

NISSENS EGR VALVE TEST from idea to turnkey solution

Søren Ellegård, Test Engineer, Nissens: *"We have used DSE as a partner to deliver a complete turnkey test system for performance testing and lifetime testing of parts to automotive application. From idea to design specifications to installation and also aftersales support, we have been very satisfied with the project process. Especially the open dialogue, the inputs and solution proposals that DSE has presented to us. Together we have found a solution that is very satisfying and give value for money."*

About Nissens:

Nissens is a leading global manufacturer and system provider of engine cooling and air conditioning products for the international automotive aftermarket and customized cooling components, systems and modules to the renewable energy and industrial segments.

The application:

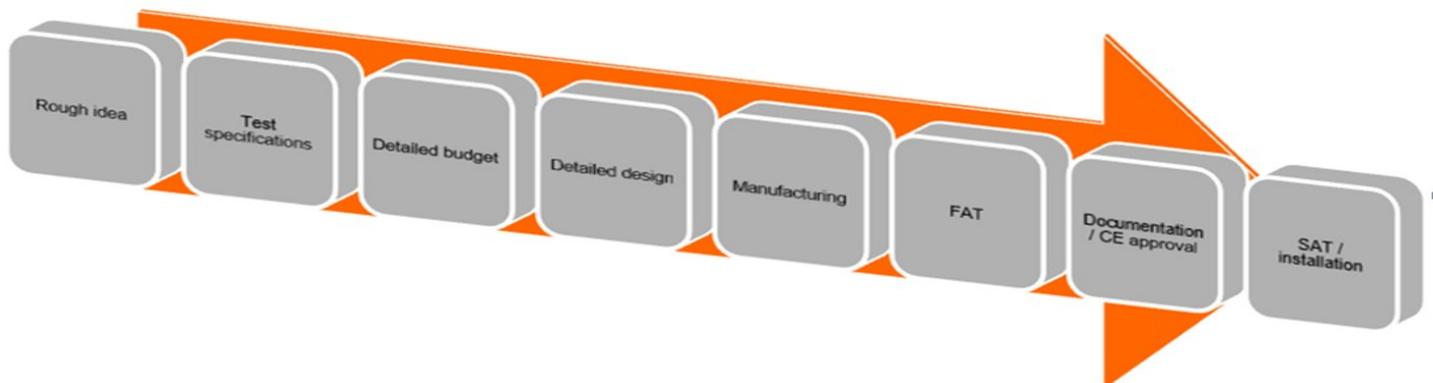
The highest-grade, industry acknowledged materials and comprehensive product testing is applied to Nissens Exhaust Gas Recirculation (EGR) valves to ensure the component's long, reliable operation in extreme conditions, such as heat of combustion and exhaust gases flows. Nissens were in demand for a lifetime and a performance test over many millions of EGR operations.

The process:

An analysis of Nissens demands was performed together with DSE. Ideas, nice-to-have and need-to-have was evaluated in joint sessions with participations of experts from Nissens and DSE as an effective and thorough way to make the optimal test specifications. Especially the customized user interface and data logging was analysed carefully in order to give best value for money.

This initial process with ideas, and also input from different stakeholders at Nissens was vital to find the best solution. Based on this, DSE presented Nissens to a complete turnkey solution, including economics and budget. The turnkey solution was based on standard modules with long term stability and also very flexible modules with various settings for test conditions and presentation/read-out of data results. The presentation of the turnkey solution was reviewed together with Nissens in order to optimize features vs budget.

An overview of the main processes/milestones:



The result:

The final result for Nissens was a modular, scalable and very flexible testsystem, that performs independent, parallel long time test's. The hardware/instrumentation was based on standard components, so it will be easy to expand the capacity and also do support and maintenance. The core instrumentation was NI cDAQ controllers and LabVIEW. And an H-bridge was used to control the EGR valve. DSE also delivered the LabVIEW source code, CE certification, and documentation for the system. During the process Nissens was able to focus on core business, by partnering up with DSE as a flexible externally resource with expertise knowledge.