

GENERIC · POWERTRAIN

**P3419**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

**P3419**

## Cylinder 3 Deactivation/Intake Valve Control Circuit Low

P3419 indicates that the powertrain control module (PCM) has detected an abnormally low voltage on the control circuit for the cylinder 3 deactivation or intake valve control solenoid. This circuit is used on engines with cylinder deactivation or variable valve timing to disable or adjust the intake valve for cylinder 3, and a low voltage reading means the PCM sees a short to ground or an open circuit on the control side.

SYSTEM

**Powertrain**

CODE TYPE

**Generic (all makes)**

SEVERITY

**Medium**

FIX DIFFICULTY

**Intermediate**

AREA

**Auxiliary emission controls**

### Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire-like shuddering, especially when the engine transitions between full and reduced displacement modes
- Reduced engine power or a limp-home mode if the fault triggers protective strategies
- Poor fuel economy because the engine may stay in full-displacement mode
- Audible ticking or abnormal engine noise from the affected cylinder bank in some cases

### Common causes, most likely first

- 1 Damaged or chafed wiring in the cylinder 3 deactivation solenoid control circuit, often near exhaust heat or sharp edges
- 2 Corroded or loose electrical connector at the deactivation solenoid or at the PCM
- 3 Failed cylinder 3 deactivation or intake valve control solenoid with an internal short to ground
- 4 Open circuit inside the solenoid coil or a broken wire between the PCM and the solenoid
- 5 PCM driver circuit fault, though this is less common than wiring or solenoid issues
- 6 Oil sludge or debris blocking the solenoid screen, causing abnormal current draw that sets a low-voltage code



## How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, then verify that P3419 is current and not a history code from a previous repair
- 2 Visually inspect the cylinder 3 deactivation solenoid connector and the wiring harness for chafing, corrosion, or loose pins
- 3 Measure resistance across the solenoid coil and compare it to the manufacturer's specification to rule out an open or shorted solenoid
- 4 Back-probe the control circuit at the PCM and check for a short to ground with the ignition on and the engine off
- 5 Perform a wiggle test on the harness while monitoring the circuit with a multimeter or scan tool to catch intermittent faults
- 6 If the circuit tests good, command the solenoid on and off with a scan tool to confirm the PCM driver is functioning
- 7 Replace the faulty solenoid or repair the damaged wiring, clear the codes, and verify the repair with a road test that includes cylinder deactivation transitions

## What the low-voltage code really means

- A low-voltage code on a solenoid control circuit often points to a short to ground rather than a failed solenoid, so inspect the harness before replacing parts
- Cylinder deactivation solenoids can fail intermittently when hot, so a cold resistance check may pass even though the solenoid is faulty
- Oil sludge or debris in the solenoid screen can cause abnormal current draw that sets a low-voltage code without any wiring fault
- The PCM may disable cylinder deactivation entirely when this code is set, masking the original symptom and leading some technicians to chase a misfire that is not present
- Aftermarket remote start or alarm wiring tapped into the harness near the PCM can introduce a short to ground that sets this code

## Can I keep driving with P3419?

You can usually drive the vehicle with this code, but avoid heavy loads and sustained high-speed driving because the engine may stay in full-displacement mode and run less efficiently. If the check engine light flashes or you feel a strong misfire, stop driving and have the vehicle inspected promptly.



## Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter with back-probe pins
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Test light or load tester

## Reading P3419

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

## Often seen with

**P0303** Cylinder 3 Misfire Detected · **P3400** Cylinder Deactivation System (Bank 1) · **P3403** Cylinder 1 Deactivation/Intake Valve Control Circuit Low · **P3418** Cylinder 3 Deactivation/Intake Valve Control Performance · **P3420** Cylinder 3 Deactivation/Intake Valve Control Circuit High

## 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/p3419/>

