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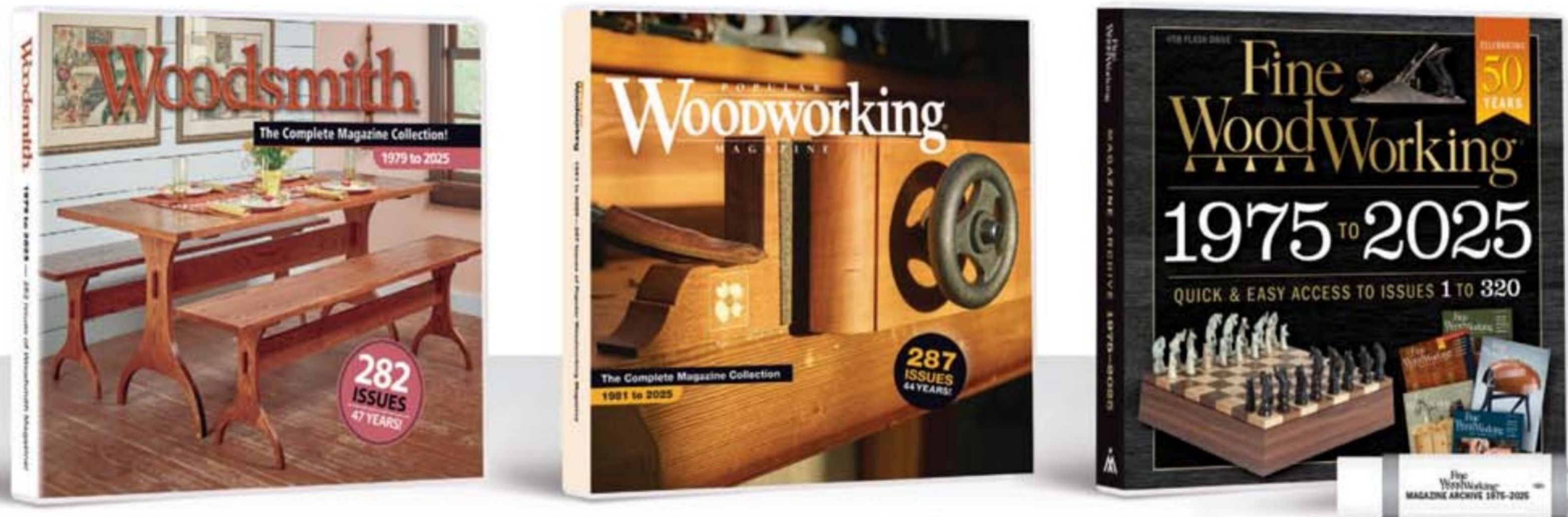
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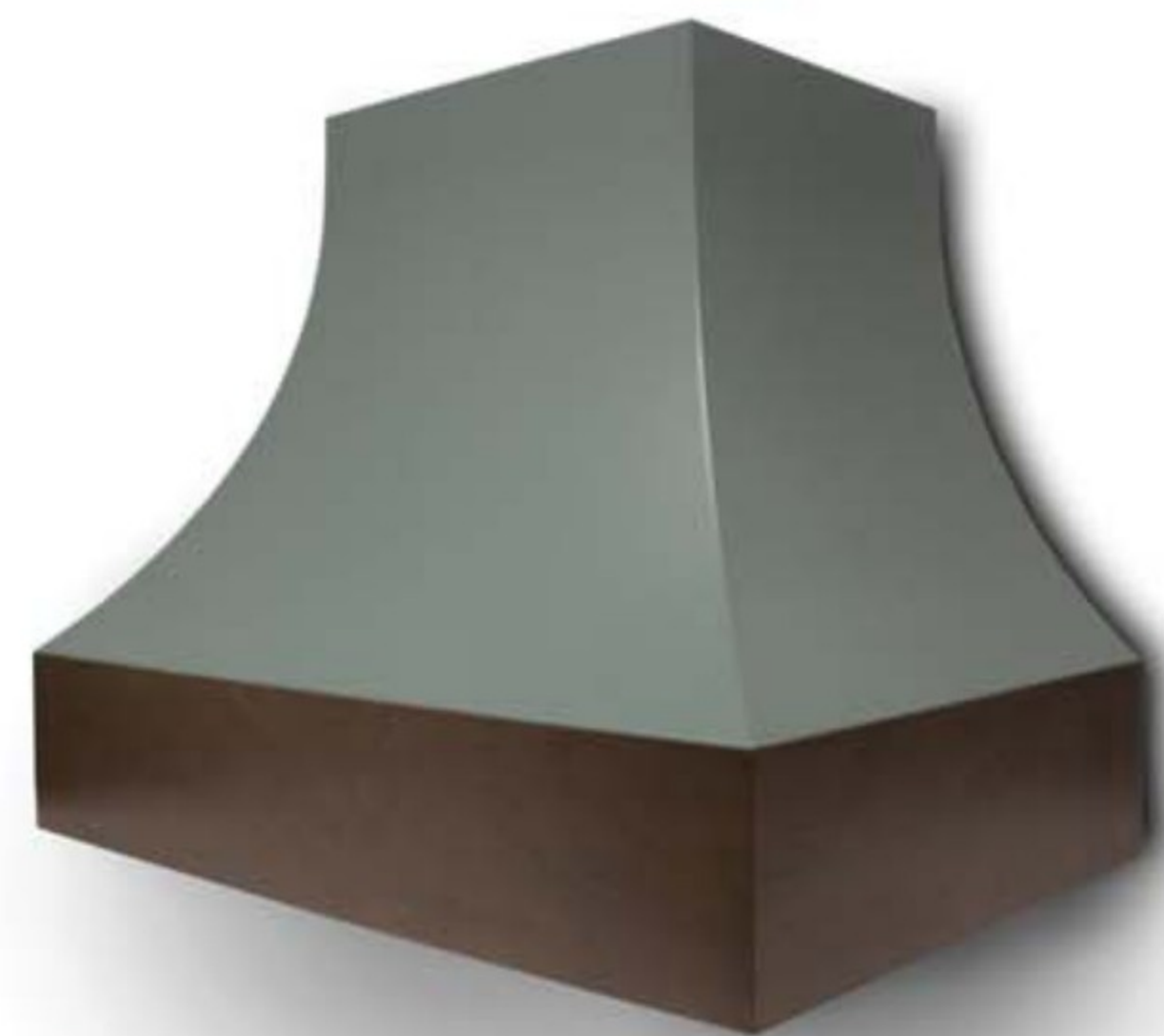
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BLOGS



