

Aluminum pistons for truck diesel engines with high loads

STUTT GART, September 2006 – The demands placed on commercial vehicle engine components are high. Depending on the application, peak cylinder pressures ranging from 180 to 230 bar are common. MAHLE has developed a cooled aluminum ring carrier piston, which is recommended for the medium heavy-duty range with peak cylinder pressures around 200 bar.

Combustion optimization opens new perspectives

The new showpiece is made from the high temperature-resistant “MAHLE 174+” aluminum alloy. The use of a cooled ring carrier further extends the service life. On a piston of this type, for instance, we were able to lower the bowl edge temperatures by 30°C. In practice, a decrease in temperature of 10°C means doubling the service life! The piston proved itself in endurance testing with peak cylinder pressures of more than 220 bar. The oil consumption, blow-by and appearance of the pistons were excellent, and the dimensions all remained within production tolerance.

MAHLE developed aluminum pistons with cooled ring carriers for passenger car diesel engines as early as 1997. They are now being used by the millions. The comprehensive experience gained in this field was used for the development of the pistons for commercial vehicles.

The MAHLE Group ranges internationally among the top 3 system suppliers for piston systems, cylinder components, valve train systems, air management systems and liquid management systems. With its unique systems competency in the field of the combustion engine and engine peripherals, MAHLE is a globally leading development partner for the automotive and engine

industry. All established manufacturers of combustion engines are customers of MAHLE.

With above-average enthusiasm for performance, precision, perfection and unique innovation, MAHLE enhances the development of vehicle and engine technique and keeps setting benchmarks – for more than 80 years.

The company is locally present in all important markets of the world. Approximately 37,500 employees are engaged in 80 production locations and in seven research and development centers. More than 2,000 development engineers and technicians worldwide are working on trend-setting concepts, products and systems for the development of the combustion engine.

In 2006, the MAHLE Group expects a turnover of approximately 4.3 billion EUR and is therefore one of the 30 largest suppliers of the automotive industry worldwide.

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