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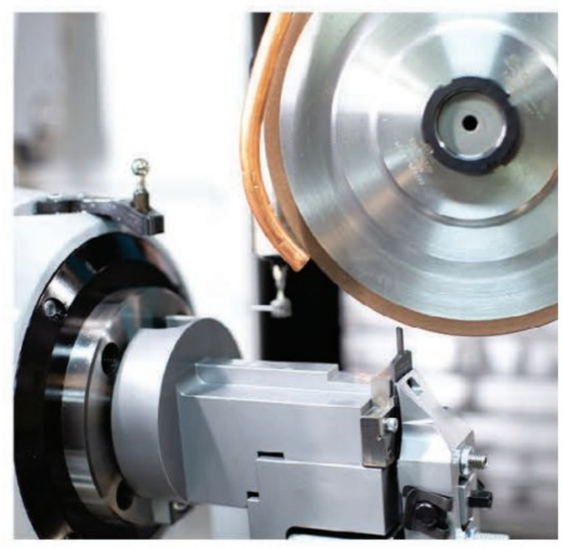

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Ace is on pace for 200 new stores

By Tod Riggio

I'm a lucky guy with four quality hardware sources in my community. One opened in 1939 and is now in its third generation of family ownership. Another is a mile away and offers enough to build a house. Two have become Ace Hardwares and, now that I've relearned where everything is, are my Saturday morning happy places.

I didn't grasp the scope of Ace Hardware's growth until the company recently announced the opening of its 100th new store in 2024, including its 5,000th domestic location, as it celebrates its 100th anniversary.

The hardware retailer said it plans to open more than 200 new stores by the end of the year and that it has opened more than 900 new stores, globally, in the past five years,

"Ace's new store growth has been fueled by existing retailers opening additional locations, competitor stores converting to Ace and new investors opening their first Ace Hardware store. Interest in owning and operating a local Ace Hardware store continues to be at historically high levels," the company said.

There's somewhat good news on the remodeling front. After a modest downturn, homeowner expenditures for improvements and repairs are expected to trend up through the first half of 2025, according to the Leading Indicator of Remodeling Activity (LIRA) from the Remodeling Futures Program at the Joint Center for Housing Studies of Harvard University.

The LIRA projects that declines in annual spending for renovations and maintenance to owner-occupied homes will ease to just -0.5 percent through the second quarter of 2025.

"Economic uncertainty and continued weakness in home sales and the sale of building materials are keeping a lid on residential remodeling, although many drivers of spending are starting to firm up again," says Carlos Martín, Director of the Remodeling Futures Program at the Center. "After several years of frenzied activity during the pandemic, owners are now making upgrades and repairs to their homes at a steadier and more sustainable pace."

REHAU recently expanded its millwork and cabinetry fabrication capabilities by opening a new lamination line at its facility in Sturgis, Mich., facility.

"The lamination line will apply the wide range of REHAU Rauvisio HouseSM surfaces – from gloss to matte, crystal, natural and metal – to MDF or particleboards as the first step in fulfilling a cabinet door or board order. Most boards will now be produced domestically, reducing lead times from months to days," the company said. **W**

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Shaping the Successful Shop™

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PRESIDENT GARY DESANCTIS

EDITOR TOD RIGGIO
ART DIRECTOR BRIANA SMITH
STAFF WRITER JENNIFER HICKS
CONTRIBUTING WRITERS
JOHN ENGLISH, DAVID GETTS AND TED BRUNING

SALES & MARKETING

PUBLISHER
RORY BEGLIN
203-952-6790; rory@woodshopnews.com

CLASSIFIED MARKETPLACE ADVERTISING
203-952-6790
marketplace@woodshopnews.com

HOME GROUP
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SENIOR VICE PRESIDENT, CONTENT **ROB YAGID**
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DIGITAL DEVELOPMENT MANAGER **MATTHEW BOYLES**
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HEADQUARTERS:
35 Industrial Park Road, Unit 10 Centerbrook, CT 06409
(860) 767-3200 • Fax (860) 767-0642
Editorial E-mail: editorial@woodshopnews.com
Advertising E-mail: sales@woodshopnews.com
Website: www.woodshopnews.com
Advertising Billing Questions: (661) 965-9925

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AHFA Furniture Foundation awards grants

By Jennifer Hicks

The American Home Furnishings Alliance's Furniture Foundation recently awarded $54,000 in grants to support furniture industry education programs for 2024-2025. The Foundation was established in 1948 to fund initiatives to improve management, manufacturing and marketing within the home furnishings industry. Since 1990, it has distributed more than $4 million in grants for projects to support its mission.

"The grants support programs that challenge young students to address manufacturing and environmental issues and programs that help prepare young executives for leadership roles in our industry. The Foundation continues seeking fresh ideas every year, focusing on educational opportunities and research initiatives for building a stronger industry," Andy Counts, CEO of the AHFA, administer the foundation fund, tells Woodshop News.

The largest recipient was Catawba Valley Community College (CVCC) in Hickory, N.C. The college received $22,000 for its two furniture academies, including $7,000 for scholarships to support up to 28 students enrolling at its main Hickory campus and $15,000 for scholarships providing tuition for up to 60 students at its Alexander Furniture Academy in Taylorsville.

Other grants included:

- $12,000 to Appalachian State University in Boone, N.C., to continue funding for four $3,000 scholarships for the furniture design program.
- $10,000 to the Home Furnishings Hall of Fame to develop a curriculum for an educational program targeting middle and high school students about opportunities for fulfilling careers in the home furnishings industry.

THE FURNITURE FOUNDATION

- $5,000 to WithIt to fund professional conference registration for women entrepreneurs, independent contractors and job seekers who do not have support from a company to fund their participation at the organization's annual professional leadership conference.
- $5,000 to Caldwell Community College and Technical Institute (CCCTI) in Hudson, N.C., for scholarships for students in the upholstery and sewing programs and for replacing outdated staple guns in the upholstery lab.

Based in High Point, N.C., the AHFA represents more than 250 furniture manufacturers and distributors, plus about 150 suppliers to the furniture industry worldwide. Learn more at *ahfa.us*. **W**

CVCC Furniture Academy in Hickory, N.C.



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Woodcraft recently donated face shields to youths who attended classes at the International Woodturning Symposium hosted by the AAW earlier this year.

Woodcraft sponsors AAW's youth turning program

By Jennifer Hicks

As a sponsor of the American Association of Woodturners' Learn to Turn Youth Turning program, Woodcraft donated 16 safety face shields to youths learning the craft at the AAW's annual International Woodturning Symposium, held May 23-26 in Portland, Ore.

"Woodcraft is proud to support this incredible program that exposes young people to the world of woodturning. We recognize that participants are building skills that reach far beyond the lathe – from safety and being aware of their surroundings, to developing the ability to see an object for what it can be and not just what it is," Beth Coffey, Woodcraft's vice president of sales and marketing, said in a statement.

"They will forever be able to apply what they learned from the experience to many facets of their lives, and their continued pursuit of woodworking, or even returning to it later in life, is a wonderful bonus."

At the three-day convention, more than 60 youths were introduced to the aspects of woodturning through special classes in which they used the donated face shields for their safety. At the event's end, four participants were chosen from a random drawing for a prize package valued at about $1,200 that included a mini-lathe, turning tools and one of the face-shields contributed by Woodcraft.

Participation in the event is free and limited to youths ages 10 to 18 with an adult registered for the symposium. This year, in addition to 32 participants at the convention itself, AAW welcomed 30 youths from the Portland-based Girls Build Organization.

Learn more at *woodcraft.com*. **W**

AHFA announces 2024 Solution Partners scholarships

By Jennifer Hicks

The Solution Partners division of the American Home Furnishings Alliance (AHFA) recently awarded $35,000 in education scholarships to the children of industry workers. The scholarships are awarded annually to students who have a parent working full-time at an AHFA member company.

"The Solution Partners Scholarship is unique in that it is not tied to any particular field of study. Rather, it is intended to support our industry's most valuable resource – our workers – by assisting them with the difficult task of funding higher education for their children. We are proud that employees at 69 different AHFA member companies have received this assistance over the years," Mike Padjen, executive director of AHFA's Solution Partners division, tells Woodshop News.

Twelve scholarships in the amount of $2,500 were awarded, including six based on academic merit and financial need, and six based on academic merit alone.

Recipients include Maria Aguilar, daughter of Jenny Szynski (employed by Carpenter Co.); Sema Altawam, daughter of Hadia Sharif (Ethan Allen); Zoey Boston, daughter of Ronald Boston (McCreary Modern); Callie Brown, daughter of Zach Brown (Jordan Mfg.); Courtney Clark, daughter of Lisa Clark (Seaside Casual Furniture); William Franklin, son of Jimmel Franklin (Rooms To Go); Caden Genrich, son of Eric Genrich (Lloyd Flanders); Jonathan Harper, son of Mark Harper (H.M. Richards); Kate Miller, daughter of Bradley Miller (Hooker Furnishings); Gabriela Rosales Moreno, daughter of Maria Moreno Espinoza (Vanguard Furniture); Briana Ruiz, daughter of Michele Rios (Ashley Furniture), and bIsabel Zhou, daughter of Ellen Ma (Treasure Garden).

One additional award, the $5,000 Bill Hauck Memorial Scholarship, was presented to Taylor Cotie, daughter of Tina Hinshaw (Legacy Classic).

Learn more at *ahfa.us*. **W**

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Finding new revenue streams

The process starts with introspection and better marketing

By John English

There's a little bit of a squeeze in the casework market going into fall because mortgage rates have topped 6 percent. That has affected housing starts, which in June were down 4.4 percent from a year ago.

Woodshops are looking for ways to pick up the slack, and one approach is to cut costs. That can be done by outsourcing more, or perhaps by upgrading the shop's automation to shave a little off the payroll. But decreasing sales are income based, not cost related, so the key to a long-term solution is either sell more of the current lines or find new revenue sources.

Step one in either case is to affirm the business's identity. Whatever the shop does exceptionally well should become the core message in its marketing. The idea is to be who you are and play to your strengths. That means a woodworker doesn't accept every offer of





A shop might add revenue by offering new door and drawer options such as these curved items from Decore-ative Specialties.

work that comes by. Rather, it means we need to understand the value of what we do, what we can do, and who we have on staff. It also means not investing in new equipment until the shop has considered how to maximize what can be done with existing machines and processes.

The first step in firming up an identity is to decide whether, and then where, to specialize. That can happen in areas such as custom closets, kitchen islands, range hoods, floating shelves, laundry rooms, bookcases and libraries, butlers' pantries, garage storage, wet or dry bars, outdoor entertaining, bedroom furniture, breakfast nooks, or even becoming an outsourcing supplier to smaller shops with less equipment.

Identifying strengths is macro, rather than micro, management. So, it's important to involve the employees. People on the shop floor often see things that are just beyond the gaze of management. Asking their opinions and listening to their feedback helps management discover what the entire team sees as cumulative strengths. The results may reaffirm existing perceptions, but there's a high probability that they'll be surprising. Employees see bottlenecks and parts reject rates up close. They also know who's good at what, who innovates, who solves small problems, and how. The shop's greatest strength may be a product line, or a process such as coating or milling, or it might just be talented people.

Whatever it is, that's where new revenue streams begin.

GET THE WORD OUT

Brochures, showrooms and trade shows are useful marketing tools, but a comprehensive online identity is now essential for





One avenue to new revenue is to outsource an area of specialty items such as prebuilt range hoods from Elias Woodwork.

growth. It's where people shop. And with flat-packed shipping, they're no longer shopping locally. But that also works for the woodshop because potential customers all over the country have access to its website. And a buyer's focus narrows if a search engine picks up on the fact that the shop does something differently or has a specialized area. So, hits online can help identify potential revenue streams because they reveal what people need or want.

