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Rover A: the craftsman's choice

Duncan Doig of Doig Furniture explains why his recent purchase of a Biesse Rover A five-axis machine is something he should have done long ago.

There is something rather wholesome about the image of a furniture craftsman whittling away in a small workshop, the smell of oak heavy in the air, an array of hand tools laid out neatly on a workbench, newly-honed chisels glinting in the sunlight. That's the traditional image, the romantic image. It's the image many craftsmen still like to portray.

Duncan Doig is just such a craftsman: traditionally trained, he has an eye for perfection and takes real pride in delivering it. But like many craftsmen, Duncan has discovered the benefits CNC machinery can bring to the workshop of the traditional designer-maker: the increased accuracy; the repeatability; the ability to joint more

accurately and more consistently; and the facility to delegate jobs that require standardised procedures to a machine that can do them better and faster while freeing up real craftsmen for tasks where only cabinet-making skills will suffice.

After 17 years working with spindle moulders, panel saws, planers, thicknessers and boring machines, he admits the move to a five-axis CNC machining centre was a big leap of faith. Compared with traditional machines, a CNC represented quite an investment. In addition, there was a space issue to consider. "We didn't really need a CNC," he admits. "It was more of a want-to-have item; a bit of a precaution against labour shortages. But now we've bought into CNC,

we're finding more and more uses for it and it's changing the way we work.

"One of the issues we were coming across was communication in the workshop about process and this is where I felt the machine could really help. We have standard procedures for some things – putting a carcass together, for example – but when you have a skilled team of craftsmen they all like to do things in their own way. Having a CNC takes that individuality out of the process. We program it to do what we want and it does it the same way every time. We know what we're getting at the end. With the CNC, dimensions are much more accurate, and if you are working at the top end of the market, it's a key consideration."

Heavily influenced by the experience of his peers, Thame-based Doig Furniture invested in its first five-axis machine, a Biesse Rover A FT 1531 five-axis CNC, in June 2021. Duncan admits he didn't really need a

five-axis machine for the carcass work he envisaged it would take over. "A three-axis machine would have done all our nesting and drilling and when we went to Biesse's showroom, the demonstration proved that. But there was a five-axis pod and rail machine at the side of the three-axis and towards the end of the day we did a quick demo using Shaker doors as an example. I was impressed, so I asked for a price. There was an uplift in the cost and it was already a big investment for us but I felt a five-axis machine would give us a bit more longevity and open up other doors.

"Back at the workshop, I started speaking to other companies who had Biesse machines and the feedback I got was that the customer service side of Biesse is where they would stand out for a first-time entry into CNCs. We knew we would need a bit of hand-holding and the consensus was that we would get that with Biesse.

