

GENERIC · POWERTRAIN

P04EA

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P04EA

EVAP System Small Leak Detected - Fuel Tank Side

P04EA indicates that the engine computer has detected a small leak in the evaporative emission control (EVAP) system on the fuel tank side, meaning the leak is located between the fuel tank and the purge valve or fuel cap area. The computer typically runs a leak detection test using the fuel tank pressure sensor and determines that pressure decays slowly, indicating a small escape of fuel vapor.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A faint gasoline odor around the rear of the vehicle or near the fuel filler
- Slight difficulty or hesitation when refueling, such as the pump clicking off early
- In rare cases, a small increase in fuel consumption due to vapor loss
- No drivability issues in most cases, as the fault does not affect engine performance

Common causes, most likely first

- 1 A loose, damaged, or missing fuel filler cap
- 2 A cracked or deteriorated fuel filler neck or seal
- 3 A leaking EVAP hose or connection on the fuel tank side
- 4 A faulty fuel tank pressure sensor giving inaccurate readings
- 5 A stuck-open or leaking purge valve allowing constant vapor flow
- 6 A small crack in the fuel tank itself or in the EVAP canister
- 7 A leaking seal at the fuel pump module or fuel level sending unit



How to diagnose and fix it

- 1 Check that the fuel filler cap is present, tight, and free of cracks or damaged seals; replace if suspect.
- 2 Inspect the fuel filler neck and surrounding area for rust, cracks, or loose connections.
- 3 Perform a visual inspection of all EVAP hoses and lines on the fuel tank side for cracks, chafing, or disconnected fittings.
- 4 Use a smoke machine to introduce smoke into the EVAP system and locate the source of the leak.
- 5 Test the fuel tank pressure sensor with a scan tool to verify it reads correctly under vacuum and pressure.
- 6 Command the purge valve closed and monitor the fuel tank pressure to see if it holds vacuum; replace the valve if it leaks.
- 7 If no external leak is found, inspect the fuel tank and canister for hairline cracks, and replace as necessary.

What a small EVAP leak often hides

- A fuel cap that looks fine can still leak due to a hardened or missing O-ring, so always inspect the seal closely.
- The fuel tank pressure sensor on many vehicles is part of the fuel pump module, and a faulty sensor can mimic a leak without any actual escape of vapor.
- A purge valve that sticks slightly open can cause a small leak code because it allows constant vapor flow that the computer interprets as a leak.
- Temperature changes and fuel level affect EVAP leak detection, so the code may only set under specific conditions such as a cold start after refueling.
- Always clear the code and perform a drive cycle to verify the repair, as some leaks are intermittent and may not reappear immediately.

Can I keep driving with P04EA?

It is generally safe to continue driving with this code, as it does not affect engine operation or safety. However, avoid topping off the fuel tank excessively and have the leak repaired promptly to prevent worsening of the leak and to ensure the vehicle passes emissions testing.

Tools that help

- OBD-II scan tool with EVAP system testing capability
- Smoke machine
- Hand tools for hose and component removal
- Flashlight and mirror for visual inspection



Reading P04EA

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

Often seen with

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) · **P0457** Evaporative Emission System Leak Detected (fuel cap loose/of

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p04ea/>

