

GENERIC · POWERTRAIN

P0015

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0015

'B' Camshaft Position - Timing Over-Retarded (Bank 1)

P0015 means the engine computer has detected that the bank 1 'B' camshaft is retarded further than the commanded timing during closed-loop variable valve timing operation. The powertrain control module compares the actual camshaft position signal against its target and sets this code when the measured angle stays over-retarded beyond a calibrated threshold for a set number of drive cycles.

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 speed at a stop
- Reduced engine power or sluggish acceleration from low rpm
- Poor fuel economy compared with the vehicle's normal consumption
- Occasional engine misfire or hesitation under light load
- A rattle or ticking noise from the timing chain area on cold start

Common causes, most likely first

- 1 Sludge or debris blocking the oil control solenoid screen for the bank 1 'B' camshaft phaser
- 2 Failed or sticking variable valve timing oil control solenoid
- 3 Worn or damaged camshaft phaser that cannot return to the commanded retard position
- 4 Low engine oil level or degraded oil that cannot build sufficient phaser actuation pressure
- 5 Stretched timing chain or worn chain tensioner altering cam-to-crank timing
- 6 Open or shorted wiring or a corroded connector at the camshaft position sensor or oil control solenoid
- 7 Mechanical binding in the camshaft or phaser assembly from wear or contamination



How to diagnose and fix it

- 1 Check engine oil level and condition, then verify oil pressure is within specification for the engine
- 2 Inspect the bank 1 'B' oil control solenoid connector and wiring for corrosion, chafing, or loose pins
- 3 Remove and clean the oil control solenoid screen, then test solenoid resistance and actuation with a scan tool
- 4 Command the camshaft phaser through its full range with a bidirectional scan tool and compare commanded versus actual angle
- 5 Verify base engine timing by checking the timing chain, tensioner, and camshaft sprocket alignment marks
- 6 Replace the oil control solenoid if it fails electrical or mechanical testing, then clear the code and run a relearn drive cycle
- 7 If the phaser or timing chain is worn, replace the affected components and confirm the camshaft position error is resolved

Oil quality and phaser screen traps

- A restricted oil control solenoid screen from neglected oil changes is one of the most frequent causes of P0015, and cleaning or replacing the screen often resolves the code without replacing the phaser.
- Technicians sometimes replace the camshaft phaser first, but a weak oil pump or low oil pressure can produce the same over-retarded condition and will destroy a new phaser if not corrected.
- P0015 can set from a stretched timing chain that shifts the camshaft base timing even when the phaser and solenoid test good, so always verify mechanical timing before condemning electronic parts.
- On engines with variable valve timing on both intake and exhaust cams, the 'B' camshaft may be the exhaust cam, so confirm which camshaft the manufacturer designates as 'B' before ordering parts.
- A dirty or failing mass airflow sensor or a vacuum leak can alter airflow enough to confuse the camshaft timing strategy and set P0015 alongside fuel trim codes.

Can I keep driving with P0015?

You can usually drive the vehicle to a repair shop, but avoid hard acceleration and sustained high-speed driving because over-retarded cam timing can cause poor combustion and increased exhaust temperatures. If the engine runs roughly, misfires, or loses significant power, stop driving and arrange a tow to prevent catalyst damage.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter for solenoid and wiring testing
- Oil pressure gauge
- Socket and wrench set for solenoid and valve cover removal
- Timing light or scan tool camshaft angle display for timing verification



Reading P0015

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

Often seen with

P000A A Camshaft Position Slow Response Bank 1 · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0014** Exhaust Camshaft Position - Over-Advanced (Bank 1) · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo

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/p0015/>

