTCs after performing this inspection.

(d) Move the shift lever to N and lift the vehicle.

(e) Turn the ignition switch off.

Procedure1

(f) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below while rotating the front wheels 2 revolutions in the same direction simultaneously.

NOTICE:

- Carefully perform this inspection as the generator (MG1) may generate current when the front wheels are rotated by hand.
- 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.

HINT:

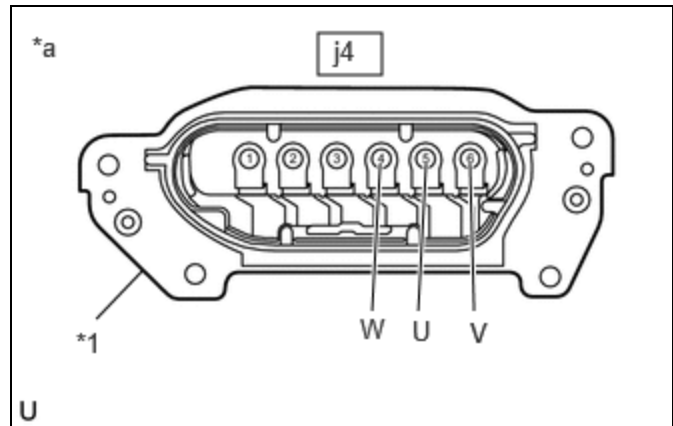
As the insulation resistance may vary when generator (MG1) rotates, perform this inspection while rotating the front wheels.

Standard Resistance:



[Click Location & Routing\(j4\).](#)

[Click Connector\(j4\).](#)



*1	Shield Ground
*a	Motor Cable (for MG1) (Inverter with Converter Assembly Side)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
j4-5 (U) - Body ground and shield ground	Ignition switch ON	100 MΩ or higher
j4-6 (V) - Body ground and shield ground	Ignition switch ON	100 MΩ or higher
j4-4 (W) - Body ground and shield ground	Ignition switch ON	100 MΩ or higher

Result:

RESULT	PROCEED TO
OK (for 4WD)	A
OK (for 2WD)	B
NG	C

Post-procedure1

- (g) Lower the vehicle and move the shift lever to P.
- (h) Disconnect the cable from the negative (-) auxiliary battery terminal.

B ► GO TO STEP 5

C ► GO TO STEP 10

A



4.	CHECK REAR TRACTION MOTOR WITH TRANSAXLE ASSEMBLY (HV FLOOR UNDER WIRE (REAR TRACTION MOTOR CABLE))
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CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

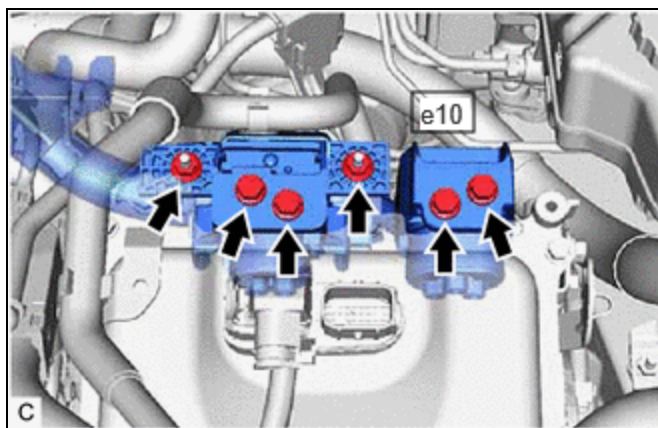
NOTICE:

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 HV floor under wire (rear traction motor cable) from the inverter with converter assembly.

HINT:

Make sure that no foreign matter, coolant or water enters the inverter with converter assembly.



- (c) Connect the cable to the negative (-) auxiliary battery terminal.
- (d) Turn the ignition switch to ON.

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes DTCs to be stored. Clear the DTCs after performing this inspection.

- (e) Move the shift lever to N and lift the vehicle.

(f) Turn the ignition switch off.

Procedure1

(g) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below while rotating the rear wheels 2 revolutions in the same direction simultaneously.

NOTICE:

- Carefully perform this inspection as the rear motor (MGR) may generate current when the rear wheels are rotated by hand.
- 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.

HINT:

As the insulation resistance may vary when rear motor (MGR) rotates, perform this inspection while rotating the rear wheels.

Standard Resistance:



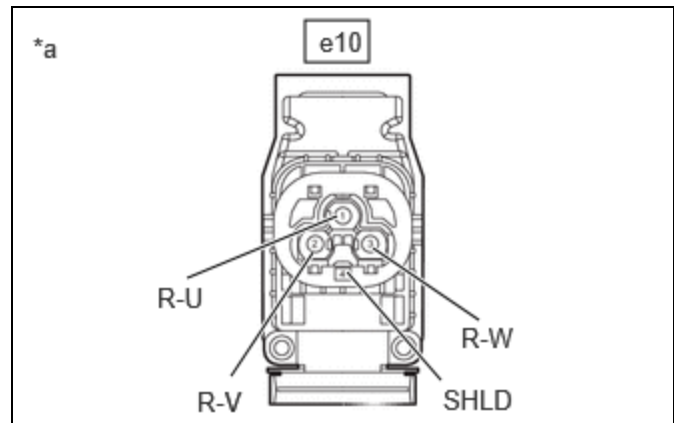
[Click Location & Routing\(e10\)](#)

[Click Connector\(e10\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
e10-1 (R-U) - e10-4 (SHLD) and Body ground and shield ground	Ignition switch off	100 MΩ or higher
e10-2 (R-V) - e10-4 (SHLD) and Body ground and shield ground	Ignition switch off	100 MΩ or higher
e10-3 (R-W) - e10-4 (SHLD) and Body ground and shield ground	Ignition switch off	100 MΩ or higher

Result:

PROCEED TO
OK
NG



*a	HV Floor Under Wire (Rear Traction Motor Cable) (Inverter with Converter Assembly Side)
----	--

Post-procedure1

- (h) Lower the vehicle and move the shift lever to P.
- (i) Disconnect the cable from the negative (-) auxiliary battery terminal.

