

progress Maschinen & Automation AG, 39042 Brixen, Italy

## Automation à la carte

fdi, one of the world's leading double-wall and lattice girder slab manufacturers, has chosen progress technology once again. The four projects already successfully completed have been joined this year by four more. fdi is investing in successive modernisation and automation and progress is expertly pulling out the most diverse technical stops to realise the appropriate solutions. "progress is not a supplier, but rather a partner that we trust. That's why we place follow-up orders again and again", says managing director Thomas Beike.

With an annual capacity of 8.5 million m<sup>2</sup> lattice girder slabs, 1.5 million m<sup>2</sup> double walls and 100.000 † precast elements, fdi is one of the world's largest manufacturers of double walls and lattice girder slabs. The majority of the precast elements produced are used in residential construction; they are delivered throughout Germany as well as to Scandinavia and the Benelux states. The group employs 918 people at 26 production facilities. Two years ago the Xebex company was incorporated into the group which to this day has acted as an independent company within the group.

The first project in co-operation with progress was realised in the summer of 2013 in Ludwigslust – a plant for the automatic processing of steel with longitudinal reinforcement. Just one year later, in the summer of 2014, the second project was successfully put into operation in Achim – a plant for the automatic processing of steel with reinforcement robot.

Since it proved to be necessary to also invest in the production facilities of the newly incorporated company Xebex, two further orders were placed shortly afterwards for the Bischofsheim location – a FormMaster demoulding, shuttering and

storage robot for the double-wall circulation plant as well as a Wire Center plant for reinforcement automation, a VGA Versa lattice girder welding machine and a shuttering robot adaptation for the lattice girder slab circulation plant.

### Optimised production thanks to FormMaster shuttering robot

The FormMaster demoulding, shuttering and storage robot was successfully put into operation in the double wall production plant in Bischofsheim in February 2015.

The benefits that the demoulding robot provides were quickly obvious, since the plant previously had no demoulding robot of its own. The personnel were relieved of strenuous physical work and additional personnel at the demoulding station could be dispensed with.

"The combination of demoulding, shuttering and storage robot enabled a considerable optimisation of the procedures as well as a higher speed of production. The most important factor, however, was the 'centimetre shuttering' principle, which improves the product quality beyond belief and makes various work steps superfluous", says managing director Thomas Beike.

The patented 'centimetre shuttering' principle from progress, which was used for the first time in the fdi group in this project, enables precast elements to be shuttered without gaps and without polystyrene extensions. Using only 17 types of shuttering, it is possible to shutter all lengths from 1 metre, without gaps, in a centimetre grid. The 'centimetre shuttering' principle ensures perfect product quality, since polystyrene extensions can be almost entirely dispensed with. The result is high-quality precast elements with immaculate outside edges. Not only that, this shuttering principle results in considerable savings of work, time and polystyrene.

The finishing touch was the additional 'notch-free' shuttering system in which the shuttering robot selects the order of the shuttering so that no chamfer recesses are created. It does this fully automatically on the basis of a calculation. As a result, not only is annoying contamination avoided, but the product quality is perfected, too.

### High-performance plant with high degree of automation

The new machines and plants were put into operation on time in May 2015 in the



Principle of centimetre shuttering: gapless shuttering without polystyrene extensions



Wire Center: automatic processing of steel with robot





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VGA Versa lattice girder welding machine



Shuttering robot head

Xebex lattice girder slab production plant in Bischofsheim:

the Wire Center plant for the automatic installation of reinforcements includes both a longitudinal and transverse wire machine, automatic spacer fitting and a reinforcement robot with quadruple grippers. This modern robot technology improves the production performance, optimises procedures, increases the dimensional accuracy and contributes to the minimisation of errors.

The VGA Versa lattice girder welding machine produces lattice girders just in time and in infinite heights for the lattice girder slab circulation plant and features an automatic wire diameter changeover for top wire and diagonal wires. With no intervention at all on the part of the personnel, the machine automatically converts from lattice girders of the type KT 800 to lattice girders of the type KTS. This VGA Versa, up to now the only one in the fdu group, convinces by its extraordinary flexibility and a production output that is so high that it was intended to additionally produce so-called 'external lattice girders', which are stacked as fixed-lengths packages.

The existing shuttering robot was optimised so that a considerable improvement in qual-

ity is achieved through the use of shutterings with integrated magnets. The scope of delivery included feed belts, shuttering cleaning and oiling, a new storage robot, a new Beckhoff controller, a pallet cleaner with rotary brushes and the 'centimetre shuttering'.

Four further projects are planned for this year at the Eslohe, Varrel, Gelsenkirchen and Hamm locations. Part of the scope of delivery is a further new item within the fdu group - the software solution ebos®, which is an all-inclusive software package developed in-house by progress for use in precast plants.

#### progress supplies tried-and-tested technology

In addition to the mechanical engineering companies progress Maschinen & Automation, Ebawe Anlagentechnik, tecnocom, Echo Precast Engineering and Ultra-Span, the Progress Group also includes the Progress precast plant. Innovative ideas and new developments are tested here, so that the customers get mature, tried-and-tested machines and plants. In addition, procedural and technological developments are realised for the manufacture of the most diverse precast concrete elements - all of this for the benefit of the customers later on. ■

#### FURTHER INFORMATION



fdu GmbH & Co. KG  
Oeseder Str. 8  
49124 Georgsmarienhütte, Germany  
T +49 5401 840600  
F +49 5401 840610  
[info@fdu.de](mailto:info@fdu.de)  
[www.fdu.de](http://www.fdu.de)



Progress Holding AG  
Julius-Durst-Str. 100  
39042 Brixen, Italy  
T +39 0472 979900  
F +39 0472 979999  
[info@progress-group.info](mailto:info@progress-group.info)  
[www.progress-group.info](http://www.progress-group.info)



progress Maschinen & Automation AG  
Julius-Durst-Str. 100  
39042 Brixen, Italy  
T +39 0472 979100  
F +39 0472 979200  
[info@progress-m.com](mailto:info@progress-m.com)  
[www.progress-m.com](http://www.progress-m.com)