Success Story

Efficiency through automation and optimised processes

Glüpker Blechtechnologie relies on welding technology by CLOOS

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HAIGER/NEUENHAUS — Automation, digitisation and networking are becoming increasingly important in all production areas at Glüpker Blechtechnologie. The sheet-metal specialists are aiming to further increase quality and productivity at their manufacturing site and ensure their competitiveness in the long term. For both manual and automated welding, the company has relied on the technologies by CLOOS for more than 20 years.

Since its founding in 1981, Glüpker Blechtechnologie GmbH has continuously expanded its expertise in the area of sheet-metal processing — especially in the fields of lasers, edges and welding. Each year, around 500 employees at the company's site in Neuenhaus process some 50,000 tonnes of material for around 500,000 production orders. The spectrum of processed components is enormous, since Glüpker Blechtechnologie performs work for a large number of companies across various industry sectors

Photo 1: CLOOS robots weld components for truck trailers

In the meantime, the company has acquired extensive component know-how and also manufactures all of its own apparatus. Its customers particularly appreciate the company's short processing times and high quality standards. "We are in direct competition with job manufacturing companies in Eastern Europe and Asia," explains Jürgen Gerst, management board member at Glüpker Blechtechnologie. "To secure our location in the long term, we need a high level of automation." For this reason, Glüpker Blechtechnologie constantly invests in its modern machine park.

Reliable welding systems for working processes

For the company's production planning, clean and repeatable processes are always at the forefront. All production information and processes are interconnected. "We live Industry 4.0," emphasises Gerst. "In order for our complex production sequences to work flawlessly, the systems must not stand idle." Because he attaches great importance to high levels of system availability and reliability, Gerst has been using CLOOS as a partner for manual and automated welding for many years. On-the-spot support is provided by long-standing CLOOS sales and service partner Engelking Schweißtechnik, based in Burgwedel, Lower Saxony.

The first robot system was put into operation at Glüpker Blechtechnologie in the early 1990s. Today, the company uses more than 30 robot systems for automated welding. These are both compact robot cells for welding small parts as well as larger robot systems with several robots for the welding of complex components. Older systems have been retrofitted over time to keep them up to date.

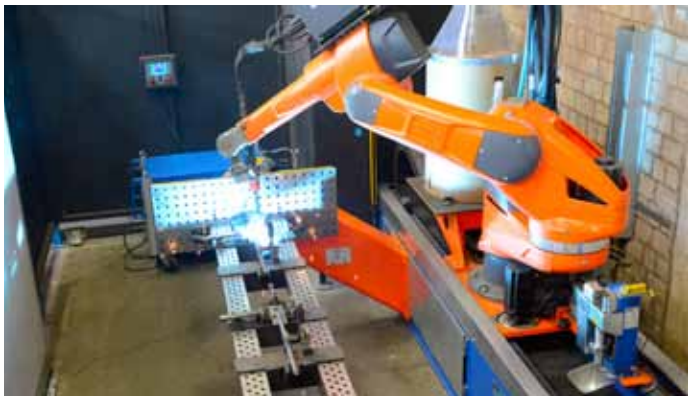

Photo 2: Production of handles for truck trailers with the QIROX QR-CC-4 compact cell.

The processes in the welding area are also optimally organised. "The picker brings all parts to the welders' and system operators' workstations in manageable quantities," explains Gerst. In addition, components with long welding times are combined with short-run parts to keep the secondary times as low as possible." The different robot systems are similar in structure and have the same programs. This greatly simplifies the workload of our operating personnel.

Photo 3: The two-station design allows the system's operator to load one station while the robots weld at the other.

Time saving via offline programming with RoboPlan

The offline programming of the robot systems is carried out using the CLOOS RoboPlan software. While the system is in production, a new program can be simultaneously produced in RoboPlan. The welding, search and travel paths and tools can be determined using 3D models, and the welding parameters and other functions required for running the program can then be defined. The program is developed in this way before being transferred to the robot controller for optimisation in the workplace. This process is less time-consuming than producing a whole new programme in the system.

Glüpker Blechtechnologie also uses RoboPlan for viability reviews, which reveal at what point automation is eco-

nomical. The high repeatability, process reliability and increased welding speed of the robots are usually the decisive factors here. As a rule, the use of automated systems is worthwhile whenever ten or more identical components are required.

Photo 4: The offline programming of the robot systems is carried out using the CLOOS RoboPlan software.

Versatile power source for flexible manual welding

The area of manual welding also remains highly significant for the sheet-metal processing professionals. In some cases, the number of parts or component geometry does not allow robot welding. All the company's manual welding workstations are identically equipped so that the employees can change quickly and flexibly between them. A central element of the modular welding stations is the QINEO Pulse by CLOOS. This high-capacity welding power source is characterised by optimal ignition and welding characteristics as well as maximum precision. Due to its versatile application possibilities, the QINEO Pulse is ideally suited to the various applications at Glüpker Blechtechnologie.

Photo 5: If robot welding is not economical due to the order quantity or component geometry, the parts are welded by hand.

In total, Glüpker Blechtechnologie uses over 100 welding machines supplied by CLOOS. The welding power sources are controlled and managed from a central PC using the QINEO DATA MANAGER (QDM) software. This enables highly efficient use of the devices since they can be supplied with data, programmed and operated via Ethernet in both a job-specific and project-specific manner.

Photo 6: Welding a motor cover for a construction machine with QINEO Pulse.

Further increasing quality and productivity through automation

Looking ahead, Glüpker Blechtechnologie will continue to invest in automatic production solutions in the future. While the requirements for quality and productivity are continuously growing, there is also a shortage of well-trained specialists. "Only by providing attractive jobs will we continue to find suitable employees in the future and bind them to our company in the long term," says Gerst. "At the same time, the requirements for robot operators are different than those for manual welders." In order to ensure that all employees work well with the CLOOS systems, the company attaches great importance to in-depth training. For this purpose, Glüpker Blechtechnologie uses CLOOS training programs.

Another challenge is the limited production area — the company is continually expanding its production halls, however the entire 35,000-square-metre area is now fully utilised. It has therefore become necessary to increase productivity within this area. "In the future, we also want to replace manual operations with automation and further reduce set-up and non-production times, in order to achieve even better throughput times," explains Gerst. "We are delighted that CLOOS will continue to support us with our challenges in the future."

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