



P2C5C

Cylinder 6 Fuel Injector B Offset Learning At Min Limit

P2C5C indicates that the powertrain control module (PCM) has learned a fuel injector offset correction for cylinder 6 injector B that has reached its minimum allowable limit. The PCM monitors injector performance and adjusts the offset to maintain proper fuel delivery; when the learned value hits the bottom of its range, it sets this code because the injector is flowing more fuel than expected or the circuit has an abnormal condition.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire felt as a shake or stumble, especially when the engine is cold
- Slight decrease in fuel economy due to incorrect fuel delivery
- Occasional hesitation or stumble during acceleration
- Possible rich-running smell from the exhaust if the injector is over-fueling

Common causes, most likely first

- 1 Faulty cylinder 6 fuel injector B that is stuck open or leaking, causing excess fuel flow
- 2 Dirty or clogged injector nozzle causing an abnormal spray pattern that the PCM tries to compensate for
- 3 Wiring harness damage or poor electrical connection at the cylinder 6 injector B, altering current flow
- 4 High fuel pressure from a failing fuel pressure regulator or restricted return line
- 5 PCM software calibration issue or internal driver fault for that injector circuit
- 6 Contaminated fuel or fuel system deposits affecting injector performance



How to diagnose and fix it

- 1 Connect a scan tool and verify the code is current, then check for any related misfire or fuel trim codes
- 2 Inspect the cylinder 6 injector B electrical connector and wiring for corrosion, chafing, or loose pins
- 3 Measure the injector resistance and compare it to the manufacturer's specification to rule out an open or shorted coil
- 4 Perform a fuel pressure test to ensure the system is within the specified range and not over-pressurizing
- 5 Run a fuel injector balance test or cylinder contribution test to compare cylinder 6 to the others
- 6 Remove and inspect the cylinder 6 injector B for leaks, clogging, or damaged tip; clean or replace as needed
- 7 After repair, clear the code and perform a relearn or adaptation reset with the scan tool, then verify the offset value returns to normal

What the offset limit really tells you

- A min limit offset often means the injector is flowing too much fuel for a given pulse width, which can be caused by a stuck-open injector or excessive fuel pressure rather than a weak injector.
Technicians sometimes replace the injector only to find the code returns because the fuel pressure regulator is over-pressurizing the rail, so always check pressure first.
 - The PCM may set this code without ever illuminating the check engine light if the offset stays just at the limit and no misfire is detected, so a scan tool is the only way to confirm.
 - A dirty injector can cause the offset to hit the limit because the PCM tries to compensate for a poor spray pattern, so a professional injector cleaning may resolve the issue without parts replacement.
- This code is specific to cylinder 6 injector B, so if the vehicle uses a different injector labeling scheme, confirm which injector is actually being monitored before diagnosing.

Can I keep driving with P2C5C?

You can usually drive the vehicle with this code, but avoid heavy acceleration or towing until it is diagnosed, because a leaking injector can cause rich running, carbon buildup, and eventually catalytic converter damage. If the check engine light is flashing or you feel a strong misfire, stop driving and have it inspected immediately.

Tools that help

- OBD-II scan tool with live data and bidirectional controls
- Digital multimeter for resistance and voltage checks
- Fuel pressure gauge
- Noid light or injector test light
- Hand tools for injector removal and replacement



Reading P2C5C

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- 5C** The exact fault within that area.

Often seen with

P0172 System Too Rich (Bank 1) · **P0175** System Too Rich (Bank 2) · **P0306** Cylinder 6 Misfire Detected · **P2C5B** Cylinder 5 Fuel Injector B Offset Learning At Max Limit · **P2C5D** Cylinder 6 Fuel Injector B Offset Learning At Max Limit

See it working

Watch the animated explainer [How a Knock Sensor Works: Spark Timing and Octane](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2c5c/>