Over the Workbench

Talkin' shop with former editor A.J. Hamler

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New grant opportunity for woodworking education programs

By Tod Riggio

The Wood Industry Association (WIA) has launched the James Scarlett Memorial School Grant Program, established to continue the legacy of James Scarlett, a visionary leader and advocate for the woodworking industry.

The memorial fund is dedicated to supporting woodworking education and training, helping schools and programs cultivate the next generation of woodworking professionals, according to the WIA.

Qualifying educational institutions with a woodworking, cabinetry, furniture, industrial design or related program are invited to apply for a grant to purchase woodworking machinery, software, supplies and/or to support an industry-related school trip.

To qualify, applicants must be an accredited K-12 public or private school, recognized educational non-profit, or post-secondary technical school in North America; offer an existing or developing woodworking-focused program; have a program that is fully operational or launching within 18 months of award, an include documented support from school leadership.

Judges will review applications based on the program's impact on students and the community, financial need, and overall quality. Apply by Jan. 31, 2026, at woodindustry.org.

Craft in America announced that Carol Sauvion, the institu-

tion's Executive Director, will retire from the organization at the end of December 2025.

Sauvion's retirement comes after 21 years of leadership and follows the launch of Craft in America's initiative for the national semiquincentennial, *Handwork: Celebrating American Craft 2026*, which will take place Nov. 13-14 in Philadelphia.

"At the end of December 2025, I will leave the Executive Director position to the new Co-Executive Directors, Robyn Hollingshead and Ann Ruhr Pifer, both members of the Craft in America Board and both experienced, dedicated craft professionals," Sauvion said in a statement.

"With Ann and Robyn, my work and my passion will be woven into their vision for the future of the crafts. We have been working on this transition, set to happen on New Year's Day 2026, for several months."

Craft in America is a Los Angeles-based nonprofit arts organization founded in 2004 with the mission to promote and advance original handcrafted work through programs in all media.

"Carol's realization, many decades ago, that craft is all around us, hiding in plain sight, moved her to create an organization that could expose communities across the country to the magnificent world of original hand-crafted works and the living artists who make them," said Hollingshead. **W**

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Stiles' event highlights industry trends

By Jennifer Hicks

Stiles Machinery hosted its semiannual Manufacturing Solutions Seminar on Nov. 5-6 at its facility in High Point, N.C., highlighting innovation, automation and AI in woodworking. Manufacturers from across North America attended the two-day event to explore the latest technologies, trends and strategies shaping the industry. Both days reached capacity.

"It's always a privilege to host so many engaged manufacturers at this event," said Sylvain Dubuc, the Southeast Regional Director at Stiles Machinery, in a statement.

"Coming together to share ideas, celebrate successes, and learn from one another reinforces the incredible opportunities within the woodworking industry and how Stiles can continue to support manufacturers in achieving their goals."

The seminar featured live work cell demonstrations, presentations, and interactive breakout sessions on key industry topics. Panel discussions included speakers who addressed current industry challenges, integrating automation, and exploring AI technologies.

