



P0477

Exhaust Pressure Control Valve Low

P0477 means the powertrain control module (PCM) has commanded the exhaust pressure control valve to move to its low-pressure position, but the valve position sensor circuit is reporting a voltage outside the expected range for that command. The PCM therefore cannot confirm that the valve actually reached the low position, so it 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 symptoms noticed by the driver.
- A noticeable lack of engine power or sluggish acceleration when the valve fails to move as commanded.
- Increased exhaust backpressure that may cause rough running, especially under load.
- A hissing or tapping noise from the exhaust system if the valve is stuck partially open or closed.
- Reduced fuel economy as the engine management strategy compensates for incorrect exhaust flow.
- In some vehicles, the engine may enter limp mode or limit turbo boost if the valve is part of the turbo control system.

Common causes, most likely first

- 1 A faulty exhaust pressure control valve position sensor or its internal circuitry.
- 2 Damaged, corroded, or disconnected wiring in the valve position sensor circuit, including the reference voltage, signal, or ground wires.
- 3 A stuck or binding exhaust pressure control valve mechanism due to carbon buildup, rust, or mechanical wear.
- 4 A failed valve actuator (vacuum, electric, or hydraulic) that prevents the valve from reaching the low position.
- 5 A poor electrical connection at the valve connector or at the PCM, often caused by water intrusion or vibration.
- 6 A PCM software issue or internal fault that misinterprets the sensor signal, though this is less common.



How to diagnose and fix it

- 1 Use a scan tool to verify the code and check for any related codes, then command the exhaust pressure control valve through its full range while watching the position sensor voltage to confirm the fault.
- 2 Visually inspect the valve, actuator, and sensor connector for obvious damage, corrosion, or loose pins, and repair any wiring issues found.
- 3 Measure the sensor reference voltage, signal voltage, and ground at the valve connector with a digital multimeter, comparing readings to the manufacturer's specifications.
- 4 Test the valve actuator operation by applying vacuum or power directly, and check that the valve moves freely through its full travel without binding.
- 5 If the sensor signal is erratic or out of range while the valve moves smoothly, replace the position sensor or the complete valve assembly as required.
- 6 Clear the codes and perform a road test to confirm the repair, monitoring live data to ensure the valve reaches the commanded low position.
- 7 If the fault persists after electrical and mechanical checks, inspect the PCM connectors and wiring harness for intermittent faults before considering PCM replacement.

What the low-position command really tests

- P0477 is often set by a sensor that is simply out of calibration rather than a completely failed valve, so replacing the entire valve assembly without testing the sensor first can be an expensive misdiagnosis.
- Carbon buildup on the valve shaft is a common cause of binding that prevents the valve from reaching the low position, and cleaning the valve can sometimes resolve the code without parts replacement.
- A weak or failing vacuum pump or a leaking vacuum line can prevent a vacuum-operated valve from moving to the low position, setting this code even though the valve itself is healthy.
- The code can be triggered by a momentary glitch in the sensor signal during cold starts, so checking for stored freeze-frame data helps determine if the fault is intermittent.
- On vehicles with variable geometry turbochargers, the exhaust pressure control valve may be integrated with the turbo actuator, and a fault in that system can set P0477 alongside boost-related codes.

Can I keep driving with P0477?

You can usually drive the vehicle with this code, but avoid heavy acceleration or towing until it is repaired because the valve may not regulate exhaust pressure correctly, which can lead to reduced power and increased exhaust temperatures. If the engine enters limp mode or you notice severe power loss, have it checked promptly.



Tools that help

- OBD-II scan tool with live data and bidirectional control capability
- Digital multimeter
- Hand vacuum pump
- Basic hand tools (sockets, wrenches, screwdrivers)
- Manufacturer-specific service information for wiring diagrams and specifications

Reading P0477

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

Often seen with

P0299 Turbo/Supercharger Underboost · **P0475** Exhaust Pressure Control Valve · **P0476** Exhaust Pressure Control Valve Range/Performance · **P0478** Exhaust Pressure Control Valve High · **P0479** Exhaust Pressure Control Valve Intermittent

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/p0477/>

