

GENERIC · POWERTRAIN

P2C17

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2C17

B Camshaft Profile Actuator Position Sensor B Range/Performance Bank 1

P2C17 indicates that the engine control module has detected an out-of-range or performance fault in the 'B' camshaft profile actuator position sensor circuit on bank 1, which is the side of the engine containing cylinder number one. The sensor reports the actual position of the camshaft profile actuator, and the ECM compares this signal against expected values to determine if the variable valve timing system is responding correctly.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

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, especially at low RPM
- Poor fuel economy or increased fuel consumption
- Occasional engine misfire or hesitation during acceleration
- In some cases, the engine may enter limp mode with limited RPM

Common causes, most likely first

- 1 Faulty camshaft profile actuator position sensor 'B' on bank 1
- 2 Damaged or corroded wiring or connector at the sensor or ECM
- 3 Open or short circuit in the sensor signal or reference voltage circuit
- 4 Contaminated or degraded engine oil affecting actuator response
- 5 Sticking or mechanically binding camshaft profile actuator
- 6 ECM software issue or internal fault (less common)



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, connector, and wiring for damage or corrosion
- 2 Check engine oil level and condition; change oil and filter if contaminated or overdue
- 3 Use a scan tool to monitor live data for the camshaft profile actuator position sensor and compare commanded versus actual position
- 4 Test the sensor signal circuit for continuity, shorts to ground, and reference voltage with a multimeter
- 5 Remove and inspect the camshaft profile actuator for mechanical binding or debris; clean or replace as needed
- 6 If the sensor is suspect, test it according to manufacturer specifications or swap with a known-good unit for diagnosis
- 7 Reprogram or replace the ECM only after all other causes have been ruled out

Oil quality and sensor signal checks matter

- Degraded or incorrect viscosity engine oil is a frequently overlooked cause because it affects the hydraulic response of the camshaft profile actuator, leading to position sensor performance codes.
- A loose or corroded ground connection at the engine block can cause intermittent sensor signal faults that mimic a failed sensor, so always verify grounds before replacing parts.
- The 'B' camshaft profile actuator position sensor may be located on the exhaust or intake camshaft depending on engine design, so consult the specific service information for the correct bank and sensor identification.
- This code can be set by a mechanical issue such as a sticking actuator or a jumped timing chain, so do not assume the sensor itself is at fault without testing the actuator's mechanical operation.
- In some vehicles, a low battery or charging system issue can cause voltage spikes that disrupt sensor signals and set this code, so check battery health and charging voltage as part of diagnosis.

Can I keep driving with P2C17?

Driving with P2C17 is generally safe for short distances, but avoid aggressive acceleration or heavy loads because the variable valve timing system may not function correctly, which can lead to reduced performance and potentially increased emissions. Have the vehicle diagnosed promptly to prevent further damage to the actuator or related components.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Basic hand tools (socket set, screwdrivers)
- Feeler gauge or micrometer (for actuator inspection)
- Manufacturer service information or wiring diagrams



Reading P2C17

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- 17** The exact fault within that area.

Often seen with

P0010 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P2C16** B Camshaft Profile Actuator Position Sensor B Circuit Bank 1 · **P2C18** B Camshaft Profile Actuator Position Sensor B Circuit Low Ba

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/p2c17/>

