

Hot Gas Tests

In-house Hot Gas Test Center • Turn-key Hot Gas Test Benches



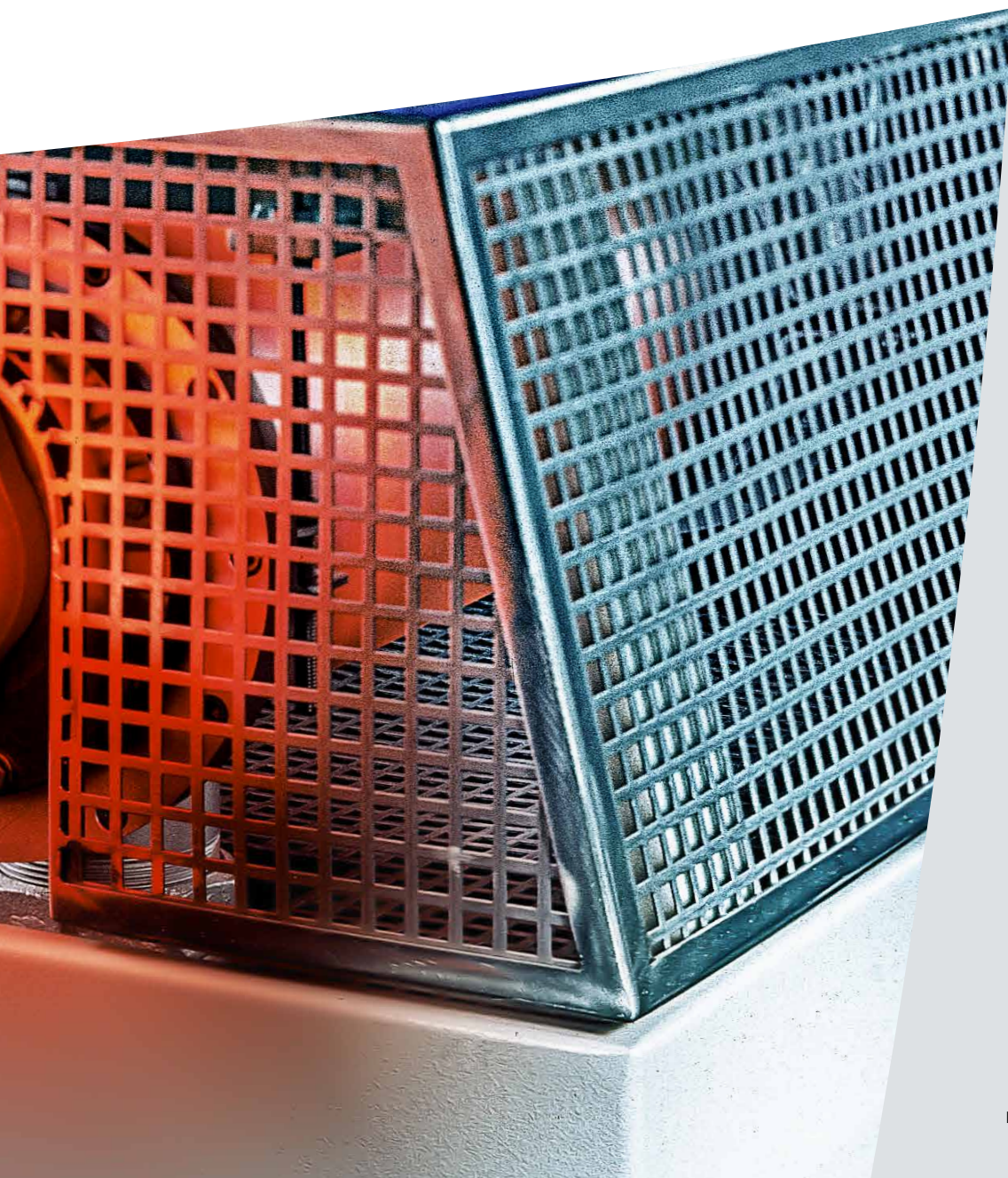
Hot Gas Tests

Turn Key Hot Gas Test Bench for Thermal Testing of Exhaust Components

Excellent services in hot gas testing combined with the necessary engineering and equipment – that is ATESTEO division CALSIM. Renowned car manufacturers and suppliers trust in our test benches and independent testing results. Thanks to the adjustable state-of-the-art features of our test benches, our own testing software, and the high level of expertise of our long-standing employees, we can vouch for our results.



ATESTEO is the leading specialist for drivetrain testing combined with automotive product validation and drivetrain testing related engineering & equipment. We are among the top partners in the automotive industry and automotive suppliers internationally. With the high professional expertise of the employees in operational testing and pre/post-processing, transmissions and products are reliably verified in custom tests. ATESTEO is everywhere that drivetrain development takes place in the automotive industry. More than 150 test benches in Germany and China as well as offices in the US and Japan make a smooth solving of measurement, testing as well as analytical problems possible at any time.



