

GENERIC · POWERTRAIN

P03CF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P03CF

Cylinder 6 Pressure Variation High

P03CF indicates that the engine control module has detected an abnormally high pressure variation in cylinder 6 during the combustion cycle, based on crankshaft speed fluctuations. The computer compares each cylinder's contribution to engine speed and flags cylinder 6 when its variation exceeds the expected threshold.

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 shaking that may be more pronounced when the engine is cold
- Intermittent misfire-like shudder during acceleration or under load
- Slight loss of power or hesitation when climbing hills or merging
- Poor fuel economy compared to normal driving conditions
- In rare cases, a flashing check engine light if the variation becomes severe enough to risk catalytic converter damage

Common causes, most likely first

- 1 Worn or fouled spark plug in cylinder 6
- 2 Faulty ignition coil or spark plug wire for cylinder 6
- 3 Clogged or leaking fuel injector for cylinder 6
- 4 Mechanical issue such as low compression, worn rings, or valve problems in cylinder 6
- 5 Vacuum leak or intake manifold gasket leak affecting cylinder 6
- 6 Carbon buildup on intake valves or piston top in cylinder 6
- 7 Faulty crankshaft position sensor or reluctor wheel causing inaccurate speed readings



How to diagnose and fix it

- 1 Inspect and replace the spark plug in cylinder 6, checking gap and electrode condition
- 2 Swap the ignition coil from cylinder 6 with a known-good cylinder to see if the code follows the coil
- 3 Perform a fuel injector balance test or swap injectors to isolate a faulty injector
- 4 Run a compression test and cylinder leak-down test on cylinder 6 to rule out mechanical faults
- 5 Check for vacuum leaks around the intake manifold and cylinder 6 intake runner using a smoke machine
- 6 Inspect the crankshaft position sensor and reluctor wheel for damage or debris
- 7 Use a scan tool with live data to monitor cylinder 6 misfire counters and pressure variation values under different operating conditions

What a cylinder 6 pressure variation really means

- A high pressure variation reading does not always indicate a failed component; it can be triggered by a temporary condition such as a tank of bad fuel or a loose spark plug.
- The code can be set by a problem that affects all cylinders but is most pronounced in cylinder 6 due to its position in the firing order or cooling circuit.
- Technicians often overlook a dirty mass airflow sensor or a restricted exhaust as a cause of pressure variation, even though these can skew the computer's calculations.
- Swapping components between cylinders is a quick diagnostic step, but always clear the code and recheck after each swap to avoid chasing false leads.
- A flashing check engine light with this code means the variation is severe enough to damage the catalytic converter, so driving should be limited until repaired.

Can I keep driving with P03CF?

It is generally safe to drive with a steady check engine light, but avoid heavy acceleration or towing until the fault is diagnosed. If the light flashes, stop driving and have the vehicle towed to prevent catalytic converter damage.

Tools that help

- OBD-II scan tool with live data and misfire counter capability
- Spark plug socket and ratchet set
- Compression tester
- Fuel injector balance tester or noid light
- Smoke machine for vacuum leak detection
- Digital multimeter for electrical checks



Reading P03CF

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.
CF	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0206** Injector Circuit/Open - Cylinder 6 · **P0300** Random/Multiple Cylinder Misfire Detected · **P0306** Cylinder 6 Misfire Detected · **P0356** Ignition Coil 'F' Primary/Secondary Circuit

See it working

Watch the animated explainer [How Push-Button Start Works: Keyless Ignition](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p03cf/>

