



P0300

Random/Multiple Cylinder Misfire Detected

P0300 means the engine computer has detected misfires that are not confined to a single cylinder, so it cannot attribute the fault to one specific cylinder. The computer monitors crankshaft speed fluctuations and flags this code when the misfire rate exceeds a threshold that could damage the catalytic converter.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Intermediate	Ignition system and misfire

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the misfire is intermittent or mild.
- Engine runs rough or shakes at idle, during acceleration, or at steady cruise.
- Noticeable loss of power and sluggish acceleration.
- Poor fuel economy compared to normal driving.
- Flashing check engine light during heavy misfire, indicating a risk of catalytic converter damage.
- Occasional backfiring, surging, or stalling when coming to a stop.

Common causes, most likely first

- 1 Worn or fouled spark plugs, or spark plugs with incorrect gap.
- 2 Faulty ignition coils or spark plug wires (boots, carbon tracking, or opens).
- 3 Vacuum leaks from cracked intake hoses, intake manifold gaskets, or PCV hoses.
- 4 Dirty or failing fuel injectors causing uneven fuel delivery.
- 5 Low fuel pressure from a weak pump, clogged filter, or faulty pressure regulator.
- 6 Mechanical engine problems such as low compression, worn camshaft lobes, or valve train issues.
- 7 Mass airflow sensor or engine coolant temperature sensor reporting inaccurate data.

How to diagnose and fix it

- 1 Scan all stored and pending codes, and check freeze-frame data to see when the misfire occurs.
- 2 Inspect spark plugs for wear, fouling, and correct gap; replace them if questionable.
- 3 Check ignition coils and wires with a spark tester or by swapping known-good components.
- 4 Perform a propane or smoke test to find vacuum leaks around the intake and PCV system.
- 5 Measure fuel pressure and check injector pulse width and resistance; clean or replace injectors as needed.
- 6 Run a compression test and, if low, a cylinder leak-down test to rule out mechanical faults.
- 7 Verify repair by clearing codes and test-driving under the conditions recorded in freeze-frame.



What P0300 hides about random misfires

- A flashing check engine light with P0300 means the misfire is severe enough to overheat and destroy the catalytic converter within minutes, so stop driving and diagnose immediately.
- P0300 often appears alongside P0301 through P0308 when multiple cylinders misfire; the presence of individual cylinder codes can help pinpoint whether the cause is ignition, fuel, or mechanical.
- A vacuum leak that affects the whole intake, such as a cracked intake boot or failed intake gasket, commonly sets P0300 without setting any single-cylinder code.
- Low fuel pressure or a weak fuel pump can cause random misfires that are worse under load and may not set a fuel system code, so always check fuel pressure.
- A worn or improperly gapped spark plug can cause P0300 even when the plugs are the correct part number; always verify gap and condition rather than assuming new plugs are fine.

Can I keep driving with P0300?

If the check engine light is steady, you can drive cautiously to a repair shop, but avoid hard acceleration and heavy loads. If the light is flashing, stop driving immediately and have the vehicle towed, because a flashing light indicates a misfire that can quickly destroy the catalytic converter.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Spark tester
- Fuel pressure gauge
- Vacuum gauge or smoke machine
- Compression tester
- Digital multimeter

Reading P0300

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.
00	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0301** Cylinder 1 Misfire Detected · **P0302** Cylinder 2 Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)



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/p0300/>

