

**MAHLE oil management modules ensure maximum flexibility in the design of electric vehicles**

- Integrated design for high performance with low package constraints
- New development makes weight saving, decreased complexity, and advantageous acoustic behavior possible

Stuttgart/Germany, May 22, 2019 – To meet the growing demands regarding oil management in electric vehicles with an oil-cooled powertrain, MAHLE has developed a new oil management module. The unit comprises a filter, electric oil pumps, and a thermostat. The MAHLE oil management module enables vehicle manufacturers to deal with the increasing requirements associated with the development of high-performance electric drives.

When MAHLE’s new oil management module was being developed, the main priority was to guarantee all the functions necessary for direct-cooled powertrains. These include cooling and filtering as well as oil supply. It is important to ensure minimal pressure losses within the system as well as a very lightweight design with good noise behavior and low package constraints. The reduced interfaces to the powertrain also mean less assembly effort, fewer mounting materials, and lower assembly times and costs.

“Our new oil management module is leading the way in powertrain design for electric vehicles. The technologies we have used are proven and suitable for large-scale production. Our approach of bringing together all the functions in one component makes our oil management module exceptional. We allow for a lot of design flexibility and combine what is technically feasible with what makes economic sense,” explains Dr. Jörg Stratmann, Chairman of the Management Board and CEO of MAHLE.

The patented pressure-side filtration concept also offers a high degree of flexibility in the selection of the type, size, and power rating of the pump. This significantly reduces the risk of foaming and cavitation on the suction side of the oil pump. Thus, high volume flows can be pumped, and even low flows can be controlled efficiently and according to demand.

MAHLE's new oil management module will support the trend of increasing output and the accompanying rise in cooling performance required as well as meet demands for maximum efficiency.

#### **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 2018, the group generated sales of approximately EUR 12.6 billion with more than 79,000 employees and is represented in more than 30 countries with 160 production locations. At 16 major research and development centers in Germany, Great Britain, Luxembourg, Spain, Slovenia, the USA, Brazil, Japan, China, and

India, more than 6,100 development engineers and technicians are working on innovative solutions for the mobility of the future.

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