NG ► **GO TO STEP 9**

OK



5. CHECK HV AIR CONDITIONING WIRE

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

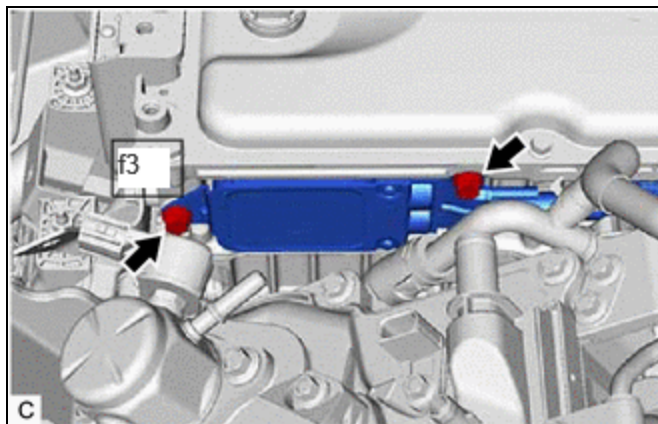
NOTICE:

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 HV air conditioning wire from the inverter with converter assembly.

HINT:

Make sure that no foreign matter has entered or contaminated the HV air conditioning wire.



Procedure1

- (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.
- Be sure to inspect with connecting the tester probes to the tips of the terminal.

Standard Resistance:

for 2WD:



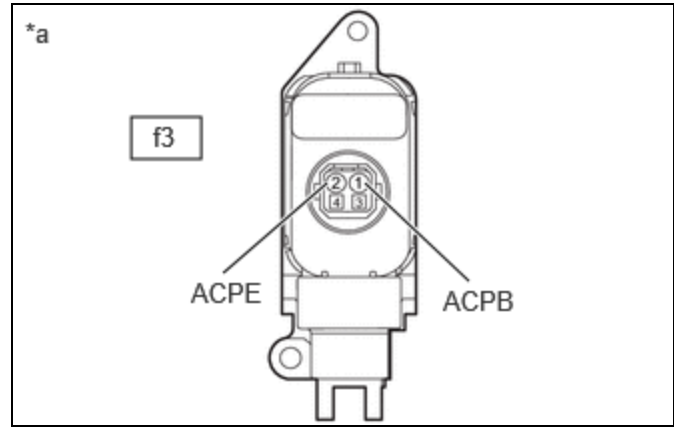
[Click Location & Routing\(f3\)](#)

[Click Connector\(f3\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
f3-1 (ACPB) - Body ground	Ignition switch off	3 MΩ or higher
f3-2 (ACPE) - Body ground	Ignition switch off	3 MΩ or higher

Result:

PROCEED TO
OK
NG



*a	HV Air Conditioning Wire (Inverter with Converter Assembly Side)
----	---

Post-procedure1

(d) None.

NG ► GO TO STEP 26

OK
▼

6.	CHECK FLOOR UNDER WIRE
-----------	-------------------------------

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

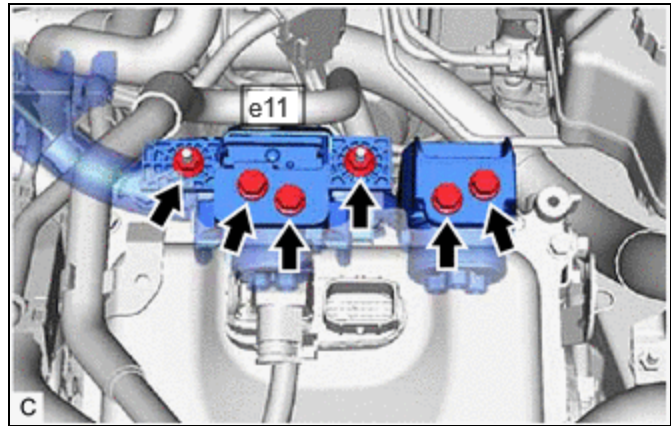
NOTICE:

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 HV floor under wire from the inverter with converter assembly.

HINT:

Make sure that no foreign matter has entered or contaminated the HV floor under wire.



Procedure1

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

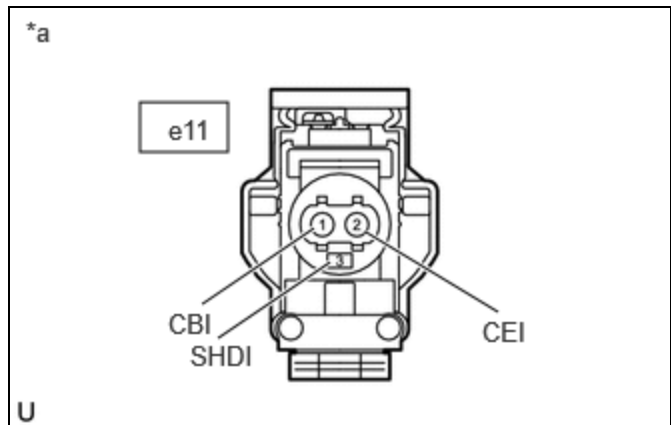
NOTICE:

- 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.
- Be sure not to damage or deform the terminal being inspected.

Standard Resistance:



[Click Location & Routing\(e11\)](#)
[Click Connector\(e11\)](#)



*a	HV Floor Under Wire (Inverter with Converter Assembly Side)
----	--

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
e11-1 (CBI) - e11-3 (SHDI) and Body ground	Ignition switch off	10 MΩ or higher
e11-2 (CEI) - e11-3 (SHDI) and Body ground	Ignition switch off	10 MΩ or higher

HINT:

Visually inspect the HV floor under wire for damage. If there is any damage, then this is the likely cause of low insulation resistance.

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG ► GO TO STEP 29

OK



7.	CHECK INVERTER WITH CONVERTER ASSEMBLY
-----------	---

CAUTION:

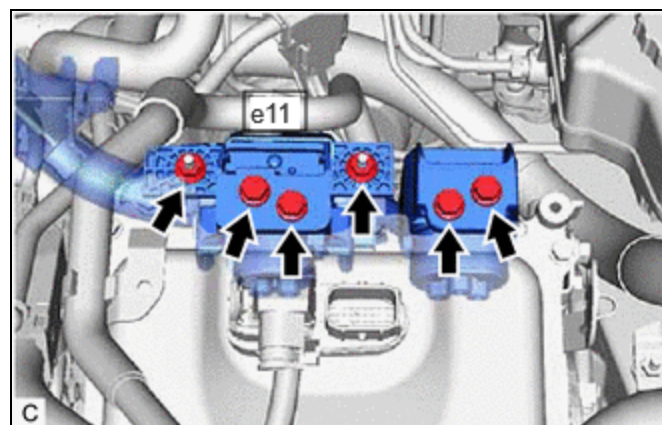
Be sure to wear insulated gloves.

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) Connect the HV floor under wire to the inverter with converter assembly.

