

GENERIC · POWERTRAIN

P34B1

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P34B1

A Camshaft Position Actuator Position Sensor A Range/Performance Bank 2

This code indicates that the powertrain control module has detected an out-of-range or performance issue with the camshaft position actuator position sensor on bank 2, which is the side of the engine that does not contain cylinder number one. The sensor reports the actual position of the camshaft phaser, and the computer compares that signal against the commanded target to judge whether the variable valve timing system is responding correctly.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or engine stumble, especially when cold
- Reduced engine power or poor acceleration
- Decreased fuel economy
- Intermittent stalling or hard starting
- Unusual engine noises such as ticking or rattling from the affected bank

Common causes, most likely first

- 1 Faulty camshaft position actuator position sensor on bank 2
- 2 Wiring damage or poor connection at the sensor or PCM
- 3 Contaminated or degraded engine oil affecting phaser operation
- 4 Sticking or failed camshaft phaser or actuator solenoid
- 5 Mechanical timing issues such as a stretched timing chain or worn phaser components
- 6 PCM software calibration issue or internal fault



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, wiring, and connectors on bank 2 for damage or corrosion
- 2 Check engine oil level and condition, and change oil if it is dirty or incorrect viscosity
- 3 Use a scan tool to command the camshaft phaser and observe the sensor signal for proper response
- 4 Test the sensor with a multimeter for reference voltage, ground, and signal integrity
- 5 Compare the bank 2 camshaft position sensor signal with the bank 1 sensor or a known good waveform using an oscilloscope
- 6 Inspect the camshaft phaser and timing components for mechanical wear or sticking
- 7 Reprogram or replace the PCM if all other components test good and the fault persists

Oil quality and phaser response checks

- A low oil level or heavily contaminated oil is a common cause of this code because the phaser relies on clean, pressurized oil to change camshaft timing.
- The sensor itself often tests good; the real problem is a sticking phaser or a solenoid that cannot deliver enough oil pressure to move the phaser to the commanded position.
- Wiring harness chafing near the bank 2 camshaft cover is a frequent hidden cause that can mimic a failed sensor.
- This code does not always mean the sensor is defective; a mechanical timing issue such as a jumped tooth or worn chain can set the same range/performance fault.
- After any repair, clear the code and perform a drive cycle that includes steady cruising and acceleration to verify the phaser reaches its target angles.

Can I keep driving with P34B1?

You can usually continue driving if the only symptom is the warning light, but avoid aggressive acceleration and heavy loads until the fault is diagnosed. If the engine runs rough, loses power, or stalls, have it inspected promptly to prevent further damage.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter
- Oscilloscope
- Oil pressure gauge
- Basic hand tools and socket set



Reading P34B1

- P** Powertrain: engine, transmission and emissions.
- 3** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- B1** 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) · **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/p34b1/>

