

GM · POWERTRAIN

P1409

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1409 · GM

EGR Vacuum System Leak

P1409 on a GM vehicle means the powertrain control module (PCM) has detected a leak in the vacuum portion of the exhaust gas recirculation (EGR) system, typically by comparing expected manifold pressure changes against actual readings when the EGR valve is commanded. The PCM commands the EGR valve to open and looks for the corresponding drop in manifold absolute pressure (MAP) or change in oxygen sensor signal; when the expected change does not occur, it flags a vacuum leak.

SYSTEM

Powertrain

CODE TYPE

GM specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or idle surge, especially when the engine is cold
- Slight hesitation or stumble during light acceleration
- Poor fuel economy or increased emissions
- In some cases, a hissing sound from a cracked vacuum line under the hood

Common causes, most likely first

- 1 Cracked, split, or disconnected vacuum hose between the EGR valve and the intake manifold
- 2 Leaking EGR valve diaphragm or failed valve shaft seal
- 3 Failed EGR vacuum solenoid (also called the EGR control solenoid) that cannot hold vacuum
- 4 Leaking intake manifold gasket or throttle body gasket near the EGR port
- 5 Carbon buildup holding the EGR valve partially open or preventing a proper seal
- 6 Damaged or corroded EGR valve electrical connector or wiring
- 7 Faulty MAP sensor or BARO sensor giving inaccurate readings to the PCM



How to diagnose and fix it

- 1 Inspect all vacuum lines connected to the EGR valve and solenoid for cracks, splits, or loose connections; replace any suspect hose.
- 2 Use a hand-held vacuum pump to apply vacuum directly to the EGR valve diaphragm and confirm it holds vacuum and moves the valve smoothly.
- 3 Check the EGR vacuum solenoid by applying vacuum to its ports and verifying it holds and releases vacuum when electrically cycled.
- 4 Inspect the intake manifold and throttle body gaskets around the EGR port for leaks using a smoke machine or carburetor cleaner while watching for idle changes.
- 5 Remove the EGR valve and inspect the pintle and seat for carbon buildup; clean or replace the valve as needed.
- 6 Verify MAP sensor operation with a scan tool by comparing key-on engine-off readings to barometric pressure and checking for a smooth signal during a snap throttle test.
- 7 Clear the code and perform a drive cycle to confirm the repair; if the code returns, re-check vacuum integrity and electrical connections.

Vacuum leaks that fool EGR diagnostics

- A common misdiagnosis is replacing the EGR valve when the actual leak is a cracked vacuum hose hidden behind the engine or under the intake plenum.
- The EGR vacuum solenoid often fails intermittently when hot, so a cold-engine vacuum test may pass while the code sets only after the engine reaches operating temperature.
- Carbon buildup on the EGR valve pintle can mimic a vacuum leak by preventing the valve from closing fully, causing the PCM to see an unexpected manifold pressure change.
- A leaking intake manifold gasket near the EGR port can set P1409 without any visible vacuum hose damage, so a smoke test is more reliable than a visual inspection alone.
- On some GM engines, a faulty MAP sensor can skew the PCM's expected pressure change calculation and trigger P1409 even when the EGR system is mechanically sound.

Can I keep driving with P1409?

You can usually drive the vehicle short distances, but avoid heavy acceleration and long trips until the leak is repaired because a persistent EGR vacuum leak can cause rough running and increased emissions. If the engine idles poorly or stalls, stop driving and have it inspected.



Tools that help

- Hand-held vacuum pump with gauge
- Scan tool with live data capability
- Smoke machine
- Basic hand tools (screwdrivers, pliers, socket set)
- Carburetor cleaner or throttle body cleaner

Reading P1409

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (GM): its meaning depends on the make.
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- 4** Auxiliary emission controls.
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- 09** The exact fault within that area.

Often seen with

P1406 EGR Temperature Sensor Range Performance · **P1406** Turbo Pressure Sensor Range Performance Problem · **P1406** DPFE Sensor Downstream Hose Off Or Plugged · **P1406** EGR Valve Pintle Position Circuit · **P1406** Differential Pressure Feedback Electronic Sensor Circuit Dow · **P1406** EGR Valve Pintle Position Circuit · **P1406** Heated Catalyst Internal Control Module Checksum ROM Error · **P0171** System Too Lean (Bank 1) · **P0401** EGR Flow Insufficient Detected · **P0402** EGR Flow Excessive Detected · **P0404** EGR Circuit Range/Performance

See it working

Watch the animated explainer [How a Car Thermostat Works: Wax Pellet and Cooling Fan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1409/>

