



The Rover B FT HD has a wider and deeper rack than the FT, a pinion that's almost twice the size and motors that have been updated from 1.3Kw to 4.4Kw.

When speed is of the essence

Biesse launches its new Rover B FT High Dynamics, a nesting machine that sports blistering positioning speeds and rivals beam saw production levels.

In today's manufacturing environment, speed is of the essence. Speed, accuracy and efficiency... these are three of the key drivers behind production efficiency and that's something everybody wants because it adds up to increased profits.

With this in mind, Biesse's engineers have developed a brand-new version of the tried and trusted Rover B FT called the Rover B FT HD. The HD stands for High Dynamics and, as CNC Brand Manager Paul Willsher explains, having high dynamics on a

nesting machine makes the newly-released HD model significantly faster than any other Rover B.

"Comparing the High Dynamics machine to the standard machine, the two are identical when it comes to cutting speed," he says. "The difference lies in how quickly the HD moves between cutting operations: the maximum movement speed of a Rover B FT standard version in the X axis is 85m/min but on the HD version it's 128m/min and the accelerations have pretty much

doubled from 4.5m/sec to 9.5m/sec in the X axis and from 5m/sec to 10m/sec in the Y. Put the two machines side-by-side and the HD moves much faster between the cuts and when changing tools."

Processing two identical nests at the same time with a standard Biesse Rover FT and the new High Dynamics version side-by-side proves the point. Based on a 14-component panel, the Rover B FT HD finished the same job 54 seconds faster than the Rover B FT. There are also commensurate increases in vector speed from 120m/min to 172m/min and it's pretty slick on the corners too, with the maximum angular speed increased from 180 degrees/second to 720 degrees/second in the HD.

Translating that into tangible terms, with both machines cutting at 25m/min, a standard Rover B FT would process 128 seven-piece cabinets in a shift – that's about 40 boards – while the HD version, by positioning faster between the cuts, produces an extra 33 cabinets taking the total to 161 cabinets in a shift. "That could be two more kitchens for our customer,"

says Paul, "And we can go up from there to a twin-head machine that will make 191 seven-piece cabinets in a shift, or a twin-head HD version that will make 233. That's up to beam saw production level."

The build quality of the new HD version has been substantially beefed-up with a much wider and deeper rack, a pinion that's almost twice the size and motors that have been updated from 1.3Kw to 4.4Kw so, potentially, it could cut at 50m/min if your tooling will allow it, further increasing the productivity you could expect.

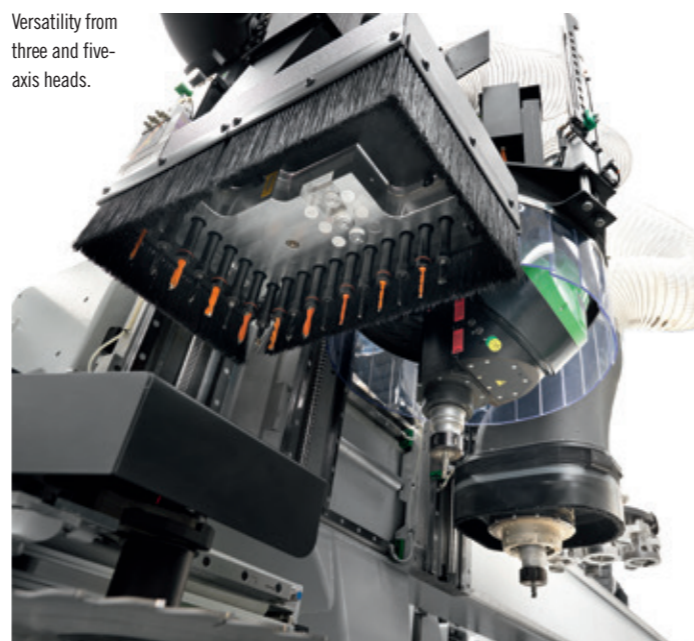
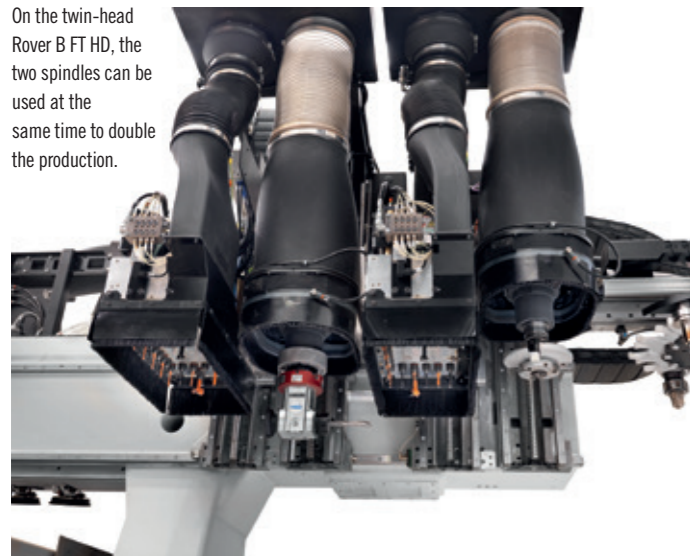
"The Rover B FT HD is predominantly going to appeal to kitchen, bedroom, or bathroom manufacturers," says Paul, "But it will also handle kitchen doors, for example J-Pull doors." A single head standard version of the Rover FT will produce up to 450 doors in a shift while the HD version pushes that by another 11.8%. With the double-head HD, that goes up to 1003 doors, an extra 26.8%.

