

GENERIC · POWERTRAIN

P03F4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P03F4

B Camshaft Profile Actuator C Control Performance/Stuck Off Bank 1

P03F4 means the engine computer commanded the Bank 1 'C' camshaft profile actuator to change valve lift or duration and the actuator did not respond as expected, or it stayed stuck in the off position. The powertrain control module (PCM) monitors the actuator circuit and the resulting camshaft position change, and it sets this code when the commanded profile change does not occur within the calibrated time window.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Reduced engine power or a limp-home mode because the PCM limits torque when valve timing cannot be controlled.
- Rough idle, misfire, or unstable engine operation at low speeds.
- Poor fuel economy and increased emissions due to incorrect valve timing.
- A noticeable lag or surge during acceleration when the profile change is commanded.
- In some vehicles, a rattle or tick from the valvetrain area if the actuator is mechanically stuck.

Common causes, most likely first

- 1 Failed or sticking camshaft profile actuator solenoid, the most common cause.
- 2 Wiring damage, corrosion, or loose connector pins in the actuator control circuit.
- 3 Low or degraded engine oil, or sludge blocking the oil passages that feed the actuator.
- 4 Mechanical binding in the profile actuator mechanism or the camshaft phaser assembly.
- 5 A faulty PCM driver for the actuator circuit, though this is less common.
- 6 Restricted oil filter or oil pump weakness reducing oil pressure to the actuator.



How to diagnose and fix it

- 1 Check engine oil level and condition, and change the oil and filter if overdue or contaminated.
- 2 Inspect the actuator electrical connector and harness for corrosion, chafing, or loose pins, and repair as needed.
- 3 Use a scan tool to command the actuator on and off while watching camshaft position data to confirm whether it responds.
- 4 Measure resistance and supply voltage at the actuator solenoid and compare with the manufacturer's specification.
- 5 Remove and inspect the actuator solenoid for debris or sticking, and clean or replace it if faulty.
- 6 If the actuator is good, check oil pressure at the actuator feed and inspect the profile mechanism for mechanical binding.
- 7 Clear the code and perform a relearn or adaptation drive cycle as required, then verify the repair with a road test.

Why this code often misleads

- A dirty or sludged engine can set this code even when the actuator itself is healthy, because oil flow to the actuator is restricted and the PCM sees no profile change.
- Technicians sometimes replace the actuator only to find the real fault is a worn camshaft phaser or a broken wire inside the harness loom, so circuit and mechanical checks must come before parts swapping.
- This code can be stored intermittently by a low oil pressure condition that only appears at idle or after a hard drive, so checking oil pressure hot is essential.
- The PCM may set P03F4 alongside camshaft position or crankshaft position correlation codes, and those companion codes often point to the true root cause.
- A recent oil change with the wrong viscosity or a collapsed oil filter can trigger this code within a few hundred miles, so service history matters.

Can I keep driving with P03F4?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration and sustained high speeds because the engine is running with incorrect valve timing. If the check engine light is flashing or the engine runs roughly, stop driving and have it towed to prevent catalytic converter damage.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter
- Oil pressure gauge
- Basic hand tools and socket set
- Wiring diagram for the actuator circuit



Reading P03F4

- 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.
- F4** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0300** Random/Multiple Cylinder Misfire Detected · **P03F3** B Camshaft Profile Actuator C Control Circuit High Bank 1 · **P03F5** B Camshaft Profile Actuator C Control Stuck On 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/p03f4/>

