

GENERIC · POWERTRAIN

P043F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P043F

EVAP System Leak Detection Reference Orifice High Flow

P043F indicates that the engine computer detected an excessively high flow through the reference orifice used during the evaporative emission (EVAP) system leak test. The computer expects a specific pressure drop when it opens the reference orifice, and a faster-than-expected drop signals a problem with the orifice itself or the test circuit.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other symptoms.
- A slight fuel odor may be present if the EVAP system has a related leak.
- In rare cases, rough idle or hesitation if the fault affects purge flow.
- No noticeable change in driveability for most drivers.
- Failed emissions inspection due to the stored code.
- Intermittent warning light if the fault is temperature or vibration sensitive.

Common causes, most likely first

- 1 Clogged or damaged EVAP system reference orifice.
- 2 Faulty EVAP canister purge valve stuck open or leaking.
- 3 Leaking or disconnected EVAP hose or tube.
- 4 Malfunctioning fuel tank pressure sensor giving inaccurate readings.
- 5 Failed EVAP system leak detection pump or module.
- 6 Corroded or damaged wiring to the EVAP system components.
- 7 Engine computer (ECM/PCM) software issue or internal fault.



How to diagnose and fix it

- 1 Inspect all EVAP hoses and connections for cracks, leaks, or disconnections.
- 2 Test the fuel tank pressure sensor for proper voltage and resistance.
- 3 Check the reference orifice for blockage or damage and clean or replace as needed.
- 4 Test the EVAP canister purge valve for proper operation and sealing.
- 5 Verify the EVAP leak detection pump functions correctly and produces the expected pressure.
- 6 Inspect wiring and connectors at the EVAP components for corrosion or damage.
- 7 If all components test good, check for ECM/PCM software updates or internal faults.

Reference Orifice Faults Often Misdiagnosed

- A clogged reference orifice is frequently caused by debris or spider webs, not a failed component.
- The code can be set by a simple loose gas cap that allows unexpected pressure changes during the test.
- Technicians often replace the leak detection pump when the real problem is a cracked hose or faulty purge valve.
- The EVAP system test only runs under specific conditions, so the code may not reappear immediately after clearing.
- A weak battery or charging system issue can cause erratic EVAP test results and set this code.

Can I keep driving with P043F?

The vehicle is safe to drive with P043F because it does not affect engine performance or safety, but avoid topping off the fuel tank and schedule diagnosis soon to prevent a failed emissions test.

Tools that help

- OBD-II scan tool
- Hand vacuum pump
- Digital multimeter
- EVAP system smoke machine
- Basic hand tools

Reading P043F

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



Often seen with

P0440 Evaporative Emission Control System Malfunction · **P0442** EVAP System Leak Detected (Small) · **P0451** Evaporative Emission System Pressure Sensor/Switch Range/Per · **P0455** EVAP System Leak Detected (Large) · **P0456** Evaporative Emission System Leak Detected (very small leak)

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p043f/>

