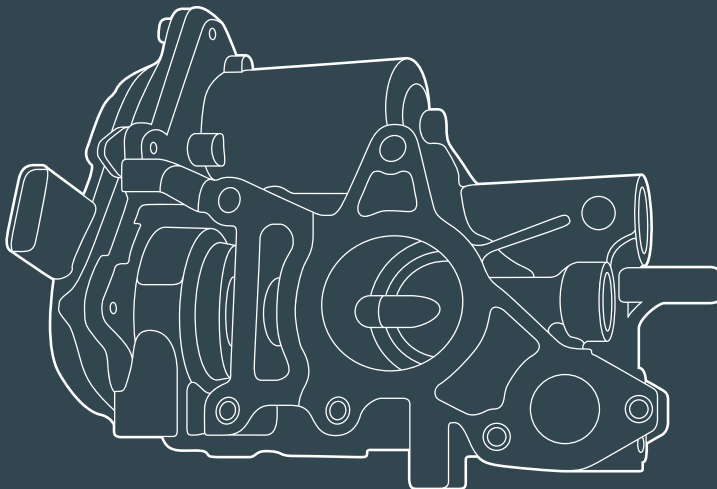


TROUBLESHOOTING GUIDELINES - EGR VALVE



INSTALLATION STEPS

Be careful with ESD sensitive valves.	Be aware! All EGR-valves packed in pink plastic are sensitive for static electricity (ESD sensitive). Read the special instruction for handling ESD sensitive devices!
Check that the new valve matches with the old.	Check the new EGR-valve against the old EGR-valve and compare them carefully. Check the OE number from the old EGR-valve match or crosses direct to the new.
Find the root cause of contamination and clean the pipes if needed.	Inspect and clean the connecting pipes. If significant contamination is found, the pipes must be dismantled for proper cleaning, or changed. It is important to determine the reason for the contamination, and repair it. If the reason is not found, the EGR-valve will fail soon due to contamination.
Always use the new gaskets..	Always use the new gaskets supplied with the EGR-valve.
If needed, synchronise the valve with the ECU.	Make sure, if the ECU of the specific vehicle needs to be synchronised with the new EGR-valve. Your diagnostic-equipment normally have this function.
Some smoke may appear after the installation.	A while after installation of the new EGR-valve, the vehicle might show some smoke and soot in the exhaust. The reason for that is, that the engine is adapting to the new valve.

POSSIBLE ERRORS

Problem	Cause	How to identify	Why the problem occurs	Solution	Preventive actions
<p>If the engine light still comes on in the dash after changing the EGR valve, the engine is possible not running well.</p> <p>Error codes: 403 to 408.</p>	The valve has to be learned by the cars ECU using a suitable test device.	The valve is opening, but the engine light is still on.	The signal from the valve has to be adapted to the ECU of the car.	Use suitable tester to delete error codes, and adapt the new valve to the car. Some cars need OE tester to adapt.	Start by adapting the valve, before starting the car..
<p>If the engine light still comes on in the dash after changing the EGR pneumatic valve, the engine is possible not running well.</p> <p>Error codes: 400 and 401.</p>	Insufficient vacuum to operate the valve.	Check with a handpump, if the vacuum is present at the valve.	Pressure transducer is not ok, or the vacuum line is damaged or bent.	Replace vacuum line or pressure transducer as needed.	Before changing a valve check if the vacuum is present, operate the valve with a hand pump, and check if the vacuum is maintained.
<p>If the engine light still comes on in the dash after changing the EGR valve, the engine is possible not running well.</p> <p>Error codes: 400 and 401.</p>	Passage to or from the valve is clogged by soot.	Visually check, if there is passage, or check if exhaust gas is able to pass through the pipes.	Over time excessive amount of soot can build up, or problems in injection or driving patterns can cause a buildup of soot.	Cleaning.	Always clean passages, when replacing an EGR valve. Check that the injection system is performing well, and the DPF should not be clogged.
<p>If the engine light still comes on in the dash after changing the EGR valve, the engine is possibly not running well.</p> <p>Error codes: 401 and 402.</p>	Air mass sensor defective.	Check with either diagnostic tester or multimeter, that the airmass sensor is working properly.	Airmass sensors are often soiled or worn out.	Replace air mass sensor.	Before changing an EGR valve always check that air mass sensor is working.
<p>If the engine light comes on in the dash after changing the EGR valve, and after driving for a while, the engine is possibly not running well.</p> <p>Error codes: 401 and 402.</p>	An excessive buildup of soot.	The valve and surrounding pipes are clogged by excessive amounts of soot. The valve is either not opening or closing completely.	Faulty injection system, excessive oil leakage from turbo or crank ventilation causing massive soiling of the valve and intake. This can also be caused by driving pattern – too many short trips.	Locate the faulty components and replace them. Clean pipes and intake. Replace the valve.	In some cases, additives for cleaning injectors are used on a regular basis will increase the lifetime of the injectors.
<p>The car starts losing coolant after change of EGR module with cooler.</p>	EGR Cooler is leaking.	Coolant is consumed by the engine, or in case of a massive leak, a cylinder can during an inactive period be flooded with coolant, causing engine damage.	The auxiliary water pump is worn out, so the cooler is not sufficiently cooled, and will be damaged due to too high temperature/pressure	Replace auxiliary water pump and EGR cooler.	When replacing an EGR module, replace the auxiliary water pump, or at least check the function of the pump, before the replacement.