

GENERIC · POWERTRAIN

P2B38

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B38

A Camshaft Profile Actuator B Control Circuit High Bank 2

P2B38 indicates that the powertrain control module (PCM) has detected a high-voltage condition on the control circuit for the Bank 2 camshaft profile actuator B. This actuator, often part of a variable valve timing or variable valve lift system, receives a command signal from the PCM to adjust camshaft profile, and the high circuit voltage suggests a short to power, an open circuit, or a faulty actuator.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine performance or power, especially at higher RPMs
- Rough idle or misfire under certain conditions
- Decreased fuel economy
- Engine may enter limp mode, limiting speed and RPM

Common causes, most likely first

- 1 Faulty camshaft profile actuator B on Bank 2
- 2 Damaged or shorted wiring in the actuator control circuit (short to power)
- 3 Corroded or loose electrical connector at the actuator or PCM
- 4 Failed PCM driver for the actuator control circuit
- 5 Open circuit in the ground or power supply to the actuator
- 6 Oil sludge or debris obstructing the actuator mechanism, causing abnormal current draw

How to diagnose and fix it

- 1 Perform a visual inspection of the actuator, wiring, and connectors for damage, corrosion, or loose pins
- 2 Use a scan tool to command the actuator on and off while monitoring circuit voltage to verify the fault
- 3 Measure resistance and voltage on the control circuit to check for shorts to power or opens
- 4 Swap the Bank 2 actuator with a known-good unit (if accessible) to see if the code follows
- 5 Check for technical service bulletins (TSBs) or software updates for the PCM related to this code
- 6 Repair or replace damaged wiring or connectors as needed
- 7 Replace the camshaft profile actuator B if testing confirms it is faulty



Don't overlook the wiring harness

- A short to power in the actuator control circuit is a common cause that many technicians miss when they replace the actuator without testing the harness.
- The PCM may set this code intermittently if the actuator connector is loose or corroded, so always perform a wiggle test while monitoring live data.
- Oil contamination or sludge can cause the actuator to draw excessive current, leading to a high circuit code, so check oil condition and maintenance history.
- This code is often misdiagnosed as a simple actuator failure, but the root cause may be a chafed wire near the exhaust manifold or a faulty PCM driver.
- Related codes such as P2B37 (low circuit) or other camshaft actuator codes may also be present, indicating a shared circuit issue.

Can I keep driving with P2B38?

Driving with this code is generally safe for short distances, but avoid aggressive acceleration or heavy loads because the engine may enter limp mode or suffer reduced performance. Have the vehicle diagnosed promptly to prevent potential catalytic converter damage from misfires.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Wire probe set
- Electrical contact cleaner
- Service manual for wiring diagrams

Reading P2B38

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- 38** 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 · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P2B37** A Camshaft Profile Actuator B Control Circuit Low Bank 2 · **P2B39** B Camshaft Profile Actuator B Control Circuit/Open Bank 1



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/p2b38/>

