



Success Story

100-year tradition welds together

Bieber trusts in flexible high-tech welding robots

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HAIGER/DRULINGEN – As a contract manufacturer for international market leaders in various industries, Bieber Industrie has relied on welding technology from CLOOS for more than 20 years. In addition to manual welding machines, Bieber uses three robot systems of the welding specialists from Haiger. The third robot system for welding grate troughs for waste incineration systems was commissioned by Bieber in time for the company's 100th anniversary in 2019. Both Bieber and CLOOS were founded in 1919 and can thus each look back on more than 100 years of company history.

In the early days, Bieber initially manufactured equipment for agriculture. After the Second World War Bieber quickly developed into an industrial subcontractor for the production of individual parts for large series. From the mid-1990s onwards, the company invested considerably in machinery in order to expand its range of products. Today, more than 100 employees manufacture various products for sectors such as environmental technology, the energy industry, the railway industry, metal construction, mechanical engineering, the food industry and agriculture. "Thanks to the strong diversification, we are independent of individual markets," says Managing Director Raymond Bieber, who is now the fourth generation of his family to run the family business together with his great cousin Marc Bieber.

Welding as core competence

Whether laser cutting, edging, bending, electrical or mechanical assembly – Bieber offers complete sheet metal processing from one source. The heart is the welding area where Bieber has used welding technology by CLOOS for more than 20 years. A total of 40 employees work in the welding production. For manual welding, Bieber uses more than 20 welding power sources by CLOOS.

In 2015 the first robot system for welding small parts was added. A further robot system followed in 2017 for welding medium-sized components.

Welding robot system with high-tech functions

The latest system from 2019 now welds the complete grate trough for waste incineration systems. The QIROX QRC-350 robot is mounted here in overhead position on a linear track with vertical and horizontal stroke. This considerably enlarges the robot working space so that it can flexibly move in all directions.



Photo 1: The new robot system weld grate troughs for waste incineration systems.

The workpiece positioners bring the component into the perfect position for welding. It has a horizontal swivelling axis with an L-shaped extension arm. The extension arm contains a vertical rotary axis with a faceplate which serves for holding the workpiece.

The robot is fitted with a torch changing system. This allows the use of different welding processes – depending on the application.

In addition, the robot system is equipped with an arc sensor to compensate for any component tolerances. This sensor uses the arc to simultaneously weld and measure the joint position on the workpiece. If the measured values are not the same on both sides, the weld seam position deviates from the programmed path. The computer-based robot controller adjusts the welding head position so that the seam is placed exactly in the centre of the joint. There is hardly any loss of time because measuring and welding take place simultaneously with the arc sensor.

The intelligent DuoDrive wire drive system transports the welding wire easily and reliably without restricting the robot's freedom of movement. The slim and compact design of the wire drive unit guarantees an optimum accessibility even in confined areas.



Photo 2: Bieber could considerably increase the production capacities with the new robot system.

Increased production capacities

Up to now, the new robot has mainly welded grate troughs for waste incineration systems in various sizes and dimensions up to 3 x 3.50 m. Due to the extensive equipment of the robot system, a multitude of different products can be manufactured here.

Due to the process acceleration in welding, Bieber was able to increase the production capacity significantly. In the past the company produced 15 grate troughs per month, today it produces about 45. The welding robot achieves exactly reproducible results so that the quality could be increased once again. Last but not least, the company can now operate more independently of human resources. Bieber is also affected by the shortage of skilled workers and faces the challenge of finding suitable manual welders. For this reason, the investment in automated welding technology was absolutely essential in order to ensure long-term competitiveness. The robots mainly weld serial products while individual parts or special parts are still welded manually.



Photo 3: The workpiece positioner brings the grate trough into the perfect position for welding.

Maximum flexibility as goal

"The schedule for the delivery and commissioning of the robot systems was well adhered to", states Bieber happily. "We are very satisfied with the support provided by both the CLOOS employees in Haiger and the CLOOS representation Philippe Schweißtechnik."

With the three robot systems, the modernisation of the welding production at Bieber has been completed for the time being. At present, no further robots are planned. However, the positioners of the robot system from 2015 shall be adapted so that an even greater variety of components can be welded on the system. "We develop the products hand in hand with our customers," says Bieber. "Our goal is to become even more flexible in order to expand the range of products for our customers further."



Photo 4: The robot is mounted in overhead position on an overhead-mounted linear track with vertical and horizontal stroke.



Video on CLOOS TV

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