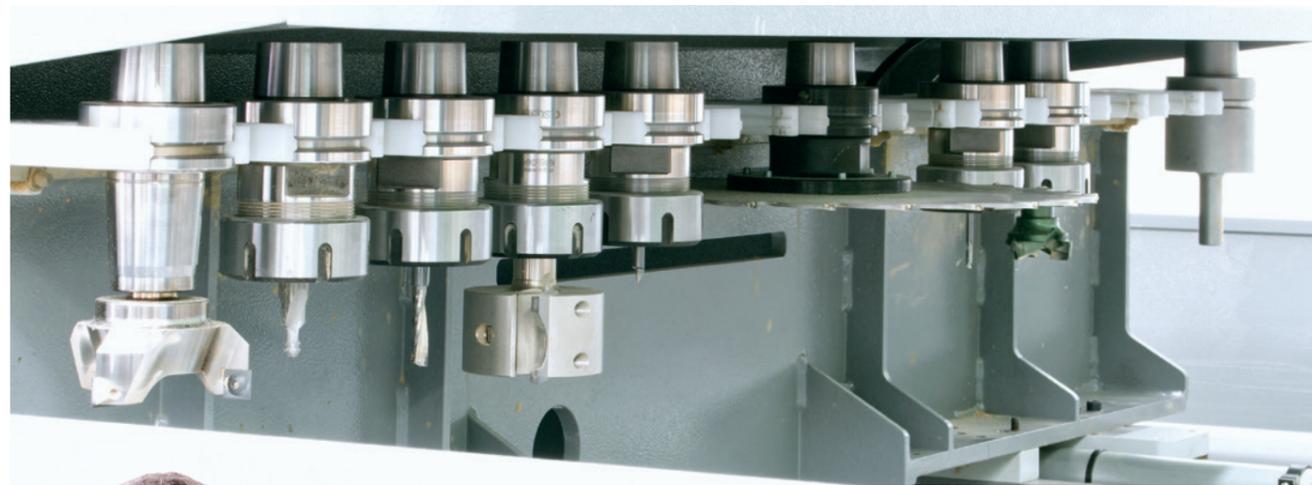
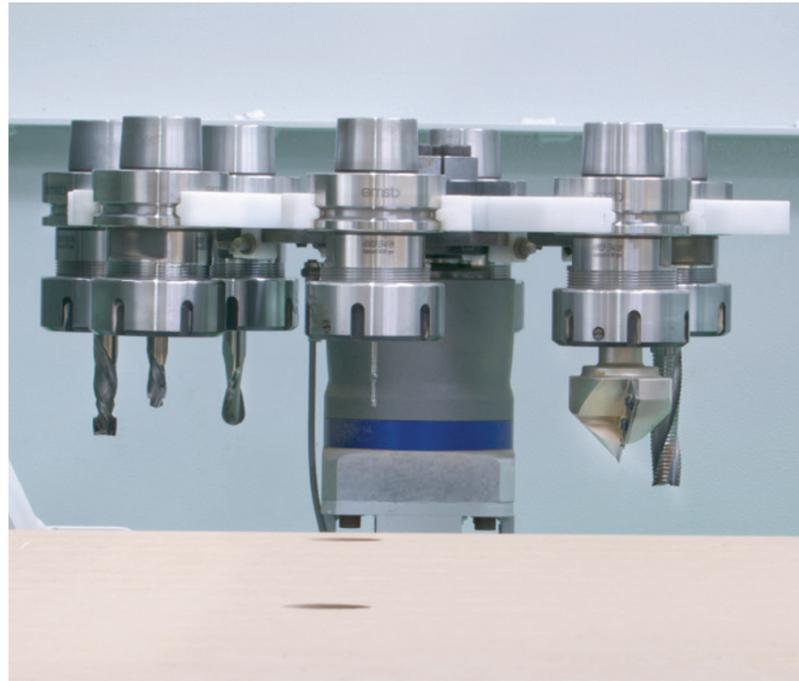
"The one thing everyone raved about was the five-year warranty. They all said it was a no-brainer. If you go with Biesse, you have to get that. One of the companies we spoke to said when they needed it there were no questions asked, it was honoured and the issues were dealt with. I felt we needed that level of support and after sales service, so we placed the order.

"The machine arrived in June 2021 and everything went as planned. The installation and everything was great, as we hoped it would be. It was installed on the day it was supposed to arrive.

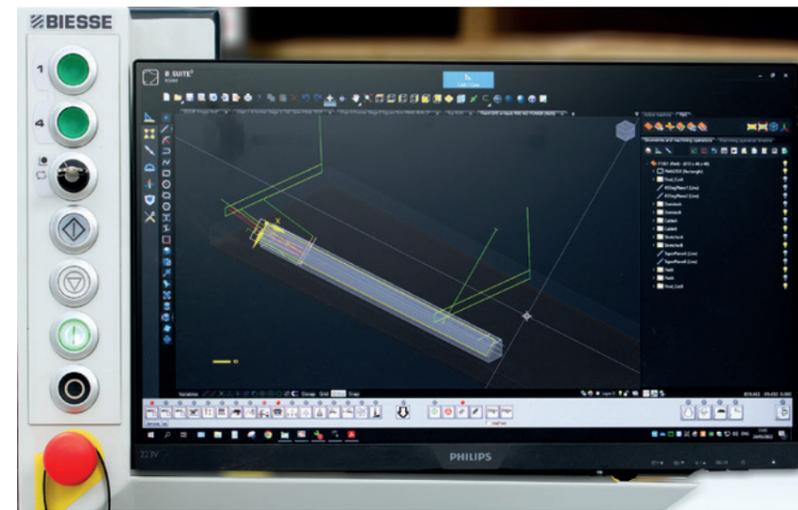
"Because of the shortage of space, we needed the machine tight against the wall and the standard machine has to be positioned 500mm from the wall. Biesse provided a bespoke build with bumpers on the upright of the cabinet so it could be positioned close to the wall. It was exactly what we wanted."



