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

ON-VEHICLE INSPECTION

PROCEDURE

1. INSPECT ELECTRIC VEHICLE CHARGER CABLE ASSEMBLY (for Type A)

HINT:

- When inspecting the electric vehicle charger cable assembly provided with the vehicle, use a known good AC power source and electric vehicle charger cable assembly.
- If a malfunction is detected, the CCID relay will turn off immediately to stop the supply of power to the vehicle.
- Before checking the plug-in charging function, make sure that the SOC of the HV battery is less than 70%.
- If the SOC of the HV battery is 70% or more and the electric vehicle charger cable assembly is connected to the inlet AC charger cable to perform plug-in charging, the charging indicator of the electric charger cable assembly will not illuminate and the charging indicator (EV charger lid indicator assembly) will illuminate for several seconds and then turn off.
- While performing plug-in charging, if the electric vehicle charger cable assembly (charging connector) is shaken, charging will be suspended for safety.
- The electric vehicle charger cable assembly is unrelated to the display of the EV driving distance.

(a) Check the plug-in charging function:

(1) Connect the electric vehicle charger cable assembly and perform plug-in charging.

NOTICE:

- Make sure to use a known good AC power source.
- Make sure to use a known good electric vehicle charger cable assembly.

1. If the malfunction cannot be reproduced, perform [#1].
2. If the malfunction can be reproduced, inspect the vehicle.

HINT:

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(b) If the malfunction cannot be reproduced [#1]:

(1) Connect the electric vehicle charger cable assembly and perform plug-in charging.

NOTICE:

- Make sure to use a known good AC power source.
- Make sure to use the electric vehicle charger cable assembly that the customer used when the malfunction occurred.

1. If the malfunction cannot be reproduced, check the condition of the AC power source and charging conditions when the malfunction occurred based on the interview with the customer.

HINT:

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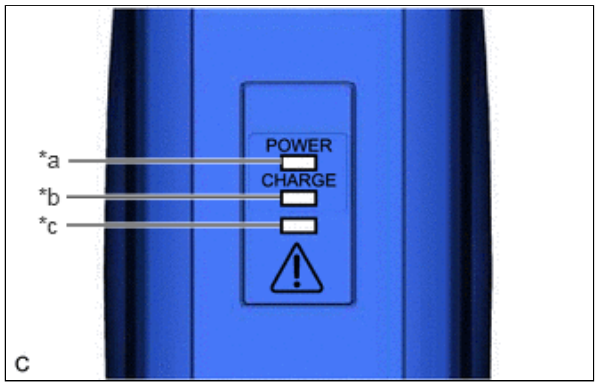
2. If the malfunction is reproduced, perform [#2].

(c) If the malfunction is reproduced [#2]:

(1) Compare the state of the power indicator, charging indicator and error indicator of the electric vehicle charger cable assembly while performing plug-in charging with the following table.



*a	Power Indicator
*b	Charging Indicator
*c	Error Warning Indicator

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
Illuminated	-	Off	Voltage is applied to the plug.	-	○	-	-
Off	-	Off	Voltage is not applied to the plug.	-	x	-	1. Plug in the electric vehicle charger cable assembly to a socket. 2. Check if voltage is present at the socket.
			CCID internal malfunction.	The CCID internal electronic does not turn on.	○	-	Replace the electric vehicle charger cable assembly.
Illuminated	Off	Flashes (once)	CCID relay stuck closed error	The conditions to close the CCID relay are not met but the relay is closed.	○	-	Replace the electric vehicle charger cable assembly.
Illuminated	Off	Flashes (twice)	CCID relay stuck open error	The conditions to close the CCID relay are met but the relay is open.	○	-	Replace the electric vehicle charger cable assembly.
Illuminated	Off	Flashes (3 times)	Electricity leakage detected	The electricity leakage detection function is operating. 1. Electric leak on the vehicle side 2. Electric leak on the electric vehicle charger cable assembly side	○	-	Check the operation at several different electrical outlets. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may be malfunctioning and should be checked by a

