

FULLY AUTOMATED: FROM 3D CONSTRUCTION TO THE MACHINE PROCESSING OF DIFFERENT PARTS WITH THE BTL PROCESSOR

The company Holz Keller AG upgraded their already existing CNC center for joinery elements Krüsimatic with an additional Homag BMG 311. Manufacturing of furniture, doors, or staircases runs just as smoothly as the processing of smaller joinery elements or house facades. Alternating production of these parts is made effortless with the BTL processor from Compass Software.

The company Holz Keller AG from Switzerland was founded in 1894 and is run with much vigor and passion by the fifth generation of the Keller family. The business is known for modern and versatile building with high-end and natural wood materials. They solve every request proficiently with a staff of 15 wood specialists. The company's range of products is vast: everything from kitchens, furniture, doors, staircases, and agricultural timber constructions, to complete houses that are assembled with prefabricated elements, are made by the one-stop shop. The common thread between all products is the high-quality output the company stands for.



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Company Holz Keller AG: "Five generations dedicated to wood."

Implementation of CNC technology with the first CNC joinery machine Krüsimatic.

The machine is exclusively used to manufacture wood beams and construction parts.



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The Challenge

The Swizz wood specialist made the important step towards digital manufacturing by purchasing their first CNC Krüsimatic for the processing of joinery elements in 2014. The machine was put into operation by Compass Software, and since then, has been used for the processing of timber beams and construction parts.

"Since the implementation of the CNC technology, our production has become more efficient and the flow of materials has become tidier and therewith more profitable. Our production is more powerful, and we have been able to increase our production output without hiring more staff," explains CEO Samuel Keller.

But still, the company's carpentry products were only offered as a side product. The family company wanted to expand this side of the business and offer more sophisticated carpentry products. This is what drove them to add the Homag BMG 311 in 2017.

CASE STUDY



The plan was to process all other carpentry products on the 5-axis processing center from Homag. The table of the new machine is approx. 1.55 m x 6.00 m (5.1 x 19.7 ft) big, and it runs parallel to the already existing machine for joinery elements. Up until 2017, other carpentry products had been manufactured by hand with conventional carpentry tools, which sometimes took up a lot of time.

It was Compass Software's task to connect the new Homag machine with the output data from an already existing 3-dimensional CAD system. The most important requirement: it had to be easy to produce all different parts in turn.

"We were adamant that we wanted an automated system, so that we didn't have to program each part manually again. And that is exactly what Compass' BTL processor delivers: an automated process from 3D construction to the machine," explains CEO Samuel Keller



It is possible to manufacture diverse parts on the new machine in turn.

The entire range of carpentry products is covered.



The Solution

The Compass Software team installed their in-house BTL solution on the new Homag CNC machine, which had already been running successfully on the Krüsimatic since 2014. External construction data from the CAD software is read in through the BTL processor, processed fully automatically, and subsequently transferred to the machine. Processing of the most diverse parts is made possible. All you need is the geometry data of the parts that are to be produced. This makes it possible to manufacture diverse and alternating parts on the new processing center. The entire range of carpentry products is covered. The processing of furniture, doors, or staircases is as easily done as the manufacturing of small joinery elements or house fronts. Furthermore, Keller is still able to design all parts with their implemented cadwork software.

Business procedures inside the company have also changed since the implementation of the Homag CNC machine – the bulk of the work has shifted to the planning process, since the production side of the business now takes up significantly less time. "As of right now, we are not able to use the machine at full capacity, since we are not able to finish that much work that quickly on the job preparation side. Thus, there is a lot of potential we have yet to exhaust," explains Samuel Keller.

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The freedom to process parts either on the joinery machine, or the CNC table machine with only one CAM/CNC software, ensures consistent flexibility of production.

The Advantage

CNC manufacturing transported the woodshop onto a whole new level of production. The result is more precise and more efficient manufacturing. Completely automatic generation of CNC processing programs speeds up production. “We were adamant that we wanted an automated system, so that we didn’t have to program each part manually again. And that is exactly what Compass’ BTL processor delivers: an automated process from 3D construction to the machine.”

The high degree of manufacturing precision is another aspect that convinced the wood specialist. Especially when processing more intricate carpentry products, the Homag machine’s precision is a major factor. The parts come off the machine and require



little to no postprocessing by hand. Before, the same degree of precision required several work steps which have now become completely obsolete.

An additional advantage is the company’s adaptability to changes on the market. Manufacturing of the most diverse parts is child’s play on the new Homag BMG 311. Samuel Keller: “It is imperative for us to be able to produce different parts on the machine in rotation. It is rare that we produce the same part twice within a span of 3 weeks. The product variety we offer is simply too great. We just manufactured a line of doors, after that a staircase, and later we might process a window shutter. We also did jamb liners and house fronts in between – it can change at a moment’s notice – we put completely different parts on the machine.”

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Samuel Keller is convinced that it was the right decision to partner with Compass Software: “Compass developed the BTL solution and implemented it in our shop. By now, we are at a point where most processes work without any problems and if errors occur that can be solved on a programming level, they are solved quickly. We have had several experiences where we have received a patch that solved the issue in less than an hour. I think that is very fast for a software provider! Experiences like that convince us and confirm that we are on the right path with Compass as our partner.”