Procedure1

(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:

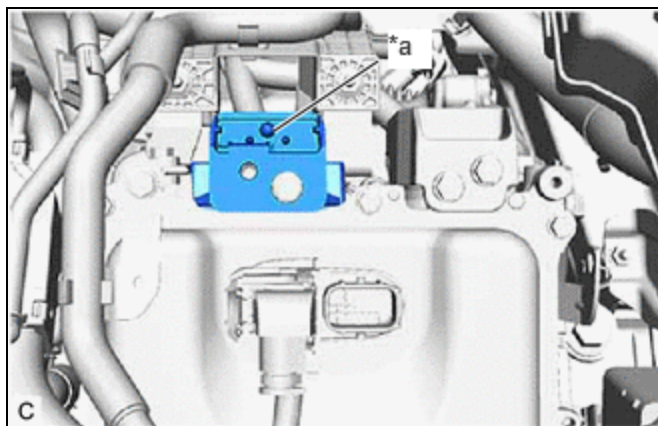
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
High voltage terminal - Body ground	Ignition switch off	1 MΩ or higher

HINT:

Perform this inspection with the motor cable, HV floor under wire and HV air conditioning wire disconnected from the inverter with converter assembly.

Result:

PROCEED TO
OK
NG



*a	High Voltage Terminal
----	-----------------------

Post-procedure1

(d) None.

OK ► GO TO STEP 14

NG ► GO TO STEP 25

8.	CHECK MOTOR CABLE (FOR MG2)
-----------	------------------------------------

CAUTION:

Be sure to wear insulated gloves.

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) Remove the motor cable from the hybrid vehicle transaxle assembly.

Click here [INFO](#)

Procedure1

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

NOTICE:

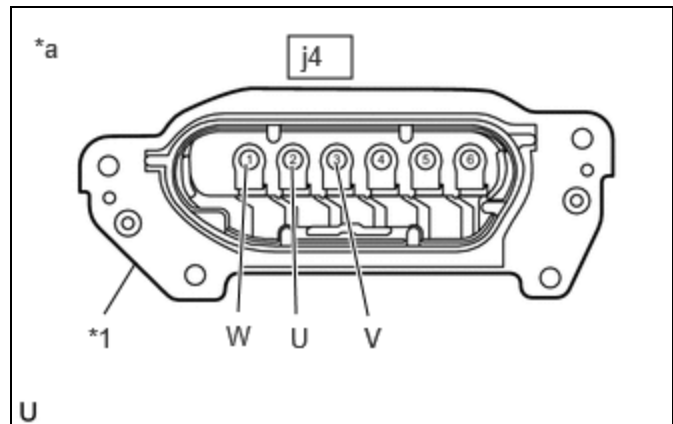
Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:



[Click Location & Routing\(j4\)](#)

[Click Connector\(j4\)](#)



*1	Shield Ground
*a	Motor Cable (for MG2) (Inverter with Converter Assembly Side)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
j4-2 (U) - Shield ground	Ignition switch off	100 MΩ or higher
j4-3 (V) - Shield ground	Ignition switch off	100 MΩ or higher
j4-1 (W) - Shield ground	Ignition switch off	100 MΩ or higher

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

OK ► **GO TO STEP 21**

NG ► **GO TO STEP 22**

9.	CHECK FLOOR UNDER WIRE (REAR TRACTION MOTOR CABLE)
-----------	---

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

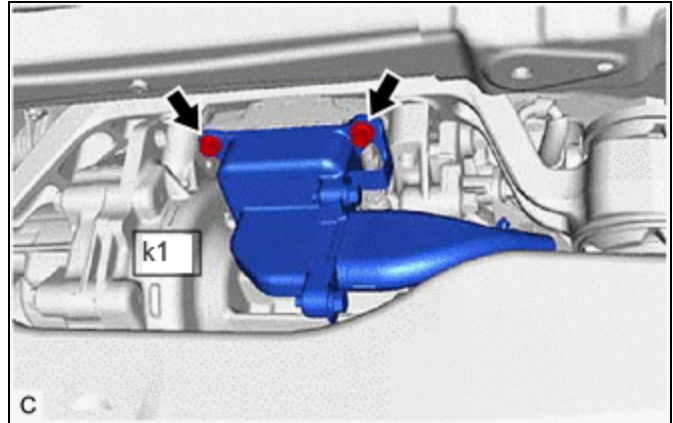
(a) Check that the service plug grip is not installed.

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) Remove the HV floor under wire (rear traction motor cable) from the rear traction motor with transaxle assembly.

Click here [INFO](#)



Procedure1

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

NOTICE:

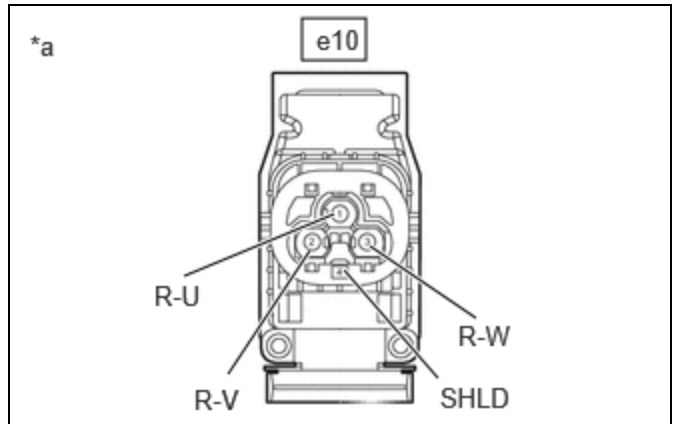
Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:



[Click Location & Routing\(e10\)](#)

[Click Connector\(e10\)](#)



*a	HV Floor Under Wire (Rear Traction Motor Cable) (Inverter with Converter Assembly Side)
----	--

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
e10-1 (R-U) - Shield ground	Ignition switch off	100 MΩ or higher
e10-2 (R-V) - Shield ground	Ignition switch off	100 MΩ or higher
e10-3 (R-W) - Shield ground	Ignition switch off	100 MΩ or higher

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

OK ► GO TO STEP 34

NG ► GO TO STEP 36

10.	CHECK MOTOR CABLE (FOR MG1)
------------	------------------------------------

CAUTION:

Be sure to wear insulated gloves.

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) Remove the motor cable from the hybrid vehicle transaxle assembly.

Click here [INFO](#)

Procedure1

(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.

