

GENERIC · POWERTRAIN

P03AF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P03AF

Cylinder 3 Pressure Too High

P03AF is a generic powertrain code that indicates the engine control module has detected an abnormally high pressure condition in cylinder 3, typically based on signals from a cylinder pressure sensor or ionization measurement circuit. The computer compares the measured pressure profile for cylinder 3 against expected values and sets this code when the pressure exceeds the calibrated threshold, which can affect combustion quality and emissions.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire sensation, especially when the engine is cold or under light load
- Reduced engine performance or hesitation during acceleration
- Knocking or pinging sounds from the engine under load
- Increased fuel consumption due to inefficient combustion
- Possible black smoke or rich-running exhaust smell in severe cases

Common causes, most likely first

- 1 Faulty cylinder pressure sensor or ionization module for cylinder 3
- 2 Damaged or corroded wiring and connectors in the cylinder 3 pressure sensor circuit
- 3 Carbon buildup on the piston crown or in the combustion chamber raising compression
- 4 Incorrect fuel injector delivery causing over-fueling and abnormal pressure spikes
- 5 Mechanical issues such as a sticking valve or excessive carbon deposits on valve seats
- 6 Engine control module software calibration error or internal fault



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data to confirm when and under what conditions the code sets
- 2 Inspect the cylinder 3 pressure sensor and its wiring harness for physical damage, corrosion, or loose connections
- 3 Perform a resistance and continuity test on the sensor circuit according to the manufacturer's specifications
- 4 Swap the cylinder 3 pressure sensor with a known-good sensor from another cylinder to see if the code follows the sensor
- 5 Run a compression test and cylinder leak-down test to rule out mechanical causes of high pressure
- 6 Check fuel injector operation and fuel trim values to identify over-fueling or injector imbalance
- 7 If all hardware checks pass, reprogram or update the engine control module as per technical service bulletins

What most technicians overlook with P03AF

- A high-pressure code for one cylinder often results from a sensor that is reading correctly but responding to carbon buildup, not from a failed sensor itself.
Swapping the sensor to another cylinder is the quickest way to separate a sensor fault from a mechanical or fueling issue, yet many replace the sensor without this test.
- Fuel injector imbalance can create pressure spikes that mimic a faulty pressure sensor, so fuel trim data should always be reviewed before condemning the sensor.
- The code can be set by a software calibration issue in the engine control module, and a reflash may be required even when all hardware tests pass.
Wiring harness chafing near the cylinder head is a common hidden cause, especially on engines with tight routing, and should be inspected with a wiggle test.

Can I keep driving with P03AF?

You can usually continue driving to a repair shop, but avoid heavy acceleration and towing until the fault is diagnosed. Prolonged driving with high cylinder pressure can lead to engine damage or catalytic converter overheating, so schedule service promptly.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for circuit testing
- Compression tester
- Cylinder leak-down tester
- Fuel pressure gauge and injector test kit
- Oscilloscope for signal analysis (optional but helpful)



Reading P03AF

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.
AF	The exact fault within that area.

Often seen with

P0172 System Too Rich (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0303** Cylinder 3 Misfire Detected · **P03AE** Cylinder 3 Pressure Too Low · **P03B0** Cylinder 3 Pressure Variation Low

See it working

Watch the animated explainer [Master the Four-Stroke Engine Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p03af/>