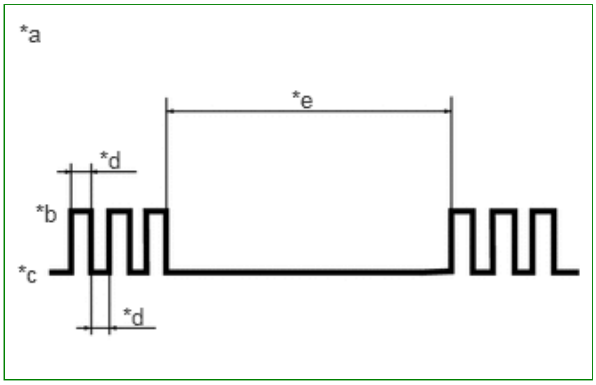
POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
				3. Incorrect detection due to power source malfunction			qualified tradesperson. 2. If the malfunction is reproduced at several electrical outlets. **HINT:** ◦ Click here INFO ◦ Make sure to use an outlet other than one used by the customer.
Illuminated	Off	Flashes (4 times)	CPLT (duty) error	The duty ratio is less than 5% or 40% or more.	○	○	Replace the electric vehicle charger cable assembly.
Illuminated	Off	Flashes (5 times)	CPLT (-12V) error	-12 V cannot be detected while the duty waveform is output.	○	○	Replace the electric vehicle charger cable assembly.
Illuminated	Off	Flashes (6 times)	Electricity leakage self diagnosis error	The electricity leakage self-diagnosis function is abnormal.	○	○	Check the operation at several different electrical outlets. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may be abnormal voltage and should be checked by a qualified tradesperson. 2. If the malfunction is reproduced at several electrical outlets, replace the electric vehicle charger cable assembly. **HINT:**

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
							Make sure to use an outlet other than one used by the customer.
Flashes (interval of 0.25 seconds)	-	Off	Abnormally high power source plug (electrical outlet) temperature detected	Abnormally high power source plug (electrical outlet) temperature detected 1. Connecting part of electrical outlet is extremely hot 2. Power source plug internal malfunction	○	-	Check the operation at several different electrical outlets. **HINT:** Make sure that the plug is fully inserted into the outlet. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may have internal deterioration and should be checked by a qualified tradesperson. 2. If defects reemerge with the multiple electrical outlets, exchange only the power plug redo the reemergence confirmation. If it reemerges, replace the charging cable. **HINT:** Make sure to use an outlet other than one used by the customer.
Flashes (interval of 0.25 seconds)	-	Flashes (interval of 0.25 seconds)	Power source plug temperature detection malfunction	1. The electric vehicle charger assembly is not	○	-	Check that the electric vehicle charger assembly is locked correctly. 1. If the electric vehicle charger

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
				connected correctly. 2. Charging plug temperature cannot be detected.			assembly is not locked, reconnect and lock it correctly. 2. If the electric vehicle charger cable assembly is locked correctly, check for an open in the circuit.
Illuminated	-	Flashes (interval of 0.25 seconds)	Advance notice of end of service life	The number of charging cycles has reached a specific number.	○	-	-
Illuminated	-	Illuminated	End of service life reached	The maximum number of charging cycles has been reached.	○	-	Replace the electric vehicle charger cable assembly.

- ○: Correct
- x: Incorrect

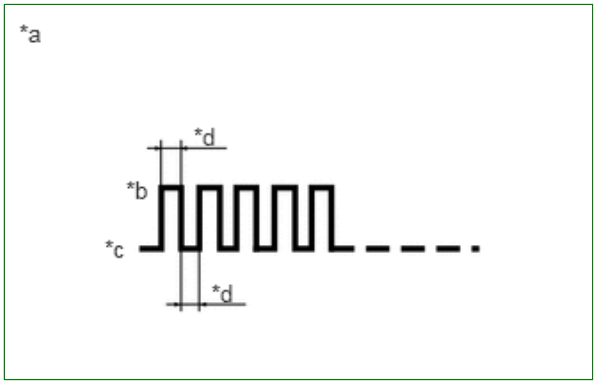
HINT:



- In the case of an electricity leakage error:

*a	Flashing 3 times
*b	Illuminated
*c	Off
*d	0.5 seconds
*e	2.5 seconds

The power indicator flashes in the pattern shown in the illustration.



*a	Flashing at interval of 0.25 seconds

*b	Illuminated
*c	Off
*d	0.25 seconds

In the case of a power source plug temperature detection malfunction:

The power indicator and error indicator flash in the pattern shown in the illustration.

