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Lower Austrian concrete ideas – Jungwirth focuses on automation and networking

Betonwerk Jungwirth GmbH from Lower Austria is breaking new ground in the expansion of its pallet circulation system in Rappottenstein. The plant was put into operation in 2005 by Ebawe Anlagentechnik GmbH, a company of the Progress Group, and has now been extensively expanded. In addition to doubling the number of pallets from 39 to 78, the reinforcement production was also automated and invested in new software.

The plant is idyllically situated in the so-called Waldviertel. Jungwirth is a valued employer in the region and has been established as a supplier for buildings and underground construction projects since 1926. In Grünbach, 60 employees work in the circulation plant, as well as in the production for structural precast elements and the administration. Precast slabs with in-situ topping as well as double walls or insulated double walls are produced in circulation. For insulated double walls, wall thicknesses of up to 50 cm with 16 cm insulation are produced. The precast elements are delivered to the Linz area as well as to Vienna. At a second, smaller location in Rappottenstein, Jungwirth produces with ten employees also other concrete products such as manhole components, pipes and masonry blocks.

Ebawe circulation plant

The extension of the existing Ebawe circulation plant included the installation of a formwork robot, a storage robot, an automatic concrete distributor, new transverse displacement equipment and a second drying chamber. This new drying chamber was attached to the existing storage and retrieval machine, which was already designed in 2004-2005 for the extension to this chamber and can now serve twice the capacity.

ebos® control system

The circulation plant was also equipped with the ebos® control system from Progress Software Development GmbH, the software company of the Progress Group. ebos functions as a total solution for work preparation, production and process analysis, which accompanies all aspects of the production process in a consistent manner.

In the modern pallet circulation plant from Ebawe Anlagentechnik, Jungwirth manufactures precast slabs with in-situ topping and double walls with and without insulation.

The Lower Austrian precast concrete company supplies products for buildings and underground construction from Linz to Vienna.

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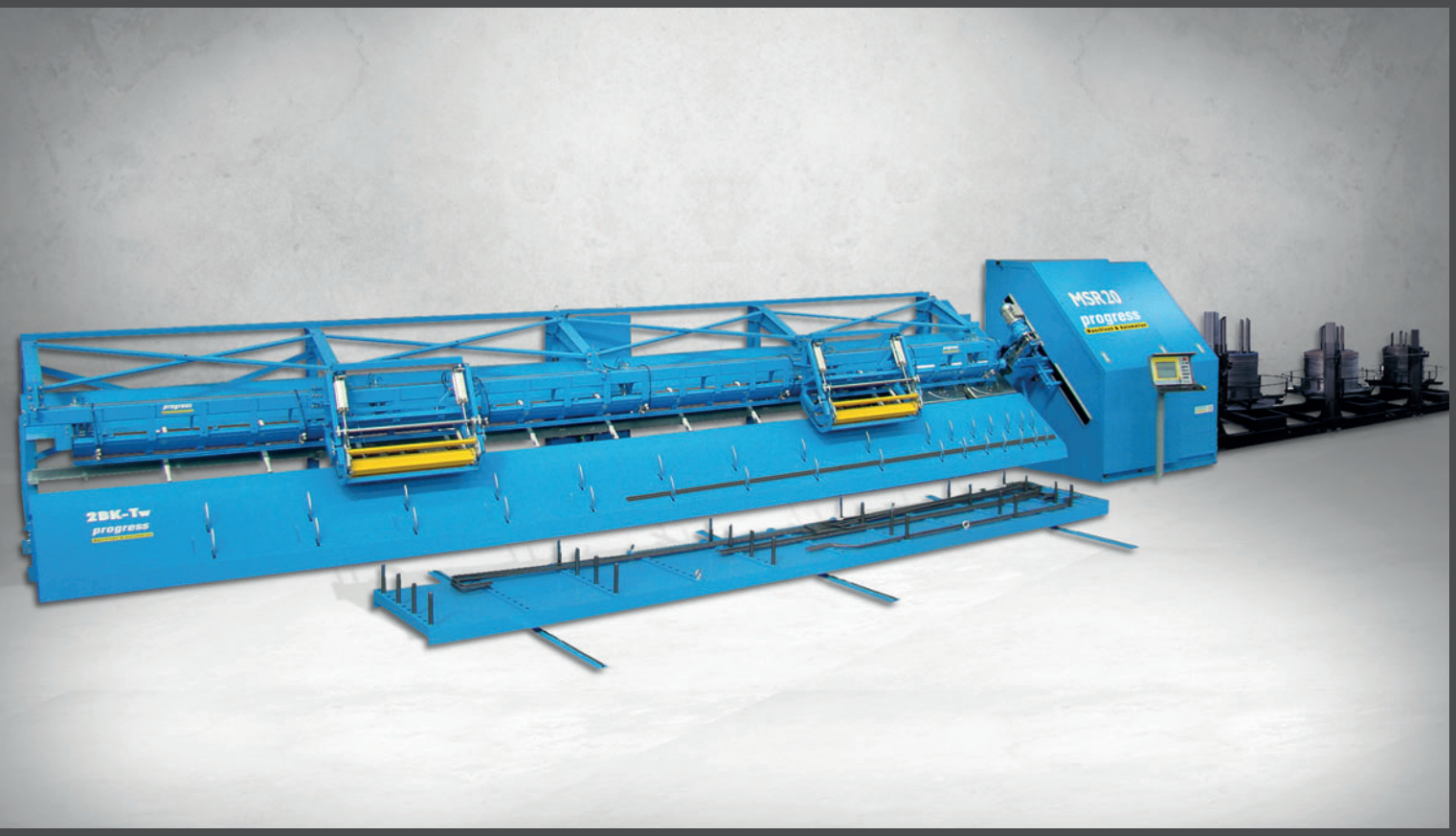

Straightening, cutting and bending

The new dimension of steel processing off coil:

- flexible
- efficient
- low maintenance

The MSR 20 cut and bend machine offers numerous opportunities for automation:

- Processes large wire diameters off coil
- Quick wire diameter changeover
- Refined rotor straightening system
- Customised solutions

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In addition to pallet circulation with integrated reinforcement production, Jungwirth also produces structural precast elements.

