

GENERIC · POWERTRAIN

**P003E**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P003E

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

P003E indicates that the powertrain control module (PCM) has detected a performance problem with the bank 2 camshaft profile actuator, specifically that the actuator is stuck in the off position or not responding as commanded. The PCM monitors the actuator's electrical circuit and the resulting change in valve timing; when the expected change does not occur, it sets this code.

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
- Rough idle or unstable engine operation, especially when cold
- Reduced engine power or sluggish acceleration due to improper valve timing
- Decreased fuel economy because the engine is not running at optimal efficiency
- In some cases, a noticeable ticking or tapping noise from the valvetrain if the actuator is stuck

### Common causes, most likely first

- 1 Faulty camshaft profile actuator solenoid or mechanical actuator assembly
- 2 Wiring damage (open, short, or corrosion) in the actuator control circuit
- 3 Oil sludge or debris clogging the actuator's oil passages, preventing proper operation
- 4 Low engine oil level or incorrect oil viscosity affecting hydraulic actuator response
- 5 PCM software issue or internal fault in the actuator driver circuit
- 6 Mechanical binding in the camshaft phaser or profile mechanism



## How to diagnose and fix it

- 1 Verify engine oil level and condition; top off or change oil if contaminated
- 2 Perform a visual inspection of the actuator connector and wiring for damage or corrosion
- 3 Use a scan tool to command the actuator on and off while monitoring live data to confirm non-response
- 4 Check for technical service bulletins (TSBs) or software updates for the PCM related to this code
- 5 Test the actuator solenoid resistance and compare to manufacturer specifications
- 6 Remove and inspect the actuator for sludge or mechanical binding; clean or replace as needed
- 7 If all else checks out, diagnose the PCM and its control circuit with an oscilloscope

## Oil quality and sludge cause this code

- A stuck-off profile actuator is frequently caused by oil sludge from infrequent oil changes, not a failed part, so always inspect oil condition first.
- The code can be set by a momentary electrical glitch that does not recur; clearing it and test-driving may reveal it was a one-time event.
- Some vehicles use the same actuator for both bank 1 and bank 2, and a known-good actuator can be swapped to confirm the fault location.
- A stuck-off actuator may not produce noticeable driveability symptoms because the engine can default to a fixed valve timing mode, masking the issue.
- After replacing the actuator, a relearn or adaptation reset with a scan tool is often required to prevent the code from returning.

## Can I keep driving with P003E?

You can generally continue driving with this code, but avoid heavy acceleration and towing until it is repaired, as prolonged operation with incorrect valve timing may lead to reduced performance and potential damage to the catalytic converter over time.

## Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter
- Oscilloscope (for advanced circuit testing)
- Basic hand tools (socket set, wrenches)
- Oil filler funnel and drain pan



## Reading P003E

- 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.
- 3E** The exact fault within that area.

## Often seen with

**P0010** 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0020** 'A' Camshaft Position Actuator Circuit (Bank 2) · **P003D** A Camshaft Profile Actuator A Control Stuck On Bank 1 · **P003F** A Camshaft Profile Actuator A Control Stuck On Bank 2 · **P3400** Cylinder Deactivation System (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/p003e/>

