

P042F: EXHAUST GAS RECIRCULATION A CONTROL STUCK CLOSED

OVERVIEW

Severity	:	<div><div>High</div></div>
DIY Difficulty Level	:	<div><div>Intermediate</div></div>
Repair Cost	:	\$250-\$450
Can I Still Drive?	:	Yes

What Does The P042F Code Mean?

If your vehicle has stored a code P042F, it means that the powertrain control module (PCM) has detected a problem with the exhaust gas recirculation (EGR) valve control system.

In the case of the P042F, the valve appears (to the PCM) to be stuck in the closed position. The designation A applies to a particular position or stage of the step-down EGR valve control system, which is explained below.

The EGR system is responsible for allowing the engine to consume a portion of the unburned fuel from the exhaust system. The EGR system is necessary to reduce harmful levels of nitrogen oxide (NOx) created as a side effect of gasoline and diesel engine operation.

The focal point of the EGR system is an electronically controlled (EGR) valve which opens to allow exhaust gases to re-enter the engine intake. The PCM uses input signals from the throttle position sensor (TPS), vehicle speed sensor (VSS), and the crankshaft position sensor (CKP), to determine when conditions are right to open/close the EGR valve.

Vehicles which exhibit this type of code are equipped with a step-down EGR valve. The step-down EGR valve operates in stages according to the degree which the throttle is opened, how much load is placed on the engine, and how fast the vehicle is moving.

In some models, the position of the EGR valve plunger is also monitored by the PCM. If the desired position of the EGR valve (as commanded by the PCM) is different from the actual position, a code P042F will be stored and a malfunction indicator lamp (MIL) may be illuminated. Other vehicles utilize data contrived from the manifold air pressure (MAP) sensor and/or the differential pressure feedback EGR (DPFE) sensor to determine whether the EGR valve is in the desired position (or not). Most vehicles will require multiple ignition cycles (with a failure) before MIL illumination will occur.

What Are The Symptoms Of The P042F Code?

Symptoms of a P042F EGR trouble code may include:

- There will likely be no symptoms exhibited with this code
- Slightly diminished fuel efficiency

What Are The Potential Causes Of The P042F Code?

Causes for this P042F code may include:

- Defective EGR valve
- EGR control solenoid/valve is bad
- Open or shorted wiring/connectors in the EGR control circuit
- Faulty DPFE sensor
- Bad EGR valve position sensor
- PCM malfunction or PCM programming error

How Can You Fix The P042F Code?

A diagnostic scanner, digital volt/ohmmeter, and a reliable vehicle information source are among the tools required to diagnose a code P042F.

Visual inspection of all EGR system related wiring and connectors is an ideal precursor to diagnosing a code P042F. Repair or replace any corroded or burned components as required.

Continue by connecting the scanner to the diagnostic port and retrieving all stored codes and freeze frame data. Write all this down as it will prove helpful if the P042F is an intermittent code. Now, clear the codes and test drive the vehicle to see if the code is reset.

If the code is reset, connect the scanner and observe the data stream. Check the desired EGR position (typically measured in percentage) and actual EGR position as reflected on the data stream display. Within a matter of milliseconds, they should be identical.

The DPFE and MAP sensors should reflect that the EGR valve has opened and/or closed (as desired). If there are MAP sensor or DPFE sensor codes present, they may be related to the P042F and should be treated as such.

If the desired EGR position varies from the actual position, follow manufacturer's recommendations for testing the EGR actuator solenoids with the DVOM. Step down EGR valves may use multiple solenoids to affect the full spectrum of EGR system operation.

If the EGR system for the vehicle in question uses a DPFE sensor, follow manufacturer's recommendations for testing it. Connector pinout charts and vehicle wiring diagrams found in your vehicle information source will aid in testing. Replace defective sensors as required and retest the system.

The DVOM may be used to test individual circuits between the PCM connector and the EGR valve connector. All related controllers must be disconnected from the circuit before testing begins.

- After repairs are performed, allow the PCM to enter readiness mode before assuming they were successful

Reference Sources

[P042F Exhaust Gas Recirculation A Control Stuck Closed](#), OBD-Codes.