



P1477 · BMW

Leakage Diagnostic Pump Reed Switch Did Not Open

P1477 on BMW vehicles means the engine computer commanded the leak diagnosis pump to run and then stop, but the pump's reed switch stayed closed instead of opening when the pump shut off. The computer uses this switch to confirm the pump is actually cycling, so a switch that will not open leaves the evaporative emissions self-test incomplete and triggers the warning light.

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

Symptoms you may notice

- Check Engine Light illuminated, often with no other noticeable symptoms
- Fuel smell around the rear of the car in some cases
- Slightly rough idle or hesitation if the leak diagnosis pump is running constantly
- A pending P1477 that returns after clearing even when the fuel cap is tight
- Failed emissions inspection because the evaporative system monitor will not complete
- In rare cases, a faint clicking or buzzing from the rear wheel arch area after shutdown

Common causes, most likely first

- 1 Failed reed switch inside the leak diagnosis pump assembly, which is the most common cause on BMW models
- 2 Wiring damage or corrosion at the leak diagnosis pump connector or along the harness to the DME (Digital Motor Electronics engine computer)
- 3 Sticking or contaminated leak diagnosis pump mechanism that keeps the reed switch engaged
- 4 Faulty DME driver circuit that cannot release the pump command, though this is less common
- 5 Blocked or pinched evaporative emissions hose preventing the pump from cycling normally
- 6 Water intrusion into the leak diagnosis pump housing, common on cars driven in wet climates



How to diagnose and fix it

- 1 Read all stored and pending codes with a BMW-capable scan tool and confirm P1477 is the only evaporative emissions code present
- 2 Inspect the leak diagnosis pump connector and harness for corrosion, chafing, or loose pins, and repair any damaged wiring first
- 3 Check the evaporative emissions hoses and canister for blockage or pinching that would prevent the pump from cycling
- 4 Command the leak diagnosis pump on and off with the scan tool while watching reed switch status to confirm the switch stays closed
- 5 Test the reed switch circuit at the pump connector with a multimeter to verify the switch is faulty rather than the wiring
- 6 Replace the leak diagnosis pump assembly if the reed switch is confirmed stuck closed
- 7 Clear the codes, run the evaporative system monitor to completion, and verify P1477 does not return

Reed switch failures that mimic other faults

- A stuck-closed reed switch often sets P1477 without any drivability complaint, so many owners replace the fuel cap or purge valve first and the code returns.
- The leak diagnosis pump on BMW models is mounted near the rear wheel arch where road spray and salt can corrode the connector, so always inspect the plug before condemning the pump.
- A faulty DME driver can hold the pump command on and keep the reed switch closed, so verify the command drops off with a scan tool before replacing the pump.
- This code does not always mean the evaporative system has a leak; it specifically flags the pump's feedback switch, so smoke testing the system is not the first step.
- After replacement, the evaporative system monitor may need several drive cycles with a fuel level between one-quarter and three-quarters to complete and turn off the light.

Can I keep driving with P1477?

The car remains safe to drive because this fault affects only the evaporative emissions self-test and not engine operation. Avoid topping off the fuel tank past the first click and have the fault repaired before your next emissions inspection, since the monitor will not complete while P1477 is stored.

Tools that help

- BMW-capable OBD-II scan tool with bidirectional control
- Digital multimeter
- Trim removal tools
- Wiring diagram for the evaporative emissions circuit
- Flashlight and inspection mirror



Reading P1477

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

Often seen with

P1476 EVAP Emission Control System LDP Malfunction Insufficient Va · **P1476** Resonance Intake Manifold Switchover Valve Y226 · **P1476** Fan Relay High Circuit · **P1476** Fan Relay High Circuit · **P1476** Too Little Secondary Air · **P1476** Leakage Diagnostic Pump Clamped Tube · **P0440** Evaporative Emission Control System Malfunction · **P0442** EVAP System Leak Detected (Small) · **P0455** EVAP System Leak Detected (Large) · **P0456** Evaporative Emission System Leak Detected (very small leak)

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

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

