



P04EC

EVAP System Large Leak Detected - Fuel Tank Side

P04EC indicates that the engine computer has detected a large leak in the evaporative emissions (EVAP) system on the fuel tank side, meaning fuel vapor is escaping into the atmosphere rather than being captured and burned. The computer typically finds this by pressurizing or vacuum-testing the tank and fuel vapor lines and seeing the pressure or vacuum bleed off faster than a calibrated threshold.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- A faint raw fuel odor around the rear of the vehicle or near the fuel filler
- Slight hesitation or rough idle in rare cases if the leak is very large
- Fuel smell in the cabin after refueling or when the tank is full
- No driveability complaints in most instances, which leads many owners to postpone repair

Common causes, most likely first

- 1 Fuel filler cap not tightened, missing, or with a damaged sealing gasket
- 2 Cracked or disconnected EVAP hose on the fuel tank side, including the filler neck vent line
- 3 Leaking fuel tank pressure sensor or its seal
- 4 Faulty or stuck-open fuel tank vent valve or purge valve on the tank side
- 5 Corroded or cracked fuel tank seam or filler neck
- 6 Damaged EVAP canister or canister vent line near the tank
- 7 Rodent damage to rubber EVAP lines under the vehicle



How to diagnose and fix it

- 1 Inspect the fuel filler cap for a tight seal and replace it if the gasket is worn or missing
- 2 Perform a visual inspection of all EVAP hoses and lines from the tank to the canister, looking for cracks, disconnects, or chew marks
- 3 Use a smoke machine to pressurize the EVAP system and locate the exact leak point
- 4 Check the fuel tank pressure sensor reading with a scan tool while manually applying vacuum to verify sensor accuracy
- 5 Test the fuel tank vent valve and purge valve for proper operation and sealing using a scan tool bidirectional control
- 6 If no external leak is found, remove the fuel tank and inspect the tank seam, filler neck, and internal vent lines for cracks
- 7 Repair or replace the leaking component, clear the codes, and run the EVAP monitor to confirm the repair

What a large tank-side leak really means

- A loose or aftermarket fuel cap is the single most common cause of this code, so always check the cap and its seal before chasing hoses.
- The code can set even when the leak is intermittent, such as a cap that seals only when the tank is full, so a smoke test may need to be repeated under different fuel levels.
- Do not confuse this with a small leak code; P04EC requires a leak equivalent to a large orifice, so a pinhole in a hose is unlikely to trigger it alone.
- A failed fuel tank pressure sensor can mimic a large leak by reporting false pressure loss, so verify sensor live data before replacing tank components.
- Rodents frequently chew the rubber EVAP lines near the tank, especially in vehicles parked outdoors, so inspect those lines carefully even if they look intact from above.

Can I keep driving with P04EC?

You can usually continue driving short distances, but avoid topping off the tank and park away from open flames or ignition sources until the leak is repaired. Prolonged driving with a large EVAP leak can release fuel vapor and may affect emissions compliance, so schedule diagnosis soon.

Tools that help

- OBD-II scan tool with EVAP system bidirectional controls
- Smoke machine for EVAP leak detection
- Hand vacuum pump with gauge
- Fuel cap tester
- Basic hand tools and socket set



Reading P04EC

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

Often seen with

P0442 EVAP System Leak Detected (Small) · **P0450** Evaporative Emission System Pressure Sensor/Switch · **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 [Helicopter Simulator: Take Off, Hover and Land](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p04ec/>

