

GENERIC · POWERTRAIN

P003C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P003C

A Camshaft Profile Actuator A Control Performance/Stuck Off Bank 1

P003C means the engine computer commanded the bank 1 camshaft profile actuator to change valve lift or timing and did not see the expected result, so it flagged the circuit as stuck off. The powertrain control module monitors the actuator's electrical response and the resulting change in camshaft position, and it sets this code when the actuator fails to move or the cam does not respond within the calibrated window.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms noticed by the driver
- Rough idle or unstable engine speed when the actuator should be changing cam profile
- Reduced engine power or a limp-home mode on some vehicles
- Poor fuel economy or increased emissions during normal driving
- A noticeable hesitation or stumble during light-throttle acceleration
- Unusual engine noise or valve train clatter if the actuator is mechanically stuck

Common causes, most likely first

- 1 Failed or sticking camshaft profile actuator solenoid, often due to oil sludge or debris
- 2 Wiring damage, corrosion, or loose connector pins in the actuator control circuit
- 3 Low engine oil level or degraded oil that prevents the actuator from responding hydraulically
- 4 Clogged oil passage or screen feeding the actuator, restricting oil flow
- 5 Mechanical binding in the camshaft profile mechanism itself, such as a stuck lifter or rocker
- 6 Faulty powertrain control module driver circuit, though this is less common



How to diagnose and fix it

- 1 Check engine oil level and condition first, and top up or change oil if it is low or dirty
- 2 Inspect the actuator electrical connector and wiring for corrosion, chafing, or loose pins
- 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 to rule out an open or shorted circuit
- 5 Remove and inspect the actuator solenoid for sludge or debris, and clean or replace it if sticking is found
- 6 Check oil pressure and inspect the oil feed passage to the actuator for restrictions
- 7 If electrical and hydraulic checks pass, inspect the camshaft profile mechanism for mechanical binding

What the code does not always mean

- A P003C is frequently set by dirty engine oil or a clogged actuator screen rather than a failed actuator, so an oil change and screen cleaning can resolve it without parts replacement.
- The code can be triggered by a momentary electrical glitch or low battery voltage, so clearing it and verifying whether it returns before replacing parts is a sound first step.
- On some engines the camshaft profile actuator shares an oil circuit with the variable valve timing system, so a VVT fault elsewhere can cause this code to appear.
- A stuck-off actuator may not produce any drivability complaint because the engine can default to a safe cam profile, which is why the warning light is often the only sign.
- Technicians sometimes replace the actuator only to find the real fault is a worn camshaft lobe or a collapsed lifter that prevents the profile change from occurring.

Can I keep driving with P003C?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration and sustained high speeds because the engine may be in a reduced-power mode. If the check engine light begins flashing or the engine runs very rough, stop driving and have it towed.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter
- Oil pressure gauge
- Basic hand tools and socket set
- Service information for the specific engine



Reading P003C

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 3C** The exact fault within that area.

Often seen with

P0010 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0020** 'A' Camshaft Position Actuator Circuit (Bank 2) · **P003D** A Camshaft Profile Actuator A 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/p003c/>

