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Model Year Start: 2023	Model: Prius	Prod Date Range: [12/2022 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for HEV Model): B14744B; A/C Inverter Cooling/Heating Over Temperature; 2023 - 2024 MY Prius [12/2022 -]		

DTC	B14744B	A/C Inverter Cooling/Heating Over Temperature
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DESCRIPTION

The temperature sensor of the compressor with motor assembly detects the A/C inverter temperature.

If the temperature exceeds the maximum, operation of the compressor with motor assembly will be stopped, and this DTC will be stored.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MEMORY	DTC OUTPUT FROM	PRIORITY
B14744B	A/C Inverter Cooling/Heating Over Temperature	Diagnosis Condition: Ignition switch ON Malfunction: A/C inverter temperature is outside the specified range (temperature too high) Detection Time: -	<ul style="list-style-type: none"> Cooling fan system Refrigerant volume Compressor with motor assembly 	Memorized	Air Conditioner	A

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.

for 2ZR-FXE: Click here [INFO](#)

for M20A-FXS: 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.

for 2ZR-FXE: Click here [INFO](#)

for M20A-FXS: 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
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(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	Control electric cooling fan motor	OFF/Low/High	Perform this test when vehicle is stopped.

Powertrain > Engine > Active Test

TESTER DISPLAY
Control the Engine Cooling Fan

OK:

Electric cooling fan operates smoothly.

NG ► GO TO COOLING FAN SYSTEM

for M20A-FXS: Click here [INFO](#)

for 2ZR-FXE: Click here [INFO](#)

OK



2. CHECK REFRIGERANT PRESSURE

Pre-procedure1

(a) Install a manifold gauge set.

HINT:

for HFC-134a(R134a): [Click here](#) INFO

for HFO-1234yf(R1234yf): [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/cm ² psi
Low pressure side	150 to 250 kPa 1.5 to 2.5 kgf/cm ² 22 to 36 psi	kPa kgf/cm ² psi

Post-procedure1

(d) None

NG CHARGE REFRIGERANT

for HFC-134a(R134a): [Click here](#) INFO

for HFO-1234yf(R1234yf): [Click here](#) INFO

OK**3. CLEAR DTC**

(a) Clear the DTCs.

Body Electrical > Air Conditioner > Clear DTCs**NEXT****4. CHECK FOR DTC**

Pre-procedure1

(a) Set the vehicle condition when the DTCs are output.

(1) Set the "Inspection Mode".

HINT:[Click here](#)

(2) Prepare the vehicle according to the table below for 30 minutes or more.

ITEM	CONDITION
Blower Speed	HI
A/C Switch	On
Set Temperature	MAX COLD

Procedure1

(b) Check for DTCs.

Body Electrical > Air Conditioner > Trouble Codes**NOTICE:**

If the engine keeps idling when the ambient temperature is high, the compressor with motor assembly may automatically stop to protect the inverter circuit, and DTC B14744B may be stored.

RESULT	PROCEED TO
B14744B is not output	A
B14744B is output	B

Post-procedure1

(c) None

A ► **USE SIMULATION METHOD TO CHECK**

B ► **REPLACE COMPRESSOR WITH MOTOR ASSEMBLY**

for 2ZR-FXE: Click here [INFO](#)

for M20A-FXS: Click here [INFO](#)

