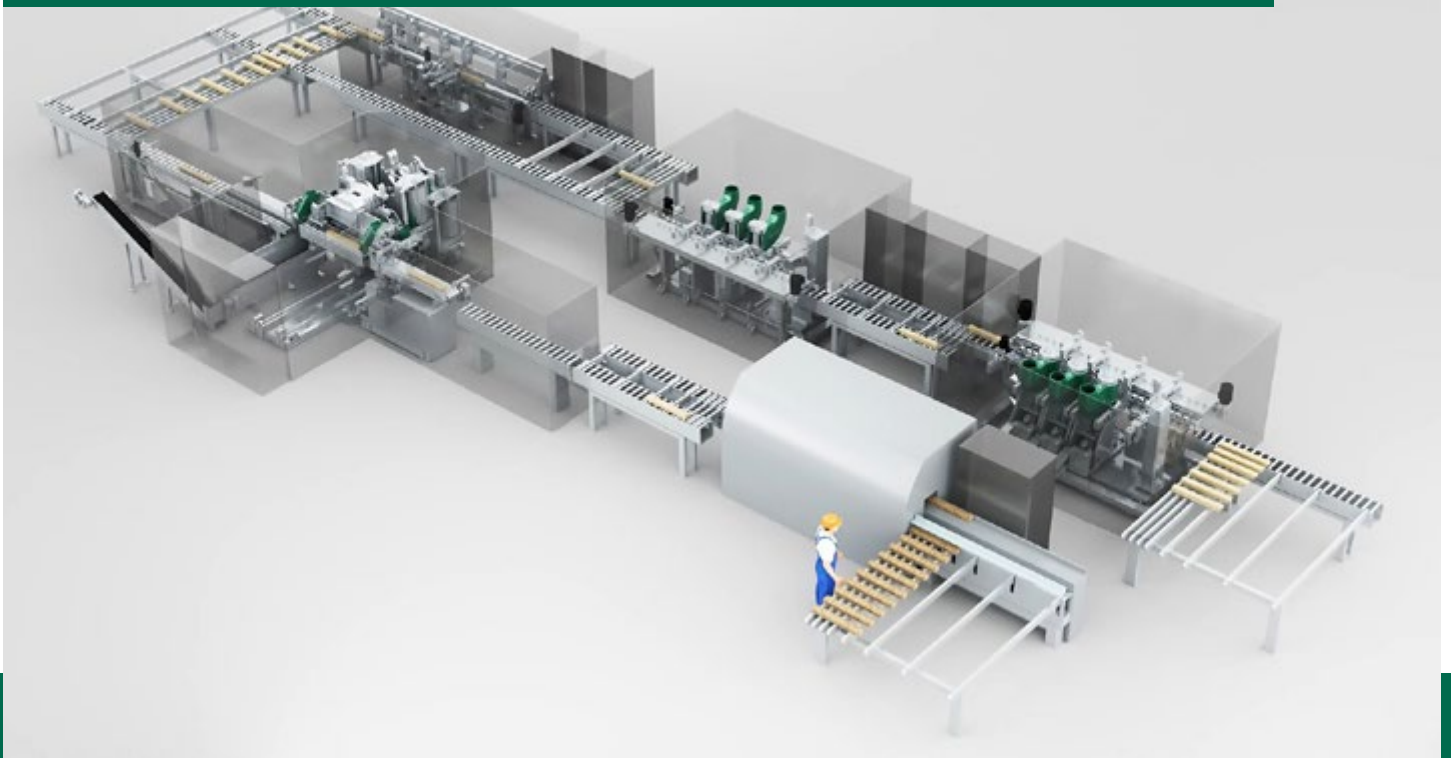


FULLY AUTOMATED WOOD WINDOW SASH PRODUCTION

LESS OVERTIME, LESS WASTE

- A SATISFIED LOOK INTO THE FUTURE



Some time ago we were described the following situation in a medium-sized company:

The variety of profiles has grown rapidly, partly due to new requirements in heat and noise protection regulations. As a result, many tool changes have become necessary, which bind scarce skilled worker resources. Enormous amounts of extra work had to be done, delivery times have been steadily extended. At the same time, scrap has remained constant and considerable rework has continued to be necessary. The space in production is limited - there are only 9 meters' width and about 30 meters' length available.