Speakers included Matthew Cathy of CFX Products; Winfried Dell of imos; Greg Easton of Woodgrain; Tyler Nay of



Stiles Machinery CNC product specialist James Swanson conducting a demonstration at the event.

Trim Art, and Brett Warriner of Powell Valley Millwork.

Stiles hosts the free seminars to foster collaboration and knowledge-sharing, helping manufacturers address industry challenges and develop strategies for long-term success. Registration for the spring event will open in early 2026.

Learn more at stilesmachinery.com. **W**

Courtesy of Stiles

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HookPic brings AI photography to furniture manufacturers

By Jennifer Hicks

HookPic, a new AI photography tool for woodworkers, automatically generates backgrounds and lifestyle settings for product images.

The web-based application empowers manufacturers to compete nationally by turning craftsmanship into professional visual storytelling without traditional photography barriers, according to co-founders Michael Bashour and furniture maker Chase Kerlin.

"Most small and midsize manufacturers make exceptional products but struggle to present them visually at the level national brands do. Photography is expensive, slow, and disruptive to production. HookPic converts simple phone photos into crisp, shadow-corrected catalog images in seconds, then produces polished lifestyle images in minutes," says Kerlin, owner of Olive & Wool, a furniture case goods manufacturer in Austin, Texas.

"No photographers, stylists or retouchers are needed. Makers get high-quality images for their furniture with digitally created scenes instead of spending tens of thousands on traditional photo shoots. Your product stays true and authentic and gets to be seen in an environment that matches your furniture's quality."



HookPic AI-generated background images of a custom desk made by Olive & Wool in Austin, Texas.

Kerlin's woodworking background complements Bashour's technical expertise, allowing them to address the specific photography needs of furniture professionals.

"HookPic is built for the realities of the woodshop and factory floor. The program accurately renders wood grain, joinery, finishes and upholstery, even from imperfect lighting conditions. Our goal is to help create a consistent look across an entire line," Kerlin says.

The program creates full scenes around products rather than simply swapping backdrops.



The before and after of a HookPic application.



"The backgrounds are prompt-based in an environment called the Image Studio. Users can access prebuilt settings that help create useful images, such as angle and lighting style. They can import existing photography, choose geographic settings and type freeform descriptions of what they'd like to see," Bashour says.

"Being the tech person here and not the furniture guy, I always like to show these pieces in front of mountains in the desert with lighting behind them. The point is that the range is almost limitless. Our goal with HookPic has been to narrow that enormous image generation power for this specific use case."

The platform requires minimal training — typically one or two sessions — according to Bashour, who designed it specifically for makers rather than tech-savvy users.

"You just take your photo, upload it to our program, select catalog silhouettes and create the lifestyle image of your choice. The user interface is intentionally simple and avoids technical jargon, making it accessible to any shop," Bashour says.

The founders educate users about copyright risks, though they say accidental infringement is unlikely.

"We always recommend users do a reverse image search. If the image is going to be widely published, we recommend they definitely check because just like with any other photo editing tool, it's possible to create something that infringes on someone else's work," Bashour says. "That said, these models are trained on billions of images. We have yet to see a situation where someone generated something that looked directly like existing work, other than when using style references."

Learn more at hookpic.com. **W**

Metabo HPT launches Bring Back Shop Class campaign

By Jennifer Hicks

In partnership with the Shop Class Foundation, Metabo HPT, has started a "Bring Back Shop Class" campaign to support better options for hands-on learning and career pathways in the skilled trades.

The initiative, backed by data from a national survey, calls for restoring shop class as a core element of public education while providing training, mentorship, and tools to help students prepare for skilled roles.

"Metabo HPT supports and celebrates our great tradespeople and their craftsmanship," Bill Wyman, CMO of Metabo HPT's parent company, KOKI Group, said in a statement.



Metabo HPT has partnered with Shop Class Foundation to help reignite America's skilled labor workforce.

"For too long, college has been framed as the primary route to a successful career. Bring Back Shop Class highlights the need for students to have a real-world path to build their future in the trades. Through our partnership with the Shop Class Foundation, we're helping make that opportunity a reality for the next generation of builders."

The Shop Class Foundation is a nonprofit that immerses students in framing, electrical, plumbing, and finishing as they collaborate on a fully functional build each school year.

"Give students the right tools and guidance, and they can build anything," said the foundation's co-founder, Jeff Gibson.

"With Metabo HPT's support, we've been able to expand our reach by 300 percent this year, giving more students access to real-world, hands-on learning. We're not just teaching trade skills; we're opening doors to meaningful careers and a future our students can be proud of."

Learn more at metabo-hpt.com and shopclassfoundation.org. **W**

Courtesy of Metabo HPT

SMALL HOLES, BIG IMPACT: HOW TO MAXIMIZE SANDING EFFICIENCY



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- Sandpaper must match these hole patterns to extract dust correctly

This begs the question, "how many holes do I actually need, and how many holes are too many?" Are we asking you to go rogue and not match your sandpaper to your sander? Absolutely not.