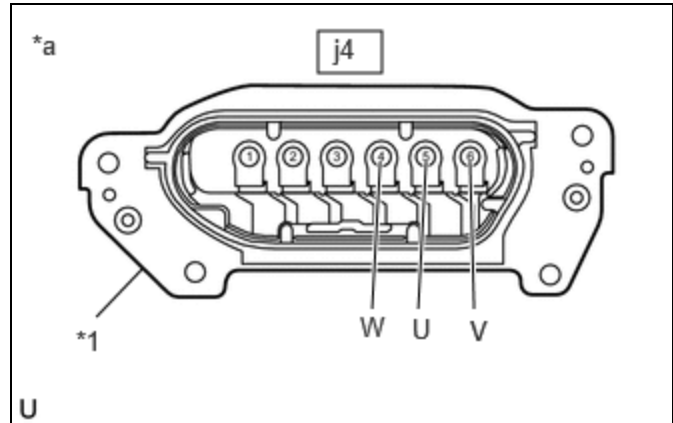
Standard Resistance:



[Click Location & Routing\(j4\)](#)

[Click Connector\(j4\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
j4-5 (U) - Shield ground	Ignition switch off	100 MΩ or higher
j4-6 (V) - Shield ground	Ignition switch off	100 MΩ or higher
j4-4 (W) - Shield ground	Ignition switch off	100 MΩ or higher



*1	Shield Ground
*a	Motor Cable (for MG1) (Inverter with Converter Assembly Side)

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

OK ► **GO TO STEP 21**

NG ► **GO TO STEP 22**

11.	CHECK COMPRESSOR OIL
------------	-----------------------------

(a) Check that compressor oil other than DN-OIL 11 (e.g. ND-OIL 8, etc.) has not been used.

HINT:

- If even a small amount of oil other than ND-OIL 11 oil is used in the refrigeration cycle (contamination), a DTC related to high voltage system insulation malfunction may be stored.
- If a large amount of oil other than ND-OIL 11 oil is used, a DTC may be output again if components related to the refrigeration cycle (No. 1 cooler evaporator sub-assembly, cooler condenser assembly, compressor with motor assembly, cooler expansion valve, and piping) are not replaced as the voltage insulation properties will not recover.

NG  **GO TO STEP 13**

OK



12. REPLACE COMPRESSOR WITH MOTOR ASSEMBLY

HINT:

Click here 

NEXT  **PERFORM CONFIRMATION AFTER REPLACING PARTS**

13. REPLACE AIR CONDITIONING CYCLE

NEXT  **PERFORM CONFIRMATION AFTER REPLACING PARTS**

14. CHECK HV BATTERY (HIGH VOLTAGE CABLE)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

HINT:

Make sure that no foreign matter or water has entered the HV battery.

Pre-procedure1

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

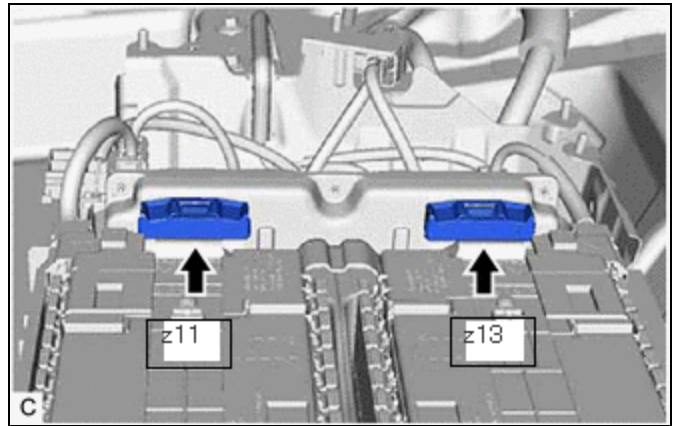
NOTICE:

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 connectors.

NOTICE:

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



Procedure1

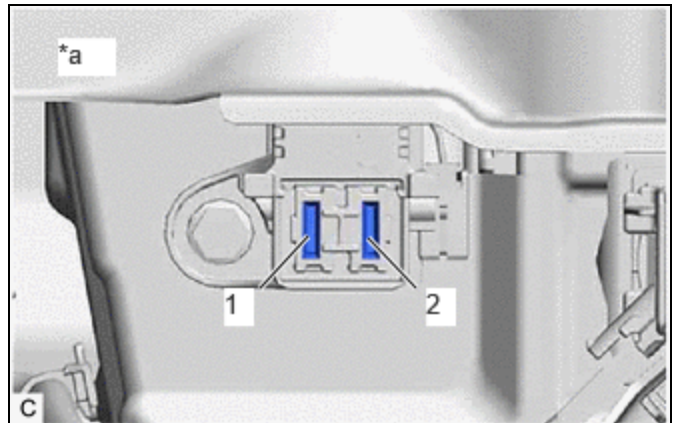
(c) Using a megohmmeter set to 500 V, measure the resistance according to the value(s) in the table below.

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
2 - Body ground	Ignition switch off	10 MΩ or higher



Result:

PROCEED TO
OK
NG

*a	Service Plug Grip Removed (Service Plug Grip Connecting Terminals)
----	---

Post-procedure1

(d) None.

NG **GO TO STEP 16**

OK**15. REPLACE BATTERY ECU ASSEMBLY****HINT:**Click here [INFO](#)**NEXT** **PERFORM CONFIRMATION AFTER REPLACING PARTS****16. CHECK HV BATTERY JUNCTION BLOCK ASSEMBLY****CAUTION:**

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

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

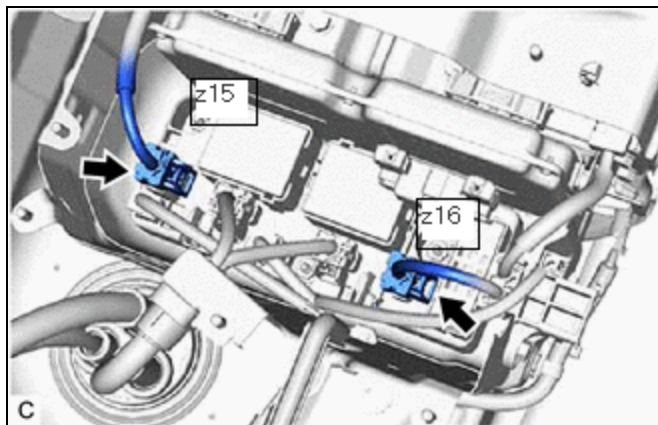
NOTICE:

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 high voltage cable connector of the HV battery from the HV battery junction block 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.



Procedure1

(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.

