

GENERIC · POWERTRAIN

# P03F3

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P03F3

### B Camshaft Profile Actuator C Control Circuit High Bank 1

P03F3 indicates that the powertrain control module (PCM) has detected an abnormally high voltage on the control circuit for the Bank 1 'C' camshaft profile actuator, which is part of a variable valve timing or variable valve lift system. The PCM commands the actuator to change camshaft profile, but the circuit voltage stays above the expected range, so the system cannot reliably alter valve timing or lift.

| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                        |
|------------|---------------------|----------|----------------|-----------------------------|
| Powertrain | Generic (all makes) | Medium   | Intermediate   | Ignition system and misfire |

#### 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 incorrect valve timing.
- Poor fuel economy or increased emissions.
- In rare cases, the engine may enter limp mode or stall.

#### Common causes, most likely first

- 1 Faulty camshaft profile actuator solenoid or its internal coil.
- 2 Damaged or shorted wiring in the control circuit, including chafed insulation or a pinched harness.
- 3 Corroded or loose electrical connector at the actuator or PCM.
- 4 PCM driver circuit failure, though this is less common.
- 5 Aftermarket or incorrect actuator installed previously.
- 6 Oil sludge or debris blocking the actuator, causing it to draw excessive current and set a high-voltage code.

#### How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for related camshaft position or VVT codes.
- 2 Inspect the actuator connector and wiring for damage, corrosion, or loose pins; repair as needed.
- 3 Measure resistance across the actuator solenoid and compare to manufacturer specifications; replace if out of range.
- 4 Check the control circuit for a short to voltage or ground using a multimeter and wiring diagram.
- 5 Test the PCM output signal with an oscilloscope or bidirectional scan tool to confirm proper command.
- 6 If the circuit and actuator test good, reprogram or replace the PCM as a last resort.
- 7 Clear codes and perform a road test to verify the repair.



## High Voltage Doesn't Always Mean a Bad Actuator

- A short to voltage in the harness can mimic a failed actuator, so always check for chafed wires near hot or moving components before replacing parts.
- Oil sludge or debris can cause the actuator to stick and draw high current, setting a high-voltage code even when the electrical circuit is intact.
- The PCM may set this code intermittently if the connector is loose or corroded, so a wiggle test while monitoring live data can reveal the fault.
- Aftermarket actuators with incorrect resistance can trigger this code even though they are new, so verify part compatibility.
- This code is often accompanied by camshaft position correlation codes, which should be diagnosed together to avoid misdiagnosis.

## Can I keep driving with P03F3?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration or towing because incorrect valve timing can cause poor performance and increased emissions. If the engine runs rough or enters limp mode, stop driving and seek professional diagnosis.

## Tools that help

- OBD-II scan tool with live data and bidirectional controls
- Digital multimeter
- Oscilloscope
- Wiring diagram and service information
- Basic hand tools and socket set

## Reading P03F3

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>0</b>  | Generic (SAE) code: it means the same thing on every OBD-II vehicle. |
| <b>3</b>  | Ignition system and misfire.                                         |
| <b>F3</b> | 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) · **P03F2** B Camshaft Profile Actuator C Control Circuit Low Bank 1 · **P03F4** B Camshaft Profile Actuator C Control Performance/Stuck Off



## 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/p03f3/>

