

GENERIC · POWERTRAIN

P0010

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0010

'A' Camshaft Position Actuator Circuit (Bank 1)

P0010 indicates that the engine computer has detected an electrical fault in the control circuit for the bank 1 'A' camshaft position actuator, which is the oil control solenoid that adjusts camshaft timing. The computer monitors the circuit for open, short-to-ground, or short-to-power conditions and sets this code when the expected voltage or current is outside the normal range.

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 incorrect camshaft timing
- Poor fuel economy or increased emissions
- In some cases, the engine may enter limp mode or exhibit hard starting

Common causes, most likely first

- 1 Faulty camshaft position actuator solenoid (the 'A' oil control valve) with an open or shorted internal coil
- 2 Damaged or corroded wiring or connector at the actuator solenoid
- 3 Open or shorted circuit in the harness between the solenoid and the engine control module (ECM)
- 4 Contaminated engine oil or sludge blocking the solenoid, causing electrical feedback
- 5 Failed ECM driver for the actuator circuit (rare but possible)
- 6 Poor ground connection for the solenoid circuit



How to diagnose and fix it

- 1 Perform a visual inspection of the actuator solenoid, connector, and wiring for damage or corrosion
- 2 Check the solenoid's resistance with a multimeter and compare to the manufacturer's specification
- 3 Test the circuit for voltage and ground signals from the ECM using a wiring diagram and multimeter
- 4 Inspect the engine oil condition and change oil and filter if contaminated or overdue
- 5 Remove and clean or replace the camshaft position actuator solenoid if electrically faulty or clogged
- 6 Repair any damaged wiring or connectors and clear the code, then retest
- 7 If the circuit tests good but the code persists, diagnose the ECM driver or seek professional help

Don't overlook oil condition and circuit tests

- A P0010 is an electrical circuit code, not a performance code, so the root cause is often a bad connection or broken wire rather than a failed solenoid.
- Sludged or dirty engine oil can cause the solenoid to stick and set this code, so always check oil maintenance history before replacing parts.
- The 'A' camshaft actuator is typically the intake camshaft on bank 1, but always confirm with the service manual for the specific engine.
- A faulty solenoid can sometimes test good when cold but fail when hot, so perform resistance tests both cold and after warming the engine.
- Replacing the solenoid without checking the circuit can lead to a repeat code if the real problem is a chafed wire or corroded connector.

Can I keep driving with P0010?

You can usually drive the vehicle with P0010 set, but avoid aggressive acceleration or heavy loads because incorrect camshaft timing can affect performance and emissions. Have the fault diagnosed soon to prevent potential damage to the catalytic converter or other components.

Tools that help

- OBD-II scanner
- Digital multimeter
- Wiring diagram for the specific vehicle
- Basic hand tools (socket set, screwdrivers)
- Oil filter wrench (if changing oil)



Reading P0010

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

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0012** 'A' Camshaft Position - Timing Over-Retarded (Bank 1) · **P0013** 'B' Camshaft Position - Actuator Circuit (Bank 1) · **P0014** Exhaust Camshaft Position - Over-Advanced (Bank 1) · **P0020** 'A' Camshaft Position Actuator Circuit (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/p0010/>

