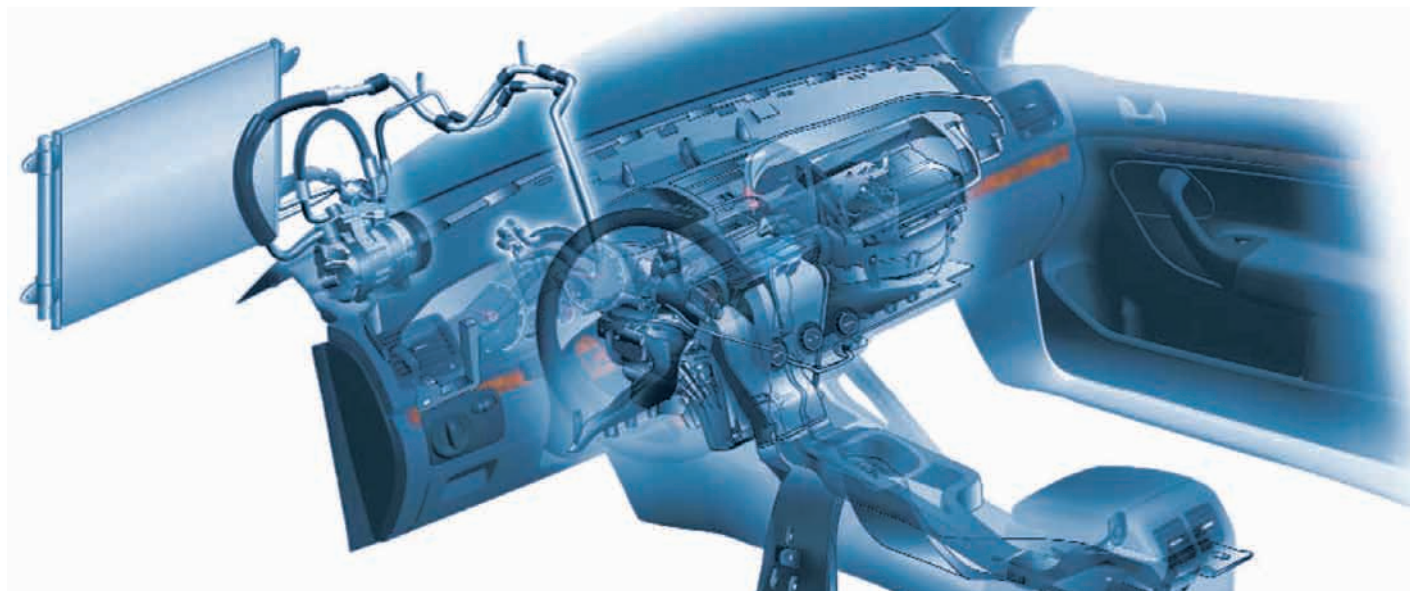


Heating and Air-Conditioning Testing I

Passenger Compartment Air Conditioning



Ever higher demands are being placed on vehicle comfort. This is pushing up the amount of time and money invested in developing air-conditioners at new-vehicle and product-update level. Although the amount of heat emitted by consumption-optimized engines is falling all the time, adequate heat control in the vehicle is a major aspect to be targeted in development activities. The aim is also to minimize the energy consumption of modern air-conditioning systems without reducing their cooling performance.

At IAV, all components in vehicle air-conditioning are developed and constantly optimized under one roof using the company's own experience and innovative methods in close cooperation between the CAD, FEM Calculation, Model Construction and Testing departments. We have a wide range of testing facilities for laying out entire air-conditioning systems and/or testing individual components.

Let us have your development brief and we will provide you with a solution covering all aspects of design, simulation and testing. Take advantage of our many years of experience and the innovative technologies we have available.

IAV is...

... your expert partner when it comes to developing entire vehicle air-conditioning systems to the point of mass-production maturity. Our activities encompass all system components, such as heaters/air-conditioners, condensers, compressors, air ducts and vents.

To remain competitive on the automobile market, a sharper focus is being placed on matters of comfort - in addition to purely technical innovations, such as those for improving performance or reducing consumption.

Most car owners understand comfort to mean climate comfort. In the compact class, for instance, there has been a clear trend over recent years toward purchasing vehicles with enhanced climate comfort.

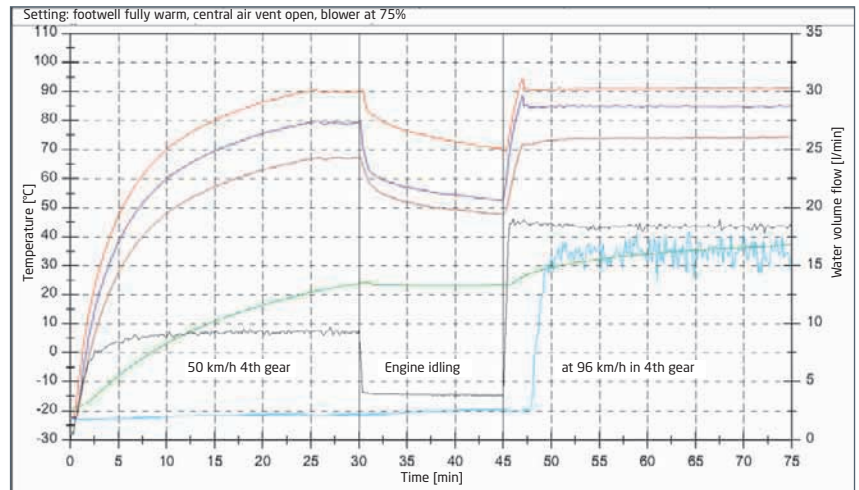


Record of flow visualization



Teamwork is a matter of course for IAV's engineers

VDA Heating Rate



- Heat exchanger in
- Heat exchanger out
- Water volume
- Tm passenger compartment
- Footwell vent, medium value
- Cooler outlet

Remark:
Heat-up to VDA cycle
Cooling chamber,
roller dynamometer

Mobile Measurement Recording Systems

A mobile data logger is used for recording values measured in the vehicle on test drives and during climate chamber tests. This system can also be used for recording values measured on components on test benches, including measurements taken under extreme conditions from -40 °C to +85 °C. Readings can be displayed online as well as stored for later evaluation or visualization of test results.

Flow Visualization

A laser system for flow visualization provides the capability of mapping free air flow patterns both in and on the vehicle. This system is used, for example, for visualizing the cone-shaped flow pattern of outlet vents, as well as for flows in ducts and housings.

The laser system permits exact determination of the direction and velocity of air flows. Combining the results with the vehicle co-ordinate measuring system permits clear assessment of flow patterns in and on vehicles.