

GM · POWERTRAIN

P1406

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1406 · GM

EGR Valve Pintle Position Circuit

P1406 on GM vehicles means the powertrain control module (PCM) has detected an unexpected voltage reading from the exhaust gas recirculation (EGR) valve pintle position sensor, indicating the valve's pintle is not where the computer commanded it to be. The PCM monitors this sensor to verify the EGR valve is opening and closing correctly for emissions control. When the feedback signal falls outside the expected range for the commanded position, the PCM stores P1406 and may disable EGR operation.

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 stalling after the engine warms up
- Hesitation or stumble during light acceleration
- Reduced fuel economy due to incorrect EGR flow
- Slight increase in engine ping or knock under load
- Failed emissions test due to EGR monitor not completing

Common causes, most likely first

- 1 Carbon buildup on the EGR valve pintle or seat causing the pintle to stick
- 2 Faulty EGR valve pintle position sensor (internal to the valve assembly)
- 3 Damaged or corroded wiring or connector at the EGR valve
- 4 Failed EGR valve motor or solenoid that moves the pintle
- 5 Vacuum supply leak or faulty vacuum regulator feeding the EGR valve
- 6 PCM software calibration issue or internal driver fault (less common)



How to diagnose and fix it

- 1 Inspect the EGR valve connector and wiring for corrosion, chafing, or loose pins; repair as needed
- 2 Remove the EGR valve and clean the pintle and seat with carbon-safe cleaner to restore free movement
- 3 Test the EGR valve pintle position sensor with a scan tool while commanding the valve open and closed to verify smooth feedback voltage
- 4 Check vacuum supply and the vacuum regulator if the valve is vacuum-operated; repair leaks or replace faulty components
- 5 Replace the EGR valve assembly if the pintle is mechanically stuck or the position sensor is faulty
- 6 Clear the code and perform a drive cycle to verify the repair and confirm the EGR monitor completes

Carbon buildup often mimics a failed EGR valve

- Many P1406 codes are set by a carbon-fouled pintle that sticks only when hot, so the valve may test fine when cold and fail after a drive cycle.
- A scan tool that can command the EGR valve is essential; simply checking for voltage at the connector does not confirm the pintle actually moves.
- The pintle position sensor is usually not serviced separately on GM EGR valves, so a faulty sensor means replacing the whole valve assembly.
- A vacuum leak or weak vacuum pump can cause the pintle to not reach the commanded position, setting P1406 even when the valve itself is good.
- After cleaning or replacement, the PCM may need several drive cycles before the EGR monitor runs and the code stays off.

Can I keep driving with P1406?

You can usually drive with P1406, but avoid heavy acceleration and long uphill pulls because the EGR system may be disabled, which can cause engine knock and higher combustion temperatures. Have the fault diagnosed soon to prevent potential damage and to pass emissions testing.

Tools that help

- Scan tool with bidirectional control and live data
- Digital multimeter
- Hand tools (ratchet set, screwdrivers)
- Carbon-safe cleaner and shop rags
- Vacuum gauge (for vacuum-operated EGR systems)



Reading P1406

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 06** 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 · **P0401** EGR Flow Insufficient Detected · **P0404** EGR Circuit Range/Performance · **P0405** EGR Sensor A Circuit Low · **P0406** EGR Sensor A Circuit High

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/gm-p1406/>