We're quite possibly stating the obvious that:

- The more holes, the less abrasive the surface doing the work.
- Reduced surface area means the remaining abrasive carries more of the load.
- Going overboard with hole-count may shorten sandpaper life instead of extending it

A balance between extraction and sanding surface is essential.

Tips for better sanding and dust control:

- Ensure your vacuum system has sufficient extraction capacity to meet your sanding demands.
- Select a moderate hole pattern to strike a balance between dust removal and sanding performance.
- Select a mesh abrasive, such as Klingspor's KlingNet, for superior airflow and extraction



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Cherry sales remain sluggish

By Jennifer Hicks

From a practical standpoint, cherry (*Prunus serotina*) should be a top-selling domestic hardwood. It's widely available at competitive prices compared with other domestic species. But sales have slumped for more than a decade, according to lumber suppliers interviewed by Woodshop News. Some say cherry is gradually making a comeback, though market trends prevent a major rebound.

"Cherry sales are still slow. They're moving a little bit, but it's definitely not selling like crazy. We have begun to see a small uptick in inquiries for sure, but it's only a very slow increase," says Myron Yoder of Irion Lumber in Wellsboro, Pa.

"And it tends to be for the thicker material as opposed to 4/4. I sell very little 4/4, but I sell 8/4, I sell 10/4, and I sell some of the bigger stuff. But the 4/4 doesn't seem to be selling that much."

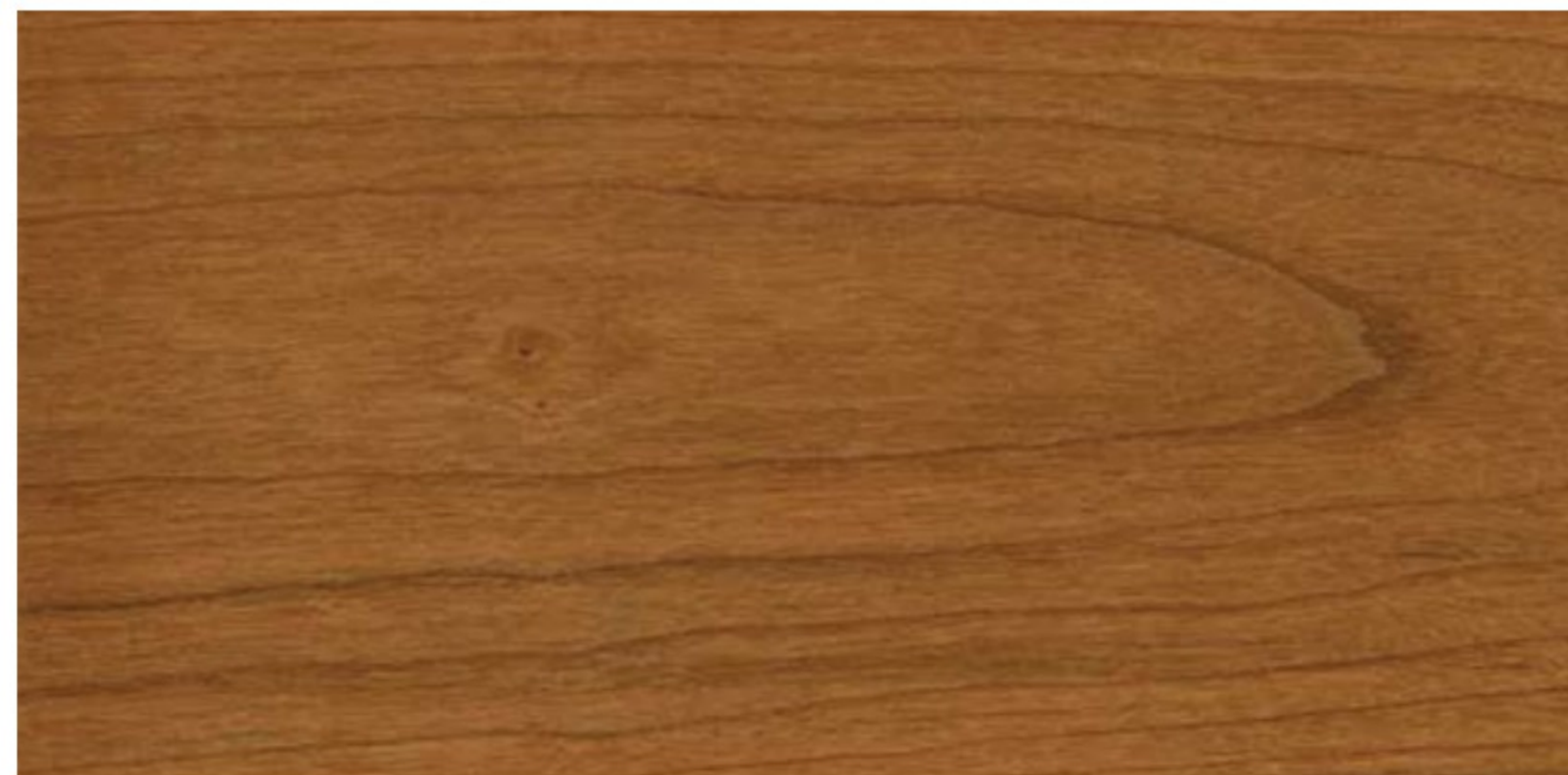
Yoder says cherry sales have been slow for at least 10 years, with a particularly strong lull in the last five. The lack of demand has helped keep prices low.

