

GENERIC · POWERTRAIN

P2D44

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2D44

A/C Compressor Motor Performance

P2D44 indicates that the powertrain control module has detected a performance fault in the air conditioning compressor motor circuit, typically on hybrid or electric vehicles with an electrically driven A/C compressor. The computer monitors motor speed, current draw, or feedback signals and sets this code when the compressor fails to respond as commanded or operates outside expected parameters.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Hybrid propulsion

Symptoms you may notice

- A/C blows warm air or no cold air at all
- Compressor may run intermittently or not engage
- Unusual noises from the compressor area such as grinding or whining
- Reduced cooling performance at idle or low speeds
- Often no symptoms besides the warning light if the fault is intermittent
- Possible high-voltage system warning or reduced power mode on some vehicles

Common causes, most likely first

- Low refrigerant charge or refrigerant pressure out of specification
- Faulty A/C compressor motor or internal motor winding failure
- Damaged or corroded wiring and connectors in the compressor motor circuit
- Failed compressor inverter or control module
- Blocked or restricted A/C system components causing excessive load
- Poor ground connection for the compressor or control module
- Software calibration issue in the powertrain control module



How to diagnose and fix it

- 1 Verify refrigerant charge and system pressures with a manifold gauge set
- 2 Inspect all wiring and connectors between the compressor, inverter, and control module for damage or corrosion
- 3 Check for technical service bulletins and software updates for the A/C compressor control system
- 4 Perform a commanded activation test of the compressor using a scan tool and observe motor speed and current feedback
- 5 Measure resistance and insulation on the compressor motor windings if accessible
- 6 Test the compressor inverter output and power supply circuits
- 7 Replace the A/C compressor assembly or control module as diagnosed, then clear codes and verify operation

What most technicians overlook with P2D44

- A low refrigerant charge is the most common cause of this code on electric compressors because the motor over-speeds or draws abnormal current when starved of refrigerant.
The code can be set by a failing high-voltage compressor inverter even when the motor windings test good, so always check inverter power and ground before condemning the compressor.
- Intermittent wiring faults at the compressor connector often cause this code without any drivability symptoms, so wiggle-test the harness while monitoring live data.
- Some vehicles require a relearn or calibration procedure after compressor replacement, and skipping it will immediately reset the code.
This code does not always mean the compressor is bad; a restricted condenser or expansion valve can overload the motor and trigger the same performance fault.

Can I keep driving with P2D44?

You can usually continue driving with this code because the A/C system is not safety-critical, but avoid using the A/C to prevent further compressor damage. On hybrid or electric vehicles, have the high-voltage A/C system inspected promptly by a qualified technician.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Manifold gauge set for A/C pressures
- Digital multimeter with insulation tester
- Refrigerant recovery and recharge machine
- Wiring diagram and service information for the specific vehicle



Reading P2D44

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- D** Hybrid propulsion.
- 44** The exact fault within that area.

Often seen with

P0532 A/C Refrigerant Pressure Sensor 'A' Circuit Low · **P0533** A/C Refrigerant Pressure Sensor 'A' Circuit High
 · **P0645** A/C Clutch Relay Control Circuit · **P2D43** A/C Compressor Motor Voltage B High · **P2D45** Reductant Temperature Too Low

See it working

Watch the animated explainer [How a Catalytic Converter Works: 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2d44/>