Catching a search engine's eye is done with a combination of search engine optimization (SEO) techniques and the evolution of a social media presence over several platforms. It's tempting to explore and exploit these options in-house, but that's probably not the smartest route. A cabinetmaker wouldn't ask a software engineer to lay up a sheet of veneer, and it's just as illogical to expect a woodworker to intuitively design a great online presence. It has become necessary to hire an expert in this area, rather than trying to tackle the complex task oneself. Today's SEO has a very long learning curve.

A good rule of thumb when budgeting for an SEO expert is to spend about as much as you might on a table saw. The shop is buying a new tool here with an undetermined ROI and as with most tools, you'll get what you pay for. A one-man outfit that runs most parts through a traditional cabinet saw should obviously spend less than a shop equipped with several CNCs and sliding table saws. But neither should skimp, because creating a new revenue stream is tied to attracting high-quality new clients.

The SEO subcontractor will want to know two things – who you are, and who your clients are. Zoning in on the shop's strengths answers the first one, but identifying the correct marketing target can be subtle. Does the woodshop need to appeal to homeowners directly? Or should online marketing be focused more on whomever sends clients to the shop, such as contractors, developers, lumberyards, real estate agents, architects, interior designers, and so on. Those are two very different messages.

Once the base is identified, knowing the nature of its members will involve another technical acronym, CRM. A customer relationship management app keeps track of interactions (conversations, emails, etc.) with all past, present and potential clients. And that can help a shop discover new revenue streams because it reveals what customers want. They will literally say so in their emails.



Suites such as KCD Software can be used with outsoured hardware and casework libraries to simplify closet design and building.

A peripheral aspect of CRM is asking clients and interested lookers how they heard of the shop. Their responses can help build a roadmap for marketing. Another part of CRM is soliciting customer reviews and then posting them. That doesn't just get you more stars, it also tells you what the shop does best and where it's dropping the ball.

PUT OUT THE WELCOME MAT

Zoning in on strengths and understanding the client base lets the SEO expert build an online presence that combines what the shop sells with people who will buy it. But the site builder's job is just to get people to the website. When they arrive, they need to have options.

E-commerce gives potential buyers an immediate way to satisfy their impulse, which is to complete an online search and make a purchase. It's no longer enough to show a few photos of

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fireplace mantles and tell people that's where the woodshop specializes. They need to be able to see the fireplace in their living room. Virtual visits, 360-degree viewing, photolike rendering, and DIY design tools have all come a long way in a short time. To take advantage of them, the woodshop will need to reach out to a second expert. Most SEO teams also offer site building, but that's not always their strength. A quick online search will reveal several sites that a shop owner likes, and most of them have the site builder's info at the bottom of the page. It usually doesn't matter where they are located: the woodshop will supply raw data such as descriptions and artwork, so the result will have a local flavor.

REVENUE GENERATORS

One quick and inexpensive way to start generating new revenue is to initiate a bonus program for both employees and subs such as installers, countertop suppliers, electricians, plumbers and painters. Giving them a fixed fee or a very small percentage of the gross encourages them to supply the woodshop's contact data when their customers ask for a referral.

Outsourcing has become so ingrained in the industry that it might be time for a woodshop owner to approach smaller or similar sized shops throughout the region and see if they want to buy production time on machines that the shop owns (and they don't). For example, a shop with one or two CNCs might want to approach smaller shops that are still using traditional machines and let them know just how affordably parts can be manufactured. These potential clients might be even more receptive if the CNC owner offers to use their materials and only charge for machine time.

Many full-sheet CNC owners can add a fourth axis (C) at a reasonable cost. This lets the machine do large lathe work such as reproduction newel posts and spindles. If there's a historical area nearby, restoration work pays well. A CNC turns in the round without a full-time operator and delivers more precise results than freehand traditional lathe work or parts produced on a pattern jig.

Other new revenue streams can be generated by catering to the needs of non-traditional cabinetry clients such as custom RV shops and classic car restorers. Outsourcing also takes a lot of the work out of cabinet refacing and repair. There's a large market for phone accessories such as CNC-made cases and hands-free stands. Charcuterie boards are a growing trend too, and they're easy to make and ship. **w**



Red oak has fallen out of favor

By Jennifer Hicks



Once a mainstay of cabinet and furniture production, shops are now shying away from red oak (*Quercus rubra*), according to suppliers interviewed by Woodshop News.

"Red oak is definitely down, especially on the commercial side," says Chad Muterspaw of C.R. Muterspaw Lumber in Xenia, Ohio. "But on the retail end, it's still a good value."

"On the kiln dried side, red oak's just steady," adds Phillip Smith, a sales manager at Stoltzfus Forest Products in Peach Bottom, Pa. "I haven't seen much change for us in the last year. The price might bump up a bit or go down, but it's been steady.

"A lot of the sales that we're getting with our red oak are ripped for width products, and we're doing a lot of molder blanks for customers that just want something like a 6" blank to run through their molder, or parts going for thermal treatment. They might want thermally treated for something like porch flooring, instead of pressure-treated or plastic alternatives."

Thermal treatment is a process that changes the wood's cell structure with heat and steam, making it weather resistant. It also changes the color to a dark caramel brown.

"We've had a little bit of success with that. We've got customers using it for all types of outdoor applications," adds Muterspaw.

Paul Koffron of Koffron Hardwoods and Cabinets in Tiffin, Iowa, used to buy semi loads of red oak, but no more.

"Twenty-five or 30 years ago, that's all we sold. Now, a lot of the red oak that's sold is just for matching or remodeling something that already had it. I've seen some of it used for flooring, but still, white oak's preferred because it's twice as hard," says Koffron.

"White oak's [price is] through the roof. The reason for that is it takes twice as long to dry white oak, twice as long to cut. Everything's double in white oak. Red oak trees are much bigger in circumference, too, so there's more wood with each tree."

For the cost-conscious, Koffron notes that red oak can be finished to resemble white oak, if done properly.

"If you look at antique tables and tabletops, many had red and white oak in the same piece," he says. "If you mess around with stains a bit you can get red oak to look like white oak. It's somewhat interchangeable that way."

"[Red oak] might cycle back around again. Everything has its cycle. But everyone was tired of that honey red oak and now they're switching it up." **w**

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REGISTRATION OPENS FOR 2024 NAFCD + NBMDA CONVENTION

The North American Building Material Distribution Association (NBMDA) and North American Association of Floor Covering Distributors (NAFCD) are heading to New Orleans, Louisiana, to host the 2024 NAFCD + NBMDA annual Convention on Oct. 22-24.

This annual event brings together the industry's top distributors and suppliers for three days of professional development, networking and best practice sharing.

"Whether early in your career or a seasoned vet, this event truly has something to offer every level of experience," said Michael Wilbur, Executive Director of NAFCD and NBMDA. "This fall, attendees can expect to learn from an impressive lineup of thought leaders about the latest trends in marketing, leadership, distribution management, corporate culture and economics — all while growing your professional network."

To register and learn more, visit *distributorconvention.org*.

US LBM EXPANDS IN NEW MEXICO

US LBM, a distributor of specialty building materials, has acquired RAKS Building Supply, a provider of building products and manufactured components to professional builders and contractors throughout central New Mexico.

Headquartered in Los Lunas, RAKS operates five locations throughout the Albuquerque metropolitan area, including an 11-acre full line building materials yard, home center and truss manufacturing plant in Rio Bravo, along with full line yards in Socorro, Edgewood and two in Albuquerque.

With the acquisition of RAKS, US LBM now operates 12 locations across the state of New Mexico.

"RAKS Building Supply has a well-earned reputation for providing customers in New Mexico with exceptional products and service, and we're pleased to welcome them to the US LBM family," L.T. Gibson, president and CEO of USLBM, said in a statement. "The Albuquerque region continues to see high demand for housing, and with continued low inventory levels, the addition of RAKS expands our network into a strong market that will continue to grow."

EASYCUT ANNOUNCES NEW EDITION OF EASY CUT STUDIO 6

EasyCut Studio, a developer of sign-making software solutions, introduces Easy Cut Studio 6 with a range of new features, including larger workspace area, variable data printing and cutting, new special effects, and more.

"We are excited to unveil Easy Cut Studio 6 to the world," said Eric Lee, senior product manager at EasyCut Studio. "Packed with a variety of time-saving tools and enhanced rhinestone features, this brilliant new version will revolutionize print and cut production and streamline workflows, reduce waste, and increase productivity like never before. Whether you're a sign shop or a small-scale business, our software is designed to meet your sign design, printing, and cutting requirements effectively and efficiently."

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The SCM Maker provides CNC precision in the shop or on a jobsite.

SCM presents a portable CNC router

By Jennifer Hicks

SCM Group introduced and demonstrated a new portable CNC router, the SCM Maker, at the 2024 IWF in Atlanta. Featuring a compact design, the SCM Maker is placed directly on large, flat work surfaces to complete routing tasks without occupying permanent space in a workshop, according to the company.

"The main purpose of this machine is to allow anyone to do CNC projects with wood in what we say is technically a boundless work area. You can install all different kinds of router bits for various woodworking projects. The machine has the capability of reaching a 3.5 meter (11.5') diagonal access and that perimeter can be extended within certain limits," says Andrea Morselli, SCM's product manager for classical machinery.

The SCM Maker offers a maximum cutting depth of 58mm (2.28"), measures approximately 16" x 16" x 12", and weighs about 40 pounds.

The 110-volt machine works in conjunction with a sensor system of two columns that get positioned on the panel to be processed. The columns are connected to the machine with a wire, a setup which guides the router to where it should be on the workspace through CAM software that generates the cutting path. The columns can be repositioned throughout the job.

The SCM Maker includes Slingshot CAM software and can be integrated with most commercial CAD/CAM programs on the market, according to the company. Once a project has been drawn and imported into the control software, the machine path is calculated and processed through a Wi-Fi connection. Users can check the progress using the user-friendly interface.

The machine also has three omnidirectional wheels, which allow it to operate on the work surface autonomously, without manual guidance and without being affected by the grooves already machined, so a worker can tend to other tasks, according to Morselli. It also transports easily to jobsites.

"One big advantage of its portability is that you can bring it wherever you want, so you can use it at your shop or the jobsite if you need a specific part designed on the spot. And while it's not as powerful as a larger stationary machine, it's still a CNC, so you can have confidence in its accuracy and precision. All you have to do is add the specs into your software and the Maker will take care of it," says Morselli.

The SCM Maker has an MSRP of $3,990. Learn more at *scmgroup.com*. W

Courtesy of SCM

New air compressor from Max USA

By Jennifer Hicks

Max USA, a manufacturer of industrial tools, announces the launch of the PowerLite AKHL 1320E, a 500 psi compressor, with features designed to enhance performance and user experience, says the company.

"Custom home builders and interior renovators face a wide variety of applications on their jobsites. The new Max AKHL 1320E compressor is ideal for them as it is compatible with 500 psi and 100 psi tools, giving them the ability to shoot through concrete, steel and LSL/LVL materials," says Mustafa Ali, marketing executive for Max USA.



The AKHL 1320E is compatible with 500 and 100 psi tools, according to the manufacturer.

"Features of the new and improved AKHL 1320E compressor include continuous fastening ability with 15 percent more air volume, a new improved design which is more durable and easier to use, easy start features which bring more protection in situations with poor electricity and freezing temperatures, and whisper quiet operation which reduce the decibels."

The compressor weighs about 38 pounds and has a 2.64-gallon air tank. It also features a new motor design that generates increased torque at lower speeds, according to the company.

