Michael Clack

A Plus for Biesse

The new, twin-head Rover A Plus brings versatility and production increases to Biesse's most compact CNC machining centre.

If you are in the market for a compact CNC machining centre that's versatile enough to tackle complex joinery as well as panel processing, there are some new and very interesting features to be found on Biesse's recently-launched Rover A Plus that you won't find elsewhere for the same price point. And the latest technology contains some real game-changers.

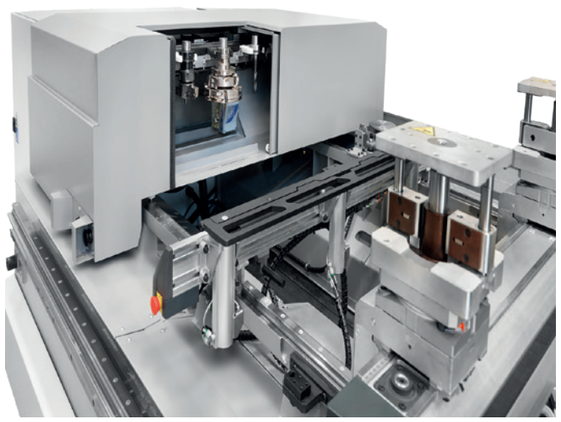
The Rover A has been around for quite a while. Its well-proven frame can be configured to suit flat-table nesting operations, or accommodate any shape of material in a pod and rail specification. For window, door and stair production, there are many different operations and while a pod and rail equipped Rover A will tackle complex shapes with ease, manufacturers who needed more tools, or more flexibility often had to step up to the more expensive and much larger Rover B to get the functionality they needed. Enter the Rover A Plus, a twin-head machine that's not as big or as costly as a Rover B but has the capacity for 83 tools on board and some very clever technology that could give you as much as 24% more productivity than a Rover A.

Michael Clack, Technical Applications Manager for CNC and Drilling at Biesse UK, takes up the story:

"The Rover A Plus is different to the Rover A in so far as it can have two individual heads on it, but to keep the price down, the second head is equipped with what we call multifunction units – for example, a dedicated unit for vertical routing operations, an aggregate for horizontal machining, a blade, or a drill head. Every time the main head needs to do a tool change, we put an operation with the multifunction unit into the program that negates the tool-change time. Depending on what processing style or materials you use, a Rover A Plus will save time, reduce the number of tool changes needed and the number of tools needed inside the machine.

"A standard Rover A can hold a maximum of 45 tools within various tool-changers. With the Rover A Plus, we've increased that to 83. However, with the ability to hold more tools comes another problem: if the machine is travelling further distances to locate tools, that takes time. To solve the problem, we've added something called Toologic into the machine. With Toologic, it recognises the program it's running next and moves all the tools it needs into its high-speed tool-changer – the one that travels along with the machine. The program is optimised automatically without any intervention from the operator. It looks at the programs required and in real time, runs through the list, itemising the tools it needs and positioning them based on how often they will be needed. It can analyse one program and set up for it, or it can analyse an entire work list and optimise the tool-changer for the work list, or the day's production. If 40 tools are needed for the day's production, we can only fit 33 into the back tool-changer, so it will move the 33 that are used most frequently and put them in there. Toologic has been developed specifically for the Rover A Plus to compensate for having a single head that's able to change tools and a second that's unable to change tools.

The Rover A Plus comes with positions for 83 tools on board and Toologic that recognises the program it's running next and moves all the tools it needs into a high-speed tool-changer that will accommodate 33 tools.