"It's bumped along for quite a while, a little here, a little there, but nowhere near what it used to be," he says. "Cherry's half the price or even less than half the price of walnut, so you're talking a significant amount, particularly on larger jobs. You could get your material at a third of the cost. It's just a color and trend issue that seems to be the reason. Walnut's the one that keeps the market moving."

Matched sets of figured cherry are moving well, however. Yoder says even when cherry generally isn't selling, highly figured material remains in demand.

"But it tends to be the most extremely figured stuff, as opposed to just generally figured," he says. "I rarely sell batches of grade figured cherry. It's normally highly figured, matched from the same tree. People think it's beautiful and want to buy the whole set. That high quality, high figured material still grabs people's attention and they buy it."

The good news: Cherry remains plentiful. Because of low



prices and declining demand, many suppliers aren't carrying much inventory. Since supply exceeds demand, the quality of available material is top grade.

"We're now able to get incredible logs we couldn't touch 10 years ago. They're the best quality we've ever had because we're able to buy big logs," Yoder says. "When cherry was really hot over 10 years ago, we couldn't get those logs because they were going overseas, but now the brokers are real happy to see us."

Levi Neimond of Alderfer Lumber in Mount Pleasant Mills, Pa., sells cherry for cabinetry and stair parts. He agrees that cherry sales are nowhere near their former levels.

"It seems like all of the red-toned woods have kind of dropped off. Red oak and cherry are both kind of slow," Neimond says. "There are certain markets for red oak but it's kind of hard to make them not red, especially when people are tending towards more natural finishes instead of stains."

Cherry peaked in popularity during the 1990s, he notes. "We still get people who want super high-quality specialty or super thick cherry, which we do up to 16/4. Overall, I just think the market trends have shifted to more brown woods vs. red woods."

He attributes some of the shift to marketing buzzwords that influence consumer choices regardless of wood quality.

Bob Reynolds of Reynolds Sawmill in Swan, Iowa, sells cherry to furniture makers.

"I've got a customer that does a lot with cherry and he bought about 100 board feet from me recently. I would say it's in an upward trend," Reynolds says. "And if you get a lot that's got figure in it and marking that just make it beautiful, it's a big seller. I sell mine at \$4.50 per board foot and nobody complains about the price." **W**

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BIESSE'S FEDERICO BROCCOLI IS NEW VP OF ACIMALL

Federico Broccoli, Chief Commercial Officer at Biesse (Pesaro), is the new vice president of Acimall, the Italian woodworking machinery and tools manufacturers' association. He replaces Raphaël Prati, who resigned and was recognized by Acimall's board for his valuable contribution.

"I am happy to see Federico Broccoli join the direction of the association and the managing board of Cepra srl, the service company that manages all our operations," said Enrico Aureli, Acimall's president, said in a statement.

"His longstanding experience as a manager and his deep knowledge of global markets will be essential for the consolidation and growth of the association, which will celebrate its 60th anniversary in 2026. I can only say thank you to him and the Biesse

ownership for their availability and nearness to Acimall, and I am fully confident that we will make a great job."

"My heartfelt thanks to President Aureli and the entire board for their trust," said Federico Broccoli said.

"I have known Acimall since 1985 — as I joined this industry forty years ago — and I have always appreciated their commitment and dedication, especially for the globalization of our companies.

"So, I am proud of joining an institution that has effectively represented our industry and, in a complex market and geopolitical scenario, must continue to be a strong reference for all businesses, independently of their size, as only by working together can we achieve and exceed the most challenging goals."

METABO NORTH AMERICA TO BECOME METABO HPT

KOKI Group has announced that the Metabo brand in North America will transition to Metabo HPT, marking the next step in the company's global strategy to unite its power tool brands under a single, stronger identity.

"Customers will start to see Metabo HPT-branded products, packaging, and signage appearing on store shelves now, with the full transition to be completed by mid-2026," the company explained.

"The phased approach ensures a smooth shift for retail partners, distributors, and professional users, while maintaining uninter-

rupted access to tools, batteries, and parts."