"The motor operates in temperatures as low as –4 Fahrenheit and includes a circuit inverter that manages electrical current to prevent shutdowns in low voltage supply areas. Its DC brushless motor offers enhanced starting power compared to conventional compressors. Horizontal pistons and a motor floating mechanism minimize vibration and noise," the company said.

The compressor has a suggested retail price of $1,484.10. Learn more at *maxusacorp.com*. **W**

Courtesy of Max USA



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New Easy|Axis turntables from Smartech

By Jennifer Hicks

Smartech, a manufacturer of 3D laminating and finishing solutions, offers Easy|Axis Turntables that feature a stick-free top for cleanliness and foot operation for efficiency, according to the company.

"These turntables can really help woodworkers who do finishing get a high-quality finish and speed up production," says company owner Jannica Greife.

"They're foot rotated, so the operator can keep spraying by turning with their foot without needing to touch the product. So, there's no smudging and the spray goes on evenly. And customers are always looking for ways to speed up the process."

The turntables have a base diameter of 25" and total height of 36-1/2". Each order includes two top plates (5-1/2" x 7-1/2" and 7-5/8" x 11-1/2") made with non-slip silicone pads. Customers can also order 4" elevation pins.

"There are options for the top plates," says Greife. "Some customers like the non-slip silicone pad on it, but people might not want silicone near their product because it might cause fisheye on the finishes. So, we developed the top-plates with 4" high, tapered, stainless-steel pins to elevate the part, and that way it only touches in four small points."

The turntable's base is made of stick-free HDPE (high-density polyethylene), so that dried finishing material can be easily pulled.

A turntable with non-stick silicone pads sells for $318. For more pricing, visit *smartechonline.com*. **W**

Courtesy of Smartech

Delmhorst presents two new moisture meters

By Jennifer Hicks

Delmhorst Instrument introduces the JX-20 and JX-30 moisture meters, part of the company's new Navigator line.

"They are our newest meters for the woodworking, lumber processing industry," says Tom Laurenz, CEO of Delmhorst, in an interview with Woodshop News. "The main features include a large dashboard-light display. It's a custom display that's backlit, easy to read under most lighting conditions, and [provides] the relevant information in terms of your meter settings and online statistics for up to 100 readings saved to the meter.

"Also, the case is newly designed. It's easy to hold. It's got a modern feel to it, including tactile buttons with an easy-grip handle. They have all the basics you would want in a wood meter."

The JX-30 is distinct from the JX-20 with Bluetooth connectivity through the company's free Edge app that allows users to select from expanded species sets, customize meter settings, and share data from anywhere.

"The meter comes with 74 species programmed into it. In the app, there are another 120 or so that you can choose from. A lot of folks are using imported species from all over the world, and we have a pretty expanded database of species that you can bring in through the app," says Laurenz.

Prices are $425 for the JX-20 and $525 for the JX-30. Learn more at *delmhorst.com*. **w**



Courtesy of Delmhorst

Delmhorst JX-30 moisture meter.

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Made by cabinetmakers for cabinetmakers

Lumber Processing

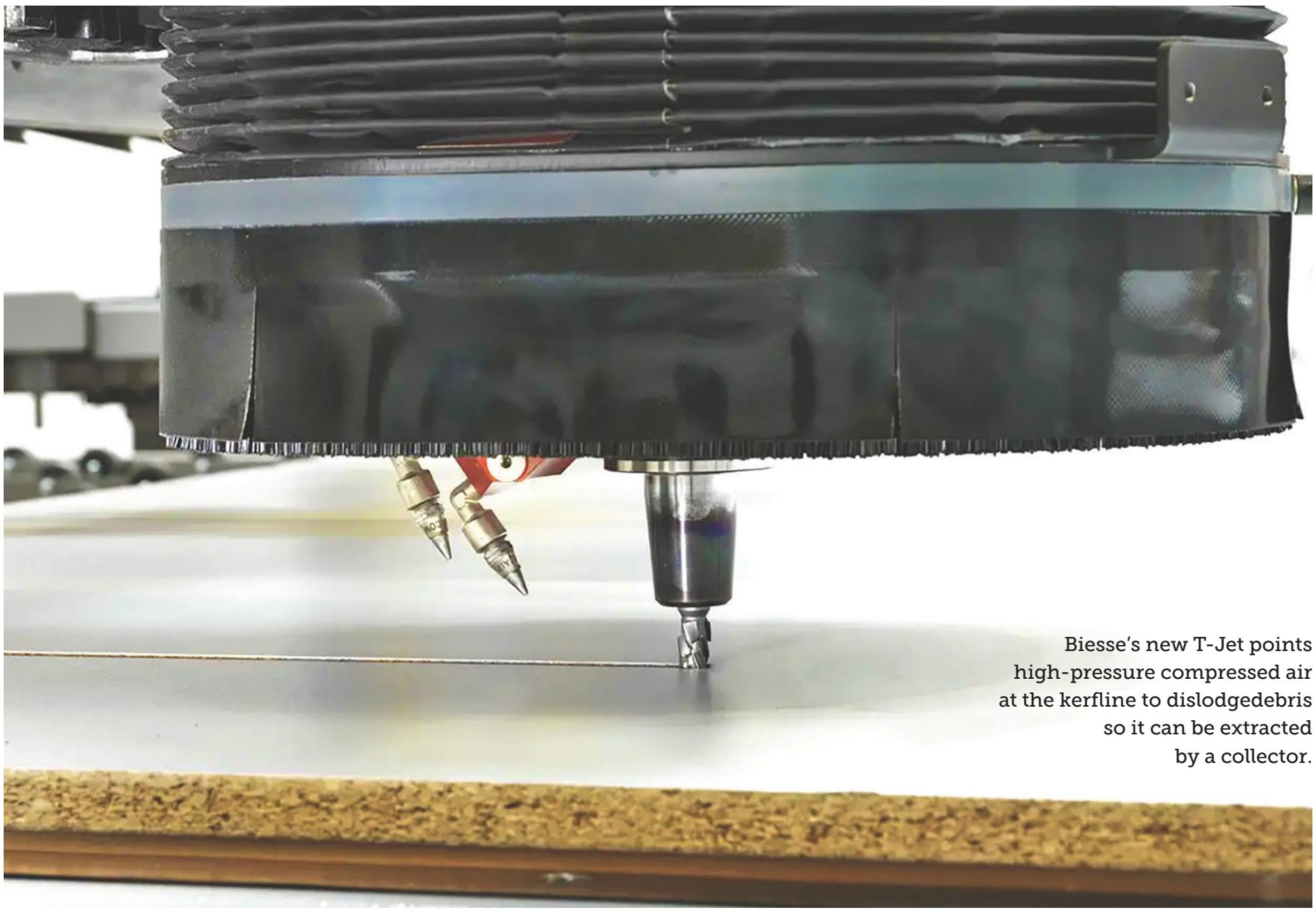
New equipment for small- and medium-sized shops

By John English

The ways we process solid wood change as the material cycles from log to cabinet. For sawyers and millers, the processes are edging, trimming, ripping, stickering, drying and grading. Cabinet shops then render those graded rough-sawn boards into usable, coatable, machined parts through ripping, planing, gluing, shaping and sanding. While many of those processes are completed by automated equipment, the industry also sees continual growth in traditional lumber processing machinery and tools.

Furniture shops without access to a CNC often need to flatten slabs for live-edge or epoxy work, and **Woodpeckers** (*woodpeck.com*) has just made that a little easier. Its American-made slab flattening jig has been around for a while – it's an XYZ guidance system for a manually controlled router sled – and its biggest challenge is that it only works comfortably on slabs that are no wider than the length of the woodworker's arms. Woodpeckers' new EZ-Drive has added a crank operated system to the platform, so just turning a couple of handles guides the router across and/or along the entire slab with ease. And extensions are available that let the shop process slabs large enough for counters and tabletops.

Another U.S. built solution, the **Chatternator** (*profilesander.com*), is a patented sander for getting rid of chatter marks. It comes in models that handle work up to 6" or 12" wide, such as moldings, picture frames, or profiled stiles and rails. The machine can be purchased either as a standalone unit or as an attachment for specific molding machines. The core concept evolves around an aluminum drum with dovetail-shaped slots that accept slide-in sanding sleeves. This makes it very simple and quick to change abrasives, and also lets the



Biesse's new T-Jet points high-pressure compressed air at the kerfline to dislodgedebris so it can be extracted by a collector.





machine sand complex shapes without changing their profile.

For shops that need to gang rip solid wood, **Stiles Machinery** (*stilesmachinery.com*) offers CML E Series multi-rip saws. Designed as entry-level machines, these are tailored to meet most volume production requirements.

Wood-Mizer's (*woodmizer.com*) new MP280 planes and molds material on all four sides at the same time. All four cutters can be fitted with planing knives or molding profile knives to produce flooring, planed boards, crown molding, and more. It features multiple upgrades over its predecessors for durability and performance including reinforced metal construction, standard infeed and outfeed tables, a longer in-feed fence, an additional cutterhead, and dust collector controls.

When it comes to processing moldings, the innovative miter saw fence from **Kizen Enterprise** (*kizenenterprise.com*) is now available in a plastic version. The original fence is offered in anodized aluminum. It's designed to cut crown and other trim, while making miter saw work both faster and safer. It allows for quick transitions between cuts in molding or stock lumber in seconds.

MORE SANDING SOLUTIONS

Cantek's (*cantekamerica.com*) newer offerings include the BS600-2H, a two-head wire brush machine designed to remove the soft grain between growth rings to produce distressed wood flooring, paneling, and more. With variable frequency inverters to control the brush RPM and feed speed, the shop can control the texture of the finish.

Gibbs Group North America (*gibbsgroupna.com*) introduces the Cup Brush Sander to the U.S. market. This machine can perform delicate and general sanding tasks and features a touchscreen control display and six customizable programs. It also has an automatic cleaning function, leaving cabinet doors and fronts dust-free and ready for coating. It comes in stock models to fit most shop's needs





DeWalt's new DCW620B cordless plunge router.

from 40" to 51" wide. Wider custom sizes are also available.

The new SideShift from **Castle** (*castleusa.com*) is a positioning jig for the company's pocket cutting and screw inserting machine, the CSI 1.5D. The new device automatically positions solid wood stock to create two low angle 6-degree pockets with the screws already located and started, and it does all that in under four seconds. SideShift automatically adjusts for stock widths of 1-1/4" to 3", so it's ideal for face frame assembly.



Kizen offers four aftermarket fence systems for the miter saw.

Felder Group USA (*felder-group.com*) presents the Hammer CNC Portal milling machine with a T-slot table and a work capacity of 32-1/2" x 18-7/8" and 6-1/4" in Z. This is a small heavy-duty machine that can be controlled by integrated, proprietorial software or by any of several aftermarket packages.

South Bend Tools (*southbendtools.com*) offers the new 24" resawing band saw, model SB1123. The saw offers a full 16" of resaw capacity and features dual ball-bearing blade guides and rack-and-pinion table adjustments. The cast iron table is 23-5/8" x 33-1/2"and a full 2" thick. That mass, along with cast iron trunnions, works to minimize vibration.

Another new band saw, the 14CX from **Laguna Tools** (*lagunatools.com*), boasts a digital readout, speed control knob, electronic variable speed, and foot-operated disc brake.



The Chatternator sands out chatter marks on moldings without changing the profiles.

PROCESSING IMPROVEMENTS

For woodworkers with machines that have a T-slot table, some new pneumatic clamps from **PantoRouter** (*pantorouter.com*) might make a big difference in lumber processing. The clamps rotate 360 degrees and work with air cylinders, so their operation can be synchronized. That is, two or more clamps can engage at the same time, or they can operate separately using an inexpensive ($20) clamp control kit.