M-System BlueMesh mesh welding plant

In order to have a very good reinforcement solution, an automatic mesh welding plant M-System BlueMesh and a lattice girder welding machine VGA were invested at the same time. The mesh welding plant is operated by an MSR multirotor straightening cutting machine with reinforcement bars and enables the production of meshes with a size of 4x10 m in wire diameters of 5-6-7-8-10-12-14-16 lengthwise and crosswise in a flexible position. The bars can also be offset lengthwise and crosswise for precast slabs with in-situ topping and ironed for walls.

All three machines come from progress Maschinen & Automation AG, also a company of the Progress Group.

"In the past, the bars had to be cut into a compartment and transported there via a paternoster to the circulation area where they were inserted and tied by hand. The lattice girders were also cut to length from the 14m girder and added manually," recalls master builder Werner Jungwirth, Managing Director of Jungwirth. "In the meantime, production, transport and laying of the meshes and lattice girders are fully automatic, right up to the pallet, without a single hand movement". With the M-System BlueMesh mesh welding plant, Jungwirth achieves a high degree of flexibility in the just-in-time production of reinforcement meshes directly from coil.

The machine's strengths lie in its versatility, high efficiency and cost-effectiveness due to the low power connection values achieved by inverter welding. Production without waste, without cutting meshes and without laying work is also indispensable. This optimizes the production flow. Low storage costs and easier material handling - everything can be obtained from the coil - make a significant contribution to cost-efficient production.

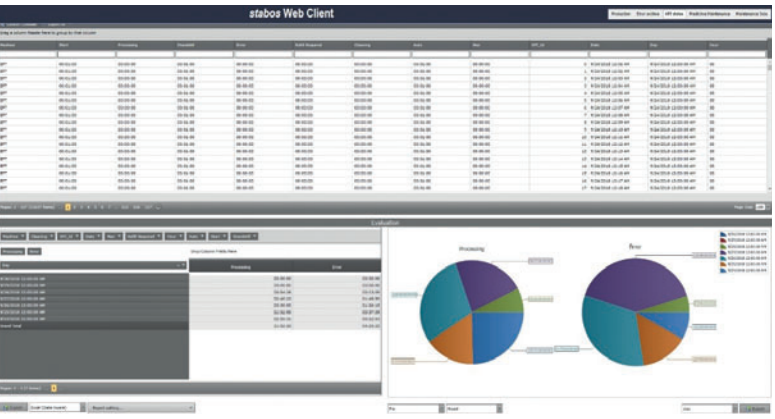
VGA Versa lattice girder welding machine

The current reinforcement production is rounded off with the lattice girder welding machine VGA Versa. The VGA Versa could be optimally integrated into the complete plant. The principle of just-in-time production makes it possible to get each lattice girder individually and precisely, thus completely eliminating storage costs and waste. The lattice girder welding machine also produces from coil. Different wire diameters are available for the top chord, diagonal and bottom chord. The VGA Versa can produce beam heights from 70 to 400 mm in 5 mm steps and, together with the wire change, offers fully automatic changeover in just a few seconds.

The production of standard and special meshes, stirrup meshes and lattice girders is not only designed for Jungwirth's own requirements, but can also serve the external market. Further products - such as reinforcement cages up to 10 m in length - are to be added to the range in the future with an extension of the mesh welding plant.

Software stabos

Investments were also made in new software: The new stabos software from Progress Software Development GmbH is



With the stabos Webclient from Progress Software Development, Jungwirth has the latest software for recording analysis of machine and production data.

currently being implemented. Quality, professionalism and adherence to delivery dates are top priorities for Jungwirth, along with good customer loyalty and advice. Therefore, it was obvious to integrate a software tool for the acquisition and evaluation of machine and production data into the production process. stabos offers worldwide access to data through a cloud solution. With four highly specialized modules, the software offers in-depth production analyses for production statistics (big data), Predictive Maintenance, KPIs (Key Performance Indicators) and error analyses.

By the central collection of data, the productivity can be determined with the production module and thus the quality can be increased. Maintenance planning is also significantly simplified: The easier overview of several machines makes it possible to plan maintenance efficiently. The system creates date proposals for this independently.

By using performance indicators (KPIs), the performance of the machines can be determined on the basis of simple values. For example, the following key figures can be defined:

- Daily operating times of machines
- Monthly or weekly operating times of machines for individual days
- Comparison of operating times and fault times of machines
- Evaluation of downtimes, waiting times etc.

The comprehensive error archive makes it easy to record plant standstills and thus react to recurring errors in good time.

Werner Jungwirth draws a positive conclusion: "When planning our production expansion, we paid particular attention to ensuring that the new components could be easily integrated into the existing plant. At the Progress Group we had the best result." ■

FURTHER INFORMATION

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