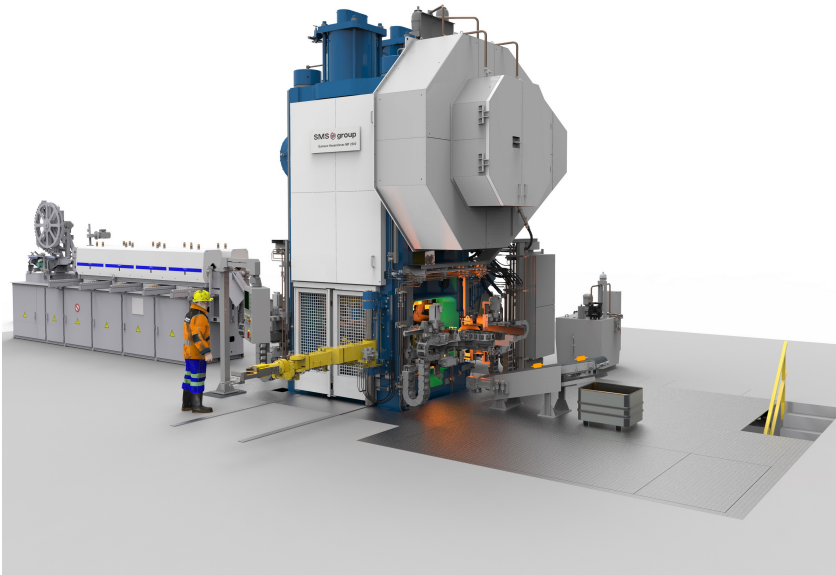


PRESS RELEASE

Düsseldorf, December 21, 2020

Anhui Anhuang Machinery orders fully automatic piston forging line from SMS group

China's first fully automatic forging line for flash-free
forged pistons for cars and trucks



Fully automatic 25-MN forging line with automatic walking beam system, die spraying unit and die holder, and ELO-FORGE L induction heating system.

Anhui Anhuang Machinery Co., Ltd., based in Anqing in the Chinese province of Anhui, has placed an order with

SMS group for a fully automatic closed-die forging line for pistons. Anhui Anhuang will be one of the first automotive suppliers in the field of massive forming in China that is capable of manufacturing pistons for cars and trucks in a fully automated process. For SMS, this is the first reference customer in China for a closed-die forging line for pistons. The 2,500-t forging line to be delivered consists of a fully automatic eccentric closed-die forging press of type MP 2500 and an ELO-FORGE L induction heating system from SMS Elotherm, an SMS company, for heating the forging blanks.

The cost efficiency of the whole process is significantly improved as the forging line is fully automated. Car pistons can be forged in a cycle time of less than four seconds. The flashless precision forging process also saves material and energy costs during production: only the exact amount of material required to forge a piston without cutting scrap is heated and used. Other machining steps can be reduced thanks to the high dimensional accuracy of the forged parts. An integrated process control system permanently monitors the entire line and, if necessary, is able to evaluate the production data saved.

“In China, the demand for automotive parts continues to grow steadily. By investing in this integrated forging line from SMS, we can respond flexibly to increasing market requirements while at the same time guaranteeing a high level of quality for our customers. For us, the key arguments in favor of the fully automatic line were its high availability combined with an output capacity that is higher than with other press suppliers. In addition, SMS already has several reference plants in this sector and is also a systems supplier – that's what convinced us,” says Leming Huang, President of Anhui Anhuang Machinery.

The induction heating system from SMS Elotherm has a capacity of 800 kW that enables the forging blanks to be heated to a temperature of 1,220°C. With a throughput of around 2 tons per hour and a cycle time of 2.2 seconds, the modular heating system works in perfect harmony with the SMS forging line. Energy-efficient production is possible in any operational state thanks to a consistently high cos phi power factor. This results in

energy savings of up to 30 percent under production conditions. The material feed system and the fully automatic discharge unit are an integral part of the plant concept and enable forging right up to the last part under production conditions within the specified cycle.

The 25-MN closed-die forging press is equipped with an automatic walking beam, a die spraying unit, and a die holder with quick-change system. Important features of the forging press are the electrohydraulic clutch-brake system and the programmable single ejectors for each forging operation.

The use of an electrohydraulic clutch-brake system, which is fitted with a wet multiplate clutch, means that no wear-related readjustments are required. Not only that, no compressed air is required to operate the brake and clutch. Other advantages include the high repeat accuracy of the switching operations and, associated with this, extremely low noise levels.

The automatic walking beam developed by SMS has a separate servo drive with series-connected gear unit for each axis. The servo drive ensures a smooth and finely-tuned sequence of movements. The electric automatic walking beam system has optimized startup and deceleration ramps, which not only minimize wear on the mechanical equipment but also guarantee the shortest cycle times. The integrated sensor technology permanently monitors the position of the ram, thereby ensuring the smooth execution of the press movements.

The spraying manipulator developed by SMS is mounted on the rear side of the press, providing clear access to the die space. The spraying and drying times for each individual forging operation can be programmed individually. This significantly reduces spraying agent and spraying air consumption and enhances the overall efficiency of die maintenance procedures. Commissioning of the fully automatic forging line is scheduled for second quarter of 2022.

SMS group is a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry. It has some 14,000 employees who generate worldwide sales of more than EUR 2.9 billion. The sole owner of the holding company SMS GmbH is the Familie Weiss Foundation.