Ripping and crosscutting are essential steps in the processing of solid wood, and several saw manufacturers have added high-tech safety features to their saws of late. Among them, **Altendorf's** Hand Guard (*altendorfgroup.com*) is a two-camera early-recognition system that drops the blade below the table before any hand contact is made. Other options to explore are SawStop, the Felder PCS system, and Blade Off from the SCM Group.

Dust isn't just a health hazard. It can negatively affect several steps in the processing of lumber. Cutting debris for the second time dulls bits and blades. Accumulated waste can mess with set-ups and positioning. And, of course, dust in a coating can be a bit of a nightmare. By cleaning the cut line as dust is produced, Biesse's new **T-JET** (*biesse.com*) increases finishing quality, prolongs tool life and boosts process efficiency by accelerating job turnaround. It uses high pressure air nozzles mounted to the rotating C axis and dislodges any dust that has settled in the kerf. As soon as it becomes airborne, the dust is removed by an extraction system that sits over the spindle.

Battery technology is making it easier than ever to use portable tools in processing. For example, the new **DeWalt** (*dewalt.com*) DCW620B is a cordless plunge router that delivers





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PantoRouter's new pneumatic clamps help shops process solid wood as they swivel 360 degrees on T-slot tables.

2-1/4 hp of torque and has integrated dust collection.

Batteries also helped make the new CSC SYS 50 cordless table saw from **Festool** (*festoolusa.com*) so compact that it fits into one of the company's standard Systainers. It can directly support rip cuts in material up to 11" wide, and cross cuts to 17-3/4". It bevels with electronic controls from -2 to 47 degrees and comes with a sliding table. The two 18-volt batteries combined with a brushless EC-TEC motor deliver plenty of torque to process any solid wood species.

SawStop (*sawstop.com*) has also introduced a new compact table saw, the CTS. Weighing in at just 68 lbs., it has a 10" blade, rack and pinion fence, a quick-tilt mechanism with micro adjustment for bevels, and the company's patented safety system.

Lumber processing often requires cast iron machine tables and beds and tables that can be prone to rust. **Harvey** (*harveywoodworking.com*) presents three 'stain-less' table saws and two band saws, all of which boast nickel plating. They're not only moisture resistant, but they also clean up and withstand impacts better than older tables.

Powermatic (*powermatic.com*) has also introduced a new way to

Images courtesy of manufacturers







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Wood-Mizer's new MP280 planes and molds material on all four faces at the same time

fight rust. Its ArmorGlide option is now offered on band saws, table saws and jointers. It is described as a durable and rust-free coating that gives you more control.

For bigger shops with larger lumber processing needs, the new Zentrex 6215 panel saw from **Holz-Her U.S.** (*holzherusa.com*) features linear guide technology on all axes and tool position memory.

Not all lumber processing is lineal, and a new lathe from **Oliver** (*olivermachinery.net*) addresses work in the round. The Oliver No. 2019 features cast iron construction for torsion rigidity, a reversible 2-hp motor, an rpm meter, and a dual-purpose bed extension that can be used either for outboard turning or to increase the distance between centers to 41". **w**



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Improving a post-processor with edited commands

By Ted Bruning

Post-processors generally get little attention. Their primary function is to instruct the CAM software on how to format the G-code that runs a CNC machine. Many users design in a single CAD/CAM software package and then machine the parts on a single CNC router. Once the appropriate post-processor is identified and installed, most CNC users never give it further attention.

When I started teaching CNC router classes, I began to explore how post-processors might provide additional assistance.

The first case had to do with identifying G-code files. With multiple novice students programming for the several different CNC routers in the school shop there was no way to identify who had created a particular file. In addition, there was little easily identifiable information about the file or the job. It would have been valuable to me, as the instructor, to be able to look at the file and understand important parameters. I noticed that the G-code created by the different post-processors from the different CNC router manufacturers each provided different useful information. That led me to investigate the source of the useful information and to understand how I might maximize that information for each of the school's CNC routers.

The school uses software that publishes a post-processor guide. Using that guide I was able to edit the post-processor with comment lines describing what tools are used, the dimensions of the stock, whether Z-zero is set to the top of the stock or the bed of the machine, where the X-Y origin is located, and when the G-code was created.

Why did I have to add that information? I believe that it has to do with when the G-code standards were initially developed. The first international standard, ISO 6983, was finalized in 1982. At that time, 8-bit computers like the Commodore 64 could address a maximum of 64 Kb of memory. In those days, every "bit" was valuable, and programmers did not want to use bits and memory for unnecessary data. Today, with computer memory measured in Gb – a million times larger than Kb – there is no reason to be stingy with useful data.

PROCEED WITH CAUTION

It turns out that editing a post-processor to add this information is a relatively trivial exercise. These added lines are comments and not executed by the controller. It gets more interesting when the post-processor is modified to add executable lines of code.

At this point, I must add some words of caution. Editing post-processors must be done with great care. Even trivial changes need to be thoroughly tested. Changes to a post-processor could result in unexpected behavior by the machine that could cause damage and even injury. When editing a post-processor, you are essentially on your own. Software and hardware vendors do not generally provide support.

My first editing exercise began while running a test to see how fast one of our CNC routers could run. I programmed an oval-shaped toolpath and commanded the machine to run around that path (in the air with no tool) at a very high feed rate. I used a stopwatch to time the run and then calculated the actual feed rate. What caught my attention was that when the spindle travelled the straightaways, it was smooth and quick. But it hesitated and sputtered on the curves.

I found that the G-code for the curves was programmed with several straight G1 commands, rather than G2 (clockwise arc) or G3 (counterclockwise arc) commands which were not enabled on the post-processor. I called the manufacturer of that CNC router and asked if it should be able to support G2 and G3 commands. I was told that it should be able to. I then modified the post-processor to use G2 and G3 commands. The new G-code ran smoothly through the curves and we've been successfully using it at the school for about eight years.

FOR SAFETY'S SAKE

Another functional capability that post-processors can provide is interactive checks. I learned of these possibilities from one of the school's CNC routers which has a 4th axis. When using the 4th axis, the post-processor provided by the manufacturer pauses execution and shows the message: "Is the chuck key out of the chuck?". The operator must press the Cycle Start button to proceed. While this might be a bother in a production environment, it is helpful in the school environment.

When using that 4th axis, it is important to set the spoilboard thickness to zero. Otherwise, it could be set to cut into or through the spoilboard and into the bed of the machine. I wondered if a message might be implemented to help prevent that error. It turns out that it is possible to pause execution and get a message such as "Spoilboard thickness is 0.580. Proceed?". If the spoilboard thickness has not been reset, the message reads "Spoilboard thickness is 0.000. Proceed?" This has been a particularly helpful reminder.

Our software enables the user to specify a home position with the intention that the spindle is moved to that location prior to the spindle being turned on. But one day I realized that the spindle was turning on at a location close to the tool rack, then moving to the start of the first toolpath. The G-code was not doing what the toolpath simulation showed. It turned out that the post-processor was not implementing moves to the home position. By editing and modifying the post-processor our spin-

dle now stays up high out of the tool changer, moves to the home position over the job, then drops down to the "Safe Z" before turning on. We are far less likely to have a tool run into clamps with this behavior.

My personal CNC includes a modest solid-state laser. I have edited its post-processor to show a message reminding me to put on laser safety glasses and to turn on the fume exhaust system before starting the laser toolpath. It also has a 4th axis and the risk of running a tool into the tailstock. But by modifying the post-processor, the spindle now moves up high in Z and far to the side when approaching the start of the toolpath, thus minimizing that chance.

From a colleague I learned of a more exotic and unexpected use of post-processor functionality that I believed was obsolete. In the early days of CNC routers, G-code was saved on paper tape. Longer jobs required several tapes. As a result, it was necessary to break the job into segments. This functionality is called "Tape Splitting" in Vectric software, and I did not imagine that I would ever have an interest in that functionality. My colleague pointed out that this functionality can be used to break up a very long job into several files so that it can be run with breaks. For example, a job that might require 14 hours to run can be posted as four G-code files that each take three to four hours to run. With those files, it is not difficult to spread actual machining of a long job over several days or shifts.

"Old and outdated post-processors may limit your ability to take advantage of all the features and functions your CNC router is capable of."

Old and outdated post-processors may limit your ability to take advantage of all the features and functions your CNC router is capable of. New and updated post-processors can enable CNC routers to use all their capabilities. In addition, post-processors can be enhanced to help eliminate opportunities for errors and assist with following safe practices. Paying attention to your post-processor may provide some nice returns. **W**

Ted Bruning is a part-time instructor in the Fine Woodworking program at Red Rocks Community College.

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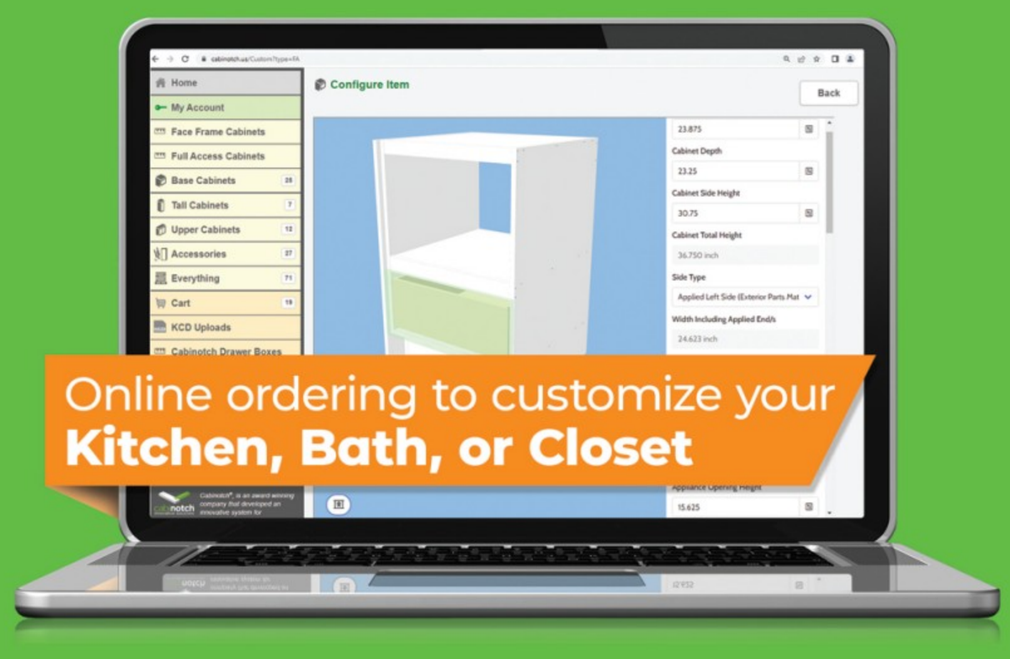

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NHFM enjoys a Summer at the Fells

By Jennifer Hicks

The New Hampshire Furniture Masters is hosting "Summer at the Fells", an exhibit of members' work, at the John Hay Estate at the Fells in Newbury, N.H., through Oct. 12.

"The opportunity to exhibit our work at the Fells is an absolute treat," says Ted Blachly, the exhibition's curator. "I was so impressed by the staff, supporters and volunteers who care so much for this gem of an estate on Lake Sunapee.

"The curated show of paintings that is paired with furniture in the gallery makes an enjoyable experience for anyone who looks closely. If you haven't been to the Fells, summer is the time to visit."