In-house Hot Gas Test Center

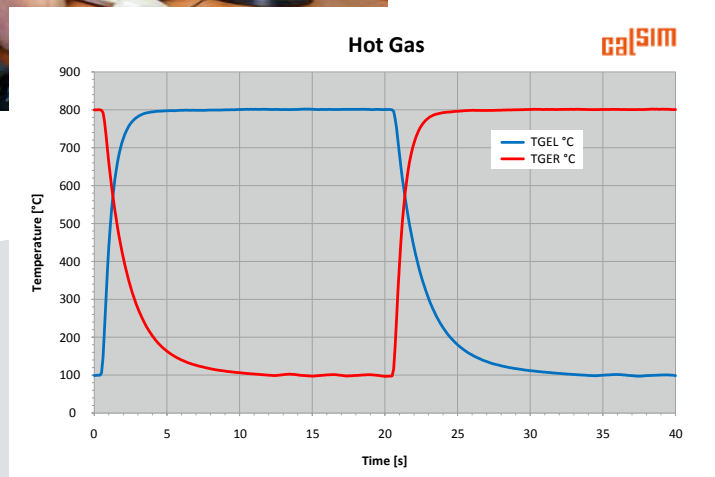
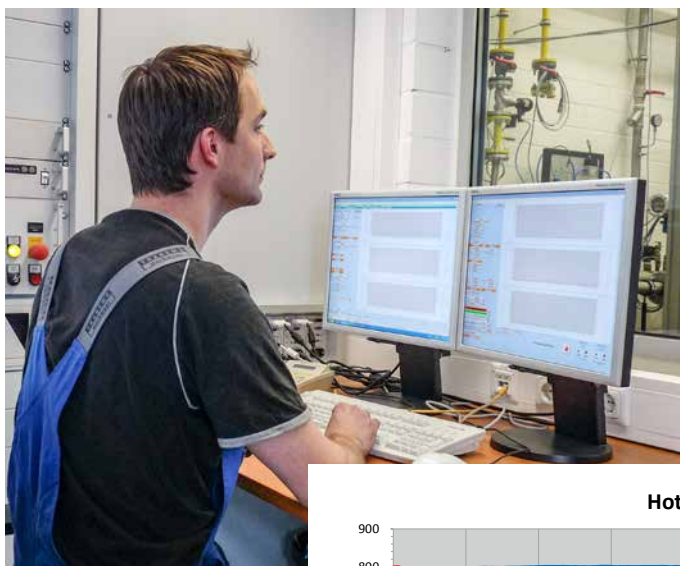
For the thermal testing of components or complete exhaust systems seven fully automated hot gas test benches are available. The modular set-up enables the conception of arrangements for durability tests as well as for complex test requirements.

For the testing of EGR coolers controlled cooling circuits are installed. Furthermore a Clausius-Rankine circuit for testing of WHR components can be added. Demineralized water, ethanol or special fluids are used as work fluid. All test benches are designed to cover the range from passenger cars to commercial vehicles, up to 800 kW heating power, up to 1,300°C hot gas temperature, up to 4,000 kg/h hot gas mass flow, up to 6 bar hot gas pressure.



Processing of Orders

After assignment and receipt of the specimens the test bench will be set up ready for operation in close cooperation with the contractor. Following the successful start-up an exemplary cycle is measured and the customer releases the start of the test run. Supervision is guaranteed 24 hours a day by shift-operation. During the entire test duration the relevant data are communicated.



Technical Data of Seven Test Benches

Burner power	20 up to 800 kW
Mass flow hot gas	40 up to 4,000 kg/h
Temperature hot gas burner	250 up to 1,300°C
Mass flow coolant	up to 15 kg/s
Pressure capability	up to 6 bar(rel)
Fuel	natural gas, propane, diesel/heating oil
Operation	24/7

Turn-key Hot Gas Test Benches

The plc controlled Hot Gas Generator F1 produces hot gas for technical test purposes. In particular, the thermal test of components of vehicle exhaust system lines can be carried out time- and energy-saving and environmentally friendly. The modular design allows the execution of durability tests up to challenging tasks like turbocharger tests.





Height adjustable hot gas outlet



Integrated natural gas compressor.

Working Principle

Hot gas is generated by combustion of fuel (e.g. natural gas, propane, diesel or heating oil) and air in the combustion chamber. The desired output temperature is adjusted by admixing cold air into the combustion chamber.

Options

- Computer aided test bench automation and data acquisition
- Gas mass flow measuring and control
- Thermal shock operation
- Interface for connection to superior automation system (e.g. CAN, Profibus, Modbus TCP)
- Design and assembly of compressor systems in cooperation with well known partners
- Natural gas compressor

Technical Data

	DISPLAYED BURNER	OPTIONAL
Height of hot gas outlet	540 mm	upon agreement
Burner power	10 to 400 kW	10 to 1,000 kW
Temperature	up to 1,300 °C	up to 1,300 °C
Temperature gradient	up to 200 K/s	up to 200 K/s
Mass flow rate	50 to 1,500 kg/h	up to 4,000 kg/h
Hot gas pressure	up to 3 bar (rel)	up to 8 bar (rel)
Fuel consumption	approx. 1 m ³ (STP) natural gas /10 kWh	approx. 0.4 m ³ (STP) propane/10 kWh approx. 1 l heating oil EL/10 kWh
Dimensions (LxWxH)	ca. 1,500 mm x 1,230 mm x 1,970 mm	special configurations possible
Power range	40:1	50:1



Excellence in drivetrain testing

This brochure has given you an overview of our in-house hot gas test center and turn-key hot gas test benches. If you have any questions, feel free to give us a call at +49 2404 9870-160 or write an email to jochen.markant@atesteo.com. Your personal ATESTEO contact partner will be happy to help you.

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