

Innovative emission control for commercial vehicles**Development and test centre for engines and exhaust gas treatment**

- **Dynamometers and test benches for engines and components**
- **State-of-the-art emission technology**
- **Development partner of engine, car and machine manufacturers**

The development of engines for cars, trucks and mobile machines, such as those used in agriculture or construction, is currently determined as much by traditional variables like performance, driveability, durability and low fuel consumption, as it is by the need to minimise emissions.

In 2000 Emitec, the global market leader in the field of catalytic converters and diesel particulate filters and a development partner of engine, car and machine manufacturers, built a new production plant in Hörselberg (**fig. 1**) near Eisenach. The site includes a state-of-the-art development and test centre, which has been continually extended and upgraded in response to increasing requirements arising from worldwide changes in emissions legislation and new areas of application, such as commercial vehicles and, more recently, mobile machines.

Emitec's development and test centre is equipped with the latest highly dynamic engine test benches that cover the entire performance spectrum from small passenger cars to large commercial vehicles and non-road engines with up to 600 kW of power and 400 Nm of torque. The centre also has a chassis dynamometer for cars and transporters and a chassis dynamometer for heavy-duty trucks. A number of the test benches have cold chambers to reproduce arctic conditions for testing and acceptance requirements.

The test benches are fitted with the latest emission measurement technology for petrol and diesel engines and are able to detect even the smallest pollutant concentrations specified in current and future emissions legislation. Besides regulated components, such as carbon monoxide (CO), unburned hydrocarbons (HC) and nitrogen oxides (NO_x), the systems also measure particulate emissions. In addition to gravimetric measurements, the sampling and exhaust analyzer equipment to measure particle numbers according to the PMP method, which will become mandatory in future, has already been put in place. Other technologies include additional measuring and analysis systems for secondary emissions components and for system development, e.g. multi-component FTIR gas analysers that can be used to good effect in the application of exhaust gas treatment based on the SCR process (selective catalytic reduction).

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The new chassis dynamometer for trucks (**fig. 2,3**) enables Emitec's engineers to record emissions on the entire vehicle during driving and to optimise the exhaust gas treatment. The dynamometer is designed for engines with up to 600 kW of power and can also be used to test trucks with two powered axles. The maximum test speed is 160 km/h. The entire dynamometer technology is designed to meet current and anticipated future requirements and guidelines for the heavy-duty sector.

Emitec has worked together with its customers on setting global standards for the implementation of suitable development tools to ensure that the competitive advantage the company gained from 'zero errors in the field' can be transferred to new developments and new areas of application.

The durability of Metalit[®] catalysts under actual operating conditions is a top priority.



fig. 1



fig. 2



fig. 3

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