



## MediaInfo

Forschungsvereinigung Verbrennungskraftmaschinen e.V.  
FVV | Research Association for Combustion Engines

**Petra Tutsch** | Communications & Media Relations  
T +49 69 6603 1457 | tutsch@fvv-net.de | www.fvv-net.de

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### **High Pressure in Aachen: New FVV Advanced Centrifugal Compressor Test Rig Placed into Operation at RWTH Aachen University**

**The start of operation of the FVV Centrifugal Compressor Test Rig on 5th April 2016 at the RWTH Aachen University marks a technological milestone in German centrifugal compressor research. This ultra-modern installation enables industry and science to successfully continue their 45 years lasting co-operation under the umbrella of the Research Association on Combustion Engines (FVV).**

**Frankfurt/Main.** // The power of two megawatts together with its outstanding technical features makes the new FVV test rig one of the most effective centrifugal compressor testing and research installations in Europe. It was taken into operation now in the Institute of Jet Propulsion and Turbomachinery (IST) at RWTH Aachen University. "The test rig is an excellent example of the successful cooperation between industry and science", said Professor Dr Peter Jeschke, Director of IST. The experts from RWTH Aachen University and from the turbomachinery industry have been jointly developing and constructing the installation in the past five years under the umbrella of the Research Association for Combustion Engines (FVV). The research operation in the three-million-euro investment can start now. The German Research Foundation (DFG) in addition to the project partners contributed significantly to project funding.

"With this new test rig we are well positioned for the next 20 years of intensive research", affirmed Dr Karl-Heinz Rhone, ABB Turbo Systems AG and coordinator of the FVV Centrifugal Compressor Working Group. The installation is able to cover the entire range of industrial applications. The currently built transonic compressor stage allows an increase in the inlet pressure by a factor of seven, the test system is flexible and modularly expandable. "Since 1968 we have been running every year a centrifugal compressor project in the FVV", summed Dr Rhone. The focus of future research studies is on optimising transonic centrifugal compressor stages in terms of lower noise emissions and greater efficiency.

"This is genuine application-oriented fundamental research", highlighted Dr Thomas Kathöfer, Chief Executive of the German Federation of Industrial Research Associations "Otto von Guericke" eV, commonly known as AiF. The AiF, on behalf of the Federal Ministry for Economic Affairs and Energy (BMWi) and with research funds from the federal government, supports through its member associations innovation projects in the field of industrial collective research (IGF). "The pre-competitive (IGF) research

community is characterised by an efficient and broad transfer of research results into the interested companies and provides through its practical approach a unique training environment for young researchers", emphasised Dietmar Goericke, Managing Director of FVV. Currently four scientists are working on their PhD theses in the context of centrifugal compressor test rig projects.

The applications of centrifugal compressors are extremely diverse. Their most popular field of use are turbochargers in passenger cars. They ensure that the energy of the engine exhaust is used for compressing the combustion air and thus increases the engine power. Because of this efficiency-enhancing effect turbochargers have become indispensable for many other combustion engines – such as marine propulsion engines, for example, installed in container ships that carry about 95 percent of world trade. Another very broad and important field of application are industrial compressors in the oil and gas industry.

## Images



1 and 2 | Prof. Dr.-Ing. Peter Jeschke demonstrates the new test rig at the Institute of Jet Propulsion and Turbomachinery (IST), RWTH Aachen University  
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3 | On the Control Platform (from left to right): Prof. Dr.-Ing. Peter Jeschke, Director IST, Prof. Dr.-Ing. Ernst M. Schmachtenberg, Rector RWTH, and Dr.-Ing. Thomas Kathöfer, Chief Executive AiF  
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## About FVV

FVV | The Research Association for Combustion Engines is a globally unique network of companies, research & technology performers (RTD) and funding bodies. Manufacturers of automotive engines, industrial engines and turbomachinery as well as their suppliers and service providers work together with universities and other research establishments on cutting-edge technologies. The aim is to make engines and turbines cleaner, more efficient and sustainable – for the benefit of society, industry and the environment.

Combustion engines facilitate individual mobility, transportation, energy supply and industrial added value. The innovative power of the industry and its economic success make a significant contribution to social prosperity. As a non-profit organisation, the FVV supports the development of its members - small, medium and large companies - and the promotion of young scientists through pre-competitive industrial collective research.

The FVV is a member of the German Federation of Industrial Research Associations (Arbeitsgemeinschaft industrieller Forschungsvereinigungen - AiF), the leading national organisation for applied research and development for SMEs. It has invested more than 420 million euros in 1,200 research projects since it was founded in 1956.

More information at [www.fvv-net.de](http://www.fvv-net.de)