"On the twin-head Rover B FT HD, the two spindles can be used either at the same time to double the production, or you can



Paul Willsher

On the twin-head Rover B FT HD, the two spindles can be used at the same time to double the production.



Versatility from three and five-axis heads.

use them independently with one working and cutting panels while the other changes tools ready for the next operation in masked time. You decide. If they are both three-axis heads, the software knows that the nest will accommodate the two spindles and the process will be optimised."

The software is clever enough to know if it can't cut two of every single part but it can maximise sheet yield and productivity better by using one spindle rather than two to do the job, then it will do that. You could also opt for a five-axis spindle on one head and a three-axis spindle on the other if you wanted increased versatility but, of course, the two won't run at the same time.

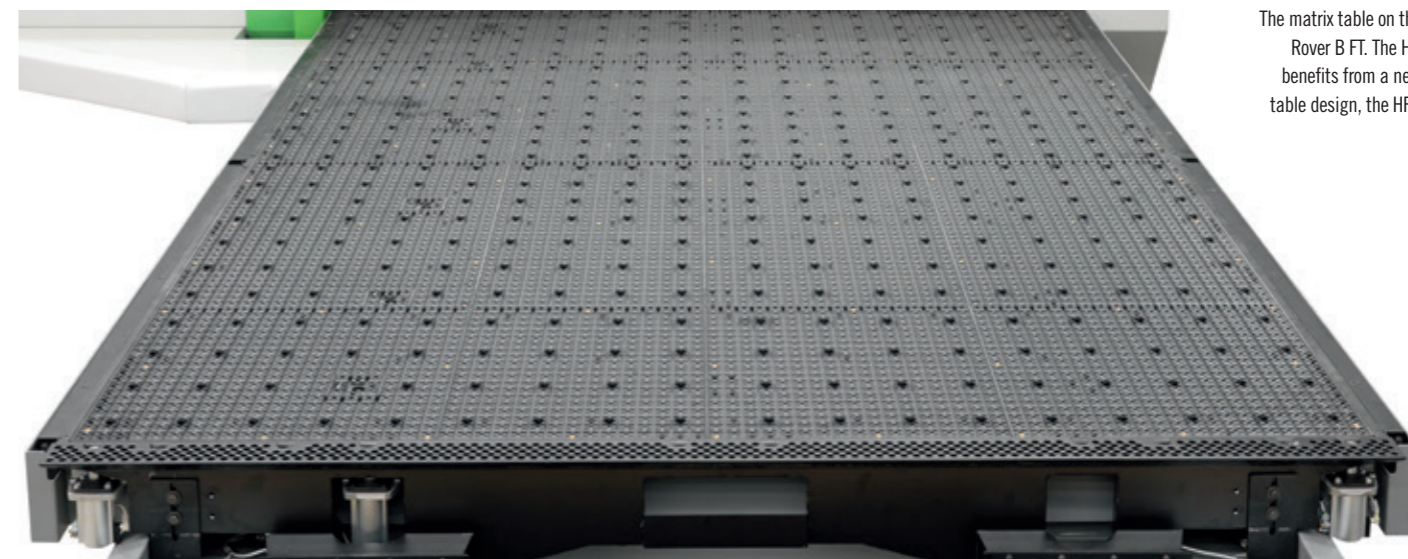
In order not to slow the speed down between cutting operations, Biesse has also changed the position of the tool-changers on the new Rover B FT HD, reducing the weight on the gantry by floor-mounting them. "If you are manufacturing doors, you'll

need quite a few tools and profiles and that means lots of tool positions so you can fit all your different profiles in the machine," says Paul. "On the Rover B FT HD there is an eight-position tool-changer that sits on the Y carriage. This is the fastest available because it's actually on the tool carriage, following the spindles up and down the Y carriage. We then have a 16-position tool-changer that's not available on the HD version because that sits on the X carriage. We don't want tool-changers slowing down the inertia so we have a floor mounted chain-style tool-changer rather than a revolving tool-changer on the HD machine that gives 22-33 positions. A customer with lots of different tools would opt for this.