- If a certain number of charging cycles is reached, CCID relay operation will be suspended.
- The end of service life advance notice and end of service life reached warnings are displayed when charging has completed and a corresponding number of charging cycles has been performed.

2. INSPECT ELECTRIC VEHICLE CHARGER CABLE ASSEMBLY (for Type B)

HINT:

- When inspecting the electric vehicle charger cable assembly provided with the vehicle, use a known good AC power source and electric vehicle charger cable assembly.
- If a malfunction is detected, the CCID relay will turn off immediately to stop the supply of power to the vehicle.
- Before checking the plug-in charging function, make sure that the SOC of the HV battery is less than 70%.
- If the SOC of the HV battery is 70% or more and the electric vehicle charger cable assembly is connected to the inlet AC charger cable to perform plug-in charging, the charging indicator of the electric charger cable assembly will not illuminate and the charging indicator (EV charger lid indicator assembly) will illuminate for several seconds and then turn off.
- While performing plug-in charging, if the electric vehicle charger cable assembly (charging connector) is shaken, charging will be suspended for safety.
- The electric vehicle charger cable assembly is unrelated to the display of the EV driving distance.

(a) Check the plug-in charging function:

(1) Connect the electric vehicle charger cable assembly and perform plug-in charging.

NOTICE:

- Make sure to use a known good AC power source.
- Make sure to use a known good electric vehicle charger cable assembly.

1. If the malfunction cannot be reproduced, perform [#1].
2. If the malfunction can be reproduced, inspect the vehicle.

HINT:

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(b) If the malfunction cannot be reproduced [#1]:

(1) Connect the electric vehicle charger cable assembly and perform plug-in charging.

NOTICE:

- Make sure to use a known good AC power source.
- Make sure to use the electric vehicle charger cable assembly that the customer used when the malfunction occurred.

1. If the malfunction cannot be reproduced, check the condition of the AC power source and charging conditions when the malfunction occurred based on the interview with the customer.

HINT:

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2. If the malfunction is reproduced, perform [#2].

(c) If the malfunction is reproduced [#2]:

(1) Compare the state of the power indicator, charging indicator and error indicator of the electric vehicle charger cable assembly while performing plug-in charging with the following table.

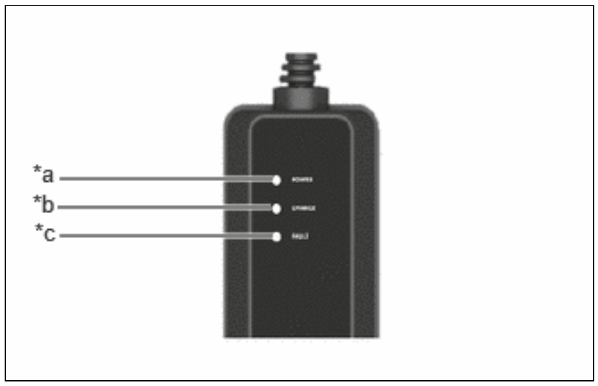
POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
Illuminated	-	Off	Voltage is applied to the plug.	-	○	-	-
Off	-	Off	Voltage is not applied to the plug.	-	x	-	1. Plug in the electric vehicle charger cable

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
							assembly to a socket. 2. Check if voltage is present at the socket.
			CCID internal malfunction.	The CCID internal electronic does not turn on.	○	-	Replace the EV charger cable assembly.
Flashes (interval of 0.25 seconds)	-	Illuminated	The applied voltage / frequency are beyond the specified range	The voltage operating range is 85V to 265V and frequency range is 45Hz to 65Hz	○	-	Check the operation at several different electrical outlets. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may be malfunctioning and should be checked by a qualified tradesperson. 2. If the malfunction is reproduced at several electrical outlets, replace the EV charger cable assembly. **HINT:** Make sure to use an outlet other than one used by the customer.
Flashes (interval of 0.25 seconds)	-	Illuminated	Ground loss error detected	The grid side ground connection between plug and socket outlet is lost	○	-	Check the operation at several different electrical outlets. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may be malfunctioning and should be checked by a qualified tradesperson.

