



P2CF7

Hybrid/EV Battery Pack Coolant Pump B Underspeed

This code indicates that the powertrain control module has detected that the coolant pump responsible for circulating liquid through the hybrid or electric vehicle battery pack is running slower than the commanded speed. The computer monitors the pump's feedback signal or electrical current and sets the code when the actual pump speed falls below the expected threshold for a calibrated amount of time.

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

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message
- Reduced hybrid system power or a forced limp mode
- Battery pack overheating warning or elevated battery temperature gauge reading
- Possible audible whine or lack of pump noise when the vehicle is in ready mode
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Low coolant level or air trapped in the battery coolant loop
- 2 Failing battery coolant pump motor or impeller
- 3 Wiring damage or corroded connector at the pump
- 4 Blown fuse or faulty relay supplying power to the pump
- 5 Restricted coolant flow due to a clogged radiator or degraded coolant
- 6 Faulty pump control module or driver circuit inside the PCM
- 7 Internal mechanical binding of the pump shaft or bearing

How to diagnose and fix it

- 1 Check battery coolant level and top up with the specified pre-mixed coolant if low
- 2 Inspect the pump connector and harness for corrosion, chafing, or loose pins
- 3 Verify power and ground at the pump connector with a multimeter or test light
- 4 Command the pump on with a scan tool and listen for operation or measure current draw
- 5 Perform a coolant bleed procedure to remove trapped air from the battery loop
- 6 Replace the battery coolant pump if it fails to respond to commands or draws excessive current
- 7 Clear the code and verify the pump reaches commanded speed during a road test



What the pump speed code really tells you

- A pump that spins freely by hand can still set this code because the internal speed sensor or control electronics fail while the motor turns.
- Air pockets in the battery coolant loop are a frequent cause of underspeed codes after a coolant service, and bleeding must follow the manufacturer's specific procedure.
- The pump may run only when the battery is above a certain temperature, so a cold vehicle can pass a quick visual check yet still set the code during a drive.
- A weak 12-volt auxiliary battery can cause the pump to run slowly and set this code without any pump fault at all.
- This code does not always mean the pump is dead; a restricted coolant passage or a failing pump driver in the control module can produce the same underspeed condition.

Can I keep driving with P2CF7?

Do not continue driving at high speeds or under heavy load because a failed battery coolant pump can lead to overheating and permanent damage to the hybrid battery pack. Limit driving to a short distance to a safe location or repair shop, and avoid using the vehicle for long trips until the fault is repaired.

Tools that help

- Scan tool with hybrid system capabilities
- Digital multimeter
- Coolant refractometer or hydrometer
- Hose clamp pliers
- Vacuum coolant refill tool

Reading P2CF7

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
C	Hybrid propulsion.
F7	The exact fault within that area.

Often seen with

P0A93 Inverter A Cooling System Performance · **P0A94** DC/DC Converter A Performance · **P0C73** Hybrid Battery Pack Cooling Pump Performance · **P2CF6** Hybrid/EV Battery Pack Coolant Pump B Overspeed /Air in Syst · **P2CF8** Engine Coolant Bypass Valve D Control Circuit Driver Current



See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2cf7/>