The five-axis head can be equipped with an HSD spindle of up to 16.5 kW that offers 360° continuous rotation on the vertical and horizontal axes.



Josh, programmer (left), with John, production manager



Mark Trapnell

Biesse's Rover A 1531 five-axis CNC is one of three flexible high-performance gantry-structure NC machining centres in the Rover A range. The five-axis head can be equipped with an HSD spindle of up to 16.5 kW that offers 360° continuous rotation on the vertical and horizontal axes, which makes the machining of complex shapes easy. Even though space is limited in Duncan's workshop, the vertical bumpers mean the flat worktable can be accessed from every side and there are no cages to restrict operators.

"Designed for nesting, the Rover A FT 1531 Duncan opted for is capable of much more than he needs currently," says Biesse's Mark Trapnell, "But it's great for chamfering edges, angled cutting, machining for Lamello fixings, etc. It has a new vacuum pod system that goes directly onto the spoil board and lifts the workpiece up so you can put panels

on top. The table is a high-flow design with increased vacuum. It's 1500mm wide and in the vertical position the head can machine across the whole area of the table. The table can also be pendulum loaded at either end.

"Duncan opted for the sweeper arm so he could add an outfeed table at a later date. The sweeper arm has vacuum in it so it cleans the spoil board and the workpiece.

"The machine at Doig Furniture is equipped with a standard rack tool-changer at the end of the bed and a revolving tool-changer on the side. The sweeping arm comes with linear guides so when panels are being swept off, the guides raise. The sweeping arm comes with linear guides so when panels are being swept off, the guides raise to prevent jamming. There are also high position linear guide stops on the front for increased accuracy when carrying out secondary operations. The datum in

the middle is an extra that Duncan wanted because when the head is in the horizontal position you can't machine to the edge of the bed, so having a row of stops in the middle of the bed means you can work off your pods, lift it up and still have a datum to work to. You just drop down and machine in sideways. These features were requested because Duncan envisaged doing five-axis CNC work as well as nesting carcass panels."

Although the Rover A is a very intuitive machine to program, that's an aspect Duncan is happy to leave to Josh Evans, his programmer. "I thought I'd be struggling," says Josh, "But it was easy to get to grips with. The three-axis side is really easy. Five-axis is a whole lot more to learn. It was good to have six months to get to grips with three-axis side first because we also had to figure out the machine itself. When a job

came in that needed the five-axis, it was a relatively easy transition. We were soon making tapered turned legs, domino slots, inserting holes at angles – things we would not have done without the CNC."

"I'd always thought CNCs were for big, volume-driven companies," concludes Duncan. "I can now understand why companies with half a dozen people are investing in CNC. It's not about volume but about consistency and accuracy, even if it's just three-axis nesting of a carcass. My advice to any small company is don't hesitate. It won't replace everything but if you are going to have one machine, make it a CNC and gear your product and offer around that."

Already Duncan has started to look at a secondary business that's pretty much based around the CNC's capabilities and uses standardised furniture designs that are parametrically customisable. "The idea has

come through having the CNC and the designs are based on what the CNC can do for us," he says. "It's completely changed our mindset. A finger-pull detail that we've been producing on a spindle moulder we can make easily on the CNC and we're starting to re-evaluate the design process and push more work onto it. We needed to have the machine to find out what we are capable of. It is a big investment but now we've made it we realise we should have done it a long time ago. It really opens doors."

To discuss how a Biesse machine could open doors for your company, call 01327 300366 or visit www.biesse.com/uk/ If you are reading this article with the free Furniture Journal app, check out Biesse's five-axis video demonstration by touching the image marked with a link sign, or download the Rover A brochure at www.biesse.com/uk/wood/cnc-work-centres/rover-a-ft