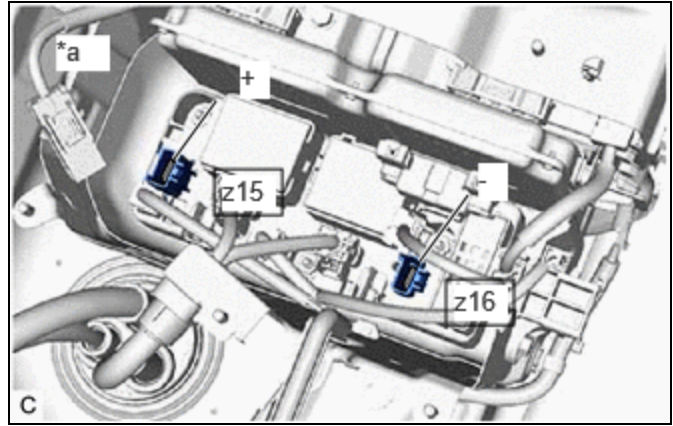
Standard Resistance:



[Click Location & Routing\(z15,z16\)](#)

[Click Connector\(z15\)](#)

[Click Connector\(z16\)](#)



*a	Component without harness connected (HV Battery Junction Block Assembly)
----	--

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
z15-1 (+) - Body ground	Ignition switch off	10 MΩ or higher
z16-1 (-) - Body ground	Ignition switch off	10 MΩ or higher

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG ► **GO TO STEP 30**

OK



17.	REPLACE HV BATTERY
------------	---------------------------

HINT:

[Click here](#)

NEXT ► **PERFORM CONFIRMATION AFTER REPLACING PARTS**

18.	CHECK INVERTER WITH CONVERTER ASSEMBLY
------------	---

CAUTION:

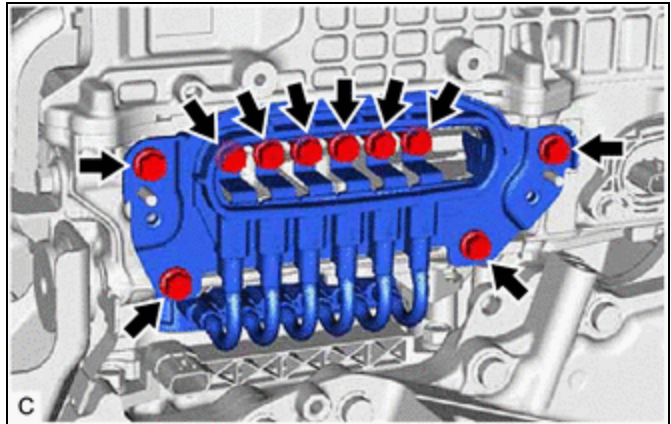
Be sure to wear insulated gloves.

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 motor cable from the inverter with converter assembly.

HINT:

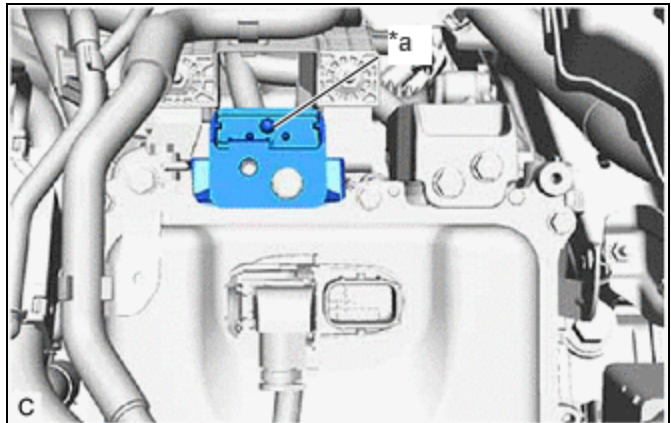
Make sure that no foreign matter, coolant or water enters the inverter with converter assembly.

Procedure1

(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
High voltage terminal - Body ground	Ignition switch off	1 MΩ or higher

*a	High Voltage Terminal
----	-----------------------

HINT:

Perform this inspection with the motor cable disconnected from the inverter with converter assembly.

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) Turn the ignition switch off.

NG ► GO TO STEP 25

OK



19.	CHECK MOTOR CABLE (FOR MG2)
------------	------------------------------------

CAUTION:

Be sure to wear insulated gloves.

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) Remove the motor cable from the hybrid vehicle transaxle assembly.

Click here [INFO](#)

Procedure1

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

NOTICE:

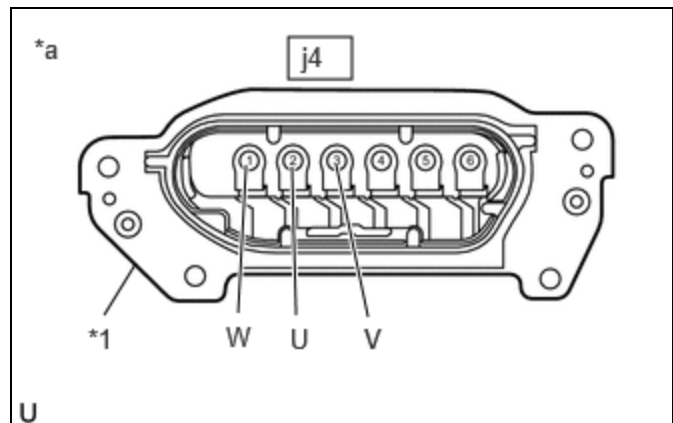
Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:



[Click Location & Routing\(j4\).](#)

[Click Connector\(j4\).](#)



*1	Shield Ground
----	---------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
j4-2 (U) - Shield ground	Ignition switch off	100 MΩ or higher
j4-3 (V) - Shield ground	Ignition switch off	100 MΩ or higher
j4-1 (W) - Shield ground	Ignition switch off	100 MΩ or higher

*a	Motor Cable (for MG2) (Inverter with Converter Assembly Side)
----	--

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG  **GO TO STEP 22**

OK



20.	CHECK MOTOR CABLE (FOR MG1)
------------	------------------------------------

CAUTION:

Be sure to wear insulated gloves.

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) Remove the motor cable from the hybrid vehicle transaxle assembly.

Click here 

Procedure1

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

below.

