

MAHLE at IAA Cars 2017: product highlights

- Piston rings and liquid management module for lower emissions
- Heart of air conditioning system for electric vehicles: new e-compressors
- World's first air conditioning system with environmentally friendly refrigerant CO₂
- CareMetix[®] cabin air filter eliminates unpleasant odors

Stuttgart, September 12, 2017 – Clean air, energy efficiency, driving pleasure: these are the issues that MAHLE is committed to in its product developments. The highlights presented at IAA Cars 2017 represent the company's investment in these three aspects. Trade show visitors will have the chance to experience these product innovations at the MAHLE stand C40 in Hall 8.0.

Piston rings for lower emissions

To reduce oil ash and particulate emissions in combustion engines, MAHLE is presenting a new generation of oil control rings: U-flex piston rings. If oil enters the combustion chamber of a gasoline engine, oil ash and particulate emissions are produced. With U-flex piston rings, MAHLE lowers particulate emissions and oil ash by up to 30 percent. The number and mass of particles decreases as a result, and the particulate filter generates less counter pressure—reducing CO₂ emissions over the vehicle's lifetime.

Liquid management module: up to two percent less CO₂

A further innovation at IAA Cars 2017 is the MAHLE liquid management module, a combination of electric coolant pump for 12 or 48 volts and cooling circuit control. The benefits of this module are short warm-up phases for combustion engine cold starts, rapid control of coolant flows, and control of several circuits at different temperature levels for different components using just

one pump. The module allows CO₂ savings of up to two percent, with minimal package requirements. The module can also be used in electric vehicles. The advantages here are likewise a simpler systems architecture and greater efficiency.

E-compressors for different power classes

With the newly developed e-compressors, MAHLE is also a full-line supplier in air conditioning systems for electric vehicles. The electric compressor is the heart of the air conditioning system, which MAHLE has developed in both 400- and 800-volt versions—for diverse power classes and a wide array of applications.

First R744 air conditioning system worldwide: the natural and environmentally friendly CO₂ refrigerant

Environmental compatibility is essential in air conditioning systems too, as MAHLE demonstrates in its world first, the R744 air conditioning system. R744 is a one hundred percent natural, climate-neutral, and environmentally friendly refrigerant. As the thermodynamic characteristics of R744 are fundamentally different from the chemical alternatives used to date, MAHLE has completely redeveloped the refrigerant circuit for R744.

Complete protection for the cabin

More than 100,000 liters of air are swept into the cabin every hour when a vehicle is in operation. The new CareMetix[®] cabin air filter from MAHLE has five layers to protect against solid matter and gas particles from the ambient air, while also reliably eliminating odors. In the process, CareMetix[®] keeps all stresses to the respiratory tracts of all passengers to a new minimum. The CareMetix[®] demonstrator will give visitors to the MAHLE stand a chance to experience the filter's superb performance first-hand.

About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry as well as a pioneer for the mobility of the future. The MAHLE Group is committed to making transportation more efficient, more environmentally friendly, and more comfortable by continuously optimizing the combustion engine, driving forward the use of alternative fuels, and laying the foundation for the worldwide introduction of e-mobility. The group's product portfolio addresses all the crucial issues relating to the powertrain and air conditioning technology—both for drives with combustion engines and for e-mobility. MAHLE products are fitted in at least every second vehicle worldwide. Components and systems from MAHLE are also used off the road—in stationary applications, for mobile machinery, rail transport, as well as marine applications.

In 2016, the group generated sales of approximately EUR 12.3 billion with about 77,000 employees and is represented in 34 countries with 170 production locations. At 15 major development centers in Germany, Great Britain, Luxembourg, Spain, Slovenia, the USA, Brazil, Japan, China, and India, 6,000 development engineers and technicians are working on innovative solutions for the mobility of the future.

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