

VOLKSWAGEN · POWERTRAIN

P1477

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1477 · Volkswagen

EVAP Emission Control System LDP Malfunction

P1477 on Volkswagen vehicles indicates that the engine control module has detected a malfunction in the EVAP (Evaporative Emission) system's Leak Detection Pump (LDP) circuit or the pump itself. The LDP is used to pressurize the fuel tank and check for leaks, and this code sets when the pump's electrical circuit or mechanical operation fails to meet expected parameters during the self-test.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Volkswagen specific	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- A slight fuel odor may be present if the LDP is stuck open or the system has a leak.
- Rough idle or hesitation in rare cases if the LDP circuit shares a ground with other sensors.
- Failed emissions test due to the EVAP monitor not completing.
- In some models, a message such as 'Check Fuel Cap' may appear if the system detects a leak.
- Intermittent check engine light if the LDP fault is temperature or vibration sensitive.

Common causes, most likely first

- 1 Faulty Leak Detection Pump (LDP) due to internal diaphragm or motor failure.
- 2 Damaged or corroded wiring in the LDP circuit, including power, ground, or signal wires.
- 3 Failed EVAP canister purge valve stuck open or closed, affecting LDP test conditions.
- 4 Leaking EVAP hose or connection between the LDP and fuel tank.
- 5 Faulty fuel tank pressure sensor sending incorrect readings to the ECM.
- 6 ECM software issue or internal driver fault for the LDP circuit (less common).
- 7 Blocked EVAP canister filter causing excessive resistance during LDP operation.



How to diagnose and fix it

- 1 Perform a visual inspection of all EVAP hoses and connections for cracks, loose clamps, or disconnections.
- 2 Check the LDP electrical connector for corrosion, tightness, and damaged pins; repair as needed.
- 3 Test the LDP circuit with a multimeter: verify power and ground at the pump connector with the key on, and check for continuity to the ECM.
- 4 Command the LDP on with a scan tool and listen for pump operation; if no sound, remove and bench-test the pump.
- 5 Inspect the EVAP canister purge valve for proper operation and replace if stuck.
- 6 Perform a smoke test on the EVAP system to locate any leaks that may be causing the LDP to work harder than expected.
- 7 If all components test good, check for technical service bulletins or ECM software updates before replacing the ECM.

Don't Replace the LDP Before These Checks

- A loose or faulty fuel cap can cause EVAP codes including P1477, so always verify the cap seals properly and the filler neck is clean.
- The LDP is often misdiagnosed as the sole cause; however, a stuck-open purge valve can prevent the LDP from building pressure, setting this code.
- Volkswagen models with the LDP system may also set P1477 if the battery was recently disconnected or the ECM lost power, requiring a drive cycle to re-learn.
- Corrosion in the LDP connector is common on older models due to its location under the rear of the vehicle, exposed to road splash.
- A faulty fuel tank pressure sensor can mimic LDP failure; compare its readings with a known good sensor before condemning the pump.

Can I keep driving with P1477?

The vehicle is generally safe to drive with P1477 because it is an emissions-related fault and does not affect engine performance. However, avoid ignoring the check engine light, as a persistent EVAP leak could worsen and affect fuel economy or emissions compliance.

Tools that help

- OBD-II scan tool with bidirectional control
- Multimeter
- Smoke machine
- Basic hand tools (screwdrivers, pliers, socket set)
- Vacuum pump or hand-held vacuum gauge



Reading P1477

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Volkswagen): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 77** The exact fault within that area.

Often seen with

P0441 EVAP System Incorrect Purge Flow · **P0442** EVAP System Leak Detected (Small) · **P0455** EVAP System Leak Detected (Large) · **P0456** Evaporative Emission System Leak Detected (very small leak) · **P2400** Evaporative Emission System Leak Detection Pump Control Circ

See it working

Watch the animated explainer [How a Wideband Air-Fuel Sensor Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1477/>

