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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [03/2023 - ]
<b>Title:</b> HYBRID / BATTERY CONTROL: PLUG-IN CHARGE CONTROL SYSTEM (for PHEV Model): AC Charging Does not Start; 2023 - 2024 MY Prius Prime [03/2023 - ]		

**AC Charging Does not Start**

## PROCEDURE

**1. CHECK DTC OUTPUT (HEALTH CHECK)**

(a) Enter the following menus: Health Check.

(b) Check DTCs.

RESULT	PROCEED TO
No DTCs are output	A
DTCs are output	B

(c) Turn the ignition switch off.

**B**  **GO TO DTC CHART**

**A**  


**2. CHECK FOR VEHICLE CONTROL HISTORY**

(a) Enter the following menus.

**Powertrain > Plug-in Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

**Powertrain > Hybrid Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(b) Check for Vehicle Control History (RoB) except AC Charging History (X10F0).

**HINT:**

- Vehicle Control History (RoB) items AC Charging History (X10F0) is stored each time plug-in charging is performed, and is also stored when plug-in charging completes without error from start to finish. For this reason, the fact that they are output does not directly indicate any malfunction or problem.
- If AC charging has not started, Vehicle Control History (RoB) will not be stored.(Except if a power outage occurred before AC charging could start.)
- If Vehicle Control History (RoB) has been stored, it can be determined that AC charging has been performed.

RESULT	PROCEED TO
Vehicle Control History (RoB) not stored	A
Vehicle Control History (RoB) stored	B

(c) Turn the ignition switch off.

**B ▶ GO TO VEHICLE CONTROL HISTORY**

- PLUG-IN CHARGE CONTROL SYSTEM

Click here [INFO](#)

- HYBRID CONTROL SYSTEM

Click here [INFO](#)

**A**  
▼

<b>3.</b>	<b>CHECK PLUG-IN CHARGE STATE (USING A KNOWN GOOD ELECTRIC VEHICLE CHARGER CABLE ASSEMBLY)</b>
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**NOTICE:**

- On the customer's vehicle, perform AC charging using a known good electric vehicle charger cable assembly and a known good AC power source.
- Use the same voltage that the customer used to plug-in charge the vehicle.

(a) Enter the following menus: Health Check.

(b) Clear DTCs.

(c) Enter the following menus: Powertrain / Plug-in Control / Utility / Vehicle Control History.

**Powertrain > Plug-in Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(d) Clear all Vehicle Control History (RoB) items.

(e) Enter the following menus.

**Powertrain > Hybrid Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(f) Clear all Vehicle Control History (RoB) items.

(g) Set "Charge Now" on.

**HINT:**

- If no charge schedule has been registered, the above step is not necessary.
- "Charge Now" setting method:

[Click here](#) 

(h) On the customer's vehicle, perform AC charging using a known good electric vehicle charger cable assembly and a known good external AC power source.

(i) Enter the following menus: Health Check.

(j) Check DTCs.

(k) Enter the following menus.

**Powertrain > Plug-in Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(l) Enter the following menus.

**Powertrain > Hybrid Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(m) Check for Vehicle Control History (RoB) except AC Charging History (X10F0).

**HINT:**

Vehicle Control History (RoB) items AC Charging History (X10F0) is stored each time plug-in charging is performed, and is also stored when plug-in charging completes without error from start to finish.

For this reason, the fact that they are output does not directly indicate any malfunction or problem.

(n) Disconnect the electric vehicle charger cable assembly.

RESULT	PROCEED TO
DTCs output	A
Vehicle Control History (RoB) stored	B
DTCs and Vehicle Control History (RoB) not stored and AC charging started	C
DTCs and Vehicle Control History (RoB) not stored and AC charging did not start	D

**A** ► **GO TO DTC CHART**

**B** ► **GO TO VEHICLE CONTROL HISTORY**

- PLUG-IN CHARGE CONTROL SYSTEM

Click here [INFO](#)

- HYBRID CONTROL SYSTEM

Click here [INFO](#)

**D** ► **CAUSE ANALYSIS (VEHICLE RELATED CAUSE)**

(a) Analyze the cause according to the following table.

**Vehicle**

POSSIBLE CAUSE	ACTION TO BE TAKEN
Discharged auxiliary battery	Inspect auxiliary battery <a href="#">INFO</a>
Open in control pilot signal circuit	Control pilot signal circuit <a href="#">INFO</a>
Charging inlet (AC Charger Inlet Cable) GND malfunction	Inspect charging inlet <a href="#">INFO</a> <a href="#">INFO</a>
Charging inlet (AC Charger Inlet Cable) PISW malfunction	Inspect charging inlet <a href="#">INFO</a> <a href="#">INFO</a>

(b) Take appropriate action in accordance with the result of the cause analysis.



<b>4.</b>	<b>CHECK PLUG-IN CHARGE STATE (USING THE CHARGING CABLE (ELECTRIC VEHICLE CHARGER CABLE ASSEMBLY) PROVIDED WITH THE VEHICLE)</b>
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**NOTICE:**

- On a known good vehicle, perform AC charging using the customer's charging cable (electric vehicle charger cable assembly) and a known good AC power source.
- Use the same voltage that the customer used to plug-in charge the vehicle.

