

GENERIC · POWERTRAIN

P02A8

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P02A8

Cylinder 4 - Injector Restricted

P02A8 indicates that the powertrain control module has detected an abnormal fuel injector circuit condition specifically for cylinder 4, which it interprets as the injector being restricted or partially clogged. The computer monitors injector performance through voltage and current feedback, and when the expected response falls outside the calibrated range, it flags this code and may disable the injector to protect the engine.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire that is most pronounced at idle and low speeds
- Noticeable loss of power and reduced fuel economy
- Engine hesitation or stumble during acceleration
- Shaking or vibration felt through the steering wheel and floorboard
- In some cases, a rich or lean fuel smell from the exhaust

Common causes, most likely first

- 1 Clogged or restricted fuel injector nozzle due to carbon buildup or contaminated fuel
- 2 Failed or failing fuel injector solenoid winding
- 3 Damaged or corroded electrical connector at the injector
- 4 Chafed or open wire in the injector control circuit
- 5 Internal driver failure inside the powertrain control module (rare)
- 6 Low fuel pressure or volume from a weak fuel pump or clogged filter
- 7 Use of poor-quality fuel or lack of regular maintenance leading to deposits



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 4 injector connector and wiring for damage or corrosion
- 2 Use a noid light to verify that the injector is receiving a proper pulse signal from the computer
- 3 Measure the injector coil resistance with a multimeter and compare it to the manufacturer's specification
- 4 Check fuel pressure and volume to rule out a supply issue that could affect all injectors
- 5 Run a fuel injector cleaning service or use a proven additive to dissolve deposits
- 6 Swap the cylinder 4 injector with a known-good injector from another cylinder to see if the misfire moves
- 7 Replace the faulty injector if electrical and flow tests confirm it is restricted or failed

Why a restricted injector is not always the culprit

- A clogged fuel filter or weak fuel pump can cause a lean condition that mimics a restricted injector, so always verify fuel pressure before condemning the injector.
- Carbon buildup on the injector tip often occurs gradually and may not trigger a misfire until the restriction becomes severe, so the code can appear without obvious driveability symptoms.
- Electrical faults such as a rubbed-through wire or a loose pin tension at the connector can set P02A8 even when the injector itself flows perfectly on a bench test.
- Some vehicles use stratified injection or multiple injection events per cycle, and a partially restricted injector may only show up under specific load conditions, making intermittent diagnosis tricky.
- Replacing an injector without addressing the root cause, such as contaminated fuel or a failing fuel pressure regulator, often leads to repeat failures on the same or other cylinders.

Can I keep driving with P02A8?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or prolonged idling because a restricted injector can cause misfires that damage the catalytic converter over time. If the check engine light begins flashing, stop driving immediately and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Noid light set
- Fuel pressure gauge
- Mechanic's stethoscope or screwdriver for listening to injector operation
- Basic socket and wrench set



Reading P02A8

- 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).
- A8** The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0204** Injector Circuit Malfunction - Cylinder 4 · **P02A7** Cylinder 4 - Fuel Trim at Min Limit · **P02A9** Cylinder 4 - Injector Leaking · **P0304** Cylinder 4 Misfire Detected

See it working

Watch the animated explainer [How a MAP Sensor Works: Engine Vacuum and Load](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p02a8/>

