

GENERIC · POWERTRAIN

P0025

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0025

'B' Camshaft Position - Timing Over-Retarded (Bank 2)

P0025 indicates that the engine computer has detected the bank 2 'B' camshaft is retarded beyond the commanded timing by more than a calibrated threshold. The powertrain control module compares the actual camshaft position signal against its target and sets this code when the camshaft stays over-retarded 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
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Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or engine misfire, especially when cold
- Reduced engine power or sluggish acceleration
- Poor fuel economy compared to normal
- Extended cranking before the engine starts
- Intermittent stalling at low speeds or when coming to a stop

Common causes, most likely first

- 1 Sticking or failed variable valve timing (VVT) oil control solenoid for bank 2
- 2 Sludge or debris blocking the bank 2 camshaft phaser oil passages
- 3 Worn or failing bank 2 camshaft phaser mechanism
- 4 Low engine oil level or degraded oil that cannot actuate the phaser
- 5 Faulty bank 2 camshaft position sensor or damaged wiring
- 6 Stretched timing chain or worn timing chain tensioner on bank 2
- 7 Engine computer calibration issue or faulty powertrain control module (PCM)



How to diagnose and fix it

- 1 Check engine oil level and condition; top off or change oil if it is low or dirty
- 2 Scan all stored codes and freeze-frame data to confirm P0025 is active and not history
- 3 Inspect the bank 2 VVT oil control solenoid for sludge and test its resistance and operation
- 4 Remove and clean or replace the bank 2 VVT solenoid if it is sticking or clogged
- 5 Verify oil pressure to the phaser and inspect the phaser for mechanical wear
- 6 Check the bank 2 camshaft position sensor signal and wiring for damage or corrosion
- 7 If the above checks pass, inspect the timing chain and tensioner for stretch or wear

Oil quality and VVT solenoid traps

- A dirty or sticking VVT solenoid is the most common cause of P0025, and it often sets no other codes until the phaser is damaged.
- Low oil level or neglected oil changes can trigger this code even when the solenoid and phaser are mechanically sound.
- A stretched timing chain can mimic a failed phaser by retarding cam timing beyond the computer's ability to correct.
- Replacing the phaser without first flushing the oil passages often leads to the same code returning within a few thousand miles.
- Some vehicles set P0025 only during cold starts or after long idles, so a test drive under those conditions may be needed to reproduce it.

Can I keep driving with P0025?

You can usually drive the vehicle short distances to a repair shop, but avoid hard acceleration and sustained high speeds until the fault is repaired. Prolonged driving with over-retarded cam timing can damage the phaser and timing components, so schedule diagnosis soon.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for testing solenoid resistance and wiring
- Oil pressure gauge
- Basic hand tools including socket set and torque wrench
- Feeler gauges or timing chain wear gauge



Reading P0025

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

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0024** 'B' Camshaft Position - Timing Over-Advanced or System Perfo · **P0300** Random/Multiple Cylinder Misfire Detected

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/p0025/>

