

GENERIC · POWERTRAIN

P3425

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P3425

Cylinder 4 Deactivation/Intake Valve Control Circuit/Open

P3425 indicates that the powertrain control module has detected an open circuit or abnormal electrical condition in the control circuit for the cylinder 4 deactivation/intake valve, which is part of a variable displacement or cylinder management system. The computer monitors the circuit for expected voltage or current and sets this code when the signal falls outside the normal range, preventing the cylinder from deactivating or reactivating as commanded.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire-like shudder when the engine transitions between full and reduced displacement
- Reduced fuel economy because the cylinder deactivation system remains inactive
- Slight loss of power or hesitation during light-throttle cruising
- In some cases, the engine may run rough or stall if the valve control circuit affects intake airflow

Common causes, most likely first

- 1 Open or damaged wiring in the cylinder 4 deactivation/intake valve control circuit
- 2 Failed cylinder deactivation solenoid or intake valve control actuator
- 3 Corroded or loose electrical connector at the valve or solenoid
- 4 Faulty powertrain control module driver for that circuit (rare)
- 5 Internal short or open in the valve control solenoid coil
- 6 Blown fuse or poor ground connection serving the deactivation system



How to diagnose and fix it

- 1 Inspect the wiring harness and connector at the cylinder 4 deactivation/intake valve for chafing, corrosion, or loose pins
- 2 Check the fuse and ground connections for the cylinder deactivation system
- 3 Measure resistance of the deactivation solenoid or actuator and compare to manufacturer specifications
- 4 Backprobe the control circuit at the PCM and command the valve on and off with a scan tool to verify signal integrity
- 5 Repair or replace any damaged wiring or connectors, then clear the code and retest
- 6 If the circuit tests good, replace the faulty deactivation solenoid or intake valve actuator
- 7 As a last resort, diagnose the PCM driver circuit and replace the PCM if confirmed faulty

What the code does not always mean

- A P3425 can be set by a simple loose connector or chafed wire, so always perform a visual and wiggle test before condemning the solenoid or actuator.
The code does not necessarily mean the cylinder is permanently disabled; it only indicates an electrical fault in the control circuit, and the engine may still run on all cylinders.
- Some vehicles use the same circuit for both deactivation and intake valve control, so a fault in the intake valve actuator can mimic a deactivation solenoid failure.
- After any repair, the cylinder deactivation system may require a relearn or adaptation procedure with a scan tool to restore normal operation.
A weak battery or charging system can cause intermittent open-circuit codes in these circuits, so check system voltage first.

Can I keep driving with P3425?

You can usually drive the vehicle with P3425 set, but the cylinder deactivation system will be disabled and fuel economy may suffer. Avoid heavy towing or sustained high-load driving until the fault is repaired, and address the code promptly to prevent potential misfire or catalyst damage.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and component access
- Test light or jumper wires for circuit testing



Reading P3425

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

Often seen with

P0304 Cylinder 4 Misfire Detected · **P3400** Cylinder Deactivation System (Bank 1) · **P3424** Cylinder 3 Exhaust Valve Control Circuit High · **P3426** Cylinder 4 Deactivation/Intake Valve Control Performance · **P3497** Cylinder Deactivation System (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/p3425/>

