Success Story

Automation to address the skills shortage

CLOOS robots ensure optimum welding quality

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HAIGER/BIEBESHEIM – The canopies, bicycle parking systems and street furniture of Orion can be found in many European cities. In Malmö, Sweden, for example, there is an Orion bicycle parking deck for about 2,000 parking spaces for some years now. The British Wembley stadium is also equipped with bicycle stands by Orion. For automated welding, the company has trusted in CLOOS technologies for many years. Due to the use of a compact welding robot system, Orion achieves optimum welding results at a reduced production time.

The wide product portfolio of Orion Bausysteme GmbH ranges from compact bicycle stands for private users up to complete bicycle parking decks with two- and three-level parking decks. Furthermore, Orion is specialised in the production of canopies and other street furniture. Founded in 1980, the company has about 50 employees at its premises in Biebesheim am Rhein where 500 tons of steel are processed per year. Since 1995, about 25 employees work at the Saxon premises in Neustadt where mainly bicycle safes and bike enclosures are produced. For the European sales, Orion cooperates with trade partners.

Photo 1: Among others, Orion produces canopies and bicycle parking systems.

For some years now, Orion has considerably experienced the skills shortage. "Particularly at the Biebesheim site it is difficult for us, to find qualified personnel because there are many big companies in our region and there is an intense competition for good employees," explains the Orion managing director Frank Suckow. Therefore, the company increases its investment in automated production solutions. Already in 1996, Orion has already put the first CLOOS welding robot into operation. "The old welding robot has worked reliably for more than 20 years, but now it was about time for a new technology," says Suckow. Since the end of 2016, a new CLOOS robot system is in use. Here the bike stands and the components for the canopies are produced. "Thanks to the new technology, the handling of the new robot system is much easier for our employees than with the 20 years old robot," Suckow adds.

7-axis welding robot allows wide range

The heart of the new system is the QIROX QRC-410-E welding robot. The six-axis articulated arm robot has an ex-center axis 7 which is integrated between robot base and centre point of axis 1.

The movements of all robot axes are synchronised by 100 percent. The seventh axis considerably extends the working envelope of the robot and allows an optimum welding torch positioning. The robot is mounted in overhead position on a C-shaped robot positioner QR-RP-C. This robot position enables a better accessibility to the workpiece and facilitates welding of bigger workpieces.

Photo 2: The station change of the WP-DH-TC two-station positioner is made by a horizontal rotation.

The 2-station WP-DH-TC-5 kN workpiece positioner with horizontal change and vertical rotation with counter bearing consists of two opposition stations. The workpiece can be turned into the optimum processing position by a horizontal turning axis. The station change is made by a horizontal rotation. The two-station design allows robot welding in one station and loading of the components in the other station.

Photo 3: The 2-station design allows simultaneous welding and loading of the system.

Reduced welding times at maximum quality

Different types of bicycle stands and canopies can be welded with the system. While in the past standard solutions were mostly demanded, the customers often require individual designs today. "Furthermore, the demands of our customers on quality and flexibility continuously rise whereas at the same the delivery periods become shorter and shorter," emphasises Suckow. "Only by automation we are able to reach the annual turnover increase." A manual welder previously welded a canopy element in about 2 hours. The robot now welds the same component in just 20 minutes.

"Due to the use of the automated welding technology, we achieve reproducible welding results and an excellent

product quality," Suckow states happily. Particularly for the production of canopies there are strict safety specification as the DIN EN 1090 because this field is regulated by the building authorities. This includes, among others, welding and operator tests and detailed regulations regarding the documentation.

Photo 4: Due to the use of the automated welding technology the user achieves reproducible welding results.

To keep the high requirements of documentation and process safety, Orion uses the QINEO Data Manger software (QDM) by CLOOS. QDM allows to control and manage the welding power sources on a central PC. Thus the data is reliably stored - also because of a time-controlled, automatic backup.

Partnership-based co-operation

The company intends to invest in automation also in the future. In the medium term, a new compact robot cell by CLOOS shall be installed at the Saxon premises. Suckow praises the partnership-based co-operation between Orion and CLOOS. "The welding specialists give our employees concrete tips on different themes," the managing director states happily. "The big advantage of CLOOS is that the company as a full-liner supplies produces the robots, power sources and welding technology from a single source."

Photo 5: Operator Viktor Maier, responsible welding supervisor Jörg Mussnack, managing director Frank Suckow, production manager Thomas Krause and operator Ron Setzer in front of the CLOOS robot system (f.l.t.r.).

Video on CLOOS TV

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