

GENERIC · POWERTRAIN

P04AE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P04AE

EVAP System Purge Control Valve B Performance/Stuck Open

P04AE indicates that the engine computer has detected a performance problem with the EVAP system's purge control valve B, specifically that the valve is stuck open or not responding as expected. The computer monitors the purge valve's electrical circuit and its effect on fuel tank pressure, and it sets this code when the valve fails to close properly or does not achieve the expected pressure change during a self-test.

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 fuel odor around the vehicle, especially after refueling or when parked
- Rough idle or stumbling, particularly when the engine is cold or at low speed
- Slightly increased fuel consumption due to unintended fuel vapor flow
- Difficulty refueling or a fuel filler nozzle that clicks off repeatedly
- In rare cases, a hissing sound from the engine bay or near the fuel tank

Common causes, most likely first

- 1 Faulty purge control valve B that is mechanically stuck open or has a weak return spring
- 2 Damaged or disconnected vacuum hose between the purge valve and the intake manifold
- 3 Corroded or damaged electrical connector or wiring at the purge valve
- 4 Failed EVAP system pressure sensor sending inaccurate readings to the computer
- 5 Leaking or stuck-open fuel tank vent valve or canister purge line
- 6 Carbon canister saturated with fuel, causing liquid fuel to be drawn into the purge line
- 7 Engine computer software issue or faulty driver circuit inside the computer



How to diagnose and fix it

- 1 Use a scan tool to command the purge valve open and closed while listening for a click and observing fuel tank pressure changes
- 2 Visually inspect the purge valve, its electrical connector, and all vacuum hoses for cracks, disconnections, or signs of damage
- 3 Measure the resistance of the purge valve solenoid with a multimeter and compare it to the manufacturer's specification
- 4 Apply vacuum to the purge valve with a hand pump and verify that it holds vacuum when closed and releases when powered
- 5 Check the EVAP system pressure sensor for accuracy by comparing its reading to a known good gauge or scan tool data
- 6 Inspect the carbon canister for signs of fuel saturation or damage, and replace if necessary
- 7 If all components test good, check for technical service bulletins or software updates for the engine computer

What a stuck-open purge valve really does

- A purge valve stuck open can cause a rough idle because fuel vapor is constantly drawn into the intake manifold, richening the mixture when the engine does not expect it.
- Many technicians replace the purge valve without checking the carbon canister, but a saturated canister can force liquid fuel into the valve and cause repeated failures.
- The code can be set by a faulty EVAP pressure sensor even when the purge valve is working perfectly, so always verify sensor readings before condemning the valve.
- In some vehicles, a stuck-open purge valve will not trigger a noticeable driveability symptom, making the check engine light the only clue.
- A pinched or misrouted vacuum hose can mimic a stuck-open purge valve, so inspect the entire hose route carefully during diagnosis.

Can I keep driving with P04AE?

You can generally continue driving with this code, but avoid hard acceleration and prolonged idling because a stuck-open purge valve can cause rough running and increased emissions. Have the vehicle inspected soon to prevent potential damage to the catalytic converter from an overly rich mixture.

Tools that help

- OBD-II scan tool with bidirectional control
- Handheld vacuum pump
- Digital multimeter
- Basic socket and wrench set
- Flashlight and mirror for visual inspection



Reading P04AE

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
AE	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) · **P0496** Evaporative Emission System High Purge Flow

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p04ae/>