NOTICE:

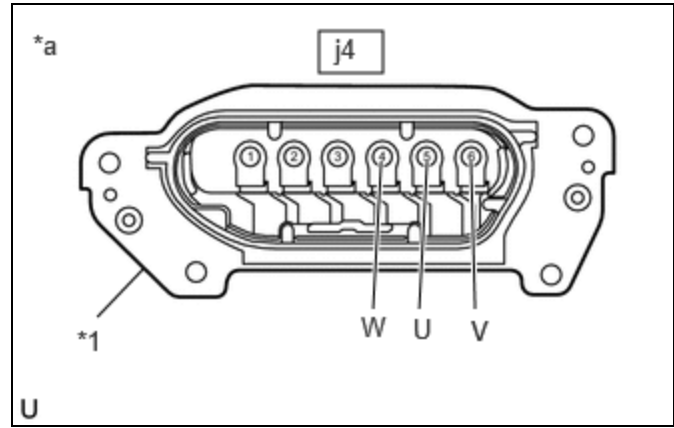
Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:



[Click Location & Routing\(j4\).](#)

[Click Connector\(j4\).](#)



*1	Shield Ground
*a	Motor Cable (for MG1) (Inverter with Converter Assembly Side)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
j4-5 (U) - Shield ground	Ignition switch off	100 MΩ or higher
j4-6 (V) - Shield ground	Ignition switch off	100 MΩ or higher
j4-4 (W) - Shield ground	Ignition switch off	100 MΩ or higher

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG **GO TO STEP 22**

OK



21.	REPLACE HYBRID VEHICLE TRANSAXLE ASSEMBLY
------------	--

HINT:

[Click here](#)

NEXT ▶ PERFORM CONFIRMATION AFTER REPLACING PARTS

22. REPLACE MOTOR CABLE

HINT:

Click here [INFO](#)

NEXT ▶ PERFORM CONFIRMATION AFTER REPLACING PARTS

23. CHECK HIGH VOLTAGE DIRECT CURRENT AREA

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

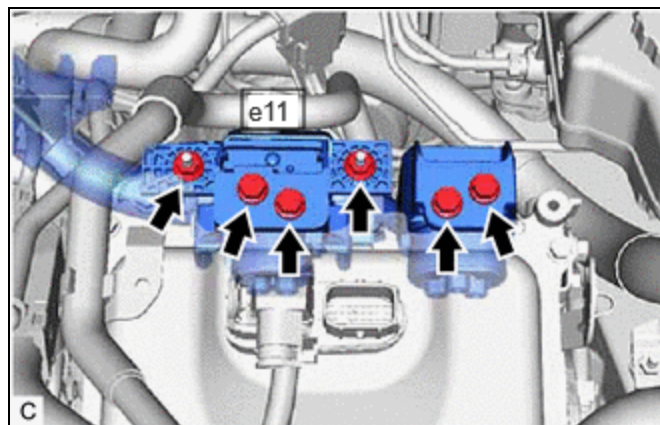
NOTICE:

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 HV floor under wire from the inverter with converter assembly.

HINT:

Make sure that no foreign matter has entered or contaminated the HV floor under wire.



Procedure1

(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.

- Be sure not to damage or deform the terminal being inspected.

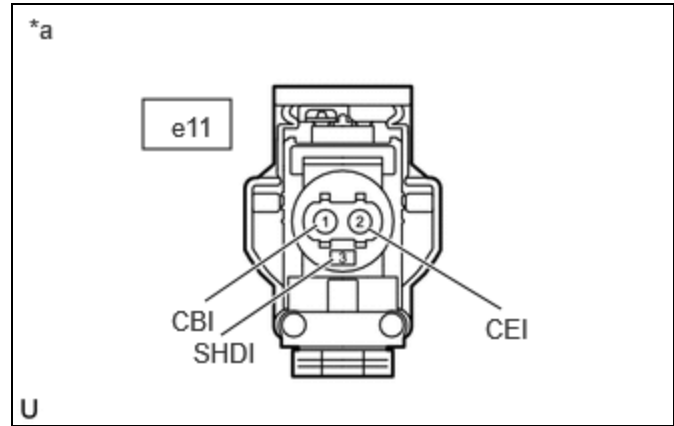
Standard Resistance:



[Click Location & Routing\(e11\)](#)

[Click Connector\(e11\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
e11-1 (CBI) - e11-3 (SHDI) and Body ground	Ignition switch off	10 MΩ or higher
e11-2 (CEI) - e11-3 (SHDI) and Body ground and	Ignition switch off	10 MΩ or higher



*a	HV Floor Under Wire (Inverter with Converter Assembly Side)
----	---

HINT:

Visually inspect the HV floor under wire for damage. If there is any damage, then this is the likely cause of low insulation resistance.

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG ► GO TO STEP 29

OK



24.	CHECK HV AIR CONDITIONING WIRE
------------	---------------------------------------

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

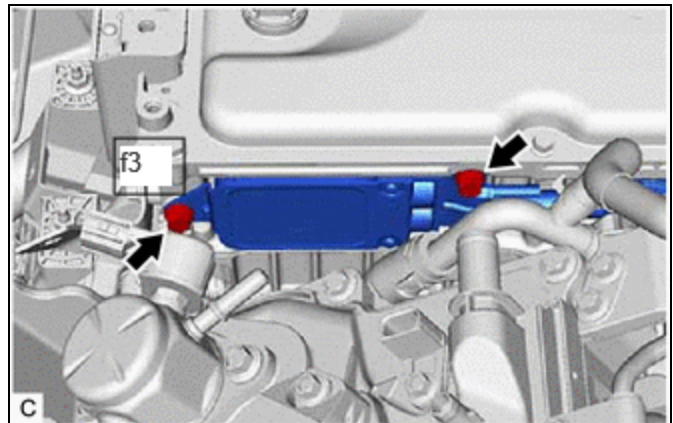
NOTICE:

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 HV air conditioning wire from the inverter with converter assembly.

HINT:

Make sure that no foreign matter has entered or contaminated the HV air conditioning wire.



Procedure1

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

NOTICE:

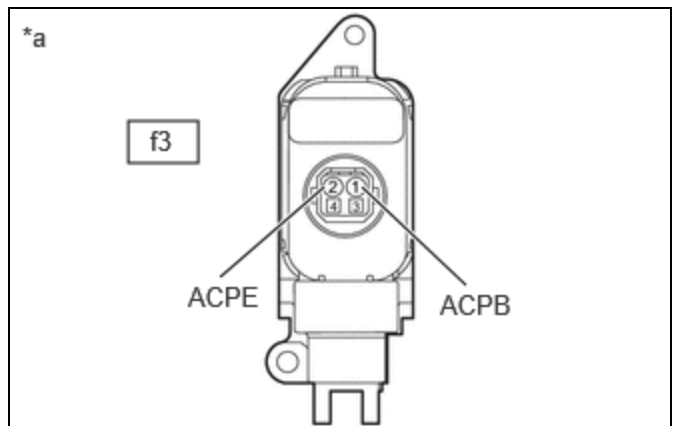
- Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.
- Be sure to inspect with connecting the tester probes to the tips of the terminal.

Standard Resistance:



[Click Location & Routing\(f3\).](#)

[Click Connector\(f3\).](#)



*a	HV Air Conditioning Wire (Inverter with Converter Assembly Side)
----	---

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
f3-1 (ACPB) - Body ground	Ignition switch off	3 MΩ or higher
f3-2 (ACPE) - Body ground	Ignition switch off	3 MΩ or higher

Result:

PROCEED TO
OK

PROCEED TO

NG

Post-procedure1

(d) None.

