

GENERIC · POWERTRAIN

P045F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P045F

EGR B Control Stuck Closed

P045F means the engine computer commanded the EGR (exhaust gas recirculation) valve on bank 1 to open, but the valve stayed closed and no exhaust gas flowed into the intake. The computer detected this by watching the EGR position sensor or the change in manifold pressure and airflow that should occur when the valve opens.

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 symptoms besides the warning light
- Slightly rough idle or a lean condition when the valve should be open
- Reduced fuel economy because the engine cannot use exhaust gas to control combustion temperature
- Elevated combustion temperatures that may lead to pinging or knock under load
- Failed emissions test due to high oxides of nitrogen (NOx) levels
- In some vehicles, a slight hesitation or surge during light acceleration

Common causes, most likely first

- 1 Carbon buildup or soot jamming the EGR valve closed
- 2 Failed EGR valve actuator (electric motor or vacuum diaphragm) that cannot move the valve
- 3 Broken or disconnected vacuum supply line to a vacuum-operated EGR valve
- 4 Wiring fault in the EGR valve control circuit, such as an open or shorted wire
- 5 Faulty EGR position sensor that reports the valve as closed when it is actually moving
- 6 Clogged EGR passage or tube preventing flow even when the valve opens
- 7 Engine computer software issue or failed driver circuit inside the PCM (powertrain control module)



How to diagnose and fix it

- 1 Connect a scan tool and command the EGR valve open while watching the position sensor and manifold pressure to confirm the valve does not move.
- 2 Inspect the EGR valve and passages for carbon buildup; clean or replace the valve if it is stuck closed.
- 3 Check the vacuum supply line and vacuum pump output on vacuum-operated systems, repairing any leaks or blockages.
- 4 Measure resistance and voltage on the EGR valve control circuit to rule out wiring faults before replacing parts.
- 5 Test the EGR position sensor with a multimeter to confirm it tracks valve movement accurately.
- 6 If the valve and wiring are good, check for a clogged EGR passage or tube and clear it.
- 7 After repairs, clear the code and perform a drive cycle to verify the EGR monitor completes without resetting the fault.

Why the EGR valve sticks closed

- Carbon deposits are the most common cause of a stuck-closed EGR valve, especially on engines that see a lot of short-trip driving where the valve rarely opens fully.
- A vacuum-operated EGR valve can appear stuck closed simply because a cracked or disconnected vacuum hose is not delivering vacuum to the diaphragm.
- The code does not always mean the valve itself is bad; a failed position sensor or a wiring fault can make a working valve look stuck closed to the computer.
- On some vehicles, a clogged EGR passage in the intake manifold mimics a stuck valve because exhaust gas cannot flow even when the valve opens.
- Replacing the EGR valve without checking the control circuit and vacuum supply often leads to the same code returning shortly after the repair.

Can I keep driving with P045F?

You can usually drive the vehicle with this code, but avoid heavy acceleration and long uphill loads because the engine loses its knock-damping exhaust gas recirculation and may ping or run hotter. Have it diagnosed soon to prevent elevated combustion temperatures from damaging the engine over time.

Tools that help

- OBD-II scan tool with bidirectional control
- Vacuum gauge and hand vacuum pump
- Digital multimeter
- Basic hand tools and socket set
- Carburetor or EGR cleaner and brushes



Reading P045F

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 4** Auxiliary emission controls.
- 5F** The exact fault within that area.

Often seen with

P0401 EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P0403** EGR Circuit Malfunction · **P0404** EGR Circuit Range/Performance · **P045E** EGR B Control Stuck Open

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/p045f/>

