



Triumphs and trials of CNC automation

To become automated is a difficult decision. Here's how one couple chose a machine and overcame some hurdles along the way

Joni Van Dusartz and her husband decided it was time to find a more efficient way to produce cabinets. They purchased a Biesse Rover 24 FT CNC router.

by **Stephanie Steenbergen**
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Shop Snapshot

Company: Van Dusartz Quality Woodworking Inc.

Location: Hammond, Wis.

Founded: 1995

Primary products: Custom kitchen and bath cabinets, entertainment centers

Proprietors: Charlie and Joni Van Dusartz

Employees: 8

Annual sales: Approx. \$700,000

Shop size: 5,600 square foot shop, 2,400-square-foot spray booth and a 600-square-foot office and showroom.

Key equipment: Biesse Rover 24 FT CNC router, Cabinet Vision software, Castle face-frame table and pocket hole machine, Dodds dovetailer, Whirlwind chopsaw, Time-savers widebelt sander, Powermatic table saw and shapers, Ritter door clamp and Senco nailers.

“I just didn't want to be left in the dust,” says Charlie Van Dusartz, co-owner of Van Dusartz Quality Woodworking Inc. “I didn't want all my competition to become automated and leave me in the dust.”

Charlie's sentiment rings true in the ears of an increasing number of small-shop owners. For Charlie and his wife and partner, Joni, the desire to become more automated is fueled by a desire to survive — and thrive — in an ever-changing industry.

The Van Dusartz's eight-person shop in Hammond, Wis., has been producing wood products since 1995. Charlie became a cabinetmaker by accident — literally. He was a union carpenter badly injured while building the Mall of America. Subsequent career testing indicated cabinetmaking would be a good fit for his skills.

Van Dusartz Quality Woodworking uses all 5/8-inch white melamine in building its cabinets, including a 5/8-inch cabinet back.

Charlie went to work for two local cabinet shops in succession for two years. Meanwhile, Joni and Charlie started a company on the side, and she began producing doors for the second cabinet shop with her father-in-law. That business blossomed quickly and evolved into a cabinet-making shop that produces face-frame kitchen and bath cabinets as



well as entertainment centers today.

Roughly two years ago, Charlie and Joni decided it was time to find a more efficient way to produce cabinets.

"We were spending so much time and manpower just trying to get the pieces cut and dadoed that we just looked at it and decided [automation] was the way to go," says Charlie. "We talked to some other shops in the area. Nobody else had this technology yet," he says. However, several shops were seriously considering automation.

Investigating automation

Charlie and Joni did extensive homework before selecting the Biesse Rover 24 FT. They batted information about brands and models around with the owner of another local shop who also ended up buying a CNC router a few months after Charlie and Joni.

The Rover is a CNC machining center that Charlie and Joni use to cut their sheet stock. It also dadoes sheet stock and drills line boring for the cabinets' adjustable shelf system. The machine will also do horizontal boring.

The new machine radically changed things in the shop. "It used to take two to three days to cut,

continued



Production flow matches automation and conventional processes.

Production at the Van Dusartz's shop starts in the office within Charlie and Joni's home. The 5,600-square-foot building that houses the shop is just behind their home.

Along with the Biesse Rover 24 FT, the shop contains a Castle face-frame table and pocket hole machine, a Dodds dovetailer, a Whirlwind chop-saw, a Timesavers wide-belt sander, a Powermatic table saw and shapers, a Ritter door clamp and Senco nailers. The shop also contains a number of "dinosaurs," says Joni. These are a collection of elderly shapers that work very well despite their age.

They design a kitchen using their Cabinet Vision software and generate a cutlist, which is transferred to a disk and taken to the shop.

Work on the face frames begins immediately. Lumber is pulled and Joni cuts materials for the face frames. The Rover cuts sheet stock from the cutlist simultaneously.

Packet follows cabinets through shop

Along with the cutlist, paper copies with pictures of individual parts and assembled cabinets are sent around with the job. The job packet also includes the customer estimate, which includes all the important details of the job, such as moulding, rollouts, etc.

Joni goes through the estimate before she cuts face frames to combine cabinetry. "If we have a wall that's 10 feet and another wall that's 8 feet of uppers, we won't make separate cabinets for each of those," she says. "The boxes will be separate, but the frames on there will make it look as if it's one piece. You won't have joints."

Then the finished ends are cut and set aside so employees can sand them and get them to the spray booth while the Rover operator cuts the rest of the boxes. "By the time he gets all the other parts cut, the next day the face frames are back and finished and the finished ends are done. We finish all our cabinet parts before we assemble," says Charlie.

Finishing before assembly means less overspray on the inside of the cabinets, says Joni. "It's a nice white melamine interior — easy to clean, hard to keep overspray out of though, if you're spraying lacquer."

Finishing before assembly also means they can finish everything horizontally, so they have no chance of runs. Charlie and Joni use a pre-catalyzed lacquer made by Sherwin Williams for their finish. They use airless sprayers with Greco guns.

