

**MAHLE expands cooperation with Scuderia Ferrari**

- Development and supply of engine components
- From motorsport to series production

Stuttgart, March 15, 2016 – MAHLE is expanding its cooperation with Scuderia Ferrari in Formula 1 with a long-term partnership agreement that includes the development and supply of crucial engine components.

“We consider MAHLE an important partner in the ongoing development of our powertrains. We appreciate not only their high level of technological expertise, but also their exceptional reliability,” explains James Allison, Technical Director at Scuderia Ferrari. The cooperation scope includes the optimization of the crank mechanism and the development of high-performance materials. “Our company’s commitment to motorsport has a decades-long tradition. Many developments have contributed to series vehicle engines being more powerful and at the same time more economical,” emphasizes Wolf-Henning Scheider, Chairman of the MAHLE Management Board and CEO.

For this project, MAHLE is developing and manufacturing high-strength forged pistons and optimizing their aluminum alloys and protective reinforcements, for example. Added to the list are friction-optimized piston rings and piston pins made of extremely resilient steel, as well as cylinder coatings in the engine housing that reduce friction and are resistant to wear. “The new generation of hybridized, turbocharged V6 engines presents very specific challenges,” according to Fred Türk, Vice President of MAHLE Motorsports.

The development activities for Ferrari also include innovative combustion processes. For the first time, MAHLE is using a patented solution in this connection that leads to a significant

increase in efficiency. The new lean burn combustion process MAHLE Jet Ignition achieves this with a special surface ignition. Higher power output is thus generated for applications in motorsport. But MAHLE will also develop the process for series vehicles, as with the help of this technology efficiency levels can be achieved that are otherwise found only in diesel engines.

This example demonstrates how motorsport continues to be a technology driver. “The extreme requirements in these vehicles are the starting point for many innovative solutions that are also used in series production at a later stage,” emphasizes Türk. Commitment to motorsport has therefore been part of the overall MAHLE strategy for decades. The latest example is the steel piston, which helped to claim victory last year in the Le Mans long-distance race. They are now being installed in the new 1.5- and 1.6-liter diesel engines from Renault, which fulfill the Euro 6 standard. MAHLE has been active in various motorsport series for many decades. Altogether, over 300 engineers and developers in the business segment of Engineering Services, Motorsports, and Special Applications are working on new solutions that will subsequently be implemented in MAHLE series production plants.

### **About MAHLE**

MAHLE is a leading international supplier to the automotive industry. With its products for combustion engines and their peripherals as well as solutions for electric vehicles, the group addresses all the crucial issues related to the powertrain and air conditioning technology—from engine systems and components to filtration to thermal management. MAHLE products are fitted in every second vehicle worldwide. MAHLE components and systems are also used off the road—in stationary applications, for mobile machinery, as well in railroad, marine, and aerospace applications.

In 2015, the group generated sales of EUR 11.5 billion (provisional figures) with around 75,000 employees (as at December 31, 2015). Today, MAHLE is represented in over 30 countries with 170

production locations. At 15 major development locations in Germany, Great Britain, Luxembourg, Slovenia, the USA, Brazil, Japan, China, and India, around 6,000 development engineers and technicians are working on innovative solutions.

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