All in all, it is a tense situation in which many successful companies can quickly find themselves. A previously perhaps well-functioning production process that is no longer efficient due to rapid market changes and other challenges such as the shortage of skilled workers - and there is already an urgent need for action. Therefore, a customer from the wood window manufacturing industry turned to us and we designed a fully automated window production system for his requirements.

The result can be seen: A machine, specially designed for the area of profile splitting, can now enable a large variety of variants in profile design with reduced tool requirements. The need for personnel is significantly reduced, delivery times recover. Rework and rejects can be reduced by state-of-the-art technology, because, for example, the end faces can now be processed without cracks. Improved extraction hoods and higher tool speeds increase quality and at the same time reduce energy costs. All in all, the existing challenges were not only solved, but the result also exceeded expectations. In this way, the company can be future-proofed in the long term.

Would you like to find out more? Then take a look at our video animation and read more details about this exciting project on the following page.

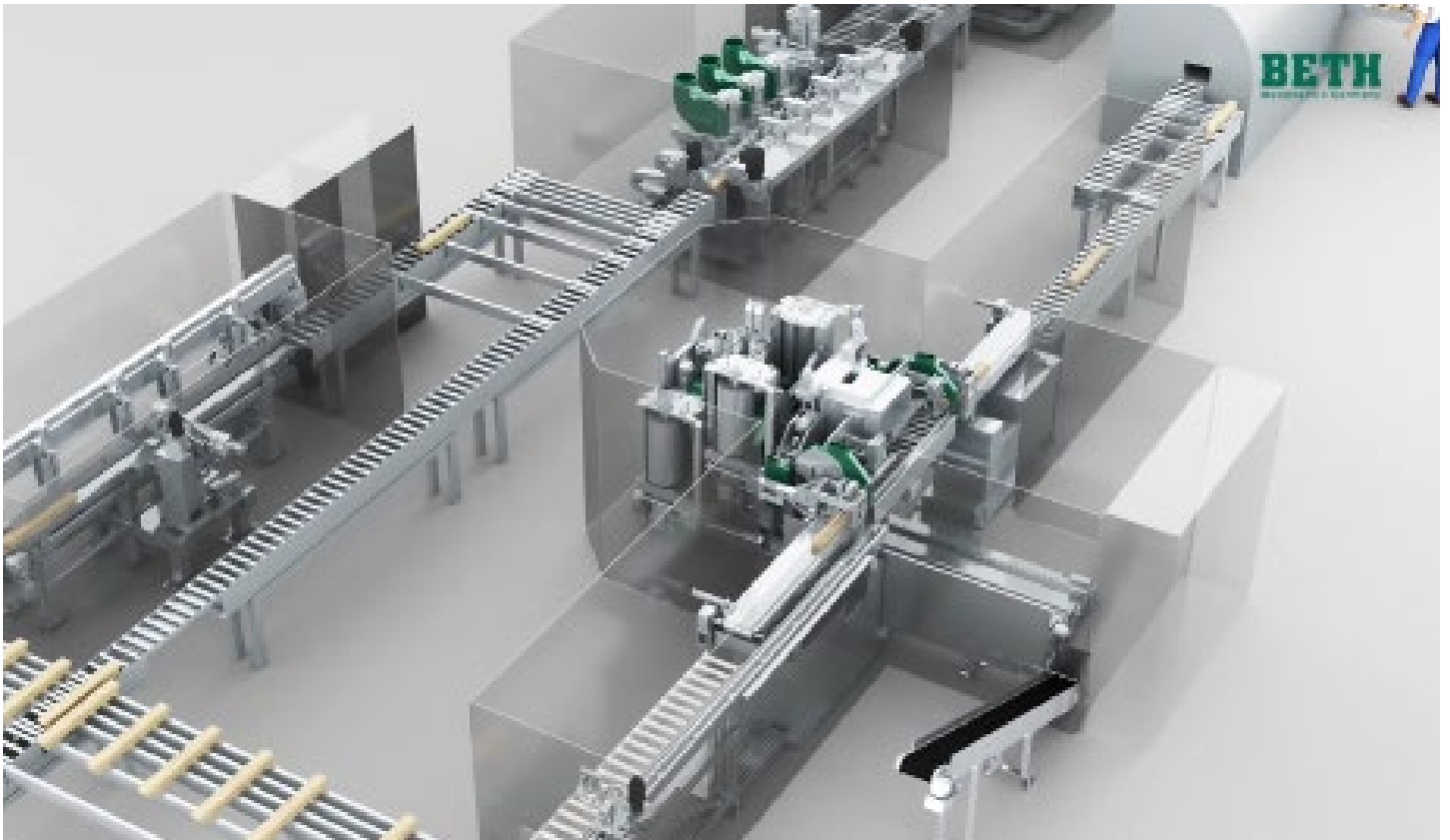
THE PROCESS STEPS

- At the beginning, the worker starts the work order and places the presorted wooden parts on the transverse conveyor with excess.
- After the planer has been adjusted for the required wood height and width, the infeed is released.
- Behind the planer, two wooden parts are then formed into pairs with the same length and the same end profile or fed as individual wood to the ECO tenon cutter.
- In the infeed device, the wooden parts are clamped tightly to the zero edge of the tools.
- The machining starts and the first end face is sawn before it is then rounded at the top and bottom.
- By means of the slot-pin counter tools, the milling, including the splitting, is carried out.
- The tool support travels through the fixed workpiece.
- In the next step, the workpiece is transported to the length stop and the second end face is machined.
- Of course, the first processing of the subsequent parts starts at the same time.
- The end-face machining of the workpieces in the ECO tenon cutter is thus completed.
- The onward transport takes place again via a transverse conveyor.
