

Progress Maschinen & Automation AG, 39042 Brixen, Italy

Schwörer Bausysteme focuses on modernisation in the precast plant

Schwörer Bausysteme GmbH produces quality cellars, slab floors, precast stairs, special concrete parts, prefabricated garages and steel structures for commercial, industrial and residential construction in Haigerloch-Stetten. Quite recently, automation in the precast concrete plant was driven forward significantly by installing further equipment from progress Maschinen & Automation AG, a company of the Progress Group. The new Form Master combines the functions of formwork, demoulding and storage robots in one system and moreover takes the job of fully automatic setting magnets and built-in components.

Schwörer is right at the forefront even after almost 60 years of development

Schwörer Bausysteme GmbH is part of the Schwörer Group and can look back on a successful development. In 1964, the Schwörer company was founded solely for quarrying and has developed considerably over the decades. In 1992 a pallet circulation system was installed. In 2000, Schwörer Bausysteme GmbH was founded and expanded in 2011 with a steel plant. Today, a total of 80 employees, five of them trainees, are employed at the Haigerloch-Stetten site. This is where mainly customised prefabricated cellars are produced for SchwörerHaus. At the beginning of 2021, the following new machines from progress make the precast plant state of the

art: Shuttering robot, demoulding robot and storage robot as well as a pallet cleaning device optimise the shuttering process; the Pluristar is used as a multifunctional plant in steel preparation.

Smart all-in-one solutions

For the production of precast concrete elements, the company operates a circulation plant for double walls and slab floors. The products are primarily produced for the Schwörer prefabricated house as well as for construction companies and private customers. In addition, sandwich walls are offered for free sale. Top sellers are not only slab floors and double walls, but also an innovative in-house product, the wood-concrete composite floor. Advantage with the latter: the underfloor heating can be incorporated, and a 20 cm-thick insulation is directly integrated. This offers the possibility of thick insulation without any disturbing effect. The group of companies is looking forward to a productive year in 2021 and cannot complain about a shortage of orders despite the pandemic. Whether in Berlin, South Tyrol, Spain or Switzerland: all prefabricated cellars for SchwörerHaus prefabricated houses are produced in Haigerloch-Stetten.

“When the cellar is well insulated from the outside as well, everyone thinks that the cellar is heated,” says works manager



Schwörer Bausysteme GmbH in Haigerloch-Stetten



Schwörer cellar assembly – the basis of Schwörer prefabricated houses.



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The individualised shuttering robot at Schwörer places the shuttering, magnets and assembly sleeves precisely on the pallet.

Karl-Heinz Schneider, works manager and authorised signatory of Schwörer Bausysteme GmbH.

Karl-Heinz Schneider, adding: “so we don’t have a classic potato cellar. The beer has to go in the fridge”.

The other important business area at Schwörer Bausysteme is steel construction. From industrial and commercial construction, mechanical engineering, plant construction and even vehicle construction - almost everything to do with steel is manufactured at Schwörer.

The all-in-one formwork solution: Form Master

Schwörer uses the fully automatic robot system for the production of high-quality precast concrete elements and an increased degree of automation in the production process. The Form Master is a shuttering robot, demoulding robot and storage robot. All work steps of the shuttering process are carried out automatically, accurately and with state-of-the-art technology and adapted to Schwörer’s needs. The patented Infinity Line® Notch-Free formwork system reduces the manual formwork effort and ensures centimetre-precise shuttering without polystyrene extensions. Doing without polystyrene not only makes for material savings but is also good for the environment.

Schwörer now works with an individualised plant that impresses with a number of technical innovations. Finding a solution for optimising the adhesion of the magnets of the mounting sleeves and inserts for electrical components was particularly tricky. These are used to fix the push-pull props when assembling double walls. The Form Master at Schwörer

further increases the degree of automation by setting special magnets for small electrical installations based on CAD data. This option guarantees a continuous data flow. By eliminating the manual work steps, the Form Master thus offers more safety as well as an increase in quality with regard to the correctness of the number and positioning on the pallet. Furthermore, mineral fibre boards can also be laid automatically. These are required above all for large-scale electrical installations.

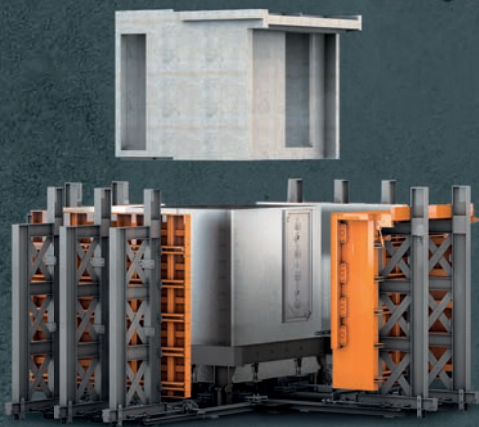
To further optimise the shuttering process, a new pallet cleaning device was installed by Ebawe, also a Progress Group company. The pallet is scanned and the shutters as well as the magnets of the assembly sleeves and electrical installation parts are lifted off and stored fully automatically. After the pallet has passed through the cleaning device, the concrete residues are removed via a rubble belt and the pallet itself is reloaded by the shuttering robot.