After the boxes are built, face frames are attached, then drawers are installed. Finally, doors are installed and the product is ready to be delivered. Van Dusartz Quality Woodworking has a box truck to make deliveries. A two-person install crew installs the kitchen and a wrapup person comes the next day to finish anything left undone by the installers. "He'll adjust any doors that aren't sitting quite right or any drawer fronts or make sure everything slides right, looks nice; he cleans the cabinets out, puts the shelves in and then it's done."



Joni Van Dusartz is in charge of getting face frames together for the cabinets her shop builds.

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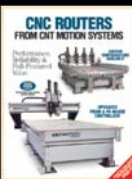


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Triumphs



Van Dusartz Quality Woodworking does its own staining in a large, 40-by-60-foot spray booth, which is located in a separate building.

drill, dado, separate and make sure all your pieces were right for a big kitchen," says Joni. "Now, it takes three to five hours with the Biesse."

Joni says they chose the Biesse for two specific reasons. First, they chose it because they could continue using their Cabinet Vision design software, which they had purchased five years earlier, and integrate it with the Biesse.

Several people at Biesse and Cabinet Vision advised them to continue using Cabinet Vision rather than try to learn the software that came with the Biesse. "They said you're better off to stay where you are rather than reinventing the wheel," Charlie says.

Windows front end

A second reason they chose the Rover is because the machine comes standard with a Windows front end. Other machine manufacturers offered the option but at a steep price.

Charlie and Joni had no prior knowledge of G-code, the computer language used to write programs for the machining center. Joni says the Windows front end was "something we could look at. We could physically push the little draw button and it would show us the picture."

G-code appears on the computer screen at the same time as the Windows front end. "You don't have to flip back and forth," says Joni. "You can see both. That was one of the main selling features."

So, when something goes wrong in the shop, and they're wondering why the machine dadoed a half a sheet when it wasn't supposed to, they can see on the screen when they read through the G-code lines where things went wrong in the program, says Joni.

Joni and Charlie agree that becoming more automated was the right choice, but their experience included a few hurdles, which the couple is creatively overcoming.

How to power the machine was the first trial the two

continued

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Triumphs

encountered. The Van Dusartz's shop is a single-phase operation with a number of three-phase converters for the machines that need them.

The Rover needs smooth, uninterrupted three-phase power to run,

so the two decided the time was right to have three-phase power run into the shop. They balked, however, when they heard about the \$30,000 per mile charge to run three-phase power to their shop, which was 2-



Here an employee glues up panels for doors. Cherry has been the most popular material for kitchen cabinets in recent months, says Joni Van Dusartz.

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1/2 miles from the power supply.

In the end, a power expert from Schneider Electric Motors, Menominee, Wis., helped Charlie and Joni by custom building a three-phase converter for them, which contains a type of filter that provides a "very steady power band," says Charlie. "That's been working flawlessly."

For Joni, overcoming the "intimidation factor" when things don't work quite right was a hurdle.

"That's a tough one to swallow," she says. Waiting in line on the phone for tech support or waiting for tech support to call back is frustrating, she says. "Like anything, we're American, we want it done soon."

For Charlie, "The downside is the learning curve. I'm not a computer programmer. I've done a lot of computer programming now, but I'm still, by no means, a computer programmer."

What makes up for the minor

continued

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Triumphs

headaches the two have suffered over the transition is the “speed and the accuracy,” says Charlie. “The cabinets, when they go together now, they’re dead on every time. If it’s wrong, it’s my fault. The router’s doing what

you’re telling the router to do.”

The couple also finds learning how to bid jobs with the Rover a challenge, says Joni. “It’s our perk that we’ve got this new ‘employee’ here that can cut really fast and is an



Joni and Charlie Van Dusartz are co-owners of Van Dusartz Quality Woodworking Inc.

awesome worker. But the other side is with those more technical jobs. How do you bid that?”

Joni says they try to be fair in their pricing, “but you still have to charge for that automation that you purchased.”

Frameless 32mm cabinets are in the future for Van Dusartz Quality Woodworking. The Rover has a software package that enables Charlie and Joni to begin offering European-style cabinets in their line as a less-expensive offering. The pair plans to begin searching for an edgebander soon and will start offering European-style cabinetry in late spring of 2004. □

The product

Van Dusartz Quality Woodworking uses all 5/8-inch white melamine in building its cabinets, including a 5/8-inch cabinet back. Finished ends are 3/4-inch-thick veneer core plywood. Cabinet interiors are white melamine, making them easy to clean, says Joni.

The boxes are dadoed, glued and stapled together. The face frames are glued and screwed to the cases.

The shop also makes its own doors and dovetail drawer boxes. “We try to go a step above in everything we do,” says Charlie. He uses heavy-duty Dynaglide ball bearing glides on the drawers, which are made of sycamore. He uses Blum hinges on the doors, which are all 3/4-inch thick. The shop does its own staining in a large, 40-by-60-foot spray booth, which is located in a separate building.

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