

GENERIC · POWERTRAIN

P2CB2

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2CB2

Charge Air Cooler Coolant Pump B Underspeed

P2CB2 indicates that the powertrain control module (PCM) has detected that the electric coolant pump for charge air cooler circuit B is running slower than the commanded speed or below the expected threshold for the given operating conditions. The PCM monitors the pump's feedback signal or current draw and sets this code when the actual pump speed falls short of the desired speed, which can reduce cooling efficiency for the charge air system.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine performance or power derate due to elevated intake air temperatures
- Intermittent cooling fan operation or unusual fan noise as the system tries to compensate
- Possible overheating of the charge air cooler circuit, leading to higher intake air temperatures
- In some cases, a message on the dashboard indicating a powertrain fault or reduced power

Common causes, most likely first

- 1 Low coolant level or air trapped in the charge air cooler coolant circuit
- 2 Faulty charge air cooler coolant pump B, such as a worn impeller or internal electrical failure
- 3 Damaged or corroded wiring or connector at the pump, including poor ground connections
- 4 Blown fuse or faulty relay supplying power to the pump
- 5 Restricted coolant flow due to a blocked hose, clogged cooler, or faulty thermostat in the circuit
- 6 PCM software issue or faulty pump control module, though less common



How to diagnose and fix it

- 1 Check the coolant level in the charge air cooler circuit and top up if low; bleed the system of air if necessary
- 2 Inspect the pump's electrical connector and wiring for corrosion, damage, or loose pins
- 3 Test the pump's power supply by checking the fuse and relay, and verify voltage at the pump connector
- 4 Command the pump on with a scan tool and listen for operation; compare commanded speed to actual speed if data is available
- 5 Perform a resistance or current draw test on the pump motor to check for internal faults
- 6 Check for coolant flow restrictions by inspecting hoses and the charge air cooler for blockages
- 7 If all electrical and hydraulic checks pass, replace the charge air cooler coolant pump B and clear the code

Diagnosing Charge Air Cooler Pump Underspeed

- A low coolant level or trapped air is a frequent cause of this code because the pump may run dry or cavitate, leading to underspeed without any electrical fault.
- The pump may only act up when the engine is cold or under specific load conditions, so a thorough road test with a scan tool recording live data is essential.
- A failing pump can sometimes be intermittent, setting the code only after multiple drive cycles; do not assume the pump is good just because it runs during a quick test.
- Corroded wiring at the pump connector is often overlooked, especially in areas with road salt exposure, and can mimic a failed pump.
- Replacing the pump without verifying the cooling circuit is free of air can lead to a repeat failure and the same code returning shortly after repair.

Can I keep driving with P2CB2?

You can usually drive the vehicle with this code, but avoid heavy acceleration or sustained high-load conditions that increase intake air temperatures. If the check engine light begins flashing or you notice a significant loss of power, stop driving and seek service immediately.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter
- Coolant refractometer or hydrometer
- Basic hand tools for hose and connector access
- Vacuum filler or bleed kit for coolant system



Reading P2CB2

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- B2** The exact fault within that area.

Often seen with

P00B4 Radiator Coolant Temperature Sensor Circuit High · **P0217** Engine Over-Temperature Condition · **P2CB0** Charge Air Cooler Coolant Pump B Performance · **P2CB1** Charge Air Cooler Coolant Pump B Overspeed/Air In System · **P2CB3** Charge Air Cooler Coolant Pump B Stuck/Stalled

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2cb2/>