(a) On a known good vehicle, perform AC charging using the customer's charging cable (electric vehicle charger cable assembly) and a known good external AC power source.

(b) Enter the following menus.

**Powertrain > Plug-in Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(c) Enter the following menus.

**Powertrain > Hybrid Control > Utility**

TESTER DISPLAY
Vehicle Control History (RoB)

(d) Check for Vehicle Control History (RoB) except AC Charging History (X10F0).

**HINT:**

Vehicle Control History (RoB) items AC Charging History (X10F0) is stored each time plug-in charging is performed, and is also stored when plug-in charging completes without error from start to finish.

For this reason, the fact that they are output does not directly indicate any malfunction or problem.

(e) Turn the ignition switch off.

(f) Disconnect the charging cable (electric vehicle charger cable assembly).

RESULT	PROCEED TO
Vehicle Control History (RoB) stored	A
Vehicle Control History (RoB) not stored and AC charging did not start	B
Vehicle Control History (RoB) not stored but AC charging started	C

**A ► GO TO VEHICLE CONTROL HISTORY**

- PLUG-IN CHARGE CONTROL SYSTEM

Click here [INFO](#)

- HYBRID CONTROL SYSTEM

Click here [INFO](#)

**B ► CAUSE ANALYSIS (CHARGING CABLE RELATED CAUSE)**

(a) Analyze the cause according to the following table.

**Charging Cable Related Cause**

POSSIBLE CAUSE	ACTION TO BE TAKEN
Open in control pilot signal circuit	Control pilot signal circuit <a href="#">INFO</a>
Charging cable (Electric vehicle charger cable assembly) malfunction	Inspect electric vehicle charger cable assembly <a href="#">INFO</a> <a href="#">INFO</a>

(b) Take appropriate action in accordance with the result of the cause analysis.

**C ► CAUSE ANALYSIS (USER / ENVIRONMENT / EXTERNAL POWER SOURCE/CHARGING STAND RELATED CAUSE)**

(a) Perform cause analysis in the order of "User Related Cause", "Environment Related Cause" and "External Power Source/Charging Stand Related Cause" categories as specified in the following tables below.

**User Related Cause**

POSSIBLE CAUSE	ACTION TO BE TAKEN
Scheduled charging time is set	Interview customer and provide instruction on usage. <a href="#">INFO</a> <ul style="list-style-type: none"> <li>• Explain to the customer that if the charging connector is connected when the charge schedule is set, the charging indicator (EV charger lid indicator) will blink for a few seconds and then turn off.</li> <li>• Explain to the customer that plug-in charging will not start immediately after connecting the</li> </ul>

POSSIBLE CAUSE	ACTION TO BE TAKEN
	<p>charging connector if the charge schedule is set.</p> <p>(Explain to the customer that plug-in charging can be started immediately if all of the charge schedules are canceled or if Charge Now is turned on.)</p> <ul style="list-style-type: none"> <li>• Explain to the customer that if they want to perform charging immediately, if a scheduled charging time is set, they must select "Charge Now" on the multi-information display.</li> </ul>
Charging station was used improperly	Confirm how to properly use the charging station with user's manual or instructions etc.
Charging connector was not securely connected to charging inlet	<p>Interview customer and provide instruction on usage.</p> <p><b>INFO</b></p> <p>Explain to the customer that the charging connector should be fully inserted into the charging inlet.</p>
Plug-in charging was attempted when HV battery was fully charged	Explain to the customer that if the charging connector is connected to the vehicle when the HV supply battery assembly is fully charged, the EV charger lid indicator (EV charger lid indicator assembly) will illuminate (when timer charging is off) or blink (when timer charging is operating) for several seconds and then turn off and AC charging will not start.

### Environment Related Cause

POSSIBLE CAUSE	ACTION TO BE TAKEN
AC charging was suspended due to power outage, circuit breaker operation, etc.	<p>Interview customer and provide instruction on usage.</p> <p><b>INFO</b></p> <p>Explain to the customer that the AC charging was suspended due to power outage, circuit breaker operation, etc.</p>

### External Power Source/Charging Stand Related Cause

POSSIBLE CAUSE	ACTION TO BE TAKEN
<p>Charging was suspended by charging station or charging station was incompatible</p>	<p>Interview customer and check the charging station.</p> <p><b>INFO</b></p> <ul style="list-style-type: none"> <li>• Explain to the customer that plug-in charging may not start due to a power management function or charging control function of the charging station. Also, charging may not be performed if the charging station is incompatible. (Check the charging station specifications provided by the manufacturer.)</li> <li>• Explain to the customer that depending on the specifications of the charging station, AC charging may be suspended when traction battery assembly cooling system is being operated.</li> <li>• Explain to the customer that depending on the charging station, charging may not begin if the charging timer is set.</li> </ul>
<p>Charging was suspended due to abnormal electrical outlet voltage</p>	<p>Interview customer and check the electrical outlet.</p> <p><b>INFO</b></p> <p>If charging does not begin due to an abnormal electrical outlet voltage or an inappropriate ground wire connection, the electrical outlet should be checked by a qualified tradesperson.</p>

(b) Take appropriate action in accordance with the result of the cause analysis.

