Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029A5K
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): VEHICLE CONTROL HISTORY (RoB); 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

VEHICLE CONTROL HISTORY (RoB)

VEHICLE CONTROL HISTORY (RoB) (HYBRID BATTERY SYSTEM)

(a) Enter the following menus.

Powertrain > HV Battery > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

HINT:

- If any of the conditions in the "Cause" column are met, data related to the Vehicle Control History item "Ready ON Prevention", "Hybrid/EV Battery Cooling Performance Decrement" or "Limit to Charge / Discharge Control Value by Hybrid/EV Battery" will be stored in the battery ECU assembly.
- When the Vehicle Control History item "Ready ON Prevention" is stored, the vehicle condition will be as shown in the Symptom column.
- There are unimplemented function codes depending on vehicle specification.

Vehicle Control History

CODE	TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
X0460	Hybrid/EV Battery Cooling Performance Decrement	History of poor HV battery cooling performance Vehicle Control History Data: • Hybrid/EV Battery Temperature 1 to 6 • Hybrid/EV Battery Cooling Fan Intake Air Temperature 1 Countermeasures: INFO	-
X0540	Ready ON Prevention	Incorrect HV battery is installed (The ignition switch does not turn to ON (READY).) Vehicle Control History Data: • Hybrid/EV Battery Determination Signal 1 • Hybrid/EV Battery Determination Signal 2 "Hi" is displayed for both of these items when they are normal. If "Lo" is displayed for either item, the ignition switch cannot be turned to ON (READY) due to an incorrect HV supply stack sub-assembly having been installed. Countermeasures: Replace the HV supply stack sub-assembly with a correct one.	-
		Incorrect ECM is installed (The ignition switch does not turn to ON (READY).) Vehicle Control History Data: Number of Hybrid Battery Mismatch Judgment with Engine ECU	-

CODE	TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
		"0" is displayed for this item when it is normal. If a value of "3" or higher is displayed for this item, the ignition switch cannot be turned to ON (READY) due to an incorrect ECM having been installed. Countermeasures: Check the part number and replace the ECM with a correct one.	
		Battery diagnosis request was ignored (The ignition switch does not turn to ON (READY).) Vehicle Control History Data: Hybrid/EV Battery Check Status Light Request If a value of "6" or higher is displayed for this item and no other conditions are preventing the ignition switch from being turned to ON (READY), the ignition switch cannot be turned to ON (READY) due to Battery Diagnosis not being performed and the vehicle being driven for a certain amount of time after "Have Traction Battery Inspected" was displayed on the multi-information display. Countermeasures: Perform Battery Diagnosis using the GTS.	-
		High voltage wire harness between HV supply stack sub-assemblies is disconnected (The ignition switch does not turn to ON (READY).) Vehicle Control History Data: High Voltage Line between Stack Engaged If "ON" is displayed for this item, the ignition switch cannot be turned to ON (READY) as the high voltage wire harness connecting 2 or more HV supply stack sub-assemblies is disconnected. Countermeasures: Inspect the high voltage wire harnesses connecting the HV supply stack sub-assemblies.	-
		Excessive engine cranking requests when HV battery cannot be used (The ignition switch does not turn to ON (READY).) Vehicle Control History Data: Number of Cranking when No Hybrid/EV Battery If a value higher than "15" is displayed for this item, the ignition switch cannot be turned to ON (READY) as engine cranking operation requests have exceeded a threshold when the HV battery could not be used. Countermeasures: Repair the malfunctions indicated by the output DTCs and clear the DTCs.	-
		Extremely low HV battery temperature judgment (The ignition switch does not turn to ON (READY).) Vehicle Control History Data: Hybrid Battery Extremely Low Temperature Judgment If "ON" is displayed for this item, the ignition switch cannot be turned to ON (READY) as the temperature of the HV battery is extremely low. The values of "HV Battery Temperature 1 to 6" and "Hybrid/EV Battery Cooling Fan Intake Air Temperature 1" can be used as a reference.	-

CODE	TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
		Countermeasures: Wait for the HV battery temperature to increase.	
		High HV battery cell voltage (The ignition switch is slow to turn to ON (READY).) Vehicle Control History Data: • Hybrid/EV Battery Stack 1 Cell Maximum Voltage • Hybrid/EV Battery Stack 2 Cell Maximum Voltage Countermeasures: Perform troubleshooting for any DTCs that are output.	-
		Low HV battery cell voltage (The ignition switch is slow to turn to ON (READY).) Vehicle Control History Data: • Hybrid/EV Battery Stack 1 Cell Minimum Voltage • Hybrid/EV Battery Stack 2 Cell Minimum Voltage Countermeasures: Perform troubleshooting for any DTCs that are output.	-
X0570	Limit to Charge / Discharge Control Value by Hybrid/EV Battery	History of HV battery charge/discharge being restricted If the temperature of the HV battery becomes approximately 40°C (104°F) or higher due to high ambient temperature, continuous driving under high load, clogged hybrid battery intake duct, etc., the HV battery current will be restricted. In this case the value of WIN/WOUT will decrease and the engine will stop and start less frequently. Vehicle Control History Data: • WIN Control Limit Power • WOUT Control Limit Power • Hybrid/EV Battery Temperature 1 to 6 (Excessively high HV battery temperature: approximately 40°C (104°F) or higher) • Hybrid/EV Battery Cooling Fan Intake Air Temperature 1 (If this value is high (approximately 38°C (100.4°F) or higher), due to high ambient temperature or high cabin temperature, the temperature of the HV battery may become high.) Countermeasures: • Check for clogs in the hybrid battery intake duct. • This Vehicle Control History item may be stored if the temperature of the HV battery became high due to certain conditions, such as if the ambient temperature was high or the vehicle was driven continuously under high load. Explain to the customer that this is not a malfunction. 1. If this Vehicle Control History item is stored, perform the following inspections.	-

CODE	TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
		◦ Check the Vehicle Control History freeze frame data. ◦ Check for clogs in the hybrid battery intake duct. ◦ Inspect the HV battery cooling filter. INFO ◦ Check the intake port of the HV battery cooling system for blockage, such as luggage, etc. 2. After performing the above inspections, check the temperature of the HV battery in the Data List. If the temperature of the HV battery is high (approximately 40°C (104°F) or higher), stop the vehicle, turn the air conditioning system on (Temperature: Lo, Blower speed: Max) and perform the Active Test "Control the Hybrid/EV Battery Cooling Fan". Check that the temperature of the HV battery decreases. 3. This Vehicle Control History item may be stored if the temperature of the HV battery became high due to certain conditions, such as if the ambient temperature was high, cabin temperature was high or the vehicle was driven continuously under high load (such as mountain driving or frequent acceleration/deceleration). Explain to the customer that this is not a malfunction.	