Success Story

Automated welding technology as competitive advantage

Heun relies on CLOOS

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HAIGER/DILLENBURG – The Heun group has trusted in the CLOOS welding technology for decades. In order to be able to manage the greatly increasing demand and to ensure the high quality standard, the medium-sized contract manufacturer increases the investments in automated production technology. Meanwhile, 4 CLOOS robot systems are in use at the company's site in Dillenburg-Oberscheld.

During the last years, the Heun group has continuously grown and has today more than 100 employees. Marc Willgenss leads the family business together with his two sons Yannick and Raphael. For more than 60 years, H.K. Heun GmbH offers solutions in sheet metal processing, tank and equipment construction and the production of gratings. In 2014 the primetall GmbH which is specialised on the production of high-quality stainless steel components became part of the group. The portfolio comprises galley components for the aviation industry, stainless steel components for domestic appliances up to operating tables for the medical industry. Although the group works for more than 90 % as contract manufacturer, Heun produces its own product by now: a safety cabinet for the retail industry.

Photo 1: The robot system produces a wide range of different types of ladders for underground engineering.

The focus of Heun is on individual special production, whereas Primetall mostly produces series parts with batch sizes between 100 and 5,000. "Our portfolio comprises thin, 0.4 mm plates up to 20 mm thick plates", says Raphael Willgenss. "We fulfil the most different customer requirements from small metalworking shops to big companies with strict regulations". For this, the Heun group trusts on modern technologies and a high degree of automation to ensure a perfect product quality.

Photo 2: The main features of the system are flexibility and user-friendliness because only one program is necessary.

22 manual welding machines and 4 welding robots

In the field of welding technology, the company has trusted in the CLOOS technologies for decades. 22 welding machines for manual MAG and TIG welding are in use at the manual welding stations. Furthermore, four robot systems produce different components. At Primetall, a CLOOS robot uses the TIG Weld process to weld circular welds for tank containers. Besides, Heun welds small and medium-sized components of different types with two compact robot cells.

Photo 3: Beside the automated welding technology, Heun uses 22 welding machines for manual MAG and TIG welding.

Another robot system produces ladders for underground engineering. This system consists of two stations which are identical at both sides. Thus the employee on one side can remove the welded components and reload the systems whilst the welding process takes place at the other station. The system produces a wide range of different types of ladders. So the ladder width and the number of rungs vary considerably. Therefore, the robot is also fitted with a gas nozzle sensor which uses electromechanical sensing technology to determine the start and end of the weld seam. The programmed welding distance is corrected correspondingly. The system also adapts the welding process automatically to the type of ladder. Thus, only one program is required for the robot system which facilitates the operation significantly.

Increased productivity at top quality

The investments in automated welding pay off considerably. In the past, it took 25 minutes to weld the tank containers manually. Today the robot only needs 12 minutes to weld the same component using the TIG weld process. TIG welding is characterised by a precise and clean processing.

Heun and Primetall are now able to produce higher quantities within a shorter time without the need to recruit new employees. This considerably reduces the production costs. Apart from the quicker welding time and the reduced production costs the component quality could be further increased due to the exactly reproducible welding results. "Due to the automation, we can perfectly meet the increasing requirements of our customers, a real advantage over

our competitors", Willgenss states happily. "In one of our product areas we could increase the turnover by more than 10 percent, in another one we even gain turnover increases of about 20 percent."

Photo 4: The 2-station design allows loading and welding at the same time.

To familiarise the employees with the new technology, they were trained comprehensively at Cloos in Haiger and in their own company. As the basic operation of the system is very user-friendly, even unskilled and inexperienced employees can work well with them.

Photo 5: A CLOOS QIROX robot uses the TIG Weld process to weld circular welds for tank containers.

Drive automation forward

Looking ahead, Heun would like to continue the investments in automated welding technology in the future. One of the main customers wants to double the order quantity of water tanks for the aviation industry within a short time. Therefore, these components shall no longer be welded manually by using the TIG process, but automated by using the laser process. For the longitudinal weld seams in container construction, an automated welding solution is planned for the medium term. "CLOOS is and will be our first choice for welding", emphasises the junior managing director. "For many years, our two companies have a friendly relationship. The close proximity facilitates the cooperation enormously."

Photo 6: In the past, it took 25 minutes to weld the tank containers manually, now the robot only needs 12 minutes to weld the same component.

Video 1 on CLOOS TV
Tanks

Video 2 on CLOOS TV
Ladder construction

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