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# **Gaured EGR module** technical bulletin

**The EGR module that forms part of the so-called "Diesel gate" scandal causes many problems. The VAG group decided at the time to disengage the EGR valve software in order to improve the performance of their engines. That gave the cars better driving characteristics, but a disadvantage of this decision was that the engines no longer met emission standards.**

**The mandatory software update demanded by governments allows the EGR valve to function again. An EGR system as applied in the automotive industry is meant to reduce harmful NOx emissions. NOx reduction is achieved by lowering the oxygen concentration in the combustion chamber and by heat absorption.**

The process of lowering NOx emissions was initiated with the introduction of the Euro 4 standard in 2005. The requirements of this code were met by requiring the installation of both a DPF filter and a high-pressure EGR system. Because this system is mounted in front of the DPF filter, contamination becomes the biggest enemy, which results in all the expected inconveniences. The Euro-6 standard came out in 2013 but was preceded by the development of the low-pressure EGR system. Contrary to the original high-pressure version, this system was located behind the DPF filter. In the latter case, the exhaust gases are cooler and cleaner. Contamination while using this system is caused by aging and clogging of the DPF filter, which can cause damage to the turbo and the EGR system. The EGR system of the VAG EA189 engine series is designed in such a way that many problems arise. Because the VAG group does not offer any solution for the constantly failing EGR system, various modifications have been implemented using Gaured's reverse engineering concept:

- Use of better-quality materials for the various parts, which greatly increases the service life.
- Modified cooler, resulting in a great improvement of the functioning of the part.
- Modified gasket, resulting in a great improvement of the heat transfer.
- Product finish has been greatly improved.

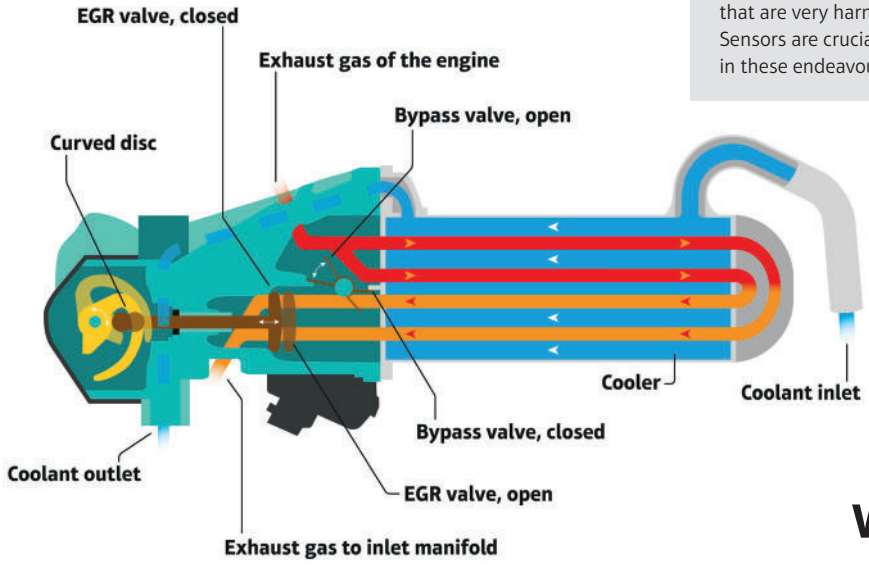
In order to guarantee quality, the Gaured EGR modules are tested several times during the production process and tested again prior to delivery in the Netherlands.

Tests include a cooling water leak test using a certified leak tester, and tests on the functioning of the valve mechanism and the valve position sensor using specially developed test equipment.

**In addition to Gaured's product quality principles, the correct mounting of the EGR module is considered just as important. We would like to stress that some important points need to be taken into consideration whilst diagnosing and repairing an automobile engine:**

- Our advice is not to unmount the cooler from the throttle body in order to facilitate the assembly of the EGR module. The gasket which is present is for single use only, and re-mounting the cooler is very difficult due to the position of the EGR module on the engine.
- It is important to preclude exhaust manifold leakage as well as to insure that the inlet and exhaust pipes of the EGR module are installed leak-tight, as leakage of hot air may cause damage.
- Cooling water leakage in the engine may be caused by a defective oil cooler.
- After a certain amount of time the EGR valve may jam, this is almost always caused by external contamination. It is important to trace and repair the real cause of the jam; for example, it could be a malfunctioning DPF filter.

Worldwide, there are more than 1.2 billion cars on the road. By having consideration for both people and the environment we can quickly make a large difference. We take this responsibility together.
Switching off the EGR system results in exhaust emissions that are very harmful to both people and the environment. Sensors are crucial to this process. We can only be successful in these endeavours by delivering a quality product.

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