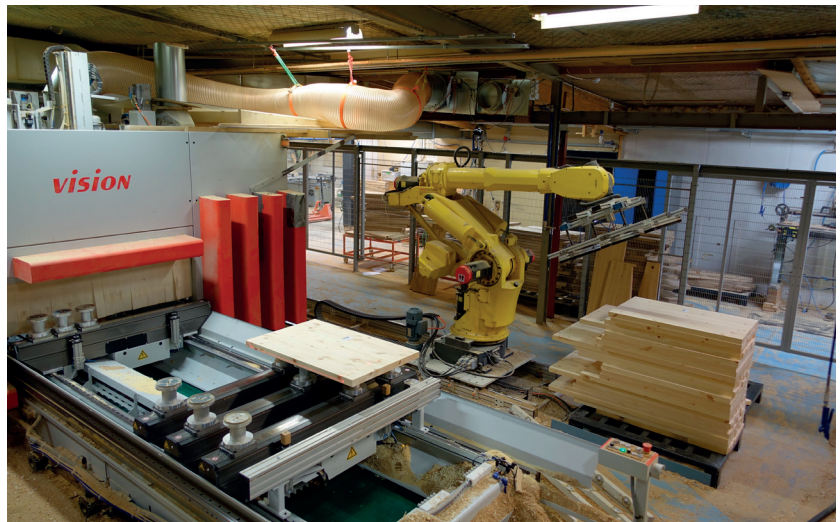


THE FUTURE IN STAIR BUILDING: FULLY AUTOMATED PRODUCTION WITH ROBOTS AT ATAB IN SWEDEN

The family owned and operated stair builder Nya ATAB Trappan AB was founded more than 90 years ago in Sweden. The long tradition of the company can still be seen today. The surrounding landscape and the traditional Swedish house, where the company's office is located, look like they came out of an Astrid Lindgren novel.

And even though the four owners regard this tradition very dearly, the production facilities of the stair builder are highly modern. The company was acquired by its current owners in 2002. The stair shop operates 4 CNC machines, two of which are loaded fully automatically with robots. Since the acquisition in 2002 the team has been able to increase production from some 15 staircases per week to ca. 55 staircases weekly. This volume is nearly enough to satisfy the entire Swedish market. The company's staircases are distributed to private parties, industrial customers, and house building contractors: "We have a clear vision to be one of the pioneers and innovators in the stair building business, for example by equipping our workshop with the robots, the modern CNC processing centers, our own coating station, and of course our CAD and CAM software," owner Lennart Jonsson explains.

At the time of the acquisition in 2002, ATAB had a revenue of 80,000 € per employee, today they achieve a turnover of 200,000 € per employee at a minimum.



The automation of production enables ATAB to run an additional night shift. The process is either run via barcodes or through a wait lists.

The latter is prepared by one of the machine operators, who also prepares the material in the correct order. The robot is then able to work up to 9 hours autonomously.

24 Hour Production Thanks to Innovative Manufacturing

The automation of production enables ATAB to run an additional night shift. The two robots work completely autonomously, which gives the company an enormous competitive edge. They save time and money, while production staff is freed up to work on additional projects.

The two standard 5-axis processing centers that are loaded by robots, are equipped with automatic vacuum cups and clamp positioning. Amongst other things, ATAB produces risers, child protection bars, posts, and straight railing parts on the two machines. Processes are either run via barcodes or waiting lists. The latter are prepared by one of the machine operators, who also prepares the material in the correct order.

CASE STUDY

The robot is then able to work up to 9 hours autonomously. Before the implementation of the robot, the employee who loads the machines had to lift 300 – 400 kg (660 – 880 lbs.) each day; now all of it is lifted by the robot. This approach reflects ATAB's company philosophy. Owner Jonsson is constantly striving to make operations smoother for his employees and to find ways to make their life easier. This was also the thought process that sparked the idea to purchase the robot. Jonsson does not let up until he has exhausted every possible optimization possibility. The owner's dedication does not only lead to highly effective processes, but also creates a pleasant working climate: "Here in Sweden, it is becoming increasingly difficult to find skilled labor as well. Luckily, we have been able to fill open positions quickly up until now. All we've had to do, was to announce the opening with our staff" the stair builder explains beaming with pride.

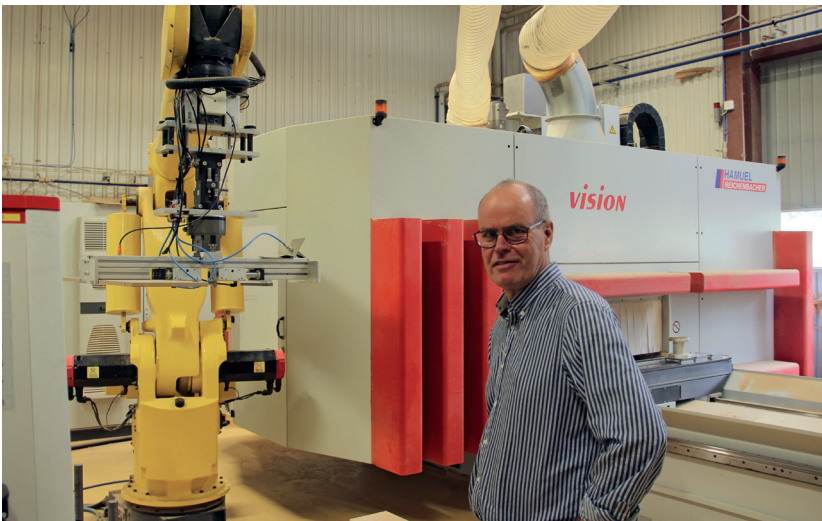
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Material Savings: Good for the Company and Good for the Environment

