

GENERIC · POWERTRAIN

P3481

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P3481

Cylinder 11 Deactivation/Intake Valve Control Circuit/Open

P3481 indicates that the powertrain control module (PCM) has detected an open circuit in the control wiring for cylinder 11's deactivation or intake valve control solenoid. This circuit is part of a variable displacement or cylinder deactivation system, and an open means the PCM cannot command that cylinder to switch between active and deactivated states.

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.
- A slight vibration or shudder during light-throttle cruising when the system attempts to deactivate cylinders.
- Reduced fuel economy because the engine may stay in full-displacement mode.
- Rough idle or misfire-like behavior if the affected cylinder's valve state is stuck.
- In some vehicles, a message on the driver information center indicating reduced engine power or service required.

Common causes, most likely first

- 1 Broken or chafed wire in the solenoid control circuit, often near connectors or where the harness bends.
- 2 Corroded or loose electrical connector at the cylinder deactivation solenoid.
- 3 Failed cylinder deactivation solenoid with an open internal coil.
- 4 Open circuit inside the PCM driver for that solenoid, though this is less common.
- 5 Damage to the wiring harness from heat, rodents, or previous repairs.
- 6 Poor ground connection for the solenoid circuit, causing an intermittent open.



How to diagnose and fix it

- 1 Inspect the solenoid connector and wiring for obvious damage, corrosion, or looseness; clean and reseal as needed.
- 2 Use a scan tool to command the cylinder deactivation solenoid on and off while watching for a change in circuit status or listening for a click.
- 3 Measure resistance across the solenoid coil with a multimeter and compare to the manufacturer's specification to check for an open winding.
- 4 Check for continuity and voltage drop on the control wire between the PCM and the solenoid, repairing any open or high-resistance section.
- 5 Verify the PCM ground and power supply are intact, as a poor ground can mimic an open circuit.
- 6 If the wiring and solenoid test good, suspect the PCM driver and perform further pinpoint tests before replacement.
- 7 Clear the code and test-drive the vehicle under conditions that enable cylinder deactivation to confirm the repair.

What a P3481 open circuit really means

- An open circuit code does not always mean the solenoid is dead; a backed-out terminal or corroded pin in the connector is a frequent culprit that costs little to fix.
- Cylinder 11 is typically part of a larger deactivation bank, so a single open circuit can disable the whole bank and cause symptoms that feel like a transmission shudder.
- Some vehicles set this code only after several drive cycles with the fault present, so an intermittent wiring issue may not trigger the light immediately.
- Replacing the solenoid without checking the harness for chafing near hot exhaust components often leads to a repeat failure.
- A scan tool that can read live cylinder deactivation status is more useful than a generic code reader for confirming whether the circuit is truly open or just intermittently failing.

Can I keep driving with P3481?

You can usually drive the vehicle with this code, but avoid heavy towing or aggressive acceleration because the engine may be running on all cylinders and the deactivation system is disabled. If the check engine light starts flashing or you feel a strong misfire, stop driving and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Digital multimeter
- Wire repair kit with crimpers and heat shrink
- Electrical contact cleaner
- Factory service information for circuit pinouts and resistance specs



Reading P3481

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

Often seen with

P0300 Random/Multiple Cylinder Misfire Detected · **P3400** Cylinder Deactivation System (Bank 1) · **P3480** Cylinder 10 Exhaust Valve Control Circuit High · **P3482** Cylinder 11 Deactivation/Intake Valve Control Performance · **P3490** Cylinder 12 Deactivation/Intake Valve Control Performance

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/p3481/>

