

GENERIC · POWERTRAIN

P2C58

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C58

Cylinder 4 Fuel Injector B Offset Learning At Min Limit

P2C58 indicates that the engine control module has learned a fuel injector offset correction for cylinder 4 that has reached its minimum allowable limit, meaning the module can no longer compensate for the injector's flow characteristics. The computer detected that the learned offset value for injector B on cylinder 4 is clamped at the bottom of its adaptive range, which typically points to an injector that is flowing more fuel than expected or a related circuit issue.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire sensation, especially when the engine is cold
- Slight decrease in fuel economy or black smoke from the exhaust
- Hesitation or stumble during acceleration
- Elevated hydrocarbon emissions or a fuel smell

Common causes, most likely first

- 1 Fuel injector on cylinder 4 is partially stuck open or leaking, delivering excess fuel
- 2 Contaminated or clogged injector nozzle causing an abnormal spray pattern
- 3 Wiring harness or connector issue at the cylinder 4 injector, such as chafing or corrosion
- 4 Faulty engine control module injector driver circuit for that cylinder
- 5 Low fuel pressure or a restricted fuel filter altering injector behavior
- 6 Internal mechanical wear in the injector affecting its offset learning



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and injector offset learning values for all cylinders to compare
- 2 Inspect the cylinder 4 injector connector and wiring for damage, corrosion, or loose pins
- 3 Perform a fuel injector balance test or cylinder contribution test to isolate the faulty injector
- 4 Check fuel pressure and volume against the manufacturer's specification
- 5 Swap the cylinder 4 injector with a known-good injector from another cylinder and see if the code follows
- 6 If the injector is faulty, replace it and clear the adaptive learning so the module can relearn the offset
- 7 Verify repair by road-testing under the conditions that originally set the code and confirming the offset value returns to the normal range

What the offset learning limit really tells you

- A min-limit offset code often means the injector is flowing more fuel than the module can correct for, which is the opposite of a clogged injector that flows less.
Many technicians replace the injector immediately, but a poor electrical connection at the injector can cause the same learned offset to hit the limit.
- This code can be set by a fuel pressure regulator that is bleeding pressure into the intake, causing rich running that the module tries to offset.
- After replacing the injector, the adaptive learning must be reset with a scan tool; otherwise the old offset value remains stored and the code may return.
A dirty mass airflow sensor or a vacuum leak can skew fuel trims and indirectly push the injector offset learning to its limit, so check those before condemning the injector.

Can I keep driving with P2C58?

You can usually continue driving to a repair shop, but avoid heavy acceleration or towing until the fault is diagnosed. Prolonged driving with a rich-running cylinder can damage the catalytic converter and spark plugs, so schedule service soon.

Tools that help

- OBD-II scan tool with live data and bidirectional controls
- Fuel pressure gauge
- Digital multimeter
- Noid light or injector test light
- Mechanic's hand tools and torque wrench



Reading P2C58

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

Often seen with

P0172 System Too Rich (Bank 1) · **P0304** Cylinder 4 Misfire Detected · **P2C56** Cylinder 3 Fuel Injector B Offset Learning At Min Limit · **P2C57** Cylinder 3 Fuel Injector B Offset Learning At Max Limit · **P2C59** Cylinder 4 Fuel Injector B Offset Learning At Max Limit

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2c58/>