Participating Masters include Blachly, Tim Coleman, Jeffrey Cooper, Dan Faia, Owain Harris, David Lamb, Richard Oedel, and Lynn Szymanski.

Summer at The Fells is the first of three major exhibitions organized by the NHFM this year. Learn more at *furnituremasters.org*.



Summer at the Fells exhibit.

Bill Truslow

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FACULTY SHOW

The Center for Furniture Craftsmanship of Rockport, Maine's yearly exhibition, New Work by Faculty, opened June 14 and will run through Sept. 11 at the school's Messler Gallery. It features work by 29 instructors.

"This work beautifully exhibits our instructors' breadth of talent and deep expertise in design and construction of furniture and furnishings," says Matt Hoggle, the center's executive director. "The diversity of objects in this show will surely delight our visitors."

Many of the instructor/exhibitors live in Maine, including John Bryan (North Yarmouth), Aaron Fedarko and Libby Schrum (Camden), Andy Glenn and Erica Moody (Waldoboro), Yuri Kobayashi (Thomaston), James Macdonald (Burnham), Philip Morley (Spruce Head), Mac Ray (Damariscotta), and Ken Wise (Brunswick).

Exhibitors from other states include Bruce Beeken (Shelburne, Vt.), John Cameron (Gloucester, Mass.), Rob Chamberlin (Kalamazoo, Mich.), Vivian Chiu (Henrico, Va.), Erik Curtis and Larissa Huff (Philadelphia), Aspen Golann (Rollinsford, N.H.), Garrett Hack (Thetford Center, Vt.), Reed Hansuld (Brooklyn, N.Y.), Beth Ireland (St. Petersburg, Fla.), Patrick Kana (Dedham, Mass.), Jack Mauch (Spruce Pine, N.C.), Matt Monaco (Springfield, Mo.), Jomo Tariku (Springfield, Va.), Curt Theobald (Pine Bluffs, Wyo.), and Chelsea Witt (Cinnaminson, N.J.)

International exhibitors are Adrian Ferrazzutti (Canada), Aled Lewis (Wales), and Israel Martin (Spain).

Learn more at *woodschool.org*. **W**

Bill Truslow



Richard Oedel's Art Deco side table.



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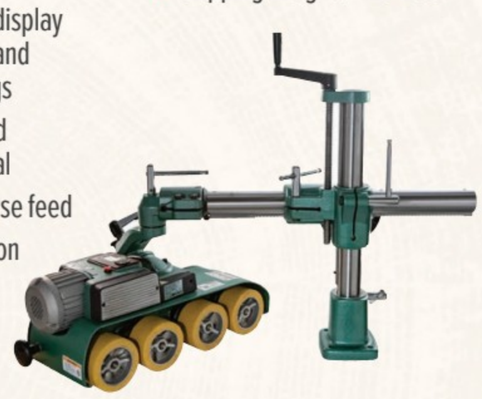

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The 14-person shop specializes in custom cabinets and countertops.



A RECIPE FOR SUCCESS

With a veteran crew, solid reputation and a growing market, Bliemeisters' Wood Works has all the ingredients

By Jennifer Hicks

Bliemeisters' Wood Works has been a fixture in Sequim, Wash., since 1979 and the reason is simple, according to Jason Doig, the company's president and CEO.

"This company thrives 100 percent because of our help here at the shop," he says. "We have 14 dedicated employees. A lot of them have been here over 25 years, and a couple of them have been here over 30 years."

The shop specializes in commercial and residential custom cabinets and countertops.

Sequim (pronounced Squim), west of Seattle, gets very little rain and an abundance of clear, sunny days. It's described as one of the state's best kept secrets and Bliemeisters is growing right along with it.

"I'd say about 80 percent of our work is residential. The other 20 percent is commercial and some of those are really big jobs. We do a lot of work for healthcare facilities in the area. We're really the only acrylic, solid surface fabrication shop, so that gets us into dental offices and hospitals. We get a ton of work from them.

"We regularly work with about eight to ten general contractors, high-end home builders. That's our bread and butter here. We're in a finite geographic area. It's very affluent. There's lots of money here."

A FORMER CUSTOMER

Born and raised in Sequim, Doig, 52, is a experienced woodworker and carpenter. Working as a general contractor who frequently had Bliemeister cabinetry installed on jobs that he ran, Doig relished the opportunity to buy the business from his friend and colleague Darrell Joslin in 2017.

"Darrell and I were very good friends and both competitive golfers. I was a general contractor and dealt with him on many projects over the years. Back in the day, you put Bliemeister cabinets in your advertising, you put Bliemeister cabinets in your house. Those were the two key words people looked for.



WHAT'S IN THE SHOP

Festool KS 120 EB chop saw • SawStop 10" cabinet saw • Bleeker Bros. spray booth • Ritter & Rockwell shapers • Ironwood P-600 helical planer • Belfab & Dustkop dust collectors • Homag Cenateq N-300 5x12 CNC • SCM Olimpic K560 edge bander • Altendorf F-45 slider • Kreg face-framing table • Laguna & Delta band saws • OMAL hinge borer • Castle TSM 21 pocket screw machine • Denray downdraft sanding tables • Thermoforming solid surface oven • Timesavers Series 100 wide belt sander • Ritter edge sander

"I was just enamored with what came out of this place. Then I built my own house, prior to owning the shop, and went to Darrell for the cabinetry. Just to see with my own eyes what came out of this place over the years was just amazing. So, when the opportunity came when Darrell wanted to retire, he came to me. Part of his vision was to sell to someone not out of the area. He wanted a local guy. He cared so much about everyone that worked here and wanted to retain all the employees. We kept every single one."

Long-standing employees include lead designer Dave Horvath, production supervisor Adam Caudill, production manager Todd Manchester, estimator Rick Knodel, finishers Bob Spence and Greg Decker, cabinetmakers Dave Winans and Micah Needham, installers Carl Ludwig and Trey Mannor, and office manager Heidi Handshumaker.

The business operates out of three buildings, including the main production area, offices and showroom in the center of town, a three-bay finishing facility nearby, and countertop fabrication a few miles away.

SERVING ALL SECTORS

Doig retooled the shop with automated equipment to expand the client base and accommodate a higher volume of work.

The service area includes the Olympic Peninsula and beyond. "We go all the way from Forks to Bainbridge Island, which is a huge area," Doig explains. "We do some commercial projects in Seattle. We have gone all the way to eastern Washington and worked on the border patrol office in Bellingham.

One of the shop's hot spots is Bell Hill, an affluent community that's constantly under development.

"We've done lots of the cabinetry in the homes there. It has the most incredible views. You can see all the way to Victoria. We deal with 3,000 to 5,000 square foot homes there with cabinets in every room."

The shop also offers general contracting services for remodeling jobs. "About 15 to 20 percent of our volume is more than just cabinetry," says







Doig. “That’s all-inclusive for us. We step into the interior and exterior, all the flooring, siding, windows, take it all the way. Darrell did a lot of remodels and they’ve been a good part of this business for a long time.”

The shop has an average of 30 to 35 jobs in the pipeline at any given time. “Those are current active jobs with people who’ve given deposits and are waiting patiently for their cabinets,” Doig.

He sees an influx of more work in the foreseeable future as the area continues to expand.

“This area, when I grew up here as a kid, was almost strictly retirees, which it still has a lot of. Now we’re more of a hub. We’ve got big box stores and all that here in Sequim which draws more people in. All the people to the west of us have to drive here to the grocery shop, pick up lumber, visit medical facilities. Sequim has retained a small-town feel, but it’s growing, which is great.”

IN THE SWEET SPOT

Doig says he wants to take on more volume but isn’t necessarily interested in adding more employees.

“This is kind of a sweet spot for us. I’ve had up to 18, been down to 11, and somewhere in there is the magic number. It gets stuff out the door.

“We don’t have a lot of ‘rover-type’ employees. Everybody has their own designated thing. Occasionally we do get some overtime people to do the rover thing if we need to. We’re also very set in our ways here about the right way to build cabinetry.

“We work four 10-hour days, and the rest of the time is ours to enjoy with our loved ones and family in this beautiful area we call home,” says Doig.

If he were to change anything, it would be consolidating the three buildings into one if the space becomes available. Doig says one building with 20,000 to 25,000 sq. ft. would be ideal.

“The only challenge would be our footprint. We’re honestly looking for a different location if it arises. I was really close to getting us into an old Sears building, but it didn’t have a sprinkler system.

“Space is a premium for us here. We could always use a bigger shop.”

Learn more at *bliemeisters.com*. **W**



THE PERFECT CUT

Making accurate, clean cuts is an essential part of productivity – especially if the shop can make them quickly and without endless set-ups.

The new Miter Fence Pro from Kizen Enterprise does exactly that. It's a deeply thoughtful auxiliary fence system that addresses all the big issues at the miter saw station. It brings clever clamping, zero clearance, and the ability to add shop-built jigs to this most error-prone tool. But it also lets the woodworker set up for molding work such as crown cuts and, without breaking down the set-up, it lets the saw be used for other purposes. Make some crown cuts, trim straight stock, and go right back to the molding without missing a beat.

Tooling is the other half of the equation. No cut will ever be perfect if the tool isn't. That's why the finest woodworkers have turned to Vortex Tool Company Inc. in Wisconsin since 1992 for some of the world's best stock and custom CNC and traditional machine tooling. Beyond that signature reputation for quality, the company also delivers design innovation. Take, for example, their 7500 and 7600 dovetail kits that allow a woodshop to use any flat table CNC router to manufacture dovetail drawer boxes. And Vortex's Series 2600 solid carbide dovetail bits are manufactured with up-shear or down-shear geometry, a 10° cutting angle, and either right or left hand rotations.

Upgrading tools and tooling: these are the processes that let woodworkers make perfect cuts every time.

VORTEX TOOL COMPANY INC.

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KIZEN enterprise

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Need a Perfect Cut in New Materials?

Switching panel cores, veneers, wood species or laminates can be a real adventure. A woodshop that's changing suppliers or moving into new materials needs to figure out the best way to cut for clean edges and low rejects. Most of that transition hinges on having the best tooling.

Vortex Tool Company Inc. in Schofield, Wisconsin is a U.S. based manufacturer of solid carbide and insert tooling, and the company excels in helping woodshops through such transitions. For more than thirty years, the team at Vortex have been producing world class cutting tools for woodshops, and has done so with a stellar reputation built on a customer-driven attitude and unmatched technical support.

Vortex can supply custom tooling for the perfect cut.

"As technology changes," says co-owner Matt Serwa, "we have woodworkers call us more and more about new materials that they've never cut before. They'll send us the material to test, and we'll figure out if they need a custom tool or perhaps an existing stock tool that will give them the best results."



Vortex's engineering team will also help a shop work out processing issues. Those include recommendations on aspects such as feed and speed, or the optimum depth of cut per pass.

"We also have customers that will send us profiles that they're trying to match," says Serwa. "For example, they might be doing a restoration project where they need to replicate crown molding that's a century old, or perhaps match a cabinetry profile or door stile and rail in an older house that's being renovated."

Another example of Vortex's versatility is the ability to create a custom tool that can eliminate multiple cutters. Not only will this deliver the perfect cut because profiles don't need to line up after separate passes, but the shop also gains time and efficiency by not having to make multiple tool changes.

Manufacturing custom tools for a woodshop typically requires a turn-around time of just fifteen days.

Vortex also distributes major cutting tool brands, and offers expert sharpening and re-tipping. In house, the company produces tools with cutting edges in various grades of carbide, stellite, high-speed steel, and polycrystalline diamond.

For woodshops exploring new materials, looking at higher operating speeds, or searching for significantly longer edge life, the customer care team at Vortex has is the answer.

