P06C5: CYLINDER 1 GLOW PLUG INCORRECT

OVERVIEW

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

What Does The P06C5 Code Mean?

This is a generic powertrain diagnostic trouble code (DTC) and typically applies to OBD-II vehicles. That may include but is not limited to vehicles from VW, Audi, Ford, , Ram, Chevy, etc.

Additionally, this code seems to be found mainly on Volkswagen vehicles. Although generic, the exact repair steps may vary depending on year, make, model and powertrain configuration.

When a code P06C5 is stored, it means that the powertrain control module (PCM) has detected an incorrect degree of resistance in the glow plug circuit for cylinder #1. Consult a source of reliable vehicle information to determine the location of the #1 cylinder for your year/make/model/powertrain 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 it’s normal state.

If the PCM detects an unexpected resistance with the cylinder #1 glow plug, a code P06C5 will be stored and a malfunction indicator lamp (MIL) may be illuminated.

What Are The Symptoms Of The P06C5 Code?

Symptoms of a P06C5 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 P06C5 Code?

Causes for this P06C5 fuel injector code may include:

- Failed or incorrect glow plug(s)
- Open or shorted glow plug circuit
- Loose or faulty glow plug connector
- Defective glow plug timer

How Can You Fix The P06C5 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 P06C5. 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 P06C5.

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).

Step 2

Next, I would test drive the vehicle to see if the code P06C5 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 3

Be careful not to burn yourself or start a fire when performing this test. My usual method 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, it is defective. In the case of the stored code P06C5, you will want to take time to test it with your DVOM. If it does not comply with manufacturer's specifications for resistance, consider it defective.

Step 4

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 5

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.

- Attempting to diagnose the wrong cylinder is more common than you might think. Save yourself a 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 P06C5 should be addressed with urgency.

Reference Sources

P06C5 Cylinder 1 Glow Plug Incorrect, OBD-Codes.