- Furthermore, longitudinal machining is carried out in the CNC drilling machine with automatic feed.
- Examples are rung drilling, pocket milling, olives, etc.
- If no machining operations are required in the drilling machine, it can be bypassed via a bypass.
- The complete longitudinal profiling is then milled on the first side.
- A small transverse transport is installed behind the first longitudinal profiling in order to enable the milling units to move freely as quickly as possible when changing the profile of the second longitudinal profiling.
- At the end of the system there is then a transverse conveyor, which collects the finished wooden parts.

FACTS

- the available space is 9 m wide / 30 m long
- part Length: 280-3500 mm
- part height: 50-120 mm
- part Width: 50-200 mm
- required performance: 2.5 Parts/Minute in single wood processing
- required performance: 4.0 parts/minute in double wood processing

Take a look at the machine video for this project at www.beth-germany.com:





DISTINCTIVE FEATURES OF THE PROJECT

- large profile design with reduced tool requirements possible
- no movements on the wood to be processed in the ECO tenon cutter, workpieces are fixed on one side of the tool table and tools drive past
- tear-free processing of the end faces by running counter-woods
- separate radius cutters increase the service life of the main tools as well as the milling quality
- a continuous stop on the opposite side of longitudinal profiling machines is used to produce absolutely parallel parts
- BETH is the only supplier on the market to equip pressure shoes with servo adjustment in front of and behind the longitudinal profile spindles for sensible splitting
- modern feed system with feed rollers
- axial adjustment of the feed rollers (pneumatic or with servo drive)
- adjustment of tool positions (horizontal and vertical) with servo drives
- moving tool tables
- adjustment of the machine tables to the tool diameter (allows small parapet dimensions in a continuous machine)
- machine bases filled with polymer concrete ensure smooth running
- speed-controlled direct drives (no belt drive)
- energy-efficient motors and feed-back modules
- one employee is enough to operate the plant



CONTACT

ARE YOU FACING SIMILAR CHALLENGES?

We will be happy to advise you on projects of this sort and answer any questions you may have about our references.

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