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Do You Have A Dovetail Machine?

Vortex Tool Series 2600 solid carbide dovetail bits are designed for a variety of dovetail machines. They are manufactured with upshear or downshear geometry, designed with a 10 degree cutting angle, and are available in right or left hand rotations.



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The Perfect Miter Saw Cut

One of the most time-consuming and error-prone tasks in the woodshop is setting up the miter saw, especially for crown. The KIZEN Miter Fence System fixes that. It is safer, faster, more adaptable, and simpler to use than any other option on the market, period. Made in the USA, it fits just about any full-size 10" or 12" saw that has a standard 3.5" tall fence.

The most obvious feature of this tall auxiliary fence system is a pair of vertically adjustable red T-slot inserts that host push-in stops. With the stops on the fence, it means the saw can be used to perform other tasks without having to disassemble any tricky set-ups. A woodworker or crew can be set up to cut crown, then trim a few shelves, maybe miter a picture frame, and then come right back to finish the crown molding job. At most, one of the pins may need to be removed for a minute and then quickly replaced. That means the miter saw isn't set up for a single task that can create bottlenecks.

Because the stops can be placed anywhere in the insert, it's perfect for other applications besides crown like panel moldings, or even to hold down small or warped pieces of trim. The system also comes with micro-stop holes in the fence face for repeat cutting of parts to length, and the face slides left and right for micro-adjustment. The simplicity of the design is so original, it's brilliant. This had to be designed by a seasoned woodworker!

Have you ever needed to cut more than the fifty or so degrees at the limit of your saw?

Most of us have done something dangerous with shims and clamps or screws, and found religion while we made the cut. But remember those vertical T-slot inserts on the Miter Fence Pro? You can pop one of them out and drop in the Extreme Angle jig on either side of the blade.



This lets a woodworker safely chop very acute angles that used to lie in no-man's land. It's both simple and ingenious.

Their Jig Inserts also let woodworkers create their own jigs, such as a reverse 45° block for complex cuts (there's a video on the website), which lets the woodworker cut crown in the same orientation as it would be when installed against the ceiling. We all know how confusing it can be to mark the molding, reverse it, and then make an angled cut. It's a surprise when you don't make a mistake. This simple guide avoids that 'reverse psychology' and sets up the cut so it's intuitive.

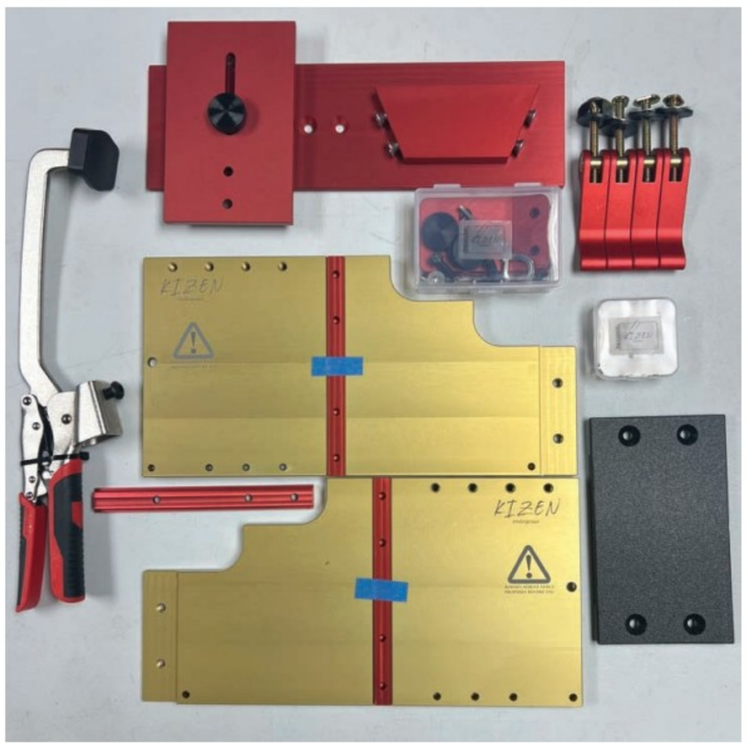
For sensitive materials such as veneers and laminates, the two halves of the Miter Fence Pro can be set so close to the blade that they essentially deliver zero clearance, even at an angle.

The tips won't harm your blade and can be swapped out when needed.

Ever needed an extra hand? One of the best features of the system is clamping. Angled plates on top of the fence provide a base that makes clamps actually practical for a miter saw.

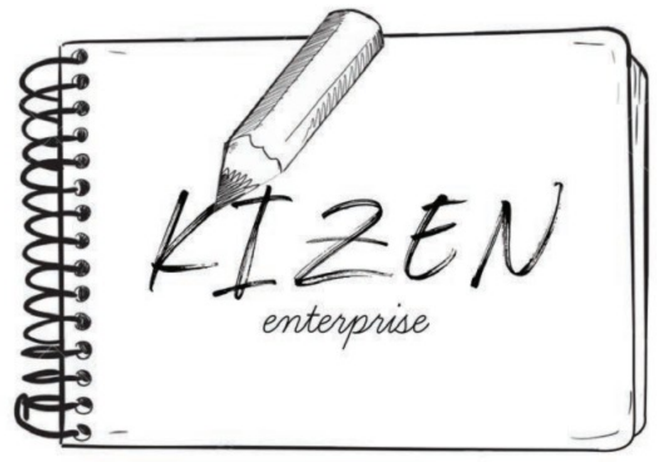
Anyone who has ever tried to tighten clamps against the uneven backs of most miter saw fences understands the magic here. The clamp can even hold nested crown, making measuring as easy as can be.

The components and accessories of the KIZEN Miter Fence System are interchangeable, allowing woodworkers to create their own custom system that is based on weight, price, capabilities, or even simply aesthetics. Check out their video to see the system in action.









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The X-Carve Pro from Inventables, available with a 2x4 or 4x4 table.

Look before you leap

Questions that need answers for entry-level CNC buyers

By John English

Thirty-some years ago, being broke but ambitious, I bought a used Craftsman table saw and started a small woodshop. Before the saw was even plugged in, the fence was replaced with a far better aftermarket upgrade that cost more than the machine. We were gifted a Forrest blade, and the shop was up and running. Over the years it graduated through cabinet saws and sliders, but that old Craftsman still holds some special memories.

We kept the core and added better.

The leap from router tables and cabinet saws to CNCs can be a little daunting, but it's a similar routine. A smaller woodshop can start with a basic machine and allow it to evolve as budgets allow. The important thing to keep in mind is that the choice of machine should be firmly rooted in the shop's needs, rather than being influenced by technical bells and whistles. The buying process involves a little introspection and soul-searching, and it's not always based solely on cold, hard facts.

SOME QUESTIONS TO ASK

"Should the first CNC be new or used?"

There are arguments either way, the most obvious being that a used machine costs less. But a new machine usually comes with the latest software and controller, a factory warranty, free phone and/or online support, and no worn-out parts. On the other hand, the price of a used machine might include the other shop's fixturing and clamps, dust collection add-ons, feed and offloading tables, and so on. There's no rule of thumb other than this: what does your gut says.

The decision will be a lot easier if the used machine is a respected brand, or the seller is someone familiar and trusted. It also helps that nowadays a woodworker can visit online chats and discover a great deal about other shops' experiences with specific machines.

"Can the CNC grow as the shop does?"

Entry-level CNCs are often targeted at skilled (or well-heeled) amateurs who want to play with the technology and learn new skills. But a small professional shop needs the machine to pay its way. It needs to be big and robust enough to complete daily tasks such as milling stiles and rails, flattening floating panels, or completing other production-line tasks when needed. Most shops are looking at a first CNC to increase output without adding payroll. If it does that, then the shop will experience some growth. Can the new machine keep pace with that? There's not much point in investing in a CNC that can only turn out as much work as the traditional machines are already handling.

"What are the critical parameters?"

A work envelope describes the cubic area of the maximum sized part that a machine can process. The length and width of the table are going to be the most pivotal dimensions here for smaller shops. For example, a very small CNC won't be able to process panels for wide drawers or pantry cabinets. The work area needs to be bigger than anything the shop intends to machine. There are some workarounds, such as splitting large panels and using a muntin, but such compromises will only satisfy for a while. At some point, frustration will set in. The best advice here is to buy a large enough table, and one that can handle thick parts. The travel in Z (up and down) isn't always as grand as the specs say because it can be compromised if the shop needs to use longer bits or spindle attachments such as a dust diverter or an aggregate.

Think about pendulum processing. This is a term that describes a series of actions where one group of parts is being unloaded while others are being machined or loaded. It can happen effectively if the table is large enough and the automation is advanced enough (or the woodworker is agile enough!).

With robotics becoming more widespread and affordable, pendulum processing is a concept to be considered – maybe not today, but down the road a little. If it seems viable soon, that may affect how large a CNC table the smaller shop should buy now.

Precision is crucial. Rework and rejects are very costly, in both time and materials. If the gantry or frame is underbuilt on a desktop or small floor model CNC, it might bow a little under stress. If the spindle is underpowered, the tool can bog down as it leans into the work and cause chatter, or even deviate from the toolpath. Overbuilt is best.



The Iconic Series from Axiom Precision includes 2x2, 2x3 and 2x4 table-size options.

HOW MANY AXES?

Agility is a prime concern. Does the shop need 2, 2.5, 3, 4 or 5 axes? Almost every new CNC sold to small cabinet shops has 3 axes, and many of those can also handle an aggregate head. A 2.5 axis machine is actually a 3-axis model that can only move in two axes simultaneously. It works well for drilling and many simple milling tasks. A fourth axis rotates work around one of the three main axes, X, Y and Z. In the X plane (side to side) the fourth axis, called A, acts much like a lathe at high speed, but it can also rotate work very slowly such as just a quarter turn so that a different face can be milled. Ro-



Avid CNC makes four benchtop CNCs including 2x2, 2x3, 3x2, and 3x3 (shown here) models that can have up to 9" of Z.

tation in the Y plane (back and forth) is called the B axis, and it's similar to A. The C axis rotates in the Z plane (around the up and down axis).

How many axes a CNC needs to have in a small shop depends on the type of work being done. The more unique, shaped, and intricate the work, the more axes come into play. If the shop only builds casework with traditional flat rectangular doors, where the most intricate shape is a simple cathedral arch, then three axes will most likely be enough. If there's an occasional need to execute a complex, multi-faceted part, it may be less expensive to outsource that than to upgrade from 3 to 5 axes.

A 5-axis machine cuts down on set-up time. It allows the spindle to do different operations with different tools without changing the fixturing. Clamp the work once, and then work on it from the top and all sides (except the bottom). A 3-axis machine often requires that the part be moved to reveal a new face after each machining task, and that can lead to inaccuracy. The more times a workpiece is handled, the more likely something such as dust accumulation or operator error can affect realignment.

Some CNCs offer the option of adding a second spindle and while that's probably not a budget option for most small shops just entering the field, it might be an upgrade to be considered in the future, and that can be planned for now. Two tables rather than (or as well as) two spindles is also an option with some CNCs, and this can increase the volume and size of parts that can be machined. Some dual tables can be locked together so that very large object such as live edge tabletops can be processed.

The ability to add aggregate heads can transform the agil-



ity of a 3-axis machine because the spindle is no longer just pointing straight down. An aggregate can work at any angle up to 90 degrees, so it can do things such as slot the edges of mitered cuts or chamfer at angles other than 45 degrees. Aggregates can hold drills, milling tools, saws, texturing brushes, sanders and a host of other tools, but they extend the point of contact farther from the gantry so there is more stress and a higher degree of lateral torque at the spindle. Slower speeds and smaller tools can help, but there are limits. Ask before buying.

