

GENERIC · POWERTRAIN

P02B4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P02B4

Cylinder 7 - Injector Restricted

P02B4 indicates that the engine control module (ECM) has detected a restricted fuel injector on cylinder 7, meaning the injector is not delivering the expected amount of fuel for the commanded pulse width. The ECM typically compares crankshaft speed fluctuations or fuel trim corrections across cylinders to identify the imbalance.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering (injector circuits)

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire sensation, especially when the engine is cold
- Reduced engine power or hesitation during acceleration
- Poor fuel economy due to the ECM adding fuel to compensate
- Shaking or vibration felt through the steering wheel or seat
- In some cases, a strong fuel odor from the exhaust or increased emissions

Common causes, most likely first

- 1 Clogged or restricted fuel injector nozzle due to carbon deposits or debris
- 2 Faulty fuel injector solenoid or internal mechanical failure
- 3 Wiring harness damage or poor electrical connection at the injector
- 4 Low fuel pressure or volume from a weak fuel pump or clogged filter
- 5 Contaminated fuel or fuel system corrosion
- 6 ECM software issue or faulty injector driver circuit (less common)

How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 7 injector and its wiring harness for damage or corrosion
- 2 Use a scan tool to check fuel trim values and misfire counters to confirm the affected cylinder
- 3 Test the injector's electrical resistance and compare it to the manufacturer's specification
- 4 Run a fuel pressure and volume test to rule out a supply issue
- 5 Perform an injector balance test or cylinder contribution test to verify restriction
- 6 Clean the injector with a professional fuel injection cleaning service or replace it if cleaning fails
- 7 After repair, clear the codes and verify fuel trims and misfire counters return to normal



Before you replace the injector

- A restricted injector often sets no drivability symptoms because the ECM can compensate with fuel trims, so the code may appear during routine scanning.
- Fuel pressure problems can mimic a restricted injector; always verify supply pressure and volume before condemning the injector.
- Carbon buildup on the injector tip is a common cause that can sometimes be resolved with a targeted cleaning rather than replacement.
- Wiring issues at the injector connector are frequently overlooked and can cause intermittent restricted codes.
- The ECM may misreport a restricted injector if the crankshaft position sensor signal is erratic, so check for related codes.

Can I keep driving with P02B4?

You can usually continue driving with this code, but avoid heavy acceleration or towing until it is repaired. Prolonged driving with a restricted injector can lead to catalytic converter damage and worsened fuel economy.

Tools that help

- OBD-II scan tool with live data and injector balance test capability
- Digital multimeter for electrical testing
- Fuel pressure gauge
- Noid light or injector pulse tester
- Mechanic's stethoscope or screwdriver for listening to injector operation

Reading P02B4

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
2	Fuel and air metering (injector circuits).
B4	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P02B3** Cylinder 7 - Fuel Trim at Min Limit · **P02B5** Cylinder 7 - Injector Leaking · **P0307** Cylinder 7 Misfire Detected



See it working

Watch the animated explainer [Fuel Trims Explained: Short-Term and Long-Term](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p02b4/>

