

SCA BOLLSTA

Dances with robots

This analogy is rarely as fitting as it is in this particular case. At the Bollsta sawmill of Swedish forestry and timber group SCA, Springer Maschinenfabrik completed a truly exceptional project. For the newly built dry sorting line, the focus was on automation. In the future, five robots will handle, move and pack more than 700,000 m³ of lumber a year, thereby making an important contribution to one of Sweden's most modern sawmills.

✍️ & 📷 Raphael Kerschbaumer

“The new Springer line combines the output of our two old lines and allows us to increase our capacity from 550,000 to over 700,000 m³ a year. In addition, the sorting and grading quality has improved significantly in our mill. With this investment, we are not just prepared for the future. We are also setting new standards in automation and in terms of technological progress,” Johan Olofsson, Project Director at SCA, says, summarizing the latest project which was carried out in collaboration with Springer Maschinenfabrik of Friesach.

Demanding requirements

“We not only wanted to replace the two outdated sorting lines but also to reposition the entire sawmill with a focus on productivity, safety and, above all, automation in order to be fit for the future,” Olofsson says about SCA's goals which had been defined in a feasibility study. “We spoke to several manufacturers but Springer was the only one that offers sophisticated solutions, including a fully developed IoT platform. In combination with the impressive robot solutions, which fit seamlessly into Springer's overall concept, we envisioned the future together,” the SCA project director tells us. “With this project, we not only want to be able to keep up with the competition. We want to be at the forefront of aspects that are crucial to sawmills, such as digitalization and productivity.”

When asked about automation, Springer's project manager Helmuth Sommer says: “For us, automation is part of a project already during the planning phase. At this early stage, digital models and simulations can be used to provide valuable insights not only about the further course of the project, but also about the entire production process in the future plant.” In the case of SCA, Springer mapped the entire plant onto a digital twin and placed it in an existing BIM model of the new hall. This way, it was possible to simulate in detail where possible bottlenecks and problems in the material flow could arise, even before installation began in the autumn of 2021, and to make the according changes in advance.

A complete package from Springer

“At the Bollsta site, SCA uses all of Springer's sorting solutions,” Sommer tells us. Already at the entrance to the newly built sorting hall, two robots can be found. They scan the surface of the lumber packages and remove any stacking sticks before the dried wood is destacked. “Especially in winter, when the sticks tend to stick to the lumber due to frost or resin oozing out, they would often cause problems in the further process. Now, they are safely removed and the packages can be destacked without any problems,” Sommer explains. “This process is an excellent example of the use of industrial robots. They can carry out difficult and monotonous tasks automatically and safely,” Nikolas Jausz, deputy head of the robotics department at Springer, explains and adds: “Our robots are always

based on the same basic concept, which makes maintenance and servicing much easier. Nevertheless, we always adapt them to local conditions and the customer's requirements to make sure that the machines achieve a maximum in performance.”

Standard plus with a significant gain in productivity

After the packages have been destacked, an initial visual inspection follows. Then, the boards are separated and graded according to strength with the help of a Microtec Goldeneye scanner.

Once the boards are graded and shaped using a trimmer, each piece falls into one of the 80 sorting bins – at full speed. “The line is designed for 230 boards per minute. With standard ranges, this speed is also achieved in normal operation,” Sommer tells us and adds: “In addition to installing many special solutions and some prototypes as well, all of the machines that have been tried and tested for years, such as the tilting table, conveyors and feeders, were updated and adapted to the high speeds and the conditions here at this site.”

Sewing instead of welding

Immediately after the sorting bins have been emptied, the boards pass through one of the two packaging lines. “Having two parallel lines increases reliability and flexibility,” Sommer comments. Thanks to the newly developed flying layer forming system and the dual fork stackers, stacking takes place uninterruptedly at up to 28 layers per minute. Next, the packages are given safety straps as well as RFID chip markings which ensure traceability throughout the entire production site and in the warehouse. Finally, a truly impressive solution from Springer comes into play. According to the Carinthian machine manufacturer, their newly designed wrapper is unrivalled when it comes to automation. Even the infeed of new packaging rolls is fully automated. In fact, numerous new developments have been integrated into the new wrapper. For the first time, it is possible to fully automatically wrap lumber packages containing boards of varying lengths, which are widespread in Nordic countries. Even the labeling process can do without manual intervention. This task is done by a robot which distinguishes unwrapped packages from wrapped ones. “The robot recognizes whether it needs to stick the label on the foil or staple it directly to the wood,” robotics expert Jausz explains. Springer's innovative orientation is also reflected in the way the packaging foil is wrapped around the packages: The foil is not welded, but rather sewn together with threads. This makes it possible for SCA to switch to paper-based packaging solutions in the future without having to make adjustments to the machine. “Thanks to this investment, we will remain well positioned and competitive in the coming decades. Our partner Springer helped us achieve this goal,” Magnus Wikström, manager of the Bollsta sawmill, says, summing up. //



WATCH THE VIDEO HERE

Scan this QR code to watch the video of the Holzkurier's visit to SCA in Sweden.



- 1 An Austrian-Swedish team:** The employees of Springer Maschinenfabrik together with their project partner SCA
- 2 Process monitoring:** All process steps – from destacking, the infeed, board measurement and shaping to sorting – are monitored from here by the controller
- 3 Focus on sustainability:** The wrapper does not weld but rather sews the packaging foil together, thereby enabling the use of paper-based solutions in the future
- 4 Useful application of robotics:** At the factory entrance, two Springer robots safely and reliably remove the unwieldy stacking sticks
- 5 No foil? No problem!** The labeling robot securely affixes the package labels to the wood

