

Press Release

Stuttgart, July 19, 2023

MAHLE positions itself as system champion for e-mobility

- Systems expertise is a success factor in electrification
- “Perfect motor”: MAHLE combines advantages of its SCT and MCT electric motors in new technology kit for electric motors
- New integrated thermal management module reduces system complexity and can enable up to 20% more cruising range
- E-HEALTH Charge: new MAHLE Aftermarket product for simple and fast battery diagnostics in electric vehicles
- MAHLE serves global markets with an open approach to technology: focus on electrification and thermal management as well as green combustion engines

“MAHLE will position itself as the system champion in e-mobility,” said Arnd Franz, Chairman of the MAHLE Management Board and CEO, during a Tech Day in the run-up to the IAA Mobility in Munich in September. Systems expertise is a crucial success factor in electrification, Franz noted at the event held at Hydrogen Test Center in Stuttgart, which is owned by the Group. This is because the interaction of the individual components in electric drives is much more complex than in internal combustion engines. MAHLE presented a new technology kit for electric motors that combines the advantages of the benchmark SCT and MCT electric motors. The “perfect motor” combines permanently high peak power, contactless and thus wear-free power transmission, the elimination of rare earths, and the highest efficiency. In addition, MAHLE has developed a new thermal management module that brings together essential thermal management components. This reduces installation space, development effort and costs and makes the complete system significantly more efficient: Up to 20 percent more cruising range is possible—the battery needs to be charged less often. MAHLE will present both products to a broad audience for the first time at the IAA Mobility. Other topics at the trade fair will include components for green combustion engines. As a global partner to automobile manufacturers, the Stuttgart-based technology group focuses on the needs of the global markets with an open approach to technology. Electrification and thermal management as well as highly efficient, sustainable internal combustion engines are the strategic focus here.

“Electrification is the topic of the future for MAHLE,” Franz said. Battery electric vehicles offer MAHLE a sales potential almost three times higher than vehicles with combustion engines. In this area, the Group is focusing on electric drives and intelligent charging. The aim is to increase cruising range and performance, as well as to advance fast-charging capability and charging convenience.

In the past two years, MAHLE introduced two highly innovative electric motors: the MCT (Magnet-free Contactless Transmitter), which operates contactless and without rare earths, and the endurance champion SCT (Superior Continuous Torque) electric motor. Now, for the first time, the Group is combining the characteristics of the two concepts in a technology kit. “With this unique construction kit for electric motors, we can offer our customers customized solutions,” Franz said.

In terms of charging infrastructure, MAHLE is focusing on wireless charging in addition to wired solutions for long-term parkers (MAHLE chargeBIG) – a convenient and promising alternative for e-vehicles. Together with SIEMENS, MAHLE is developing a complete system comprising infrastructure and automotive engineering in order to set standards for inductive charging systems. During Tech Day, the automotive supplier unveiled a new automated positioning system for this charging technology, in which the vehicle detects the induction surface in the ground and provides positioning assistance to the driver.

The Group is also working on innovative products for independent workshops in the service and spare parts business. The latest example is a new vehicle- and manufacturer-independent battery diagnostic solution for electric vehicles, which MAHLE will launch in the current year. E-HEALTH Charge combines charging and diagnostics and provides reliable information about the “health” of the high-voltage battery. The measurement takes less than 15 minutes.

Efficient thermal management is what makes efficient e-mobility possible in the first place. Heating and cooling in vehicles is an essential technology field for electrification and a core business of MAHLE. “MAHLE has excellent expertise in both areas-electrification and thermal management. This enables thermal systems solutions for battery electric vehicles, hybrids and conventionally driven vehicles,” Franz said.

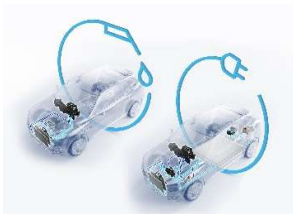
In the case of the e-car, key end customer acceptance factors depend on thermal management: Service life of the battery, cruising range of the e-car, performance of the drive system and fast-charging capability. This significantly increases the complexity of the system. To reduce this complexity again while increasing efficiency, MAHLE has developed a new thermal management module. It combines, for example, a heat exchanger, coolant pumps, condenser, chiller, sensors and valves in one unit. This reduces installation space, development effort and costs. At the same time, the complete system becomes significantly more efficient: Up to 20 percent more cruising range can be achieved with the MAHLE

module in a system network with a heat pump compared to a pure electric heater architecture. The higher cooling performance also improves fast charging capability.

For combustion engines, MAHLE remains a reliable supplier to its customers as long as there is demand on the global markets. The Group is using its expertise in combustion engines to pave the way for sustainable fuels in the engine side. For example, hydrogen engines are a quick way to decarbonize propulsion, especially for heavy-duty commercial vehicles and off-highway applications. MAHLE recently received the first series order from DEUTZ for components to be used in stationary engines. Other applications are planned.

The IAA Mobility will take place in Munich from September 4 (press day) to September 10, 2023. MAHLE will present its technologies at the exhibition center (Summit) in Hall A2 and in the Testing Area in Hall C2.

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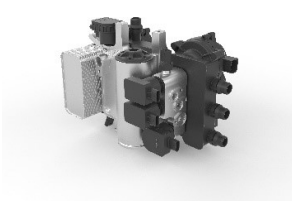
MAHLE masters the increasing complexity of thermal management in electric vehicles thanks to its distinct understanding of systems.



With the new technology kit for electric motors, MAHLE is combining the advantages of its benchmark products SCT and MCT electric motors for the first time.



For the first time, MAHLE presented a positioning system for inductive charging.



The MAHLE thermal management module enables up to 20 percent more cruising range, less installation space, and lower systems costs.



Hydrogen engine on the test bench: MAHLE is using its expertise in combustion engines to clear the way for sustainable fuels in the engine side.



Battery diagnostic solution for electric vehicles: E-HEALTH Charge combines charging and diagnostics and provides reliable information about the "health" of the high-voltage battery.

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About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry with customers in both passenger car and commercial vehicle sectors. Founded in 1920, the technology group is working on the climate-neutral mobility of tomorrow, with a focus on the strategic areas of e-mobility and thermal management as well as further technology fields to reduce CO₂ emissions, such as fuel cells or highly efficient, clean combustion engines that also run on synthetic fuels or hydrogen. Today, one in every two vehicles globally is equipped with MAHLE components.

MAHLE generated sales of more than EUR 12 billion in 2022. The company is represented with around 72,000 employees at 152 production locations and 12 major research and development centers in 30 countries. (Last revised: 12/31/2022)

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