

GENERIC · POWERTRAIN

P03A8

OBD-II TROUBLE CODE

P03A8

Cylinder 2 Combustion Performance

P03A8 is a generic powertrain code indicating that the engine control module has detected a combustion performance problem specifically on cylinder 2, typically by monitoring crankshaft speed fluctuations or ionization current. The computer sets this code when cylinder 2's contribution to engine power falls outside the expected range, which can be caused by ignition, fuel, or mechanical faults.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or engine vibration, especially when cold
- Noticeable misfire or hesitation during acceleration
- Reduced fuel economy and increased emissions
- Shaking or shuddering while driving at steady speeds
- In some cases, the engine may enter limp mode to protect the catalytic converter

Common causes, most likely first

- 1 Worn or fouled spark plug on cylinder 2
- 2 Faulty ignition coil or spark plug wire for cylinder 2
- 3 Clogged or leaking fuel injector on cylinder 2
- 4 Vacuum leak affecting cylinder 2 intake runner
- 5 Low compression due to worn piston rings, valves, or head gasket
- 6 Wiring or connector issue to the cylinder 2 injector or coil
- 7 Mechanical valvetrain fault such as a worn cam lobe or lifter



How to diagnose and fix it

- 1 Scan all stored codes and freeze-frame data to confirm the fault is isolated to cylinder 2
- 2 Inspect the spark plug and ignition coil for cylinder 2, swapping components with a known-good cylinder to see if the misfire moves
- 3 Perform a compression test and cylinder leak-down test to rule out mechanical issues
- 4 Check fuel injector operation with a noid light or injector balance test, and inspect wiring
- 5 Smoke test the intake system for vacuum leaks near cylinder 2
- 6 Replace faulty components such as spark plugs, coils, or injectors as needed
- 7 Clear codes and verify repair with a road test and live data monitoring

Cylinder 2 misfire traps to avoid

- A misfire code for a single cylinder often results from a faulty ignition coil that tests fine when cold but breaks down under load, so swapping coils with another cylinder is a reliable diagnostic step.
- Fuel injector problems can be intermittent and may not set a code until the engine is under specific load conditions, so live data monitoring during a test drive is more revealing than a static resistance check.
- A vacuum leak at the intake manifold gasket near cylinder 2 can cause a lean misfire that mimics a bad injector, and a smoke test is the quickest way to confirm it.
- Low compression from a worn piston ring or valve seat may only cause a misfire at idle or under light load, so a cylinder leak-down test is essential before replacing ignition parts.
- The code can be set by a faulty crankshaft position sensor or reluctor wheel if the signal is erratic, so always check for related codes and inspect the sensor wiring.

Can I keep driving with P03A8?

You can drive cautiously to a repair shop, but avoid hard acceleration and prolonged driving, as continued misfiring can overheat and damage the catalytic converter. If the check engine light flashes, stop driving and seek immediate service.

Tools that help

- OBD-II scan tool with live data capability
- Spark plug socket and wrench
- Compression tester
- Fuel injector noid light or balance tester
- Vacuum gauge or smoke machine
- Digital multimeter



Reading P03A8

- 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.
- A8** 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 · **P0302** Cylinder 2 Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p03a8/>

