

| | | |
|---|---------------------------|--------------------------------------|
| Last Modified: 12-04-2024 | 6.11:8.1.0 | Doc ID: RM100000029A56 |
| Model Year Start: 2023 | Model: Prius Prime | Prod Date Range: [12/2022 -] |
| Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): "HAVE TRACTION BATTERY INSPECTED" is displayed; 2023 - 2024 MY Prius Prius Prime [12/2022 -] | | |

"HAVE TRACTION BATTERY INSPECTED" is displayed

DESCRIPTION

The battery ECU assembly monitors the SOC (State Of Charge) of the HV battery. When it finds the HV battery has deteriorated excessively, it will display "Have Traction Battery Inspected" on the multi-information display. If "Have Traction Battery Inspected" is displayed, perform "Battery Diagnosis" and replace the HV battery as necessary.

CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here [INFO](#)

NOTICE:

- If "Have Traction Battery Inspected" is displayed on the multi-information display, the message will not be cleared until one of the following conditions is met. If the traction battery is used continually without performing battery diagnosis for a few weeks*, "VEHICLE START WILL SOON BE DISABLED" and "Have Traction Battery Inspected" are displayed and the use of the HV battery is limited. If it is used more, the power on (READY) operation will be disabled.

*: The timing may vary depending on vehicle usage.

- "Have Traction Battery Inspected" is cleared when both of the following conditions are met:
 - "Prediagnostic Battery Charge" and "Battery Diagnosis" have been performed.
 - "003" (There is no need to replace HV battery) is displayed on the GTS.
- 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](#)

PROCEDURE

1. READ VALUE USING GTS (HYBRID/EV BATTERY CELL 1 TO 60 INTERNAL RESISTANCE)

- (a) Read the value of Data List items "Hybrid/EV Battery Cell 1 Internal Resistance" through "Hybrid/EV Battery Cell 60 Internal Resistance".

Powertrain > HV Battery > Data List

| |
|---|
| TESTER DISPLAY |
| Hybrid/EV Battery Cell 1 Internal Resistance |
| Hybrid/EV Battery Cell 2 Internal Resistance |
| Hybrid/EV Battery Cell 3 Internal Resistance |
| Hybrid/EV Battery Cell 4 Internal Resistance |
| Hybrid/EV Battery Cell 5 Internal Resistance |
| Hybrid/EV Battery Cell 6 Internal Resistance |
| Hybrid/EV Battery Cell 7 Internal Resistance |
| Hybrid/EV Battery Cell 8 Internal Resistance |
| Hybrid/EV Battery Cell 9 Internal Resistance |
| Hybrid/EV Battery Cell 10 Internal Resistance |
| Hybrid/EV Battery Cell 11 Internal Resistance |
| Hybrid/EV Battery Cell 12 Internal Resistance |
| Hybrid/EV Battery Cell 13 Internal Resistance |
| Hybrid/EV Battery Cell 14 Internal Resistance |
| Hybrid/EV Battery Cell 15 Internal Resistance |
| Hybrid/EV Battery Cell 16 Internal Resistance |
| Hybrid/EV Battery Cell 17 Internal Resistance |
| Hybrid/EV Battery Cell 18 Internal Resistance |
| Hybrid/EV Battery Cell 19 Internal Resistance |

| TESTER DISPLAY |
|---|
| Hybrid/EV Battery Cell 20 Internal Resistance |
| Hybrid/EV Battery Cell 21 Internal Resistance |
| Hybrid/EV Battery Cell 22 Internal Resistance |
| Hybrid/EV Battery Cell 23 Internal Resistance |
| Hybrid/EV Battery Cell 24 Internal Resistance |
| Hybrid/EV Battery Cell 25 Internal Resistance |
| Hybrid/EV Battery Cell 26 Internal Resistance |
| Hybrid/EV Battery Cell 27 Internal Resistance |
| Hybrid/EV Battery Cell 28 Internal Resistance |
| Hybrid/EV Battery Cell 29 Internal Resistance |
| Hybrid/EV Battery Cell 30 Internal Resistance |
| Hybrid/EV Battery Cell 31 Internal Resistance |
| Hybrid/EV Battery Cell 32 Internal Resistance |
| Hybrid/EV Battery Cell 33 Internal Resistance |
| Hybrid/EV Battery Cell 34 Internal Resistance |
| Hybrid/EV Battery Cell 35 Internal Resistance |
| Hybrid/EV Battery Cell 36 Internal Resistance |
| Hybrid/EV Battery Cell 37 Internal Resistance |
| Hybrid/EV Battery Cell 38 Internal Resistance |

| TESTER DISPLAY |
|---|
| Hybrid/EV Battery Cell 39 Internal Resistance |
| Hybrid/EV Battery Cell 40 Internal Resistance |
| Hybrid/EV Battery Cell 41 Internal Resistance |
| Hybrid/EV Battery Cell 42 Internal Resistance |
| Hybrid/EV Battery Cell 43 Internal Resistance |
| Hybrid/EV Battery Cell 44 Internal Resistance |
| Hybrid/EV Battery Cell 45 Internal Resistance |
| Hybrid/EV Battery Cell 46 Internal Resistance |
| Hybrid/EV Battery Cell 47 Internal Resistance |
| Hybrid/EV Battery Cell 48 Internal Resistance |
| Hybrid/EV Battery Cell 49 Internal Resistance |
| Hybrid/EV Battery Cell 50 Internal Resistance |
| Hybrid/EV Battery Cell 51 Internal Resistance |
| Hybrid/EV Battery Cell 52 Internal Resistance |
| Hybrid/EV Battery Cell 53 Internal Resistance |
| Hybrid/EV Battery Cell 54 Internal Resistance |
| Hybrid/EV Battery Cell 55 Internal Resistance |
| Hybrid/EV Battery Cell 56 Internal Resistance |
| Hybrid/EV Battery Cell 57 Internal Resistance |

| |
|---|
| TESTER DISPLAY |
| Hybrid/EV Battery Cell 58 Internal Resistance |
| Hybrid/EV Battery Cell 59 Internal Resistance |
| Hybrid/EV Battery Cell 60 Internal Resistance |

| RESULT | PROCEED TO |
|---|------------|
| "Hybrid/EV Battery Cell 1 to 60 Internal Resistance" is out of the specified range. | A |
| All values are not within the specified range. | B |

(b) Turn the ignition switch off.

