

GENERIC · POWERTRAIN

P2BC1

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2BC1

Charge Air Cooler Coolant Pump A Stuck/Stalled

P2BC1 indicates that the powertrain control module (PCM) has detected a fault with the electric coolant pump that circulates liquid through the charge air cooler circuit. The PCM commands the pump on and monitors its operation, and it sets this code when the pump's feedback indicates it is stuck (not rotating) or stalled (unable to turn) despite the command to run.

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, especially during sustained boost or towing.
- The engine may enter limp mode or limit boost to protect the charge air cooler from overheating.
- A whining, humming, or grinding noise from the charge air cooler coolant pump area when the pump is commanded on.
- Overheating of the charge air cooler, which can lead to elevated intake air temperatures and reduced efficiency.
- In some cases, the pump may run continuously or not at all, affecting coolant circulation.

Common causes, most likely first

- 1 Failed charge air cooler coolant pump (electrical or mechanical failure).
- 2 Blown fuse or faulty relay supplying power to the pump.
- 3 Damaged or corroded wiring or connector at the pump.
- 4 Coolant leak or low coolant level causing the pump to run dry and seize.
- 5 Debris or contamination in the coolant system blocking the pump impeller.
- 6 Faulty pump control module or PCM software issue (less common).



How to diagnose and fix it

- 1 Check for any related diagnostic trouble codes (DTCs) and freeze-frame data to confirm the fault conditions.
- 2 Inspect the coolant level and condition; top off or flush if contaminated.
- 3 Visually inspect the pump, wiring, and connectors for damage, corrosion, or leaks.
- 4 Test the pump's electrical circuit: check fuses, relays, and power/ground signals at the pump connector.
- 5 Command the pump on with a scan tool and listen for operation; measure current draw if possible.
- 6 If the pump does not respond, remove it and check for mechanical binding or debris; replace if defective.
- 7 After repair, clear codes and verify the pump operates correctly with a scan tool.

Don't overlook the charge air cooler pump

- A stuck or stalled charge air cooler pump often does not produce noticeable symptoms until the engine is under heavy load, so the code may be the only clue.
- Low coolant level or air pockets in the system can cause the pump to cavitate and trigger this code even if the pump is mechanically sound.
- Some vehicles use the same pump for both charge air cooling and other cooling circuits, so a failure can affect multiple systems.
- A faulty pump relay or fuse can mimic a failed pump, so always check the simple electrical components first.
- After replacing the pump, it may be necessary to bleed the cooling system thoroughly to prevent recurring codes.

Can I keep driving with P2BC1?

It is generally safe to drive with this code as long as the engine temperature remains normal and you avoid heavy loads or sustained high-speed driving. However, prolonged driving with a failed pump can lead to reduced performance and potential damage to the charge air cooler, so schedule a repair soon.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Basic hand tools (sockets, wrenches)
- Coolant refractometer or hydrometer
- Vacuum filler or bleed kit



Reading P2BC1

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- C1** The exact fault within that area.

Often seen with

P00B1 Radiator Coolant Temperature Sensor Circuit · **P0234** Engine Overboost Condition · **P2BC0** Turbocharger/Supercharger Bypass Valve A Driver Current/Temp · **P2BC2** Charge Air Cooler Coolant Pump A Supply Voltage Circuit · **P2BC3** Charge Air Cooler Coolant Pump A Control Module Overtemperat

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/p2bc1/>

