

22 March 2018

Forward-looking order in China

Market breakthrough for new gasoline engine pistons

KS Kolbenschmidt, a subsidiary of Rheinmetall Automotive AG, has just been awarded its first contract for pistons featuring the latest Liteks 4 technology. The order has a lifetime value of over €47 million.

The customer is a joint venture between a major international automaker and a leading group of companies in China.

The components are destined for a new 4-cylinder gas engine with 1.5-liter displacement and an output of almost 150 kilowatts. Production scheduled to start in autumn 2021. The lightweight pistons will be manufactured at the newly built piston plant in Chongqing ("local for local"), which belongs to the Group's Chinese joint venture company Kolbenschmidt Huayu Piston Co. (KSHP). Previously known as Kolbenschmidt Shanghai Pistons, it was set up in 1997. Construction of the plant was completed at the close of last year. In China, KSHP holds a leading position in the market for car engine pistons and has boosted its output by over fivefold during the past decade. Located in the megacity of Chongqing, the plant features ultra-modern technologies and production equipment.

The piston rings are sourced from Kolbenschmidt's alliance partner Riken, and will be shipped out to the OEM fully assembled. Production of the piston rings will take place at the Kolbenschmidt/Riken joint venture plant in Wuhan. The alliance partners joined forces to optimize the complete integrated assembly, which comprises the piston, piston rings and piston pin. Perfectly harmonized, the system now produces less friction, which in turn reduces consumption and harmful emissions.

This met the OEM's requirement for very low-weight, low-friction pistons. Another criterion for award of the order was the robust technical solution offered by KS Kolbenschmidt in an attractive overall package.

Latest-generation pistons help protect the environment

KS Kolbenschmidt first introduced its Liteks lightweight pistons back in 2006. In the meantime, these very lightweight, heavy-duty pistons have been continuously enhanced to meet the changing needs of the market. More than 100 million have now been installed in vehicles all over the world. In the fourth – and latest – generation of Liteks pistons, the use of a high-strength, high-temperature alloy and smaller wall thicknesses have resulted in a roughly ten percent reduction in weight. Optimization of the basic piston structure made this possible. The new generation

performs particularly well when it comes to friction reduction. Tests carried out on Kolbenschmidt's own test bench under full-load conditions confirmed an improvement of up to 28 percent. The latest generation of Liteks pistons thus meets the current, very exacting environmental protection requirements regarding reduced fuel consumption and CO₂ emissions.