NG ► **GO TO STEP 26****OK**

25.	REPLACE INVERTER WITH CONVERTER ASSEMBLY
------------	---

HINT:Click here [INFO](#)**NEXT** ► **PERFORM CONFIRMATION AFTER REPLACING PARTS**

26.	CHECK HV AIR CONDITIONING WIRE
------------	---------------------------------------

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

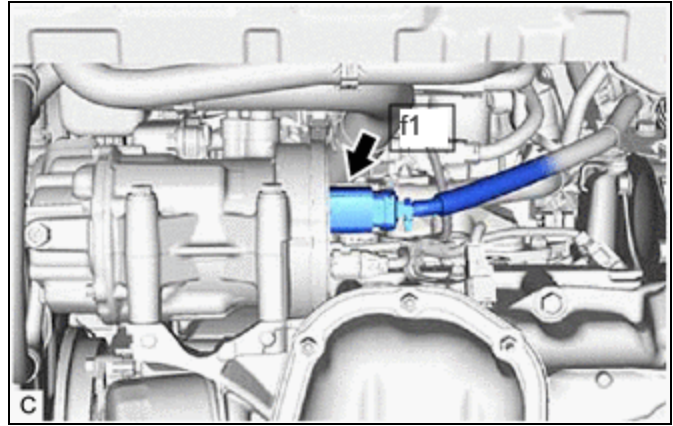
(a) Check that the service plug grip is not installed.

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 HV air conditioning wire connector from the compressor with motor assembly.

Click here [INFO](#)



Procedure1

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

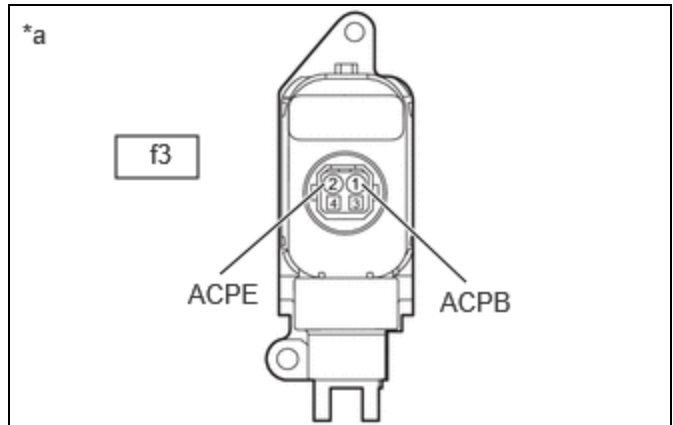
NOTICE:

- 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.
- Be sure to inspect with connecting the tester probes to the tips of the terminal.

Standard Resistance:



[Click Location & Routing\(f3\)](#)
[Click Connector\(f3\)](#)



*a	HV Air Conditioning Wire (Inverter with Converter Assembly Side)
----	---

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
f3-1 (ACPB) - Body ground	Ignition switch off	10 MΩ or higher
f3-2 (ACPE) - Body ground	Ignition switch off	10 MΩ or higher

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG  **GO TO STEP 28**

OK



27. REPLACE COMPRESSOR WITH MOTOR ASSEMBLY

HINT:

Click here 

NEXT  **PERFORM CONFIRMATION AFTER REPLACING PARTS**

28. REPLACE HV AIR CONDITIONING WIRE

NEXT  **PERFORM CONFIRMATION AFTER REPLACING PARTS**

29. CHECK FLOOR UNDER WIRE

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

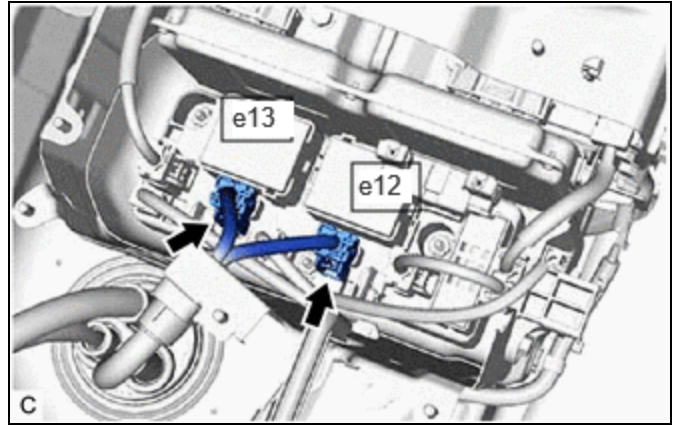
NOTICE:

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 HV floor under wire connectors from the HV battery junction block assembly.

HINT:

Make sure that no foreign matter has entered or contaminated the HV floor under wire.



Procedure1

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

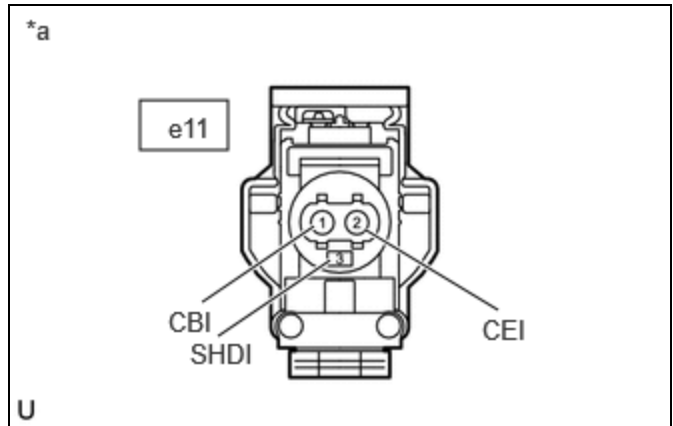
NOTICE:

- 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.
- Be sure not to damage or deform the terminal being inspected.

Standard Resistance:



[Click Location & Routing\(e11\)](#)
[Click Connector\(e11\)](#)



*a	HV Floor Under Wire (Inverter with Converter Assembly Side)
----	--

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
e11-1 (CBI) - e11-3 (SHDI) and Body ground	Ignition switch off	10 MΩ or higher
e11-2 (CEI) - e11-3 (SHDI) and Body ground	Ignition switch off	10 MΩ or higher

HINT:

Visually inspect the HV floor under wire for damage. If there is any damage, then this is the likely cause of low insulation resistance.