Pluristar: one machine for all steps in steel processing from the coil

In the area of reinforcement and steel processing, Schwörer Bausysteme GmbH has been relying on another system from Progress since the beginning of 2021. The Pluristar multifunction machine combines the functions of an automatic stirrup bender, a straightening machine and a double bending machine. The machine can process wire diameters from 6 - 16 mm and has a combined straightening system consisting of a roller straightener and a rotor straightener. This special com-



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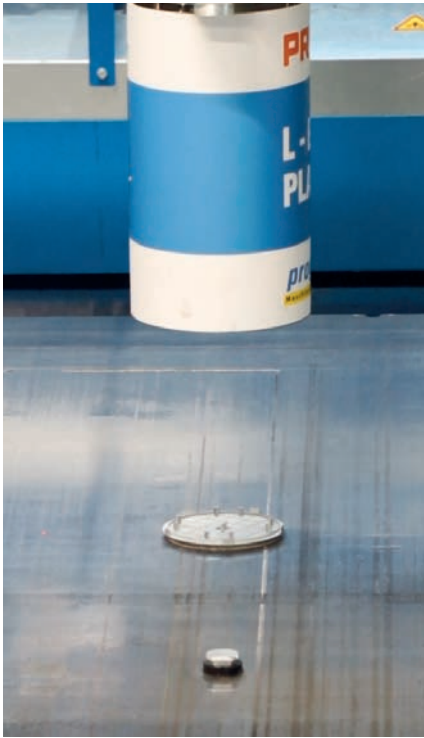
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The device specially developed for Schwörer places magnets and mineral fibre boards for electrical installations.



The demoulding robot removes the formwork fully automatically before the pallet is forwarded to the cleaning device.

combination enables flexible production of stirrups, straight bars and bars with large bends and can thus cover the entire rebar processing from coil. The main customer is the parent company, which is supplied with the reinforcement completely cut to size for the Schwörer cellar assembly.

Many years of successful cooperation with Progress

In 2011, machines from the Brixen-based company were used for the first time at Schwörer Bausysteme GmbH. The MSR type straightening, cutting and bending machine was commissioned at that time and still contributes to cost-efficient production today. The MSR works directly from the coil and thus optimises the production flow. In combination with the Wire Center, which fully automatically processes reinforcing steel from the coil and lays transverse reinforcement with and without spacers as well as longitudinal reinforcement and lattice girders according to CAD specifications, the processes are streamlined, and production increased. Welding and cutting of lattice girders is done by the GTA - cleanly and quietly, but nevertheless with high quality and performance.

The well-being of the employees is the focus

The new automation offensive is a further development step for Schwörer.

“More important than saving labour is to relieve employees of heavy physical work and to support them in terms of health,” says works manager Schneider, adding: “sure, the process is

faster and more automated, and the solution with setting the magnets for mounting sleeves as well as electrical boxes is a great step towards the future, but it’s mainly about making the employees’ work easier.”



The EBAWE pallet cleaner is also part of the new shuttering robot.



In operation at Schwörer Bausysteme GmbH since the beginning of 2021: the Pluristar - a multifunctional machine for all steps in steel processing from the coil.

Schwörer is open to modernisation and automation

In 2011, the company opted for a machine from progress and, according to its own statements, has never regretted this decision "We bet on the right horse", says Schneider, confirming his decision even after 10 years. Because of the excellent cooperation, the decision was also made in favour of progress for the new investments. The management at Schwörer is positioned such that modernisation and automation are welcomed and always supported by the Managing Director, Mr Johannes Schwörer. This also applied when the works manager and authorised signatory Karl-Heinz Schneider ordered a new machine, the Pluristar, after more than 20 years and sent the old machine into well-earned retirement due to increasingly frequent repair and maintenance work. As the straightening cutter, the reinforcement automation and the lattice girder processing had already come from progress, enhancement of the cooperation was a logical step for Schneider. "The service is impeccable and not only are the plants of the highest quality, but the staff are also absolutely exemplary. You are always heard and not turned away even if you have questions or problems."

Looking to the future

Thanks to the positive business outlook, Schwörer has also planned further modernization steps for the coming years. For the complete renewal of the circulation system, an automatic concrete spreader is still to be purchased. "Now we are at 80 per cent - we will manage the rest," says Schneider. ■



The Wire Center installs transverse reinforcement with and without spacers as well as longitudinal reinforcement and lattice girders according to CAD specifications.



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