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
							2. If the malfunction is reproduced at several electrical outlets, replace the EV charging cable assembly. **HINT:** Make sure to use an outlet other than one used by the customer.
Off	Off	Illuminated	CCID relay stuck closed error	The conditions to close the CCID relay are not met but the relay is closed.	○	-	Replace the EV charging cable assembly.
Off	Off	Illuminated	CCID relay stuck open error	The conditions to close the CCID relay are met but the relay is closed.	○	-	Replace the EV charging cable assembly.
Off	Off	Illuminated	Electricity leakage detected	The electricity leakage detection function is operating. 1. Electric leak on power socket (socket outlet) 2. Electric leak on electric vehicle 3. Electric leak on electric vehicle charger cable assembly side	○	-	Check the operation at several different electrical outlets. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may be malfunctioning and should be checked by a qualified tradesperson. 2. If the malfunction can be reproduced only at a specific electric vehicle, the EV car may be malfunctioning and should be checked by a qualified person. 3. If the malfunction reproduced at several electrical outlets and on several electric

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
							vehicles, replace the EV charging cable assembly.
Off	Off	Illuminated	CPLT (duty) error	The duty ratio is less than 9% or more 17%	○	○	Replace the EV charging cable assembly.
Off	Off	Illuminated	CPLT (-12 V) error	-12 V cannot be detected while the duty waveform is output.	○	○	Replace the EV charging cable assembly.
Off	Off	Illuminated	Electricity leakage self-diagnosis error	The electricity leakage self-diagnosis function is abnormal.	○	-	Check the operation at several different electrical outlets. 1. If the malfunction can be reproduced only at a specific electrical outlet, the electrical outlet may be malfunctioning and should be checked by a qualified tradesperson. 2. If the malfunction is reproduced at several electrical outlets, replace the EV charging cable assembly. **HINT:** Make sure to use an outlet other than one used by the customer.
Off	Off	Illuminated	Abnormally high power source plug (electrical outlet) temperature detected (over temperature detection)	Abnormally high power source plug (electrical outlet) temperature detected 1. Connecting part of electrical outlet is extremely hot 2. Power source plug	○	-	Check the operation at several different electrical outlets. **HINT:** Make sure that the plug is fully inserted into the outlet. 1. If the malfunction can be reproduced only at a

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR	CONTENT	DETECTION CONDITION	SOCKET CONNECTION	CHARGING INLET CONNECTION	PROCEDURE
				internal malfunction			specific electrical outlet, the electrical outlet may have internal deterioration and should be checked by a qualified tradesperson. 2. If the malfunction is reproduced at several electrical outlets, replace the EV charging cable assembly. **HINT:** Make sure to use an outlet other than one used by the customer.
Flashes (interval of 0.25 seconds)	Flashes (interval of 0.25 seconds)	Off	Power source plug temperature detection malfunction	1. The electric vehicle charger assembly is not connected correctly. 2. Charging plug temperature detected high temperature.	-	-	Check that the electric vehicle charger assembly is locked correctly. 1. If the electric vehicle charger assembly is not locked, reconnect and lock it correctly. 2. If the electric vehicle charger cable assembly is locked correctly, check for an open in the circuit. **HINT:** Protect the charging equipment from direct sunlight.



*a	Power Indicator
*b	Charging Indicator
*c	Error Warning Indicator

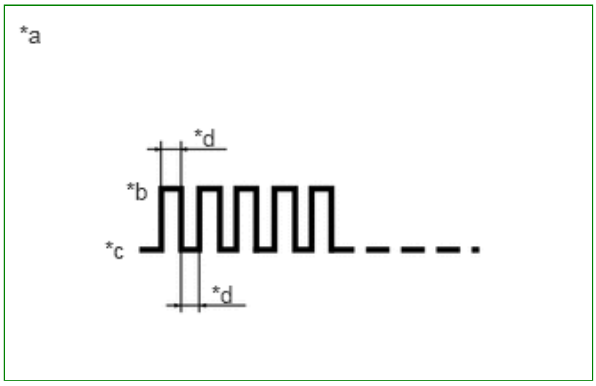
- ○: Correct
- x: Incorrect

HINT:

- In the case of an electricity leakage error:

  Indication will be as follow:

POWER INDICATOR	CHARGING INDICATOR	ERROR WARNING INDICATOR
Off	Off	On



*a	Flashing at interval of 0.25 seconds
*b	Illuminated
*c	Off
*d	0.25 seconds

In the case of a power source plug temperature detection malfunction:

The power indicator and charging indicator flash in the pattern shown in the illustration.