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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): P1AFD00; Flying Capacitor Circuit Voltage Out of Range; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P1AFD00**	**Flying Capacitor Circuit Voltage Out of Range**

DESCRIPTION

The battery ECU assembly monitors its internal operation and will store these DTCs when it detects an internal malfunction.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P1AFD00	Flying Capacitor Circuit Voltage Out of Range	ECU internal malfunction (1 trip detection logic)	• Battery ECU assembly • HV battery	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1AFD

MONITOR DESCRIPTION

The battery ECU assembly monitors its internal operation. If the internal operation is malfunctioning, the battery ECU assembly illuminates the MIL and stores a DTC.

MONITOR STRATEGY

Related DTCs	P1AFD (INF P1AFD00): Battery stack voltage sense circuit
Required sensors/components	Battery ECU assembly
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not stored	TMC's intellectual property
Other conditions belong to TMC's intellectual property	-

TYPICAL MALFUNCTION THRESHOLDS

TMC's intellectual property	-

COMPONENT OPERATING RANGE

Battery ECU assembly	DTC P1AFD (INF P1AFD00) is not detected

CONFIRMATION DRIVING PATTERN

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.

  Click here INFO

- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

  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. With ignition switch ON and wait for 30 seconds or more.[*1]

   HINT:

   [*1]: Normal judgment procedure.

   The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.
4. Enter the following menus: Powertrain / HV Battery / Utility / All Readiness.
5. Check the DTC judgment result.

   HINT:

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

CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

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

PROCEDURE

1.	**CHECK DTC OUTPUT (HV BATTERY)**

Pre-procedure1

(a) None

Procedure1

(b) Check for DTCs.

Powertrain > HV Battery > Trouble Codes

RESULT	PROCEED TO
Only P1AFD00 is output	A
P1AFD00 and other DTCs are output	B

Post-procedure1

(c) Turn the ignition switch off.

B ▶ **GO TO DTC CHART (HYBRID BATTERY SYSTEM)**

A ▼

2.	**CHECK CONNECTOR CONNECTION CONDITION (HV BATTERY HIGH VOLTAGE CONNECTOR)**

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.

Procedure1

(b) Check the connector connections and contact pressure of the relevant terminals for the HV supply stack sub-assembly.

HINT:

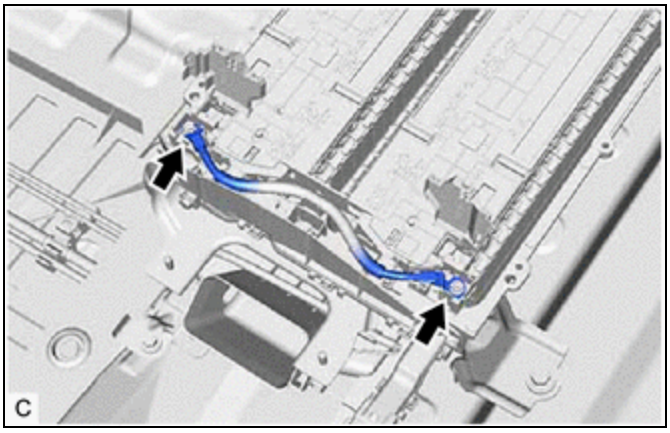
Click here INFO

OK:

The connector is connected securely and there are no contact problems.

Result:

RESULT		PROCEED TO
OK		A
Not connected securely	The terminals are not damaged or corroded	B
Not connected securely	The terminals are damaged or corroded	C



Post-procedure1

(c) None

A ▶ **REPLACE BATTERY ECU ASSEMBLY**

B ▶ **CONNECT SECURELY**

C ▶ **REPLACE HV BATTERY**