

GENERIC · POWERTRAIN

P0024

OBD-II TROUBLE CODE

P0024

'B' Camshaft Position - Timing Over-Advanced or System Performance (Bank 2)

P0024 is a generic powertrain code indicating that the engine control module has detected an over-advanced condition or performance problem with the 'B' camshaft on bank 2, which is the side of the engine that does not contain cylinder number one. The computer compares the actual camshaft position signal against the commanded target and sets this code when the camshaft timing remains too far advanced beyond the calibrated threshold for a set period.

SYSTEM Powertrain	CODE TYPE Generic (all makes)	SEVERITY Medium	FIX DIFFICULTY Intermediate	AREA Fuel and air metering and auxiliary emission controls
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Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or engine misfire, especially when the engine is cold
- Reduced engine performance or sluggish acceleration
- Poor fuel economy compared to normal driving
- Intermittent stalling or difficulty starting
- A noticeable rattle or ticking noise from the affected cylinder head

Common causes, most likely first

- 1 Sticking or faulty oil control valve (OCV) solenoid for the bank 2 camshaft phaser
- 2 Contaminated or degraded engine oil preventing proper phaser operation
- 3 Failed camshaft phaser or timing chain tensioner on bank 2
- 4 Wiring damage or poor connection at the bank 2 camshaft position sensor or OCV
- 5 Mechanical timing chain misalignment or stretched chain on bank 2
- 6 Faulty bank 2 camshaft position sensor
- 7 Engine control module software calibration issue or internal fault



How to diagnose and fix it

- 1 Verify engine oil level and condition; change oil and filter if overdue or contaminated
- 2 Perform a visual inspection of bank 2 camshaft position sensor and OCV wiring and connectors
- 3 Use a scan tool to command the OCV and observe camshaft timing response
- 4 Test the OCV solenoid for resistance and proper movement, replace if sticking
- 5 Check for mechanical timing chain alignment and tensioner wear on bank 2
- 6 Replace the bank 2 camshaft position sensor if signal is erratic or missing
- 7 Clear codes and perform a road test to confirm the repair, reprogramming the ECM if required

Oil quality and OCV sticking traps

- A sticking oil control valve solenoid is the most common cause of P0024, and it often sticks due to sludge from neglected oil changes rather than outright electrical failure.
- The code can set intermittently and may not reappear immediately after an oil change, leading some technicians to replace the phaser unnecessarily when the real issue was dirty oil.
- Bank 2 camshaft timing problems can mimic bank 1 issues on V6 and V8 engines, so always confirm which bank is affected before ordering parts.
- A stretched timing chain on bank 2 can cause over-advanced timing without any noise, and a simple visual inspection may miss it without checking chain stretch with a gauge.
- Some vehicles require a relearn or calibration procedure after replacing the OCV or phaser, and skipping this step can cause the code to return immediately.

Can I keep driving with P0024?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or sustained high speeds because over-advanced camshaft timing can lead to poor performance and potential engine damage over time. If the engine runs roughly or stalls, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter
- Oil pressure gauge
- Basic hand tools and socket set
- Feeler gauges or timing chain stretch gauge



Reading P0024

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

Often seen with

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 · **P0022** 'A' Camshaft Position - Timing Over-Retarded (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/p0024/>