A  **REPLACE HV BATTERY**

B



| | |
|-----------|------------------|
| 2. | DIAGNOSIS |
|-----------|------------------|

(a) Confirm with the owner whether or not to perform "Prediagnostic Battery Charge" and "Battery Diagnosis".

HINT:

- It takes about 2 hours to perform "Prediagnostic Battery Charge" and "Battery Diagnosis".
- Depending on the vehicle usage, it is possible to reuse the HV battery. However, if it is judged not possible to be reused, replace the HV battery.

| RESULT | PROCEED TO |
|--|------------|
| "Prediagnostic Battery Charge" and "Battery Diagnosis" is performed. | A |
| "Prediagnostic Battery Charge" and "Battery Diagnosis" is not performed. | B |

B  **REPLACE HV BATTERY**

A



3. PERFORM UTILITY (PREDIAGNOSTIC BATTERY CHARGE)

- (a) Apply the parking brake and secure the wheels using chocks.
- (b) Perform the "Prediagnostic Battery Charge".

Click here [INFO](#)

NOTICE:

- If the fuel level warning light is illuminated, add enough fuel that the light turns off, and then perform "Prediagnostic Battery Charge".
- Perform HV battery charging with appropriate HV battery temperature, between 0°C (32°F) and 47°C (116.6°F).
- Do not perform prediagnostic battery charge while the master warning is illuminated.
- Perform prediagnostic battery charge with the HV battery installed correctly.
- Do not perform prediagnostic battery charge while changing from inspection mode to another mode.

HINT:

- If the HV battery temperature is low (below 0°C (32°F)), drive the vehicle until the temperature reaches 0°C (32°F) or more and perform "Prediagnostic Battery Charge" again.
- If the HV battery temperature is high (above 47°C (116.6°F)), leave the vehicle with the ignition switch ON (READY) and park (P) selected. Wait until the HV battery temperature drops to 43°C (109.4°F) or lower, and then perform "Prediagnostic Battery Charge" again.
- If the HV battery temperature is low (below 0°C (32°F)) and the ignition switch cannot be turned to ON (READY), place the vehicle in a warm environment (20°C (68°F) or higher). Wait until the HV battery temperature reaches 0°C (32°F) or higher, and then perform "Prediagnostic Battery Charge" again.

NEXT



4. PERFORM UTILITY (BATTERY DIAGNOSIS)

- (a) Perform the "Battery Diagnosis".

Click here [INFO](#)

NOTICE:

- Perform this diagnosis with the engine coolant at -10°C (14°F) or more.
- Perform HV battery diagnosis with appropriate HV battery temperature (between 0°C (32°F) and 47°C (116.6°F)).
- Do not perform battery diagnosis while the master warning is illuminated.
- Perform battery diagnosis with the HV battery installed correctly.
- Do not perform battery diagnosis while changing from inspection mode to another mode.
- The IG off timer function automatically turns the ignition switch off 10 minutes after the battery diagnosis completes. Make sure to confirm the diagnosis result as soon as possible.
- Make sure to turn the ignition switch off after battery diagnosis to prevent the auxiliary battery from being discharged.
- If differences among SOCs of each HV battery exceed the specifications, the master warning may illuminate when "Battery Diagnosis" is complete. In this case, check for hybrid system related DTCs. If DTC P300016 is output, leave the vehicle with the ignition switch ON (READY) for 10 minutes or more allowing the vehicle to charge the HV battery. Then clear the DTCs.
- If the vehicle is left with the ignition switch ON after battery diagnosis, the master warning may illuminate. If DTC P300000 is output, perform troubleshooting by following the inspection procedure for the DTC.
- Wait 1 hours or more before turning the ignition switch to ON after the ignition switch is turned off. If the ignition switch is turned to ON shortly after battery diagnosis, the master warning may illuminate.

HINT:

As the "Battery Diagnosis" discharges the HV battery to a low SOC, if the ignition switch is turned to ON immediately after the "Battery Diagnosis" is completed, DTC P31AB16 (Hybrid Battery Cell Low Voltage) may be stored. For this reason, leave the vehicle as is for 1 hours to allow the HV battery SOC to recover.

(b) Check the battery diagnosis result.

| RESULT | PROCEED TO |
|---|------------|
| OK ("There is no need to replace HV battery.") | A |
| NG (Replace the listed No. 1 or No. 2 HV supply stack sub-assembly) | B |

B ► REPLACE HV BATTERY

A



| | |
|-----------|--------------------------|
| 5. | CHARGE HV BATTERY |
|-----------|--------------------------|

(a) Turn the ignition switch to ON (READY).

HINT:

- Charge the HV battery with the ignition switch ON (READY) to recover the SOC after "Battery Diagnosis".
- The READY indicator illuminates and the engine starts.

(b) Leave the vehicle with the shift lever in P until the engine stops.

HINT:

The engine stops when the SOC of the HV battery reaches the specified amount.

(c) Turn the ignition switch off.

NEXT ► END

