

GENERIC · POWERTRAIN

P03F5

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P03F5

B Camshaft Profile Actuator C Control Stuck On Bank 1

P03F5 means the engine computer has commanded the Bank 1 'B' camshaft profile actuator to a specific position, but the actuator's internal feedback circuit reports it is stuck in the commanded-on state. The powertrain control module (PCM) detects this by comparing the commanded duty cycle to the actuator's position sensor signal and seeing no change when the output is switched off.

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 symptoms besides the warning light
- Rough idle or unstable engine speed when the profile actuator fails to return to its default position
- Reduced engine power or limp-home mode as the PCM limits torque to protect the valvetrain
- Poor fuel economy and increased emissions due to incorrect valve timing
- Occasional engine misfire or hesitation during acceleration if the stuck actuator causes valve overlap errors

Common causes, most likely first

- 1 Failed camshaft profile actuator solenoid, where the internal spool valve sticks in the energized position
- 2 Wiring harness damage between the PCM and the actuator, such as a short to power on the control circuit
- 3 Contaminated engine oil or sludge blocking the actuator's oil passages and preventing it from returning
- 4 PCM driver circuit fault holding the control wire grounded or powered when it should be off
- 5 Mechanical binding inside the profile actuator assembly itself, often from wear or debris
- 6 Corroded or loose electrical connector at the actuator, causing intermittent feedback signals



How to diagnose and fix it

- 1 Connect a scan tool and verify P03F5 is active, then command the Bank 1 'B' profile actuator on and off while watching the feedback position to confirm it does not change
- 2 Inspect the actuator connector and the harness for chafing, corrosion, or a short to power on the control wire
- 3 Measure resistance across the actuator solenoid and compare it to the manufacturer's specification to rule out an open or shorted coil
- 4 Check engine oil condition and level, and perform an oil and filter change if sludge or contamination is present
- 5 Remove the actuator and inspect the screen and oil passages for debris, then bench-test the actuator with a known-good driver if possible
- 6 Back-probe the PCM control circuit with a scope or logic probe to confirm the driver is switching off when commanded
- 7 Replace the faulty camshaft profile actuator or repair the PCM driver circuit as indicated by the test results, then clear the code and verify the repair

Why this code often misleads

- A stuck-on profile actuator can be caused by a short to power in the harness rather than a failed actuator, so replacing the part without checking the control wire often leads to a repeat failure.
- Dirty engine oil is a common hidden cause because the actuator relies on clean oil pressure to return to its rest position, and sludge can hold the spool valve open even when the solenoid is de-energized.
- The PCM may set P03F5 only after two consecutive drive cycles with the fault present, so a single clear-and-drive may not reproduce the code if the actuator is sticking intermittently.
- Some vehicles use the same profile actuator to control both intake and exhaust valve lift on Bank 1, so a mechanical binding in the actuator assembly can mimic an electrical fault and set this code without any wiring issue.
- A failing PCM driver can hold the control circuit on without any actuator fault, and this is often missed when technicians only test the actuator on the bench.

Can I keep driving with P03F5?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration and sustained high speeds because a stuck profile actuator can cause valve-to-piston contact in extreme cases. If the engine runs roughly or enters limp mode, stop driving and have it towed to prevent further damage.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter with back-probe pins
- Oscilloscope for checking the PCM driver signal
- Basic hand tools for actuator removal
- Oil filter wrench and drain pan for oil change



Reading P03F5

- 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.
- F5** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0014** Exhaust Camshaft Position - Over-Advanced (Bank 1) · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P03F4** B Camshaft Profile Actuator C Control Performance/Stuck Off · **P03F6** B Camshaft Position Actuator Position Sensor C Circuit Bank

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/p03f5/>

