

GENERIC · POWERTRAIN

P0302

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0302

Cylinder 2 Misfire Detected

P0302 means the engine computer has detected a misfire on cylinder 2, based on crankshaft speed fluctuations that show that cylinder is not contributing power evenly. The powertrain control module (PCM) monitors crank acceleration and flags this code when the misfire rate exceeds a calibrated threshold, often within a specific RPM and load window.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Intermediate

AREA

Ignition system and misfire

Symptoms you may notice

- Engine shaking or rough idle, especially noticeable when stopped in gear
- Flashing check engine light during acceleration or under load, indicating a potentially damaging misfire
- Loss of power or hesitation when accelerating, as if the engine is running on fewer cylinders
- Poor fuel economy and a strong raw fuel smell from the exhaust
- Often no symptoms besides the warning light, particularly at steady cruising speeds

Common causes, most likely first

- 1 Worn or fouled spark plug on cylinder 2, including incorrect gap or heat range
- 2 Failed ignition coil or spark plug boot for cylinder 2, causing a weak or intermittent spark
- 3 Faulty fuel injector for cylinder 2, such as a clogged nozzle or electrical failure
- 4 Vacuum leak at the intake manifold runner or gasket near cylinder 2, leaning out that cylinder
- 5 Low compression on cylinder 2 from worn rings, a burned valve, or a failed head gasket
- 6 Mechanical valvetrain issue on cylinder 2, such as a collapsed lifter or worn cam lobe
- 7 Wiring or connector fault in the cylinder 2 injector or coil circuit, including chafed harness



How to diagnose and fix it

- 1 Scan all stored and pending codes, then record freeze-frame data to see the RPM, load, and fuel trims when the misfire was set
- 2 Swap the cylinder 2 ignition coil and spark plug with a known-good cylinder and see if the misfire follows, confirming an ignition fault
- 3 Inspect the spark plug condition and gap, and replace plugs if worn, fouled, or of the wrong type
- 4 Test the cylinder 2 fuel injector for resistance, pulse with a noid light, and compare fuel trim corrections with other cylinders
- 5 Perform a compression test and, if low, a cylinder leak-down test to rule out mechanical faults before replacing ignition or fuel parts
- 6 Check for vacuum leaks at the intake gasket and runner near cylinder 2 using a smoke machine or carburetor cleaner while watching fuel trims
- 7 Repair any wiring or connector faults found in the coil or injector circuit, then clear codes and verify the misfire counter stays at zero during a road test

Misfire codes that are not the spark plug

- A P0302 can be set by a faulty fuel injector that tests fine electrically but delivers an uneven spray pattern, so flow testing is often needed after electrical checks pass.
- A vacuum leak at the intake manifold gasket can affect one cylinder more than others and set a single-cylinder misfire code without any ignition or fuel fault.
- Low compression from a worn cam lobe or a sticking valve can mimic an ignition misfire, and swapping coils will not move the code if the problem is mechanical.
- The PCM may set P0302 from a misfire that only occurs during a specific driving condition, such as cold start or high load, so freeze-frame data is more useful than a simple idle check.
- A flashing check engine light means the misfire is severe enough to damage the catalytic converter, so diagnosis should not be delayed even if the engine feels normal.

Can I keep driving with P0302?

If the check engine light is flashing, stop driving as soon as it is safe because raw fuel can overheat and destroy the catalytic converter. With a steady light and mild symptoms, you can drive cautiously to a repair shop, but avoid heavy acceleration and towing until the misfire is fixed.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Spark plug socket and torque wrench
- Compression tester
- Noid light or injector pulse tester
- Vacuum gauge or smoke machine
- Digital multimeter

Reading P0302

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
3	Ignition system and misfire.
02	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P0303** Cylinder 3 Misfire Detected · **P0304** Cylinder 4 Misfire Detected

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0302/>