"By combining the strengths of Metabo and Metabo HPT under one brand in North America we're simplifying how we show up in the market while continuing to deliver the engineering excellence and performance professionals rely on," said Joe Leffler, the company's Business Unit President for North America. "Nothing changes in the quality, service, or innovation our customers expect. This is about aligning our North American brands to make it easier for customers to identify and trust the tools that work as hard as they do."

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Due to their higher pressure and lower volume, shop vacuums excel at general cleanup and capturing dust produced by portable tools, like this random orbit sander.



Dust collection dos and don'ts

From airflow dynamics to filter selection, a guide to keeping wood dust under control

By A.J. Hamler

Repeat after me: Effective dust collection is never “an option.” It’s an integral part of what you do to keep shop air breathable. Woodworkers have used dust collection for years, but even long-time professionals sometimes misunderstand, neglect or, more likely, simply under-plan their systems.

Wood dust is more than annoying. Fine airborne dust can ruin finishes, pose a fire hazard, and cause permanent lung damage. It doesn’t matter how big your shop or how many employees you may have, you should understand how shop air moves and how dust behaves. Then, tackle both.

There are lots of dos and don’ts. Let’s take a look at the essential basics, and some accessories that can make a difference.

DO: PLAN THE SYSTEM

DON'T: BUILD IN REVERSE

Dust problems begin at the planning stage — or rather,

the lack of one. A collector squeezed in after machines are in place is always a compromise. If you have the luxury of designing your shop from the ground-up, begin with a layout, noting where each tool goes and which (if any) will run simultaneously. Ideally, your collector should be positioned smack in the middle of your layout, or near tools with the most/largest chips — table saw, planer, jointer, and router — to keep duct runs short.

Longer ducts, bends, and flex hose create resistance, so the fewer you have, the stronger your airflow. Use smooth metal ducting where possible and keep transitions gradual to reduce drag. My small shop does fine with 4” ducts, but the main ducting in larger shops should start at 5” or 6”, branching off 4” drops to individual machines.

Keep in mind that you’re not just designing a simple chip vacuum, but a total airflow system for smooth flow from pickup point to collector with minimal turbulence. Plan ahead for new machines by adding a capped branch. It’s

cheaper and easier to do now, rather than rebuilding or extending ductwork later.

DO: SIZE COLLECTORS PROPERLY

DON'T: EXPECT A SHOP VACUUM TO DO IT ALL

They both suck dust, but dust collectors and shop vacuums operate on completely different principles. Vacuums move smaller amounts of air at high pressure, fine for sanders and other portable tools. Dust collectors pull large volumes at lower pressure, just what you need for the big chips produced by planers, jointers and other stationary machines.

