

GENERIC · POWERTRAIN

P2C61

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C61

Cylinder 8 Fuel Injector B Offset Learning At Max Limit

P2C61 indicates that the powertrain control module (PCM) has learned a fuel injector offset correction for cylinder 8's 'B' injector that has reached its maximum allowable limit. The computer can no longer compensate for the injector's flow characteristics within its programmed range, which typically points to a worn or clogged injector, a wiring issue, or a mechanical fault affecting that cylinder.

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 symptoms besides the warning light
- Rough idle or misfire sensation, especially when the engine is cold
- Slight hesitation or stumble during acceleration
- Decreased fuel economy
- Elevated hydrocarbon emissions or a fuel smell from the exhaust
- In rare cases, a noticeable loss of power under load

Common causes, most likely first

- 1 Clogged, dirty, or worn fuel injector on cylinder 8 (injector 'B')
- 2 Faulty or damaged electrical connector or wiring to the cylinder 8 injector
- 3 Internal PCM calibration issue or software glitch requiring reflash
- 4 Low fuel pressure or volume affecting injector performance
- 5 Mechanical engine issue such as low compression or a faulty lifter on cylinder 8
- 6 Contaminated fuel or fuel system deposits
- 7 Aftermarket or incorrect injector installed previously



How to diagnose and fix it

- 1 Verify battery voltage and inspect the cylinder 8 injector connector and wiring for corrosion or damage
- 2 Check fuel pressure and volume against manufacturer specifications
- 3 Perform a cylinder contribution test or injector balance test to confirm the affected injector
- 4 Run a fuel injector cleaning service or use a quality injector cleaner additive
- 5 Swap the cylinder 8 injector with a known-good injector from another cylinder to see if the code follows
- 6 If the code persists, replace the cylinder 8 injector with a new OEM-quality unit and perform a pilot learn or injector offset reset
- 7 Check for updated PCM software and reflash if applicable

What the offset learning limit really means

- The offset learning value is a correction factor the PCM applies to the injector's base pulse width; hitting the max limit means the PCM has run out of adjustment range, not necessarily that the injector has failed completely.
A dirty injector can cause this code without setting a misfire code, so technicians who only look for misfires may miss it.
- Fuel quality and pressure are critical; low fuel pressure can mimic a failing injector and lead to unnecessary replacement.
- The code may be stored intermittently due to a poor electrical connection that tests fine when the harness is wiggled, so a thorough wiggle test is essential.
On some vehicles, this code can be set by a faulty PCM driver circuit, so don't rule out the computer until wiring and injector have been ruled out.

Can I keep driving with P2C61?

You can usually continue driving short distances, but avoid heavy acceleration or towing until the fault is repaired. Prolonged driving with a rich or lean condition on one cylinder can damage the catalytic converter or spark plugs, so schedule diagnosis soon.

Tools that help

- OBD-II scan tool with live data and bidirectional controls
- Digital multimeter
- Fuel pressure gauge
- Noid light or injector pulse tester
- Mechanic's stethoscope or screwdriver for listening to injector operation
- Basic hand tools for injector removal and replacement



Reading P2C61

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

Often seen with

P0208 Injector Circuit/Open - Cylinder 8 · **P0308** Cylinder 8 Misfire Detected · **P2149** Fuel Injector Group 'B' Supply Voltage Circuit/Open · **P2C60** Cylinder 8 Fuel Injector B Offset Learning At Min Limit · **P2C62** O2 Sensor Pumping Current Trim Circuit/Open Bank 1 Sensor 3

See it working

Watch the animated explainer [How Coil-on-Plug Ignition Works: Coil and Spark Plug](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2c61/>

