



Rise of the Robots



The Selco WN 610 ROS at Ligna 2019.



A station on the right of the beam saw allows the robot to temporarily store varied-sized pieces before they are off-loaded to the designated pallets in order to create stable piles.

Michele Luzio explains the benefits of Biesse's WN 610 ROS.

Over the last couple of decades, the drive towards automation and robot technology has been relentless. Tireless, reliable and capable of the same performance at the end of a shift as they deliver at the beginning, robots ranging from automated warehouse systems to feeding and stacking options are really taking the spotlight, and even small companies can benefit from their versatility.

Back in May 2019, Biesse demonstrated a Rover KFT machining centre equipped with a Winstore X3 automated magazine that had been designed with the smaller workshop in mind. A Brema Eko 2.2 was also shown with ROS loading and unloading and alongside other machines that can be incorporated into automated cells, visitors to Ligna were able to see the Rover C and Rover A (with new FPS worktables). Biesse also demonstrated its digital factory solution under the

Automaction slogan. Its an industrial production solution that coordinates people and robots and demonstrates the infinite capacity offered by machines.

We took the opportunity to talk to Biesse's Brand Sales Manager, Michele Luzio, about one robot-assisted solution in particular that's delivering real benefits for manufacturers who have a focus on batch size one production: the Selco WN 610 ROS.

The Selco WN 610 ROS is one of a trilogy of beam saws that make up Biesse's Six Series. Six-Series models include the WN 610, WN 630 and WN 650 – the main differences between them being saw blade projection and motor power – but it's only the WN 610 Biesse has chosen to adapt to work with a ROS (Robot Operated System). Michele explains the key advantages:

"The trend in the market is moving towards single sheet work and batch size

one production. Customers want to be able to process variations, different colours, and offer lots of options. They need to be able to cope with production that changes quickly. If you have automatic storage connected to a ROS – our storage solution is the Winstore, and we have three different models – it means you have an efficient single sheet operation that's faster than any operator. The robot doesn't get tired and its performance is the same at 5pm as it is at 9am. It does need an operator but the operator doesn't have to be there all the time, so is free to do other things. The ROS also allows you to have control over your production flow, especially when it's connected to a Winstore, and damage through operator error is reduced to zero. With no rejects to remake, the production cycle is never interrupted, so you save materials and you save time. This is the

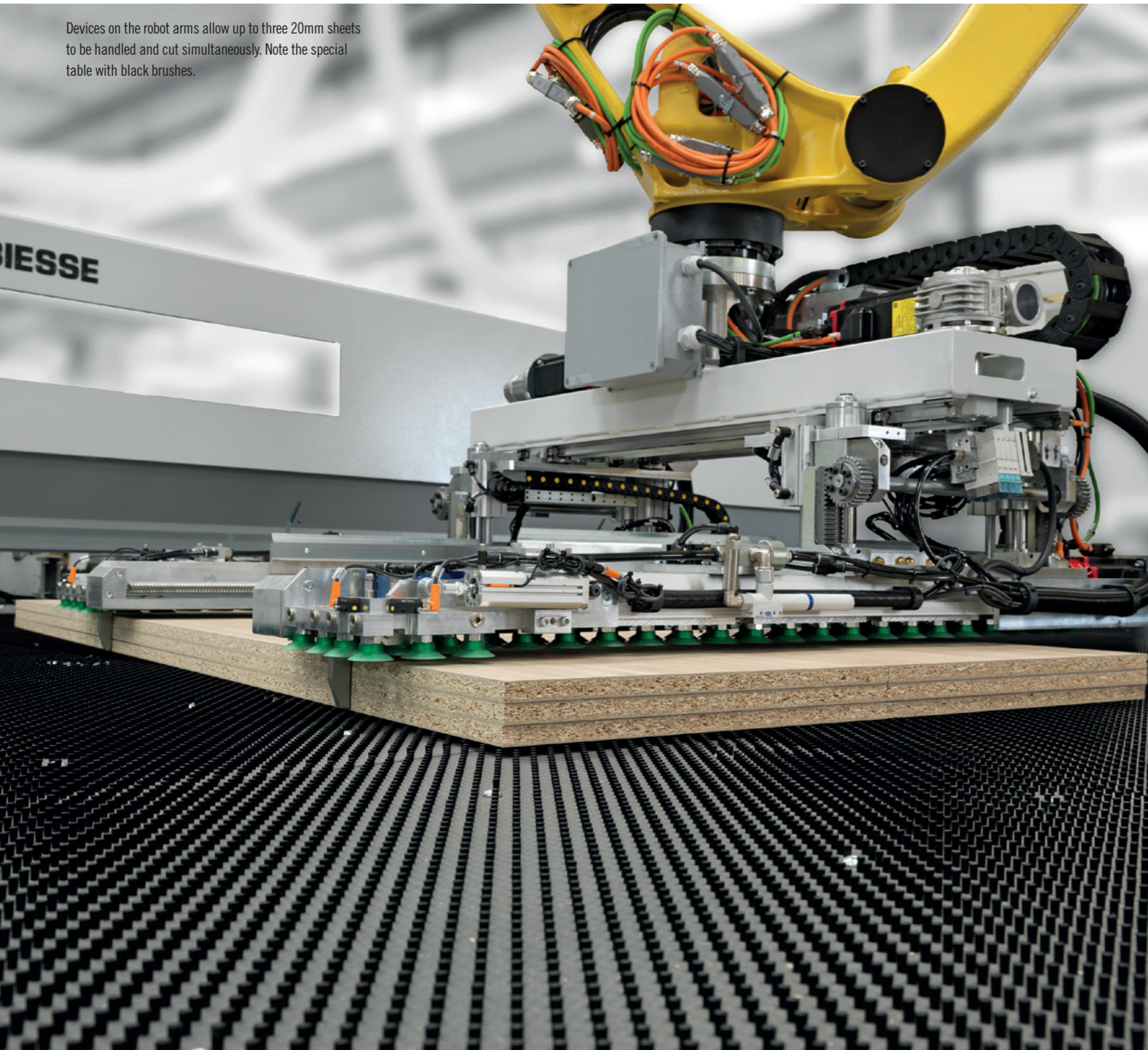
ideal solution for automation. You no longer need stock, factory space is reduced, you only cut what you need and you cut the right volume when you need it. You can cut a stack – a WN 610 ROS can be equipped with devices on the robot arms to handle up to three 20mm sheets – but its main purpose is as a single sheet solution and that's why we use a machine with a 95mm blade projection.