CONTROLLING COSTS

Running a successful business is as much about reducing costs as it is making sales. In a smaller woodshop, the margin for allowable waste is very slim. So, it may be important to invest more funding initially in the table and spindle, rather than to spend the budget on convenience upgrades. A heavier duty T-slot or vacuum table with bigger X, Y and Z capabilities and a larger, continuous duty spindle may well contribute more to the bottom line than immediately upgrading the cooling system, the speed of the travel motors, adding a chip conveyor, spending more on a fancier automatic tool changer (ATC), or automating infeed and outfeed operations. All of those upgrades can be added as needed, but the core strengths of the machine are the table, gantry and spindle. If these are undersized, add-ons won't help much. The idea here is to put your money where it will deliver the biggest ROI (return on investment).

On the other hand, tool changers aren't just convenient. They can pay for themselves because they reduce the number of setups, which cuts downtime. But it's easy to overdo. Adding a 24-tool changer to a shop that just does short kitchen runs is probably a waste of resources.

Cheap tools don't cost less. After buying a new CNC, it's important to make sure that it's allowed to do its best work. Inexpensive tooling is far more prone to overheating, gets dull quickly, and can cause undue stress on the spindle and motors. Worse, dull tools deliver parts with burned and inaccurate edges, and tear-out.

Most shop owners will caution that one shouldn't buy a machine without first ensuring that spare parts are not just available, but readily so. Downtime is expensive and demoralizing. It also creates bottlenecks through the rest of the shop. Before buying a CNC, and especially a used one, know where parts can be found and just as importantly locate experts who can complete any repairs.

A shop owner should give serious thought to the location of a new CNC. As with any machine, it will need physical space around it to load and unload materials, and that can be a serious challenge in a smaller woodshop. The new machine will also need room for dust collection ducting, and access to both electrical power and compressed air. If there's a tool changer and a vacuum table, it's probably time to buy a bigger compressor.

One item often overlooked is the need for more carts and lifts. Where will they be stored, and is there enough floor space for them to access the machine?

This may seem obvious, but CNC manufacturers caution that the shop owner should check to make sure the floor is strong enough to hold all the new weight. Wood floors on joists might not be. One of the ways that CNCs avoid vibration is to bulk up on mass, and some of them are surprisingly heavy.

RESOURCES

Anderson America	andersonamerica.com
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Biesse	biesse.com
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Industrial CNC offers the 4x4 Apprentice and 2x3 Shortcut (shown) with a T-slot or vacuum table and a liquid-cooled spindle.

A CNC may require true 3-phase rather than an auxiliary phase converter, so check with an electrician and also ask about total amperage coming into the building. The added draw of extra dust collection and a vacuum table might exceed the available load.

The existing dust collector may not be powerful enough, so it's a good idea to check the velocity and volume requirements of the new machine.

If there's a choice in control systems for the new CNC, odds are that one of them is easier to use while the other offers more features. This will be a very subjective choice: each woodshop has different requirements. Somewhere in there, the owner also needs to assess the skills of the employees and decide whether the shop is best served by either simple or more control. Part of that decision is also tied to the seller. A used machine won't usually come with much or any training, but the price of a new machine might include employee training. That might be onsite at the shop, or in a training facility that uses the manufacturer's machines, or even at a different shop that has a similar machine. The more training, the faster the CNC will start paying for itself. Learning by trial and error can be expensive.



Next Wave CNC's Shark with an optional rotary fourth axis package.

KNOW WHAT YOU'RE GETTING

The spindle is the heart and soul of a CNC and for smaller shops buying their first machine, it's very important to do due diligence. It's good advice to buy a trusted brand name that offers great support and solid history.

Spindles are often evaluated on their speed and power. After that, check on what buyers online say about precision, tolerance, and longevity. The materials being processed will play a part in choosing the most appropriate spindle. Woodshops tend to process plastic laminates, solid hardwoods and softwoods, and a range of panel products such as Baltic birch, MDF, HDF, and other composites. It's important to quantify these and understand how much of each will be presented to the new machine. Some composites behave better with low torque and high speeds, while other materials prefer the opposite. A slow spindle may not be able to reach the optimum chip load for different tooling/material combinations. That means the tool will be cutting the material more than once.

Images courtesy of manufacturers

CNCs intended for woodworking generally have faster spindles than machines that process soft metals or similar products. So, a CNC with a high rpm spindle will most likely be better suited to woodshop work. What they give up in torque, high speed spindles make up in terms of process cycle time (how long it takes to make each part), the life of the tool's cutting edge, and less wear on the spindle. A variable speed spindle with generous top and bottom limits may be the best choice for shops that process lots of different materials.

Is the machine compatible with the shop's existing software? And will third-party software such as performance or maintenance tracking apps work well with the new machine?

CNCs require regular maintenance. The shop owner should ask whether the new machine has a required maintenance schedule, and if so, what's the cost? Who performs various tasks – a factory rep or an in-house employee. Is there downtime involved, and if so, how much and how often?

The bottom line here is that buying a CNC for a smaller woodshop doesn't necessarily mean buying a smaller machine. But it might mean buying a basic model that can be upgraded over time. **W**



The G0894 CNC router from Grizzly Industrial features a 23-5/8" x 35-3/8" cutting area.

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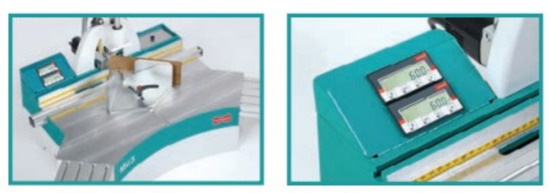

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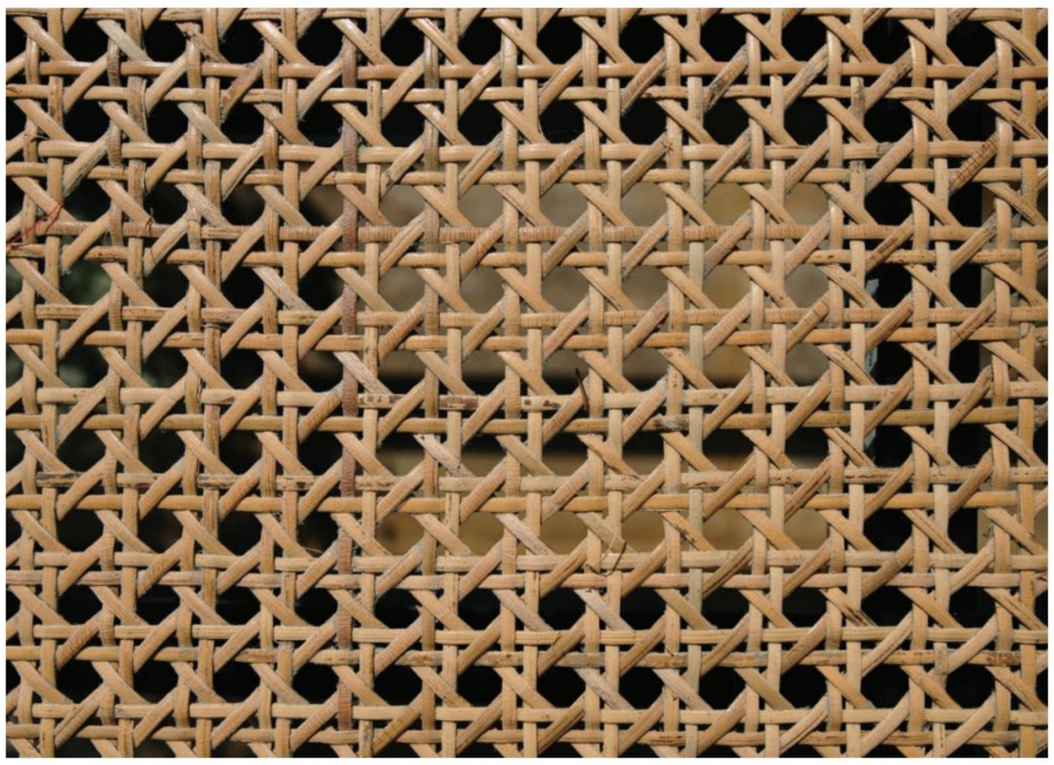

DESIGNS OF DISTINCTION
by Brown Wood Inc. has expanded its Cut-to-Size Materials line with new Rattan styles, including Basketweave, Herringbone, Hexagonal, and Radio/Square webbing. The webbing is woven from natural cane fibers with no additives or preservatives. Rattan can be painted, stained or kept natural using mineral or linseed oil, according to the company. Learn more at *brownwoodinc.com/dod*.

Courtesy of manufacturers





Organizations sponsoring meetings, classes or shows of interest to professional or hobbyist woodworkers are invited to submit items to *editorial@woodshopnews.com*.

Include name, dates, location, description of event and a contact address or telephone number. Calendar items, which should be typed or printed clearly, must be received at least 60 days before the event.

Please note that fees, as listed, might not include materials or shop fees. Check with a specific class for further details. — *Compiled by Jennifer Hicks*

ARIZONA

Sept. 23-Oct. 31 — Fundamentals of Traditional Woodworking III. Advanced course for students to further develop joinery and shaping techniques, along with finishing. Fee: $1,198. Location: Southwest School of Woodworking in Phoenix. Learn more at *sw-sw.org*.

Sept. 28-29 — Introduction to Woodworking. A welcoming hands-on class for those who want to enter the world of woodworking in a fully equipped shop. Fee: $399. Location: Southwest School of Woodworking in Phoenix. Learn more at *sw-sw.org*.

CALIFORNIA

Monthly — San Fernando Valley Woodworkers meetings are held on the third Thursday of each month at 7 p.m. at the Highland Hall Waldorf School's woodshop in Northridge. *sfvw.org*

Monthly — Society of Wood Manufacturing, a chapter of AWFS consisting of educators, manufacturers, hardware and industrial suppliers, and machinery dealers, meets during the second week of each month. For location and dates, visit *awfs.org*.

Monthly - San Joaquin Fine Woodworkers Association meetings are open to all experience levels at members' shops. For locations and dates, visit *sjfwa.com*.

FLORIDA

Ongoing — The Dunedin Fine Art Center is offering six-week woodturning classes at its Cottage Campus taught by AAW professional member Tony Marsh for beginners and intermediate-level participants. Full-day classes are held on Thursdays. Call 727-298-3322 or e-mail *education@dfac.org*.

Monthly — Woodcrafters Club of Tampa meets every third Thursday evening at 3809 W. Broad St. in Tampa. *tampawoodcrafters.org*

Sept 22-24 — Architectural Woodwork Institute's annual convention featuring networking opportunities, guest speakers and more on Amelia Island. Learn more at *awinet.org*.

ILLINOIS

Oct. 22-23 — Chicago Build Construction & Design show featuring exhibitors, demos, networking and more. Location. McCormick Place. *chicagobuildexpo.com*

MAINE

Ongoing — The Center for Furniture Craftsmanship offers year-round classes in woodworking to the highest degree of craftsmanship. One- and two-week workshops from June through October, 12-week Furniture Intensives, a nine-month Comprehensive, eight-week Turning Intensives, and Fellowships. *woodschool.org*

MARYLAND

Monthly — The Howard County Woodworkers Guild meets the first Saturdays of the month at the Bain Senior Center at 5470 Ruth Keeton Way in Columbia from 9 a.m. to 12 p.m. Contact: Manny Flecker at *aaron0641@hotmail.com*.

