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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for PHEV Model): B142200; A/C Inverter Load Malfunction; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**B142200**	**A/C Inverter Load Malfunction**

DESCRIPTION

The operation of the compressor with motor assembly is stopped and this DTC is stored if the rotation load is too large or too small while the compressor with motor assembly is operating.

HINT:

Possible causes are refrigerant leaks, overcharged refrigerant, insufficient cooling due to a condenser fan circuit malfunction, or compressor lock.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY	DTC OUTPUT FROM	PRIORITY	NOTE
B142200	A/C Inverter Load Malfunction	Diagnosis Condition: There is a compressor operation request. Malfunction: The rotational load when the compressor is operating is too large or too small. Detection Time: -	• Cooling fan system • Refrigerant volume • Compressor with motor assembly	Does not come on	Memorized	Air Conditioner	A	-

DTC Detection Condition Combination Table

		VEHICLE CONDITION	
		PATTERN 1	PATTERN 2
Diagnosis Condition	There is a compressor operation request.	○	○
Malfunction	The rotational load when the compressor is operating is too large.	○	-
	The rotational load when the compressor is operating is too small.	-	○

	VEHICLE CONDITION	
	PATTERN 1	PATTERN 2
Detection Time	-	-
Trip Count	1 trip	1 trip

HINT:

If the conditions of either of these patterns are detected, a DTC will be stored.

CAUTION / NOTICE / HINT

CAUTION:

- Before inspecting the high-voltage system, take safety precautions such as wearing insulated gloves and removing the service plug grip to prevent electrical shocks. After removing the service plug grip, put it in your pocket to prevent other technicians from accidentally reconnecting it while you are working on the high-voltage system.

  Click here INFO
- Do not touch the high-voltage connectors or terminals for 10 minutes after the service plug grip is removed.

  Click here INFO

NOTICE:

- After turning the ignition switch off, waiting time may be required before disconnecting the cable from the negative (-) auxiliary battery terminal. Therefore, make sure to read the disconnecting the cable from the negative (-) auxiliary battery terminal notices before proceeding with work.
  - Before disconnecting battery:

    Click here INFO
  - Automatic learning chart:

    Click here INFO
- The hybrid control system and air conditioning system output DTCs separately. Perform troubleshooting for the hybrid control system first if DTCs for both systems are output simultaneously.

  Click here INFO
- The air conditioning system uses the CAN communication system. Inspect the communication functions by following How to Proceed with Troubleshooting. Troubleshoot the air conditioning system after confirming that the communication systems are functioning properly.

  Click here INFO

PROCEDURE

1.	**PERFORM ACTIVE TEST USING GTS**

(a) Perform the Active Test according to the display on the GTS.

Powertrain > Engine > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	RESTRICT CONDITION
Control the Engine Cooling Fan Duty Ratio	Control the cooling fan	0 to 100%	Perform this test when vehicle is stopped.

Powertrain > Engine > Active Test

TESTER DISPLAY
Control the Engine Cooling Fan Duty Ratio

OK:
Electric cooling fan operates smoothly.

NG ▶ **GO TO COOLING FAN SYSTEM**

OK ▼

2.	**CHECK REFRIGERANT PRESSURE**

Pre-procedure1

(a) Install a manifold gauge set.

HINT:

Click here INFO

(b) Prepare the vehicle according to the table below.

Measurement Condition:

ITEM	CONDITION
Doors	Fully open
A/C Switch	On
Recirculation/fresh Control Switch	Recirculation
Set Temperature	MAX COLD
Blower Speed	HI
Air Conditioning Air Inlet Temperature	25 to 35°C (77 to 95°F)

Procedure1

(c) Read the manifold gauge pressure.

Standard Pressure:

ITEM	SPECIFIED CONDITION	RESULT
High pressure side	1370 to 1570 kPa 14 to 16 kgf/cm^2 199 to 228 psi	kPa kgf/cm2 psi
Low pressure side	150 to 250 kPa 1.5 to 2.5 kgf/cm^2 22 to 36 psi	kPa kgf/cm2 psi

Post-procedure1

(d) None

OK ▶ **REPLACE COMPRESSOR WITH MOTOR ASSEMBLY**

NG ▶ **CHARGE REFRIGERANT**