



Is a faulty EGR causing my fuel consumption to go up?

Hello Paul, a mechanic has told me my car's EGR valve might be clogged. I do not fully understand what it does, but my engine feels rough at times, and fuel consumption has increased. What role does the EGR valve play, and how does it affect performance if it is not working properly? **Sarah Namugenyi**

Hello Sarah, the EGR valve stands for Exhaust Gas Recirculation valve. It is designed to reduce engine temperatures and emissions by recirculating small amounts of exhaust gas back into the engine's intake system for re-burning.

When engines burn the fuel-air mixture during combustion, they produce very high temperatures that result in harmful gases known as nitrogen oxides (NOx). The EGR system lowers combustion temperatures by mixing regulated amounts of exhaust gas with the fresh air entering the engine.

If the EGR valve is in good working condition, the engine will run more smoothly, produce lower emissions, deliver ample power, and maintain good fuel efficiency.

However, over time, an EGR valve can become clogged or faulty due to the build-up of carbon soot inside it. This issue is common in diesel engines as well as in petrol engines that are frequently driven in slow traffic for short commutes.

A faulty or clogged EGR valve may become stuck either in the open or closed position. When the EGR is stuck open, it can cause rough idling, engine hesitation, poor acceleration, and reduced fuel economy. You might notice black

exhaust smoke, and in extreme cases, the engine could stall during idling or low-speed driving. A stuck-open EGR allows too much exhaust gas into the engine, distorting the air-fuel mixture and causing these issues.

On the other hand, when the EGR is stuck closed, it leads to engine knocking or pinging. This condition raises combustion temperatures and significantly increases fuel consumption and exhaust emissions.

In severe cases, the engine may overheat because exhaust gas is not being recirculated, resulting in higher combustion temperatures.

Several telltale signs may indicate a faulty EGR valve. These include an engine that does not run smoothly, reduced fuel economy, increased exhaust smoke during acceleration, decreased engine power, and jerking while idling or driving.

In more severe cases, you might experience difficulty starting the engine and see the check engine warning light illuminated on your dashboard.

Ignoring a bad EGR valve for too long

can lead to engine damage. A faulty EGR can cause clogging of the intake manifolds and may wear out the turbo due to excessive soot build-up. An overheating engine can also damage costly components in the combustion chamber, such as piston rings and bearings. In newer diesel engines equipped with emission control systems, a faulty EGR can lead to problems with the Diesel Particulate Filter (DPF).

There is some debate over whether cleaning the EGR valve is better than replacing it. In many cases, cleaning can resolve the issue, especially if the EGR valve is only clogged with carbon deposits and not damaged. The cleaning process involves dismantling the valve to assess carbon buildup, allowing for a decision on whether to clean the valve and its passages. If the EGR motor or actuator has failed, a replacement will be necessary instead.

Generally, cleaning the EGR can restore smooth engine operation and significantly reduce fuel consumption.

A good starting point for EGR repair is to have your mechanic perform a computer diagnosis to check for any fault codes related to the EGR system. It is also important to inspect the intake system for soot build-up and confirm whether the EGR valve is stuck open or closed.

Additionally, other components, such as the Manifold Absolute Pressure sensor, Positive Crankcase Ventilation valve, and vacuum hoses, should be checked, as they can cause symptoms similar to those caused by the EGR.

NOTE
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FOR A COMPUTER
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