

GENERIC · POWERTRAIN

P03A6

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P03A6

Cylinder 2 Pressure Variation Low

P03A6 indicates that the powertrain control module has detected an abnormally low pressure variation in cylinder 2 during the combustion cycle, based on crankshaft speed fluctuations or direct in-cylinder pressure sensing. The engine computer compares each cylinder's contribution to torque and flags cylinder 2 when its pressure pulse is weaker or less consistent than expected.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or a noticeable shake that may worsen when the engine is cold
- Misfire-like shudder or hesitation during acceleration
- Reduced engine power or poor fuel economy
- Occasional flashing check engine light under load if the misfire becomes severe
- Audible ticking or tapping from the engine if a mechanical fault is present

Common causes, most likely first

- 1 Worn or fouled spark plug in cylinder 2
- 2 Faulty ignition coil or plug wire for cylinder 2
- 3 Leaking or clogged fuel injector on cylinder 2
- 4 Mechanical issue such as a bad lifter, worn cam lobe, or valve seat problem
- 5 Low compression from worn piston rings or a leaking head gasket
- 6 Intake or vacuum leak affecting cylinder 2 specifically
- 7 Carbon buildup on intake valves or piston top reducing combustion efficiency



How to diagnose and fix it

- 1 Scan all stored and pending codes and check freeze-frame data to confirm cylinder 2 is the only affected cylinder
- 2 Inspect the spark plug in cylinder 2 for wear, fouling, or incorrect gap and replace if needed
- 3 Swap the ignition coil from cylinder 2 with a known-good cylinder and see if the code follows the coil
- 4 Perform a compression test and a cylinder leak-down test on cylinder 2 to rule out mechanical faults
- 5 Check fuel injector operation with a noid light or injector balance test and clean or replace if faulty
- 6 Smoke-test the intake system for vacuum leaks that could disproportionately affect cylinder 2
- 7 If mechanical faults are confirmed, perform the necessary internal engine repairs such as replacing lifters or valves

Why cylinder 2 pressure codes mislead

- A low pressure variation code often appears without any drivability complaint because the engine management system compensates by adjusting fuel and timing, masking the fault until it worsens. Technicians frequently replace the ignition coil first, but a swapped coil that does not move the code points to fuel delivery or mechanical compression as the real culprit.
 - Carbon buildup on direct-injection engines can cause low pressure variation on a single cylinder without triggering a traditional misfire code, so a P03A6 may be the only clue.
 - A failing intake manifold gasket or a cracked vacuum line near cylinder 2 can lean out that cylinder and set this code even though the rest of the engine runs smoothly.
- The code does not always mean the cylinder is mechanically damaged; a lazy oxygen sensor or a contaminated mass airflow sensor can skew fuel trims enough to trigger a pressure variation fault.

Can I keep driving with P03A6?

You can usually continue driving short distances at moderate speeds, but avoid heavy acceleration or towing until the fault is diagnosed. If the check engine light begins flashing or the engine runs very rough, stop driving and have the vehicle towed to prevent catalytic converter damage.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Compression tester
- Cylinder leak-down tester
- Noid light or fuel injector balance tester
- Smoke machine for intake leak detection
- Basic hand tools including spark plug socket and torque wrench



Reading P03A6

- 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.
- A6** The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P0302** Cylinder 2 Misfire Detected

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p03a6/>