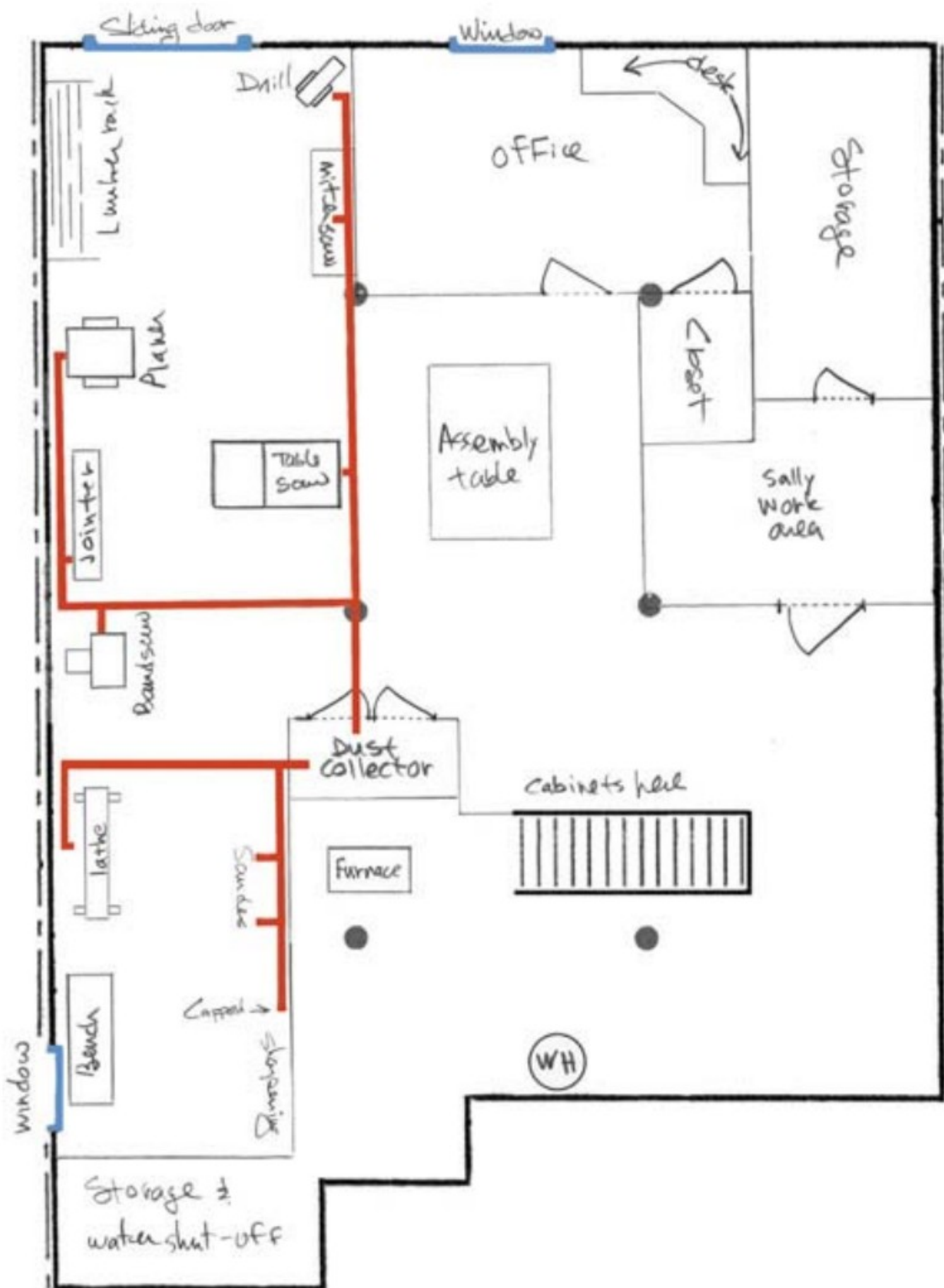
A 2- to 3-hp collector, pulling air at 1,200 to 1,800 cfm, is a good starting place for regularly used stationary tools. Bigger isn't always better: It wastes energy, creates more noise and can even collapse a thin flex hose. Instead, shoot for balance with enough power to effectively pull in the dust without being so powerful that there's a loss of static pressure caused by turbulence or friction.

Study manufacturer specs and airflow charts when shopping for collectors. The difference between 1-½ hp and 3hp, or 4" and 6" ducting, will affect whether your system captures dust or just blows it around the shop.

DO: CONTROL THE FINE DUST

DON'T: JUDGE CLEANLINESS BY SIGHT ALONE

Big, heavy chips are great — you can see them fall right out of the air — but the fine stuff floating around that you can't see is the real danger. Particles less than 10 microns can stay airborne for hours; longer if there's a lot of air



Whenever possible, design a dust collection system with a rough layout showing where all dust-producing tools will be before they're in place.



Anticipate shop growth and new tools by building a capped branch to where they're likely go. This is far easier than adding new ducts later.

movement. That's plenty of time to get into your lungs where it can trigger long-term respiratory issues.

The air may 'look' clean but seeing dust and measuring it isn't the same thing. Actually, test your shop's air quality for some hard numbers instead. Handheld air-quality meters adequate for small-shop use run about \$150-\$300. They can be enlightening, identifying which tools generate the worst fine dust (I'm looking at you, sanders), and verifying that your collection strategy is working.

For optimal performance, use high-efficiency filtration bags. An even better option is to ditch the bags and instead use pleated filter canisters. Canisters rated at MERV 15 or higher catch 85 percent of dust particles from 0.3-1.0 microns, and 90 percent from 1.0-3.0 microns. A two-stage cyclone collector can improve the efficiency of any filter type by separating heavy chips into a dedicated container while directing only fine particles to the filter. The cleaner you can keep your filters, the more powerful your suction will be.

DO: KEEP THE AIR MOVING SMOOTHLY
DON'T: CREATE BLOCKAGES OR STATIC

Airflow is the ally of dust collection; resistance is its enemy. Every extra foot in length, and every elbow, constriction or sagging hose reduces the stream. Ductwork should be straight as possible. Use high-radius elbows or replace sharp 90-degree turns with separate 45-degree connectors to soften bends. Short lengths of flex hose is fine for machine connections but use rigid ducting everywhere else.

Blast gates are great at directing suction where needed, as long as you remember to use them. Place gates close to machines and within easy reach of tool power switches. Wired gates that automatically open when turning on a tool, or a remote control clipped to your belt, will save time and help maintain consistent use.

Static electricity is another hazard related to airflow. Dust particles can build a static charge surging through ductwork, particularly PVC and other plastics. The risk of static igniting dust and causing an explosion is low, but unexpected shocks due to static are irritating at best, and sometimes painful. Metal ducting should be directly grounded with copper wire, while a bare copper wire running along the inside and outside of a PVC duct can minimize electrical surprises. At the very least, grounding lessens static that turns ducting into dust magnets.