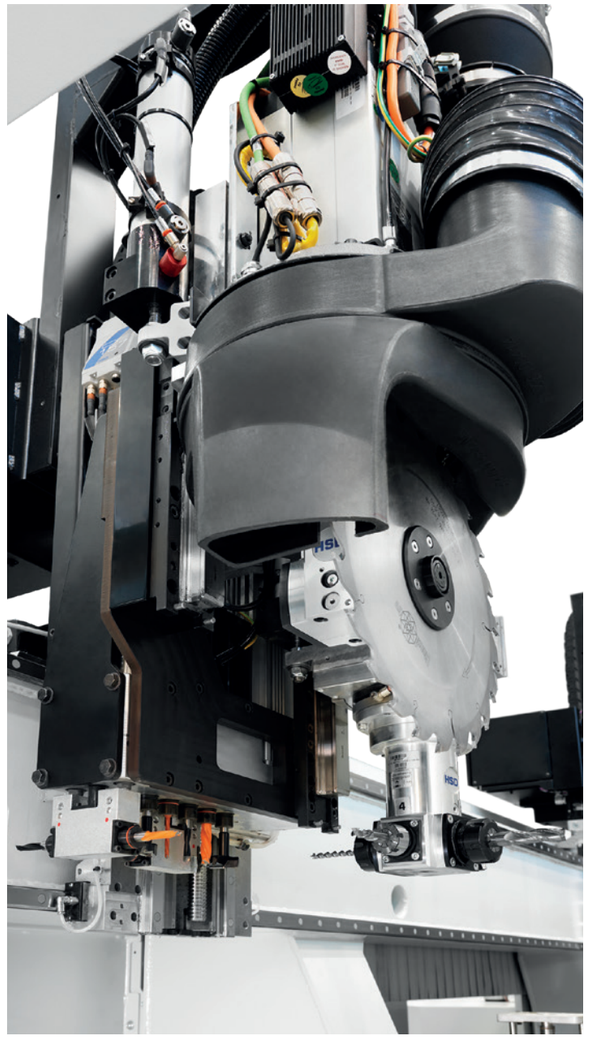


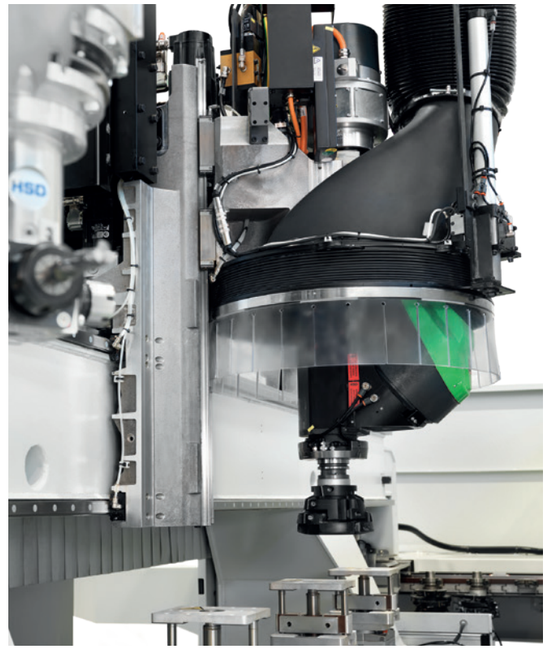
"You can choose from three, four or five-axis options for the main head. With the different configurations we offer – a double head, up to 60 different types of configurations in the multifunction units, different drill head sizes, etc – we can increase the drilling speed and reduce panel processing time drastically. On the second head, you could have a small drilling head with two multi-function units, a bigger drilling head, or a drilling head on both the main unit and the second unit. We can configure the Rover A Plus in such a way that it will appeal to different market sectors, although this machine is aimed more at joinery: a typical window manufacturer who needs a small footprint, flexible machine; general joiners who are making doors, windows, stairs who need different tooling and different styles to cover all their processes."

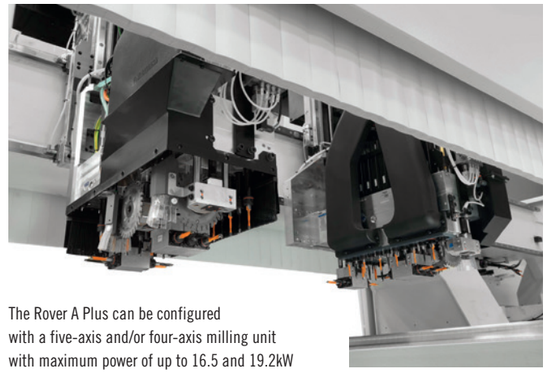
The Rover A Plus uses the same pod and rail systems as the Rover A and there's a choice of ATS (Advanced Table-Setting System) with fast manual positioning of the clamping systems; SA (Set-Up Assistance) that includes linear sensors in the worktable and an anti-collision function; EPS (Electronic Positioning System) for automatic positioning; FPS (Feedback Positioning System) with self-learning of manually selected positions of vacuum modules and clamps; and XPS (Extreme Positioning System), which has a motor on every worktable and every carriage that enables simultaneous automatic positioning of all the locking systems in 16 fully independent locking areas. "It's possible to work two separate sections of the machine simultaneously," says Michael. "We can set up one side of the table completely differently to the other – for example, almost a production environment on one side of the machine while the other is doing something completely different. We can even provide convertible flat tables."

With the Rover A Plus, Biesse has also added an auto start function, which removes one button press from the process. That might not sound significant, but when you're running multiple programs over the day, all those seconds add up. "With the auto start function, we load the piece, lock it down and walk away," explains Michael. "The machine detects when you've left the danger zone and starts itself. On a full bumper machine, it will wait five seconds and then it will start. The operator is free to load the opposite side and he doesn't have to walk over and push the start button again. It is a small feature but it's a real benefit."

Another time-saving feature that's been added to the Rover A Plus is Dynamic Parking. Normally, depending on the length of the part that's being loaded, the machine will either park in the middle of the bed, or it will park at the end. On a machine six metres long, it has to park six metres away and then traverse all the way back to start the program. With a full bumper setup, this takes time because it can only travel at 25m/min. "With Dynamic Parking, if we were to load a half metre component, for example, the machine would move 300 millimetres past that and park. If we were to load a metre component, the machine would move 300 millimetres past that and park. Where it parks is dynamic and controlled automatically by the PLC."







The Rover A Plus can be configured with a five-axis and/or four-axis milling unit with maximum power of up to 16.5 and 19.2kW

The Rover A Plus is equipped with a double-driven motor on the X axis to keep the structural integrity of the machine and ensure fluid machining when processing the larger solid wood components the new model can accommodate. Where the Rover A has a 74mm high pod that provides 200mm of clearance, the Rover A Plus has been increased by 55mm to 255mm, taking it much closer to the Rover B's 290mm. With working lengths of 3.2, 4.3, and 5.6m and a choice of 1500mm or 1800mm widths, it doesn't quite make the 2230mm width of the Rover B but it can certainly accommodate large-scale joinery work.

The Rover A Plus is a straightforward machine to program. Although Biesse would undoubtedly prefer everyone to use their software, if you have other machinery brands, or you process metal or glass, you might not want to learn new software. "We learned very quickly that if a customer has a metal-working shop and they're looking at a wood CNC to make the packaging for their components, they're not going to want to learn to use bSolid when they are already familiar with their other programs," says Michael. "So we had a straight choice to make: either to work with them and get our machine to work on their existing software; or not work with them at all. We have many partners where we already have post processors in place. It isn't always the case, so we will work with others to generate the post processor needed for our machine. Any machine can work with any software if the option of converting the language is there."

If you're looking for a well-positioned twin-head machine that takes you closer to a Rover B, but, depending on the configuration you choose, only adds about 15% to the price of a Rover A, the Rover A Plus could be the ideal solution for you. For more information, or to see the Rover A Plus in action in Daventry, call Biesse UK on 01327 300366 or visit **biesse.com/gb/en/**