

GENERIC · POWERTRAIN

P042F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P042F

EGR A Control Stuck Closed

P042F means the powertrain control module commanded the exhaust gas recirculation (EGR) valve open, but the valve did not move or the expected change in airflow was not detected, so the computer flagged the circuit as stuck closed. The PCM typically monitors EGR valve position or the resulting manifold pressure change and sets this code when the response is outside the expected range.

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 idle surge when the engine is cold
- Reduced fuel economy during light-throttle cruising
- Elevated combustion temperatures that may cause spark knock or pinging under load
- Failed emissions test due to high oxides of nitrogen (NOx) readings
- Occasional hesitation or stumble on light acceleration

Common causes, most likely first

- 1 Carbon buildup or soot deposits holding the EGR valve pintle or plunger in the closed position
- 2 Failed EGR valve actuator or stepper motor that no longer moves the valve
- 3 Open or shorted wiring in the EGR valve control circuit, including a damaged connector
- 4 Clogged or restricted EGR passage in the intake manifold or cylinder head
- 5 Faulty manifold absolute pressure (MAP) sensor or mass airflow (MAF) sensor preventing the PCM from verifying EGR flow
- 6 Failed EGR valve position sensor or integrated sensor inside the valve assembly
- 7 Vacuum supply problem on vacuum-operated EGR systems, such as a cracked hose or faulty solenoid



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P042F is the only EGR-related code and note engine conditions when it set
- 2 Inspect the EGR valve connector and wiring for corrosion, chafing, or loose pins, and check vacuum hoses on vacuum-operated systems
- 3 Command the EGR valve open and closed with a scan tool while watching valve position or MAP/MAF response to verify whether the valve actually moves
- 4 Remove the EGR valve and inspect the pintle and seat for carbon deposits; clean the valve and the EGR passage if deposits are found
- 5 Test the EGR valve actuator with a known-good signal or bench test it to confirm the motor or solenoid operates smoothly through its range
- 6 Verify MAP and MAF sensor readings against expected values at idle and during snap-throttle tests, since skewed sensors can mimic a stuck EGR valve
- 7 Replace the EGR valve assembly only after electrical and passage checks pass, then clear codes and complete a drive cycle to confirm the repair

Carbon Is the Usual Suspect Behind P042F

- A large share of P042F cases are fixed by cleaning the EGR valve and passage rather than replacing parts, because carbon deposits physically hold the valve closed.
- A skewed MAP or MAF sensor can set P042F even when the EGR valve moves freely, because the PCM cannot confirm the expected pressure or airflow change.
- On vacuum-operated EGR systems, a cracked vacuum hose or leaking solenoid can keep the valve closed and set this code without any fault in the valve itself.
- The code does not always mean the valve is mechanically stuck; an open control circuit or failed position sensor inside the valve can produce the same stored fault.
- Replacing the EGR valve without clearing a clogged intake passage often leads to a repeat P042F within a few hundred miles.

Can I keep driving with P042F?

The vehicle is generally safe to drive short distances at moderate speeds, but avoid heavy towing or sustained high-load driving because a closed EGR valve raises combustion temperatures and can lead to spark knock or engine damage over time. Have the fault diagnosed promptly, especially if the check engine light is flashing or the engine is pinging.



Tools that help

- OBD-II scan tool with bidirectional EGR control capability
- Digital multimeter for circuit and actuator testing
- Hand vacuum pump for vacuum-operated EGR systems
- Basic hand tools including socket set and screwdrivers
- Carburetor or intake cleaner and soft brushes for carbon removal

Reading P042F

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

Often seen with

P0400 Exhaust Gas Recirculation Flow Malfunction · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P042E** EGR A Control Stuck Open · **P043F** EVAP System Leak Detection Reference Orifice High Flow

See it working

Watch the animated explainer [How a Fuel Injector Works: Pulse Width and Spray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p042f/>

