

GENERIC · POWERTRAIN

P005C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P005C

B Camshaft Profile Actuator A Control Performance/Stuck Off Bank 2

P005C indicates that the powertrain control module (PCM) has detected a performance problem with the bank 2 'B' camshaft profile actuator, specifically that the actuator is stuck in the off or retarded position. The PCM commands a change in valve lift or timing via the actuator and monitors the actual camshaft position response; when the response does not match the commanded state within a calibrated time, this code is stored.

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 noticeable symptoms
- Reduced engine power or a limp-home mode, especially under heavy load
- Rough idle or misfire-like shuddering at low engine speeds
- Poor fuel economy and increased emissions
- Sluggish acceleration or hesitation during passing maneuvers
- Unusual engine noise such as ticking or rattling from the affected cylinder bank

Common causes, most likely first

- 1 Faulty bank 2 camshaft profile actuator solenoid or mechanical actuator assembly
- 2 Sticking or contaminated oil control valve (OCV) supplying the actuator
- 3 Low engine oil level or degraded oil viscosity preventing proper actuator response
- 4 Wiring damage or poor electrical connection at the actuator solenoid connector
- 5 Restricted oil passage or sludge buildup in the actuator oil galleries
- 6 Failed camshaft position sensor or crank sensor providing inaccurate feedback
- 7 PCM software calibration issue or internal driver fault (less common)



How to diagnose and fix it

- 1 Verify engine oil level and condition; change oil and filter if overdue or contaminated
- 2 Perform a visual inspection of the bank 2 actuator solenoid connector and wiring for damage or corrosion
- 3 Use a scan tool to command the actuator on and off while monitoring camshaft position feedback to confirm the fault
- 4 Measure resistance of the actuator solenoid and compare to manufacturer specification
- 5 Remove and inspect the oil control valve and actuator for sludge, scoring, or mechanical binding; clean or replace as needed
- 6 Check oil pressure at the actuator feed port to rule out low pressure or restricted passages
- 7 If all mechanical and electrical checks pass, reprogram the PCM with the latest calibration or replace the PCM as a last resort

Oil quality and actuator response

- A stuck-off profile actuator often results from neglected oil changes, as sludge and varnish prevent the solenoid from moving freely.
- The code can set intermittently due to cold oil or low oil pressure at startup, even when the actuator itself is healthy.
- Technicians sometimes replace the actuator only to find the oil control valve or oil galleries are the real restriction.
- A failing camshaft position sensor can mimic an actuator fault by reporting incorrect position feedback to the PCM.
- After repairs, a relearn or adaptation reset may be required for the PCM to accept the new actuator response.

Can I keep driving with P005C?

The vehicle can usually be driven short distances at moderate speeds, but avoid heavy acceleration or towing until the fault is repaired. Prolonged driving with a stuck actuator may cause increased emissions, poor fuel economy, and potential damage to the valvetrain.

Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter for electrical testing
- Oil pressure gauge
- Basic hand tools (wrenches, sockets, screwdrivers)
- Feeler gauges or micrometers for mechanical inspection



Reading P005C

- 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.
- 5C** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P005A** B Camshaft Profile Actuator A Control Performance/Stuck Off · **P005B** B Camshaft Profile Actuator A Control Stuck On Bank 1 · **P005D** B Camshaft Profile Actuator A Control Stuck On Bank 2

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/p005c/>