"The WN610 ROS comes with a 4.5 m cutting line. There are three loading solutions with the ROS system: lift table, lift table plus turning station - which allows you to make head cuts without turning the boards when they are ejected - and loading via Winstore. The last one is the best solution for single sheet production. Twin pusher technology is needed for the ROS solution so you can simultaneously cut multiple pieces. It brings flexibility to the



Michele Luzio

Devices on the robot arms allow up to three 20mm sheets to be handled and cut simultaneously. Note the special table with black brushes.



operation. We also have special devices on the pusher that allow the machine to eject pieces because there's no operator to collect them. The off-loading tables have been replaced with a special table with black brushes that allows the robot to handle the material.

"One useful option is an additional pallet that allows the robot to load offcuts. These will be taken out of the cell by the operator and then cut on a different machine. For safety reasons, when the operator enters the cell, both the beam saw and the robot stop.

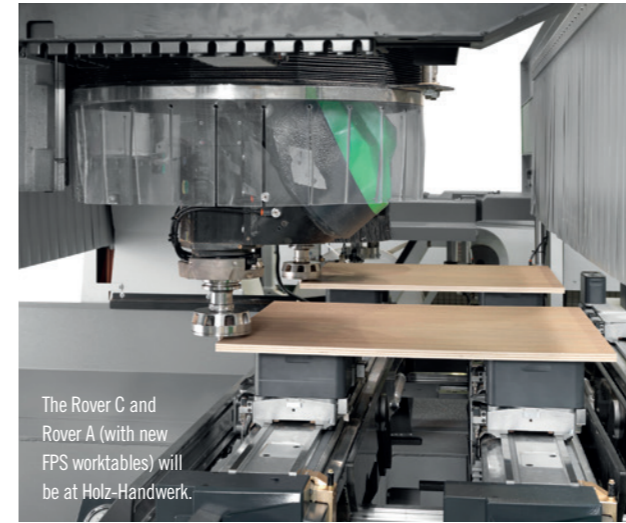
"The ROS is an off-loading robot. It can off-load to pallets that have been placed in

front of it, or, as an option, we can provide an automatic transfer unit that will transport the pieces to the destination chosen by the customer, e.g. to a drilling or edgbanding machine.

"If you think you will need to work up to three sheets at once, this needs to be specified from the beginning. You can still work with one sheet at a time if you have the three-sheet option, even sheets down to 8mm, but, as mentioned before, the best way to use a ROS is still to work each sheet separately. The cycle is the same as in any other Selco beam saw – rip cuts on the right and cross cuts on the left. In addition, there are rising posts on the cross-cut

section that allow the robot to square reference the strips. If the piece needs a third cut, the ROS rotates it on the additional parking area on the left prior to further cutting.

"In terms of programming, the ROS isn't different from an operator point of view. We offer optimising software (Optiplanning) that allows the operator to create optimised job lists that will then be sent to the machine either through the company network, or via a USB stick. Following that, the operator can start the job using the Open Selco Interface (OSI). In addition, we have a separate interface (an additional PC outside the cell) that means the operator



The Rover C and Rover A (with new FPS worktables) will be at Holz-Handwerk.



The Biesse Brema Eco 2.2 with ROS

can work with the OSI from outside the protective fences. It's an independent console. The operator can make changes without stopping the machine and do so in complete safety."

To simplify maintenance, there are a lot of features that are common to all the saws in the Biesse range. As you move up the range, pneumatic blade raising is replaced by brushless motors on Six-Series machines and the positioning of the pusher, instead of being accurate to within +/- 0.15mm, is honed to an imperceptible +/- 0.1mm. "To make maintenance easier and more efficient, a maintenance program inside the OSI reminds the operator to perform certain

tasks, like cleaning operations, lubrication checks, the status of the blade, etc. Within the maintenance programs there are videos showing how to carry out these procedures. Also, our Biesse machines are equipped with SOPHIA, our remote preventative maintenance and intervention platform. It predicts potential problems so they can be solved before they cause an interruption to production."

If you'd like to know more about the Selco WN 610 ROS, call Biesse UK on 01327 300366, or, if you are reading this article via the online App edition of Furniture Journal, tap [here](#) to be linked to Biesse UK's website.