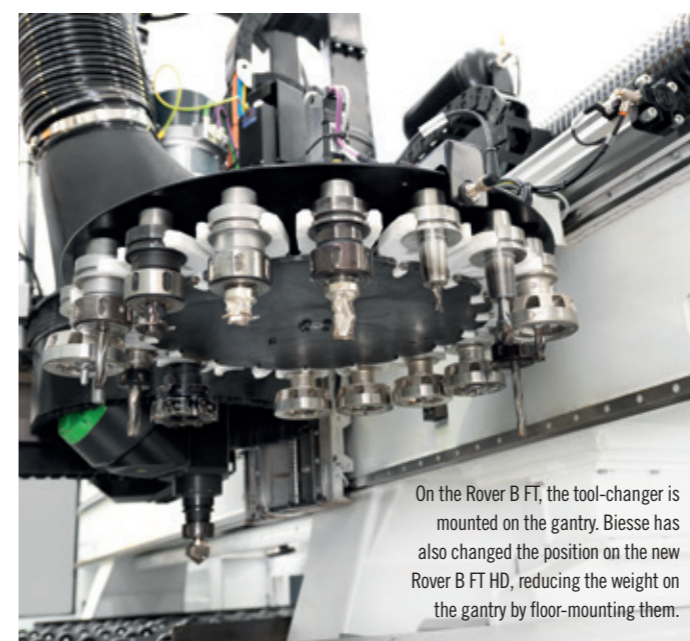
"Most companies would go for an eight-position revolving tool-changer on the Y carriage. If they buy the HD version, the revolver takes all the fast-running tools and the spirals for cutting nested panels. The

profiles for doors could then be stored on the chain tool-changer. In that respect, we're different from our competitors and having the tool-changer on the floor keeps the gantry weight down and that's what helps this machine run at 128m/min."

In addition, the Rover B FT HD benefits from a new table design, the HFT. Any machine is only as good as its ability to hold parts down while they are being machined, so Biesse has included deeper grooves in the matrix of the new HFT table for better vacuum distribution, the outlet holes have been increased to 60mm and there are further modifications under the table where the increased size of the chambers allows more air to flow into the table. "On our current FT table, available on the entry level machines, the Z direction breakout force from one vacuum pump gives a measurement of 32 kgf," says Paul. "With the HFT table, that's up to 48 kgf – a 50%



The matrix table on the Rover B FT. The HD benefits from a new table design, the HFT.



On the Rover B FT, the tool-changer is mounted on the gantry. Biesse has also changed the position on the new Rover B FT HD, reducing the weight on the gantry by floor-mounting them.



The new HFT bed design means pods can now be put directly on the table.

increase in Z direction breakout."

With the addition of a second vacuum pump, it increases the magic number marginally but, crucially, the two together provide a much greater volume of air across the whole board so the table is better able to hold down jumbo boards.

On the earlier design – the FT bed – between the edge of the table and the start of the vacuum there is a 38mm overhang if the board is positioned right to the edge. 38mm at both sides of the panel doesn't benefit from the suction. With the HFT it's only 17mm, so a lot closer to the edge as well as better vacuum on all the parts within that sheet and less risk of them moving during machining operations.

For manufacturers who might also want to use pods on their Rover B FT HD – small-to-medium-size manufacturers who don't have the space for a second machine but have a demand for five-axis work as well

as nesting operations, for example – the new HFT bed design means pods can now be put directly on the table. "Normally, if you needed a secondary operation after the nesting, such as horizontal boring, you'd need to remove the spoil board and use pods," says Paul. "At one time that would have involved putting an adapter over a vacuum hole, plugging up the other holes so the air was only coming through the pod, then putting the pod on top. Now, it's faster and easier. You don't take off the spoil board because there's enough air to pull down through it, through the pod and engage the part on the pod."

Taking everything into consideration, if it's a really fast nesting machine you are after, the Rover B FT HD has a lot going for it. High Dynamics set a new benchmark in this market sector and for those who want the ultimate performance, there are plenty of options to ramp the productivity

up from the single-head version to beam saw productivity levels. But Biesse has gone further. It's considered its market carefully and built in a degree of versatility to accommodate the needs of manufacturers who might want a nesting machine with five-axis functionality and a pod and rail bed option as part of the package – and that's good news for small-to-medium-sized companies that don't have the space for both.

To find more out about Biesse's winning High Dynamics machines, call Biesse UK on 01327 300366 or visit www.biesse.com/uk/wood/

Readers with the free Furniture Journal App can watch the 14-component processing demonstration and compare the performance of the Rover B FT with the 54-seconds-faster Rover B FT HD by touching the main image on the opening pages of this article.