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG ► **GO TO STEP 31**

OK



30.	REPLACE HV BATTERY JUNCTION BLOCK ASSEMBLY
------------	---

HINT:

Click here [INFO](#)

NEXT ► **PERFORM CONFIRMATION AFTER REPLACING PARTS**

31.	REPLACE FLOOR UNDER WIRE
------------	---------------------------------

HINT:

Click here [INFO](#)

NEXT ► **PERFORM CONFIRMATION AFTER REPLACING PARTS**

32.	CHECK INVERTER WITH CONVERTER ASSEMBLY
------------	---

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

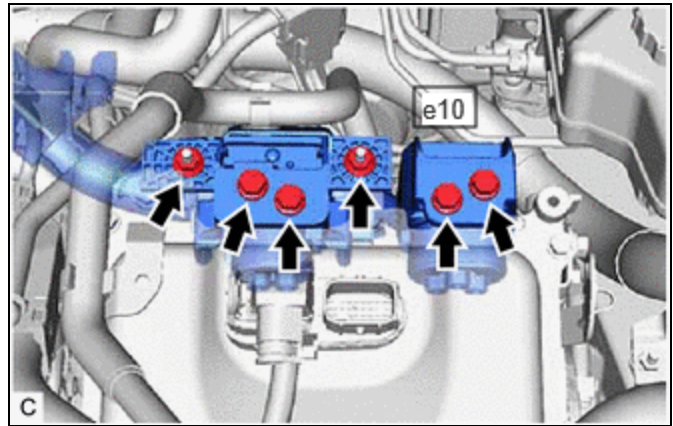
NOTICE:

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 HV floor under wire (rear traction motor cable) from the inverter with converter assembly.

HINT:

Make sure that no foreign matter, coolant or water enters the inverter with converter assembly.



Procedure1

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

NOTICE:

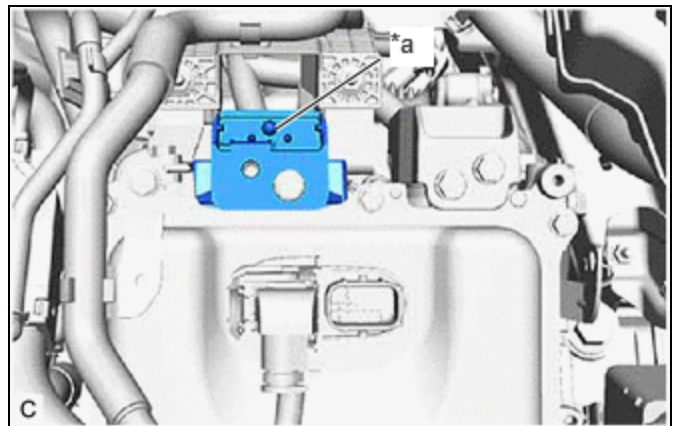
Be sure to set the megohmmeter to 500 V when performing this test. Using a setting higher than 500 V can result in damage to the component being inspected.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
High voltage terminal - Body ground	Ignition switch off	1 MΩ or higher

HINT:

Perform this inspection with the HV floor under wire (rear traction motor cable) disconnected from the inverter with converter assembly.



*a	High Voltage Terminal
----	-----------------------

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None.

NG **GO TO STEP 35**

OK**33. CHECK FLOOR UNDER WIRE (REAR TRACTION MOTOR CABLE)****CAUTION:**

Be sure to wear insulated gloves.

Pre-procedure1

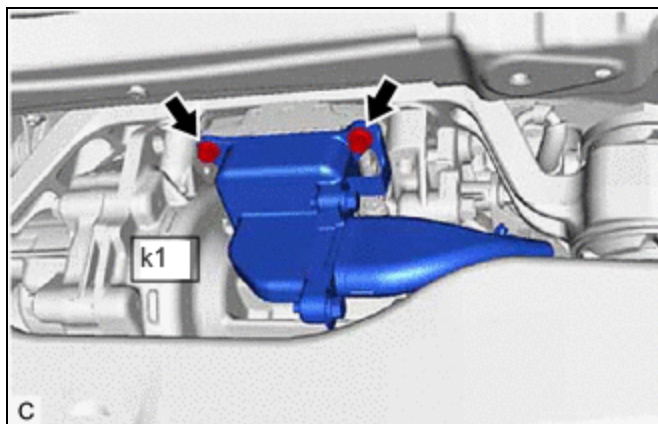
(a) Check that the service plug grip is not installed.

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) Remove the HV floor under wire (rear traction motor cable) from the rear traction motor with transaxle assembly.

Click here [INFO](#)



Procedure1

(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:



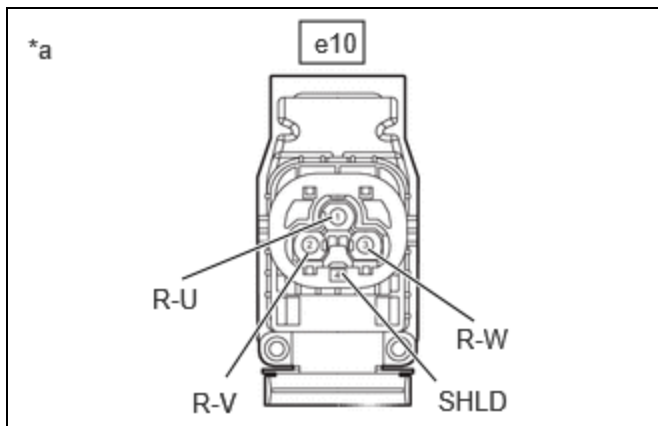
[Click Location & Routing\(e10\)](#)

[Click Connector\(e10\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
e10-1 (R-U) - e10-4 (SHLD)	Ignition switch off	10 MΩ or higher
e10-2 (R-V) - e10-4 (SHLD)	Ignition switch off	10 MΩ or higher
e10-3 (R-W) - e10-4 (SHLD)	Ignition switch off	10 MΩ or higher

Result:

PROCEED TO
OK
NG



*a	HV Floor Under Wire (Rear Traction Motor Cable) (Inverter with Converter Assembly Side)
----	--

Post-procedure1

(d) None.

NG ► GO TO STEP 36**OK****34. REPLACE REAR TRACTION MOTOR WITH TRANSAXLE ASSEMBLY****HINT:**Click here [INFO](#)**NEXT** ► **PERFORM CONFIRMATION AFTER REPLACING PARTS****35. REPLACE INVERTER WITH CONVERTER ASSEMBLY****HINT:**Click here [INFO](#)**NEXT** ► **PERFORM CONFIRMATION AFTER REPLACING PARTS**

36.	REPLACE FLOOR UNDER WIRE
------------	---------------------------------

HINT:

[Click here](#) 

NEXT  **PERFORM CONFIRMATION AFTER REPLACING PARTS**

