P069D: CYLINDER #10 GLOW PLUG CIRCUIT HIGH

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$100-$300**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P069D Code Mean?

When a code P069D is set, it means that the powertrain control module (PCM) has detected a high voltage situation within the glow plug control circuit for cylinder #10. Consult a reliable vehicle service resource to determine the location of said cylinder in the code description for your particular year, make, model, and engine configuration.

Diesel engines use high compression instead of spark to initiate piston movement. Since there is no spark involved, cylinder temperature must be increased to maximize compression. Glow plugs are used in each cylinder to accomplish this increase.

Often confused with spark plugs, a glow plug for each individual cylinder is threaded into the cylinder head. Battery voltage is applied to the glow plug element via a glow plug timer (sometimes called a glow plug controller or glow plug module) and/or the PCM. When voltage is correctly applied to the glow plug, it will literally glow red hot and aid in increasing cylinder temperature. Once cylinder temperature reaches the desired level, voltage is restricted by the control unit and the glow plug returns to its normal state.

If the PCM detects a level of voltage for the cylinder #10 glow plug control circuit that is higher than expected, a code P069D will be stored and a malfunction indicator lamp (MIL) may be illuminated.

What Are The Symptoms Of The P069D Code?

Symptoms of a P069D trouble code may include:

- Excessive black smoke from exhaust
- Engine drivability issues
- Delayed engine start up
- Reduced fuel efficiency
- Engine misfire codes may be stored

What Are The Potential Causes Of The P069D Code?

Causes for this code may include:

- Bad glow plug/s
- Open or shorted glow plug control circuit
- Loose or faulty glow plug connector
- Defective glow plug timer

How Can You Fix The P069D Code?

A diagnostic scanner, a reliable source of vehicle information, and a digital volt/ohmmeter (DVOM) will be required in order to arrive at an accurate diagnosis of a code P069D. Use the vehicle information source to search for applicable technical service bulletins (TSB). If you locate a TSB that matches the vehicle make and model, symptoms exhibited, and the code stored, it will help you to arrive at a diagnosis.

You may also need to obtain diagnostic flow charts, wiring diagrams, connector face views, connector pin out charts, component locations, and component testing procedures/specifications from the vehicle information source. All this information will be needed to correctly diagnose the stored code P069D.

Step 1

After performing a careful visual inspection of all glow plug and glow plug control wiring and connectors, connect the diagnostic scanner to the vehicle diagnostic port. Now, retrieve all stored codes and freeze frame data and record it for later (just in case you need it).

Next, I would test drive the vehicle to see if the code P069D is reset. Drive until one of two things happens: Either the PCM enters readiness mode or the code is reset. If the code is reset, continue with the diagnosis. If it is not, you are dealing with an intermittent condition which may have to worsen before an accurate diagnosis may be achieved.

Step 2

Here is a tip that the service manual will not give you. A sure way to test glow plugs is to remove them and apply battery voltage. If the glow plug glows bright red, it is good. If the glow fails to heat

up, and you want to take time to test it with your DVOM, you will likely discover that it does not meet manufacturer's specifications for resistance. Be careful not to burn yourself or start a fire when performing this test.

Step 3

If the glow plugs appear to be working properly, use the scanner to activate the glow plug timer and test for battery voltage (and a ground) at the glow plug connector (use the DVOM). If no voltage is present, test the power supply for the glow plug timer or glow plug controller.

Test all related fuses and relays as recommended by the manufacturer. As a rule, I have found it best to test system fuses and fusible links with the circuit loaded. The fuse for a circuit which is not loaded may appear to be functional (when it is not) and lead you down the wrong diagnostic path.

Step 3

If all fuses and relays appear functional, use the DVOM to test output voltage at the glow plug timer or PCM (wherever it originates). If voltage is detected at the glow plug timer or PCM, suspect that you have an open or shorted circuit. You may seek out the cause of the discrepancy or simply replace the circuit.

Additional Notes:

- It is sometimes thought that a P069D cannot be caused by a defective glow plug because this is a control circuit code. Don't be deceived; a bad glow plug may cause a variation in the control circuit that results in just such a code
- Attempting to diagnose the wrong cylinder is more common than you might think. Save yourself a big headache and make sure that you are addressing the correct cylinder before beginning your diagnosis

Severity Description

Any glow plug related code will likely be accompanied by drivability issues. A stored code P069D should be addressed with urgency.

Reference Sources

P069D Cylinder #10 Glow Plug Circuit High, OBD-Codes.