ATAB's pursuit of more efficiency is a common thread that is applied throughout the entire stair building shop. The company follows an economic and environmentally conscious manufacturing concept, which has enabled them to increase their efficiency by threefold during the last 15 years. At the time of acquisition in 2002, ATAB's revenue was 80,000 € per employee, today they achieve at least 200,000 € per employee. One of the most important factors for the modern workshop's increase in efficiency is the right staircase construction software partner. ATAB has been utilizing Compass Software's staircase construction solutions since 1997. Back then, they were looking for a complex stair construction software which was able to meet the increasing demands of the German and Swedish staircase market, for which their old solution required too much manual post-processing to keep up. Therefore, they started looking for a compatible software solution and found Compass Software. After receiving a comprehensive demo at the LIGNA fair in Hanover, ATAB realized the huge difference and knew they had found the right match for their software needs. Next to the technical advantages, the owners also put special emphasis on the communication possibilities with their future software provider. If problems should arise, the stair builder needed to be assured he would receive help as fast as possible. Thus, they were not only looking for a software provider, but a partner, with whom they could work together closely. This demand was fulfilled through the partnership with the German staircase construction software developer: "We are thrilled to have such a great cooperation with Compass Software. We have a direct line to Compass and the machine manufacturer. We always get quick reactions to our requests. This is vitally important to us. We are

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Since the purchasing of the software in 1997, many things have changed, both when it comes to the range of functions the software offers, as well as the ways in which the stair builder ATAB operates in their workshop. ATAB constantly tries to reinvent work processes and strives for more efficiency and more effective utilization of their resources. With the optimized application of Compass Software, ATAB was able to save 5% of material in the last year alone, which after all made up ca. 100,000 € in savings. Time savings from the same implementation added even more to that and the company was able to save additional 60,000 € in the same year, which amounts to an additional employee. "Handrailings create the most loss of material for us, but with Compass Software we have been able to optimize this process pretty well already. The Compass nesting (program for saving material and optimization) results in immense time savings. I don't know how well other programs do the same" Jonsson explains and remarks that he plans to expand the optimization of the software utilization even further. He sees huge potential in the proper utilization of the software. "The scope of the software is so wide, and we are still not exhausting all of the possibilities." An internal projection revealed that ATAB could be achieving additional material savings of 8% during tread production with the utilization of nesting. The optimization possibilities do not only save the company time and money, but also create more opportunities to accept and process additional orders.

Compass Software GmbH
Steinhammerstrasse 140a
44379 Dortmund, Germany
Phone +49 231 9812 90-0
mail@compass-software.de
www.compass-software.de

Individualized Optimization Coachings: Essential for Effective Software Utilization

To achieve a maximum with the software, ATAB relies on individualized optimization coachings that Compass Software offers to customers. Many stair building businesses use the software for years and never exhaust the entire range of its functions. Thus, it can be a great advantage for stair builders to invite a Compass Software technician, who can review and optimize the company's processes. During the optimization coaching one of the software company's employees visits the company on-site. A team made up of the Compass Software technician, the software user, and possibly a machine technician, analyze the current status quo. Based on this the team develops a strategy to increase efficiency together. Finally, the team implements the concept together and employees are trained accordingly. Jonsson values these coachings immensely: "The coachings help us out immediately. The technician shows us the most ideal way to perform certain processes in the software. These tricks are very valuable. For example, one time a technician was here, and we optimized our post processing. Before, we had to load posts manually onto the machine, now this is done with the robot. We save a lot of time." Many small changes like this have a huge effect in the end. Furthermore, the optimization coachings also motivate his employees to think along. The company experiences this time and again that employees actively try to think of how to optimize processes or change things even weeks and months after the coaching itself. "The coachings are now a regularly scheduled event several times a year for us. This is the best way to make sure we are using the software optimally. Also, the service technicians are different than the developers. They are skilled craftsmen themselves, they understand the problems in the workshop and are able to explain them to the developers better." There are always more requests according to Jonsson: "the good thing is that Compass is constantly working on optimizations and extensions."

Looking Ahead with Compass Software

All in all, Jonsson can only draw a positive conclusion when it comes to the software-controlled production in his workshop. The smooth flow of all processes on the production floor leads to many savings in time and costs for the company. Profits can then be invested in further innovations. Jonsson is also sure he wants to take on the future together with Compass Software. He explains: "The experiences with Compass Software are on a significantly higher level compared to other software solutions. The developments are further and more innovative than those of the competition." The two companies already have plans for the next project. ATAB wants to integrate the Compass Software online Staircase Configurator. This tool allows salesmen of the company to design staircases directly on-site with the customers in an online browser on any device, such as laptop, tablet, or smartphone. The finished designs can be sent directly to production or can be post-processed in the program. Jonsson is convinced that the utilization of software such as this and the continued automation of processes can only mean great things for his company. The more automation is implemented, the less errors will be made. This future proof strategy will ensure that the Swedish company will continue to be amongst the top of the competition on the market.