

GENERIC · POWERTRAIN

P042E

OBD-II TROUBLE CODE

P042E

EGR A Control Stuck Open

P042E means the engine computer commanded the exhaust gas recirculation (EGR) valve on bank 1 to close, but the valve stayed open or the system did not respond as expected. The computer detects this by comparing the actual change in intake manifold pressure or mass airflow against the expected change when the EGR valve is commanded closed.

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
- Rough idle or idle surge, especially when the engine is cold
- Engine stumble or hesitation during light acceleration
- Reduced fuel economy due to excessive exhaust gas recirculation
- Occasional engine ping or knock under load because EGR flow is not controlled
- Failed emissions test due to high oxides of nitrogen (NOx) or a stuck-open EGR monitor

Common causes, most likely first

- 1 Carbon buildup on the EGR valve pintle or seat preventing it from closing fully
- 2 Failed EGR valve actuator or internal binding of the valve mechanism
- 3 Damaged or disconnected EGR valve electrical connector or wiring
- 4 Leaking or cracked EGR passage or gasket allowing exhaust gas to bypass the valve
- 5 Faulty differential pressure feedback sensor or mass airflow sensor giving false readings
- 6 Stuck-open EGR vacuum regulator solenoid on vacuum-operated systems
- 7 Engine computer software issue or corrupted adaptive learning values for the EGR system



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the code set conditions and check for related EGR or airflow codes.
- 2 Inspect the EGR valve electrical connector, wiring, and vacuum lines for damage, corrosion, or disconnection.
- 3 Command the EGR valve open and closed with a scan tool while watching manifold pressure or mass airflow response to verify valve movement.
- 4 Remove the EGR valve and inspect the pintle and seat for carbon deposits; clean or replace the valve as needed.
- 5 Check the EGR passages and gaskets for leaks or blockages that could mimic a stuck-open valve.
- 6 Test the EGR vacuum regulator solenoid or differential pressure sensor according to the manufacturer's procedure if the valve itself tests good.
- 7 Clear the codes and perform a relearn or drive cycle to confirm the repair and ensure the monitor runs to completion.

What a stuck-open EGR really does

- A stuck-open EGR valve often causes a rough idle that smooths out at higher RPM, which many drivers mistake for a tune-up issue rather than an EGR fault.
- Carbon buildup is the most common cause on high-mileage engines, but a leaking EGR gasket or cracked passage can set the same code without any valve fault.
- Some vehicles use the EGR valve position sensor to detect stuck-open conditions, so a faulty sensor can trigger P042E even when the valve moves freely.
- A dirty mass airflow sensor can skew the computer's expected EGR flow calculation and set P042E as a false code, so check airflow readings before replacing the valve.
- On vacuum-operated EGR systems, a stuck-open vacuum solenoid or a leaking vacuum reservoir can hold the valve open and set this code.

Can I keep driving with P042E?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration and long trips because a stuck-open EGR valve can cause rough running, poor fuel economy, and increased emissions. If the engine idles very poorly or stalls, stop driving and have it towed.

Tools that help

- OBD-II scan tool with bidirectional control and live data
- Hand vacuum pump with gauge for vacuum-operated EGR systems
- Basic hand tools including wrenches and screwdrivers
- Carburetor or throttle body cleaner and shop rags
- Digital multimeter for electrical checks



Reading P042E

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
2E	The exact fault within that area.

Often seen with

P1404 EGR Flow Adaptation Not Carried Out · **P1404** EGR Control · **P1404** Exhaust Gas Recirculation System Valve 2 · **P1404** IAT B Circuit Malfunction · **P1404** Exhaust Gas Recirculation System Valve 2 · **P1404** Heated Catalyst Current Too High During Heating Bank 2 · **P0400** Exhaust Gas Recirculation Flow Malfunction · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P042F** EGR A Control Stuck Closed

See it working

Watch the animated explainer [How Hydraulic Brakes Work: Pedal to Caliper](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p042e/>