MASSASACHUSETTS

Sept. 19 — Open shop tour at Premier Builders in Georgetown, sponsored by the Cabinet Makers Association. *cabinetmakers.org*

MINNESOTA

Monthly — The Minnesota Woodworkers Guild meets on the second Tuesday of each month at various locations. *mnwwg.org*

MISSOURI

Oct. 2-4 — National Hardwood Lumber Association's annual Convention & Exhibit Showcase at America's Center in St. Louis. *nhla.org*

Oct. 10-12 — National Wood Flooring Association's first Leadership Development Summit. Location: Live! By Loews – Ballpark Village in St. Louis. *nwfa.org*

NEW JERSEY

Monthly — The North Jersey Woodworkers Asso-



Photo Credit Here

ciation meets the third Monday of every month. *njwawoodworkers.org*
Monthly — The Professional Woodworkers Guild of Upper New Jersey meets the third Wednesday of every month. *njwoodguild.com*

NEW YORK

Monthly — The Woodworkers of Central New York holds meetings on the first Thursday of each month at 6:30 p.m. at the Belgium Cold Springs Fire Department in Baldwinsville. *woodcny.org*
Monthly — Northeast Woodworkers Association meetings held on the second Thursday of the month at various locations in the Albany area. *woodworker.org*
Monthly — The Long Island Woodworkers meet on the first Wednesday of each month at 7 p.m. at the Frank Brush Barn of the Smithtown Historical Society in Smithtown. Learn more at *liwoodworkers.org*.

NORTH CAROLINA

Monthly — Triangle Woodworkers Association meetings held on the third Tuesday of each month at 7 p.m. at Klingspor's Woodworking Shop in MacGregor Village in Cary. *trianglewoodworkers.com*
Monthly — Charlotte Woodworkers Association meets the third Tuesday of each month at 6 p.m. at MakerSpace Charlotte. *charlottewoodworkers.org*

OHIO

Ongoing — Cincinnati Woodworking Club meets the second Saturday in the months of Jan., March, May, Sept. and Nov. from 8:30 a.m. to 12:30 p.m. at the E.B. Mueller in Reading. *cincinnatiwoodworkingclub.org*

PENNSYLVANIA

Monthly — Lehigh Valley Woodworkers Guild meets at 6:30 p.m. every third Wednesday of the month at the Woodcraft in Allentown. Various craftspeople provide presentations on their woodworking techniques. *lvwwg.com*

RHODE ISLAND

Sept. 16-18 — Stair Balustrade Class, hosted by Hardwood Design. Three-day instructional class focused on post-to-post and over-the-post handrail installation theory and skills. Location: Hardwood Design in Exeter. *stairways.org*
Nov. 8-10 — Fine Furnishings Show featuring handcrafted furniture, art, accessories and more for the home at the WaterFire Arts Center in Providence. *finefurnishingsshows.com*

TENNESSEE

Nov. 10-12 — STAFDA Convention, an industry event that includes educational programs, seminars, networking and more at the Music City Center in Nashville. *stafda.org*

TEXAS

Oct. 6-9 — World Millwork Alliance 2024 Millwork Convention & Tradeshow at the Henry B. Gonzalez Convention Center in San Antonio. *worldmillworkalliance.com*

WEST VIRGINIA

Sept. 19-22 — Stairbuilders and Manufacturers Association fourth annual SMA Camp-out at Pipestem Resort. *stairways.org*

WYOMING

Sept. 5-8 — Western Design Conference in Jackson Hole. Learn more at *westerndesignconference.com*. W

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TRAINING PROGRAM ON SPRAY FINISHING ANNOUNCED

Carlisle Fluid Technologies and Owens Community College have teamed up to present a Spray Finishing Technology Workshop. The three-day intensive training program is scheduled for Nov. 6-8 in Toledo, Ohio.

Classes meet from 8 a.m. to 5 p.m. daily and include both classroom and hands-on sessions. Attendees should be involved with industrial, contractor or maintenance spray finishing applications, or spray equipment sales and distribution.

Topics for the Spray Finishing Technology Workshops include equipment types and selection; equipment set-up, operation, and maintenance; surface preparation and defect analysis; material selection, and safety and regulatory concerns.

Learn more and register at *owens.edu*.

NEW CONTROLLER FROM SIEMENS

Siemens is offering the new Sinumerik MC controller, a universal, open, industrial PC-based CNC system.

"Its optimized motion control, high-performance automation and integrated Windows 10 operating system make it an ideal control for fabrication and specialty machines, including woodworking, stone-cutting, laser and even conventional basic grinding machines," the company explained.

"With an open operating concept, this new control system is also suitable for certain additive manufacturing, metal-forming, adhesive applications, plate-cutting, grinding and laser or waterjet cutting."

Learn more at *siemens.com*.

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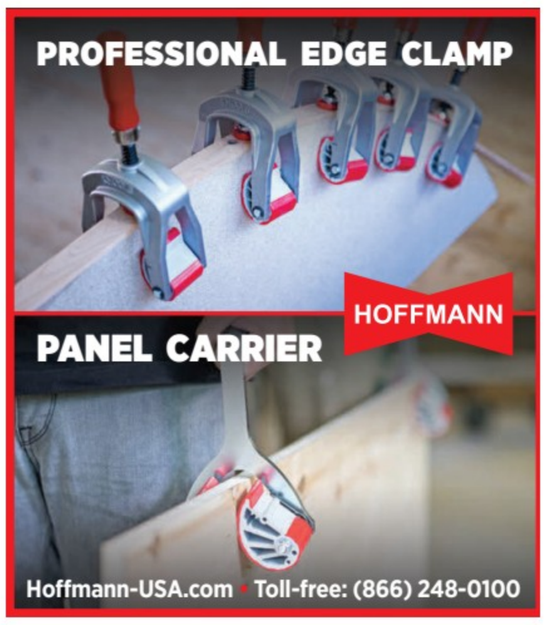

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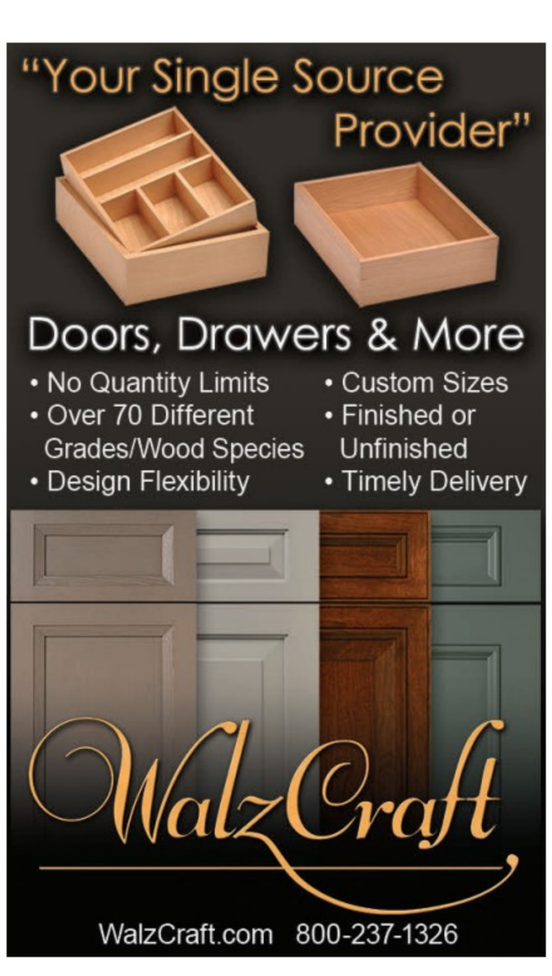

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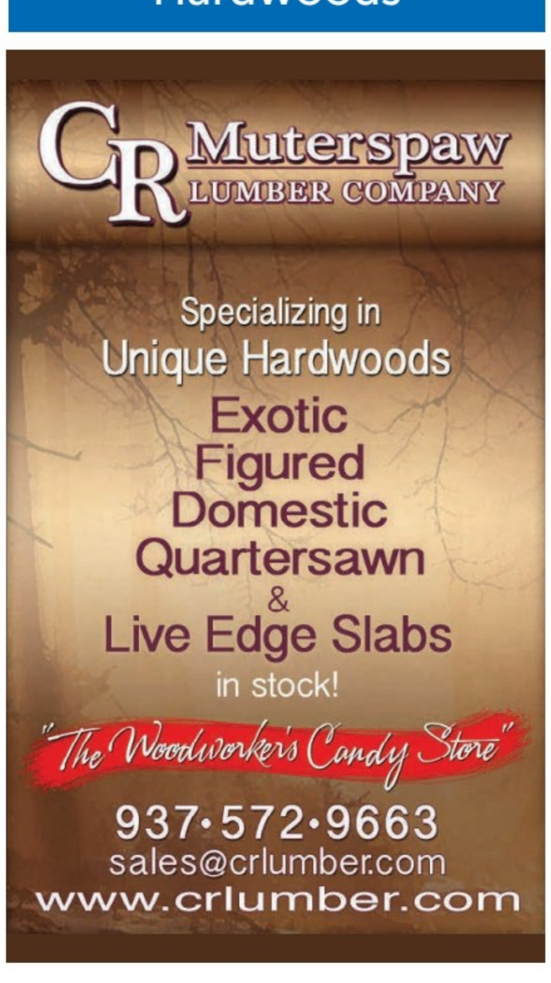

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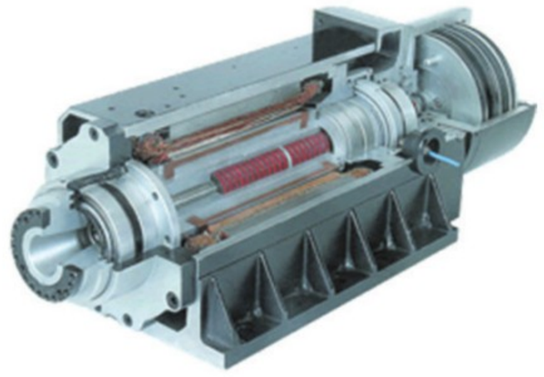

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The Gable Grants offer support to schools for training in trades careers.

Round two

The Lowe's Foundation announced nearly $8 million in Gable Grants to a second cohort of community and technical colleges in July.

Since awarding its first grants one year ago, the Foundation has assisted in expanding skilled trades career pathways through its growing network of 35 community colleges and nonprofits in rural and urban communities across 27 states.

"With enrollments rising at vocationally focused schools, these community colleges are blossoming arenas for entrepreneurship and economic mobility," Janice Dupré, Lowe's executive vice president of human resources and chair of the Lowe's Foundation, said in a statement.

"Each college has a clear, inspired vision for closing the trades gap in its community, and we're pleased to welcome them to our larger movement."

From funding new skilled trades facilities and instructors to accreditation programs, the grants will support carpentry and construction, HVAC, electrical, plumbing and appliance repair training.

These grants build on the foundation's first cohort of community college Gable Grants announced in 2023.

The latest grants were awarded to Baton Rouge Community College in Baton Rouge, La.; Central Maine Community College in Auburn, Maine; Central Piedmont Community College in Charlotte; Community College of Baltimore County in Baltimore; Maricopa Community Colleges Foundation and Maricopa County Community College District in Tempe, Ariz.; Midlands Technical College in Columbia, S.C.; Mountwest Community and Technical College in Huntington, W.Va.; Southeast Community College in Lincoln, Neb.; Valencia College in Orlando, Fla.; Wilkes Community College in Wilkesboro, N.C., and Wiregrass Georgia Technical College in Fitzgerald, Ga.

The Lowe's Foundation has made a five-year, $50 million commitment to support the training of 50,000 people for skilled trades careers. Learn more at *lowes.com/foundation*.

–Jennifer Hicks

60 Grit

Rough humor by Steve Spiro



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