



GMH GRUPPE

Media information

GMH Gruppe invests in quality management. One of the largest measuring machines in the world and a very precise ultrasonic testing machine are now in use at Wildauer Schmiede- und Kurbelwellentechnik (WSK) GmbH in Brandenburg.

The largest monoblock crankshafts in the world are manufactured for GMH Gruppe at WSK in Wildau. To be able to guarantee production work that is accurate to a hundredth of a millimetre with the purest steel qualities despite these dimensions, the company is investing in new measuring and testing equipment.

Wildau/Georgsmarienhütte, 2 July 2024 - When energy generated in engines is converted into rotary motion, mobility is created. A key element of this is the crankshaft. In Wildau, particularly big and heavy crankshafts are produced which weigh up to 20 tonnes. The Wildauer Schmiede- und Kurbelwellentechnik (WSK) specialises in the production of crankshaft of up to 12 metres in length, such as those used in large engines for stationary power generation, or in marine propulsion systems, in compressors (for hydrogen production, LNG gases) or in large pumps on construction sites, or in mining (for dewatering, disposal of overburden sludge).

WSK has invested in two measuring and testing devices in order to be able to precisely verify the accuracy of fit and material resistance of these unique components that weigh several tonnes, and are manufactured individually according to the customer's requirements and specified dimensions:

A **coordinate measuring machine**: This CNC system can measure forged parts and crankshafts of up to 15 metres in length and two metres in height and width, with an accuracy of 0.005 mm. To achieve this very high accuracy, the measuring machine is mounted on a granite bed on an air cushion. This CNC-controlled process is carried out at a constant temperature of 20 degrees Celsius, in an air-conditioned cabin built separately around the measuring device. This guarantees the comparability and repeatability of the process. Components weighing up to 60 tonnes can be measured on the measuring table.

An **ultrasonic inspection device (phased array)**: With the help of this compact and very powerful mobile ultrasonic device, WSK can detect the tiniest material defects. For this purpose, an ultrasonic transducer, with a total of 128 interconnected ultrasonic transmitters, moves in an automated process along the product and detects defects that correspond to a sound attenuation of a drill hole with a diameter of 0.3 mm. Depending on the size of the examined workpiece, this precise material inspection takes up to eight hours.

Both devices serve to increase quality assurance and the exact verifiability of the required quality characteristics. After extensive test runs, the measuring machine was put into regular operation in March of this year. The phased array system is currently undergoing final approval and is scheduled to go into operation in mid-July.

"Both our expectations and our customers' quality requirements for wear-resistant crankshafts have increased. The newly installed coordinate measuring machine, one of the largest in the world, guarantees to our customers that their individually manufactured forged products meet the tightest tolerance specifications," explains Dr David Biere, Plant Director at Wildauer Schmiede- und Kurbelwellentechnik GmbH.



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Additionally, Dr Biere continues: *"Particularly in the case of large crankshafts for combustion engines, the focus is increasingly on reducing emissions. New fuels have a different combustion process which leads to higher combustion pressures and therefore higher stress on the components. The crankshafts are often intended for decades of use. With our new ultrasonic testing method, we can reliably detect even the smallest impurities in the material. Our customers therefore receive crankshafts that meet their specifications by 100%."*

Unlike the coordinate measuring machine, for which the company has built a base and a climate cabin in the factory building, the ultrasonic device is small and mobile. The testing device can therefore be made available to other GMH Gruppe companies at any time, including the accompanying test trolley and oscillating arm, to rule out material defects. The total investment for this WSK quality offensive amounts to two million euros.

About GMH Gruppe

GMH Gruppe is a full-range supplier of steel as a primary material, melted from scrap, through to ready-to-assemble components. It is one of the largest privately owned metal processing companies in Europe. The group includes 16 medium-sized production companies in the steel, forging and casting industries, which are represented in more than 50 countries. With around 6,000 employees, GMH Gruppe generates an annual turnover of around two billion euros.

GMH Gruppe is a pioneer in sustainable steel production and has been accepted into the "Association of Climate Protection Companies". Based on the recycling of scrap metal, the company produces green steel and thus makes an important contribution to the circular economy. The use of electric arc furnaces at four sites reduces CO₂ emissions by a factor of five compared to conventional blast furnaces. This also reduces the CO₂ footprint of the customers supplied by GMH. These include companies worldwide from the automotive industry, mechanical and plant engineering, railway technology, power generation, transport logistics, aerospace, agriculture and construction machinery sectors.

GMH Gruppe has set itself the goal of being completely climate-neutral by 2039.

About Wildauer Schmiede- und Kurbelwellentechnik

Wildauer Schmiede- und Kurbelwellentechnik GmbH from Brandenburg specialises in the production of large forgings and ready-to-install crankshafts. The safety components cover a product range of low to high-alloy steel materials, which have a low CO₂ footprint due to their production method. The product portfolio includes connecting rods and crankshafts for large engines as well as pumps and compressors and large drop-forged parts, which are used in railway technology, mechanical and plant engineering and food production, among others.

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