

GENERIC · POWERTRAIN

P054C

OBD-II TROUBLE CODE

P054C

Cold Start B Camshaft Position Timing Over-Advanced Bank 2

P054C indicates that during a cold start, the engine computer detected the bank 2 camshaft position timing being more advanced than the commanded target. The powertrain control module (PCM) compares actual camshaft phaser position to its desired value and sets this code when the cam is over-advanced beyond an acceptable threshold during the cold-start phase.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire during the first few minutes after a cold start
- Reduced engine power or sluggish acceleration while the engine is warming up
- Occasional stalling or hesitation immediately after startup
- Poor fuel economy or increased emissions during cold operation

Common causes, most likely first

- 1 Sticking or contaminated camshaft phaser solenoid (oil control valve) on bank 2
- 2 Sludge or debris blocking the oil passages feeding the bank 2 phaser
- 3 Worn or failing camshaft phaser assembly on bank 2
- 4 Low engine oil level or degraded oil viscosity preventing proper phaser response
- 5 Faulty camshaft position sensor or wiring on bank 2
- 6 PCM calibration issue or software glitch affecting cold-start timing strategy
- 7 Timing chain stretch or misalignment affecting bank 2 cam timing



How to diagnose and fix it

- 1 Verify engine oil level and condition; change oil and filter if overdue or contaminated
- 2 Scan for stored and pending codes, then check freeze-frame data for cold-start conditions
- 3 Test the bank 2 camshaft phaser solenoid for resistance and proper operation, clean or replace if faulty
- 4 Inspect camshaft position sensor signal and wiring for bank 2
- 5 Check for sludge or blockages in the oil passages to the bank 2 phaser; perform an engine flush if safe
- 6 Verify timing chain alignment and condition; repair if stretched or misaligned
- 7 Reflash or update PCM calibration if a known software issue exists

Cold-start phaser faults often misdiagnosed

- A dirty or sticking oil control valve is the most common cause, but many technicians replace the phaser assembly first without testing the solenoid.
- Low oil pressure at cold start can mimic a failed phaser, so always verify oil condition and pressure before condemning parts.
- The code may set only during the first cold start of the day and not reappear on warm restarts, leading some to dismiss it as a glitch.
- Bank 2 phaser issues can be caused by debris from a failing timing chain guide, so inspect the chain area for wear.
- A faulty camshaft position sensor can report an over-advanced condition even when the phaser is working correctly, so compare sensor signal with commanded timing.

Can I keep driving with P054C?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration or sustained high speeds until the fault is diagnosed. Prolonged driving with over-advanced cam timing can cause poor fuel economy, increased emissions, and potential engine damage.

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 (wrenches, sockets, screwdrivers)
- Feeler gauges or timing chain inspection tools



Reading P054C

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 4C** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P054A** Cold Start B Camshaft Position Timing Over-Advanced Bank 1 · **P054B** Cold Start B Camshaft Position Timing Over-Retarded Bank 1 · **P054D** Cold Start B 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/p054c/>

