



P03EC

A Camshaft Profile Actuator C Control Circuit/Open Bank 1

P03EC indicates that the powertrain control module has detected an open circuit in the control wiring for the camshaft profile actuator on bank 1, cylinder group C. This actuator is responsible for varying valve lift or duration to optimize engine breathing, and an open circuit means the PCM cannot command the actuator to change camshaft profiles.

SYSTEM Powertrain	CODE TYPE Generic (all makes)	SEVERITY Medium	FIX DIFFICULTY Intermediate	AREA Ignition system and misfire
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Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or a limp-home mode if the fault is severe
- Rough idle or poor engine performance, especially at low speeds
- Decreased fuel economy due to the engine running on a fixed cam profile
- In some cases, a slight hesitation or stumble during acceleration

Common causes, most likely first

- 1 Broken or chafed wire in the actuator control circuit, often near connectors or heat sources
- 2 Corroded or loose electrical connector at the camshaft profile actuator
- 3 Failed camshaft profile actuator solenoid (open internal coil)
- 4 Open circuit inside the powertrain control module (rare)
- 5 Damage to the wiring harness from rodents, debris, or previous repairs

How to diagnose and fix it

- 1 Inspect the actuator connector and wiring for obvious damage, corrosion, or looseness
- 2 Disconnect the actuator and measure resistance across its terminals to check for an open coil
- 3 Check for battery voltage and ground at the actuator connector with the key on, using a multimeter
- 4 Perform a continuity test on the control circuit between the actuator and the PCM to locate an open
- 5 Repair any damaged wires or replace the actuator if it fails the resistance test
- 6 Clear the diagnostic trouble codes and verify the repair with a test drive



Open Circuit Checks Before Replacing Actuator

- A common oversight is assuming the actuator itself has failed when the real problem is a broken wire hidden inside the loom, so always perform a continuity test on the control circuit.
- The code can be set by a poor connection at the PCM connector, which is often overlooked because technicians focus on the actuator end of the circuit.
- On some engines, the camshaft profile actuator shares a ground with other components, so a bad ground can cause this code along with others.
- A scan tool may show the actuator command changing, but an open circuit will prevent actual movement, so live data can be misleading if you only look at commanded values.
- After repairs, the PCM may need to relearn the camshaft profile positions; failing to perform a relearn can cause drivability issues even after the code is cleared.

Can I keep driving with P03EC?

You can generally drive the vehicle with this code, but expect reduced performance and possibly lower fuel economy. Avoid heavy acceleration or towing until the fault is repaired, as the engine may not operate at its optimal efficiency.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Wire repair kit with crimpers and heat shrink
- Electrical contact cleaner
- Vehicle-specific service information for wiring diagrams

Reading P03EC

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.
EC	The exact fault within that area.

Often seen with

P03E9 A Camshaft Profile Actuator Position Sensor A Exceeded Learn · **P03EA** A Camshaft Profile Actuator Position Sensor B Exceeded Learn · **P03EB** A Camshaft Profile Actuator Position Sensor C Exceeded Learn · **P03ED** A Camshaft Profile Actuator C Control Circuit Low Bank 1 · **P03EE** A Camshaft Profile Actuator C Control Circuit High 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/p03ec/>

