

P049E: EXHAUST GAS RECIRCULATION B CONTROL POSITION EXCEEDED LEARNING LIMIT

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Advanced
Repair Cost	:	\$250-\$450
Can I Still Drive?	:	Yes

What Does The P049E Code Mean?

If your OBD-II equipped vehicle has stored a code P049E, it means that the powertrain control module (PCM) has detected a malfunction in a certain control position of the step-down exhaust gas recirculation (EGR) valve. B refers to a specific position of the EGR step-down valve.

The step-down EGR valve system is designed to deliver a portion of spent exhaust gases back to the intake manifold, in measured increments, so that it can be burned a second time.

This process is critical in the reduction of nitrous oxide (NOx) particles that are released into the atmosphere as a side effect of internal combustion and diesel engine operation. NOx is suspected of being a contributing factor in ozone depletion from exhaust emissions. NOx emissions are regulated by federal mandate in North American vehicles.

The learning limit is a programmed degree which reflects the minimum and maximum parameters to which a certain position (B) of the step-down EGR valve is able to adapt. If the PCM detects that the actual position of the EGR valve is beyond these parameters, a code P049E will be stored and a malfunction indicator lamp (MIL) may be illuminated. In some vehicle applications, multiple ignition cycles (with a failure) are required for MIL illumination.

What Are The Symptoms Of The P049E Code?

Symptoms of a P049E trouble code may include:

- There will likely be no symptoms associated with this code
- Slightly diminished fuel efficiency
- Possible drivability issues

What Are The Potential Causes Of The P049E Code?

Causes for this P049E EGR code may include:

- Defective EGR valve
- Faulty EGR sensor
- Bad PCM or a PCM programming error

How Can You Fix The P049E Code?

I would typically begin my diagnosis by locating the vehicle diagnostic connector and retrieving all stored codes and related data. I would write all this information down in case I need it as my diagnosis unfolds. Next, I would test drive the vehicle to see if the code is immediately reset.

By searching vehicle technical service bulletins (TSB) for entries which match the vehicle, codes stored, and symptoms exhibited, you may discover the solution to your (potentially hard fought) diagnosis. Since TSB entries are derived from thousands of repair specialists, they often contain very helpful details.

If the P049E is stored after clearing the codes, I would gain access to a diagnostic scanner, a digital volt/ohmmeter (DVOM), and a reliable vehicle information source.

Now, I would perform a visual inspection of the EGR valve and all related wiring and connectors. Focus on wiring harnesses which are routed near hot exhaust components and the jagged edges often associated with exhaust shields.

NOTE: Disconnect all related controllers from the circuit before testing resistance/continuity with the DVOM.

Using wiring diagrams and connector pin out charts, located in your vehicle information source, test each individual EGR valve connector circuit (with the DVOM) for the appropriate signal. It may be necessary to manually activate the EGR system using the scanner as most systems require a set rate of speed before automatic activation can occur. Circuits which do not conform to manufacturer's specifications will need to be followed back to the source (usually the PCM connector) and retested. If the output signal from the PCM is not detected, suspect a defective PCM or PCM programming error. In lieu of that, repair or replace open/shorted circuits as required.

Use the DVOM to test the actual EGR valve and integrated sensors if all circuits are in compliance with manufacturer's specifications. Your vehicle information source will once again yield information for testing this part. If the step-down EGR valve and all (integrated) sensors do not align with manufacturer's specifications, suspect that it is defective.

This code should be exhibited only in vehicles equipped with a step-down EGR valve.

Severity Description

Since the code P049E pertains to the EGR system, it should not be considered severe.

Reference Sources

[P049E EGR B Control Position Exceeded Learning Limit](#), OBD-Codes.