

Successful increase in capacity at Meiller lift doors

An unexpectedly high number of incoming orders and the associated high utilisation of production capacity led to the delivery times rising to 9-10 weeks throughout 2018. Not an ideal delivery situation from a customer's perspective, as fixed plans would have been drawn up on the basis of the shorter delivery times. The continuing high pressure from the market and the tight delivery situation induced Meiller to tackle the planning of an increase in capacity at the end of 2017, so that on the one hand the delivery times can be reduced back down to their usual level and on the other hand, growth potential can be generated for the company.

Due to the fact that the production capacity of the existing Salvagnini punching and bending production line was already fully utilised it was immediately clear that this system was the real bottleneck. Various scenarios for increasing production were analysed. As an interim measure to relieve the strain, from January 2018 certain stocked parts were outsourced and a new shift model to increase capacity was agreed with the workers and the works council, and introduced.

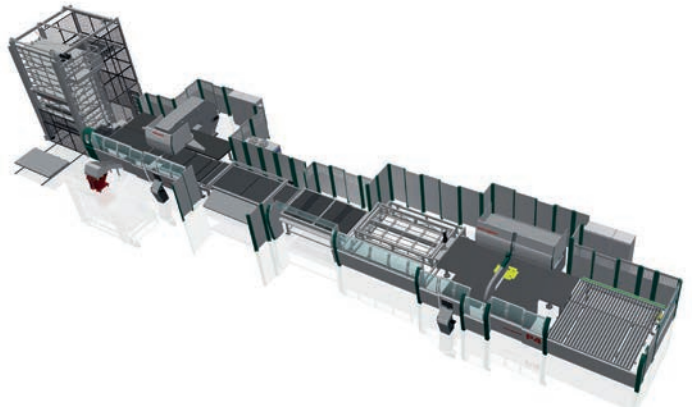
However, these actions to increase the capacity fizzled out immediately in the face of a further increase in incoming orders and so in the end, the 10 weeks delivery time could not be reduced but could at least be maintained.

During the investigation into various different schemes for increasing capacity it became very clear that the manufacturing on the automated Salvagnini punching and bending system was one of the core skills and an important success factor for Meiller. After that, the company set about planning and acquiring an additional system.

Through various time studies and feasibility studies it was quickly ascertained that, with their unique automation and manufacturing technology, the manufacturer Salvagnini was still the best choice in the world of punching and bending equipment.



Connected arrangement of a MD storage tower, a S4Xe combined punching shearing and P4lean bending unit
Picture: Meiller



3D offer layout
(Picture: Salvagnini)

Thanks to the many years of experience that Meiller has in manufacturing with Salvagnini machines, a few empirical values were incorporated in the planning and concept phase, enabling the system to be ideally tailored to Meiller requirements.

All hands on deck: The shareholders, the management and the workforce have immediately agreed to this large investment so that it was possible to initiate the order for a new production line as early as April.

The system was then delivered at the end of November with a particularly short lead time on the part of the manufacturer due to the special situation at Meiller.

After comprehensive and detailed project planning, the system was then assembled and commissioned. Nevertheless, due to the complexity of the system technology and the products, the commissioning was no quick matter and for that reason the final acceptance could only be carried out at the end of February, in accordance with the planning.

The system primarily comprises three main components, an MD storage tower, an S4Xe punching-shearing centre and a P4lean automated panel bender.

The automated MD storage tower enables the coordination and transport of the sheets required for the various machining processes, up to 4 m in length, automatically and just in time.

The S4Xe punching-shearing centre has a multi-press head, which can be equipped with up to 50 different tools, which can all work simultaneously thanks to them each having their own hydraulic drive. In conjunction with the angled shears, which cut the parts out of the metal panel leaving no residual skeleton, this is the fastest and most efficient 4 m punching machine on the market.

With the P4lean bending system for part edge lengths up to 3.2 m, Meiller has a state-of-the-art, purely electrically driven bending machine, which equips itself with tools in parallel with the primary operating time, which corrects the bending angle in real-time and which can also manufacture

very narrow sheet metal profiles thanks to an additional feature. Optimised and adapted for lift door production.

These three components are linked to one another through corresponding automation equipment so that in principle, finished bent parts are created from a sheet metal panel and can be immediately fed into the final assembly area. The Salvagnini S4+P4 system punches, shears and bends metal parts from standard sheets without any kind of intermediate handling of the semi-finished parts.

With over 40 years of experience, Salvagnini is the global market leader for this type of fully-automated, flexible manufacturing system.

This degree of automation, in combination with the parameterised programming enables the production of lift door components in batch sizes of 1, with maximum efficiency and precision.

When compared with the 13-year-old system, the new system offers further enormous advantages:

- ▶ 30% increase in speed
- ▶ 66% less electrical power used
- ▶ No hydraulics in the bending machine
- ▶ Automated angle correction during bending
- ▶ Online OEE assessment via dashboard
- ▶ Automated programming via 3D data models
- ▶ Part marking system for paperless manufacturing

These advantages alone show how much further Salvagnini's technology has developed in this time.

The new system has established the prerequisites at Meiller for a further increase in production capacity and this has already been incorporated

into the capacity planning from April 2019.

Further increases will then follow in the months thereafter with a continuous start-up curve in order to be able to adapt the neighbouring production areas to a higher unit quantity level.

The objective is to reduce the delivery time to 7-8 weeks in the first step and then after that to reduce it back down to 5-6 weeks. Prerequisite for this of course is that the pressure from the market does not increase too extremely, but if it does then Meiller will certainly find the right solutions for that too.

With this investment, Meiller has established the framework for further growth and expansion of the market presence and all this with the customary quality standard.

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