

GENERIC · POWERTRAIN

P3415

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P3415

Cylinder 2 Exhaust Valve Control Circuit Low

P3415 indicates that the powertrain control module (PCM) has detected a low-voltage condition on the control circuit for the cylinder 2 exhaust valve, which is part of a variable valve timing or cylinder deactivation system. The PCM commands the valve actuator to change lift or timing, but the circuit feedback stays below the expected threshold, so the computer flags the circuit as faulty.

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 misfire sensation, especially when the engine is cold or under light load
- Reduced engine power or sluggish acceleration due to improper valve operation
- Decreased fuel economy as the engine management system defaults to a less efficient mode
- Intermittent stalling or hesitation when the valve control circuit fails to actuate

Common causes, most likely first

- 1 Damaged or chafed wiring in the cylinder 2 exhaust valve control circuit, such as a short to ground or an open
- 2 Corroded or loose electrical connector at the valve actuator or PCM
- 3 Failed exhaust valve control solenoid or actuator that has an internal short
- 4 Faulty PCM driver for that specific circuit, though this is less common
- 5 Oil sludge or debris blocking the valve actuator, causing excessive current draw and a low-voltage feedback
- 6 Aftermarket electrical accessories improperly tapped into the circuit, causing voltage drops



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 2 exhaust valve actuator connector and wiring for damage, corrosion, or loose pins
- 2 Use a digital multimeter to check for battery voltage at the actuator connector with the key on and engine off, then check for ground continuity
- 3 Measure the resistance of the valve control solenoid and compare it to the manufacturer's specification to rule out an internal short
- 4 Inspect the PCM connector for corrosion or pushed-out terminals, and perform a wiggle test on the harness while monitoring the circuit
- 5 If the circuit tests good, command the actuator with a scan tool to verify operation and check for mechanical binding
- 6 Repair or replace any damaged wiring, connectors, or the faulty actuator as needed, then clear the code and verify the repair with a test drive

Don't overlook the harness before replacing parts

- A low-voltage code often results from a poor ground connection rather than a failed actuator, so always check ground points and engine block straps first.
- Oil sludge or varnish from infrequent oil changes can cause the valve actuator to stick, drawing excessive current and setting a low-voltage code without any wiring fault.
- The PCM may set P3415 as a result of a low battery or charging system issue, so verify battery voltage and alternator output before condemning the circuit.
- Aftermarket remote starters or alarm systems tapped into the valve control wiring can introduce resistance and trigger this code intermittently.
- A misfire from a spark plug or ignition coil on cylinder 2 can sometimes cause the PCM to misinterpret valve control feedback, so check for other codes before focusing solely on the circuit.

Can I keep driving with P3415?

You can usually drive the vehicle with P3415 set, but avoid heavy acceleration or towing until the fault is repaired because the engine may enter a reduced-power mode. If the check engine light begins flashing or you notice severe misfiring, stop driving and seek professional diagnosis immediately.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wire repair kit with crimpers and heat shrink
- Manufacturer-specific wiring diagram



Reading P3415

- P** Powertrain: engine, transmission and emissions.
- 3** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 15** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0302** Cylinder 2 Misfire Detected · **P3400** Cylinder Deactivation System (Bank 1) · **P3416** Cylinder 2 Exhaust Valve Control Circuit High · **P3417** Cylinder 3 Deactivation/Intake Valve Control Circuit/Open

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/p3415/>