This before/after image shows an air quality meter first reading the air when no tools are running, and then again after using a spindle sander for five minutes with no dust collection.

DO: MAINTAIN, CLEAN AND MONITOR

DON'T: SET IT AND FORGET IT

Even good systems degrade without maintenance. Filters that become clogged, ducts or connections that leak, and overfilled collection bags or

drums all have a way of creeping up on you in a busy shop. Nearly full collection containers, bags or drums do more than reduce capacity; they can alter airflow dynamics affecting every machine in the chain.

Establish a schedule for emptying collection bags/bins before they're

topped off and consider two-thirds as "full." Overfilled bags can come loose or make them so heavy that they're difficult to empty.

For smaller shops, filters should be inspected at least monthly; for larger, busier shops a weekly inspection would not be excessive. If filters are cleanable, clean them; if not, replace them.

Check connections and ducts for leaks everywhere; the more leaks, the lower the cfm's. Measure airflow periodically with a basic handheld anemometer, record the stats, then watch for declining numbers that can signal a leak, obstruction, or a torn or a slipping bag.

Sweeping the floor is fine and encouraged, but fine dust tends to build up on horizontal surfaces, in joists and rafters, atop light fixtures and inside shop HVAC systems. This is where that shop vacuum, preferably with a HEPA filter, really shines. Every shop should have an ambient air cleaner (or more than one depending on shop size), that you use while on the shop floor, and for a half hour or so after shutting the shop down for the day.

**DO: FILTER AND VENT SAFELY
DON'T: WASTE CONDITIONED AIR OR CREATE HAZARDS**

Where dusty air goes after filtration is just as important as how it gets there. Venting outdoors removes nearly all fine dust, but then you're also shooting heated/cooled

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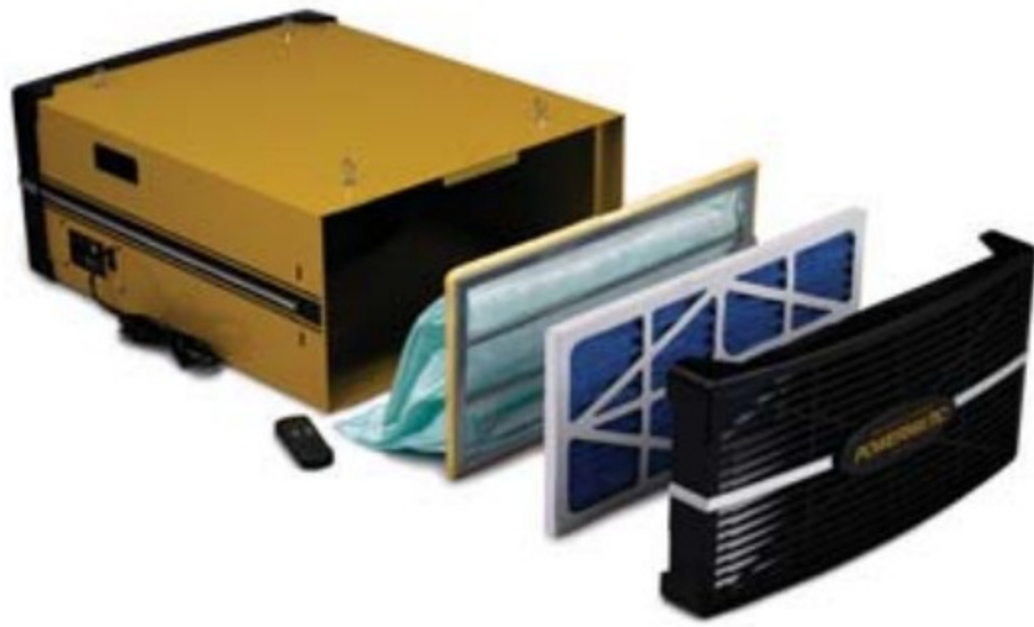





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A handheld anemometer can show airflow rates at specific points in a duct run. Here the connection at a miter saw connection shows 5,882 ft/min, which converts to about 513 cfm.



No matter how great your system is, it can still miss the finest — and most dangerous — airborne particles. Ambient air cleaners run that dusty air through filters to return clean air to the shop.

air into the wilderness. You'll do better, energy-wise, to return that air to the shop through high-efficiency filters, but only if filtration is truly effective.

If you smell dust, you're breathing dust. Use HEPA-grade filters for indoor returns, so you aren't recirculating dirty air. If local climate allows outdoor venting, install a backdraft damper on the vent, and a screen to keep out small uninvited guests looking for a warm place to spend the night.

This is also a good time to talk about noise control. A 3-hp collector can hit 85-90 decibels. Consider placing the collector in a central enclosure. Or, as long as it doesn't extend the run too much, put it in a separate utility room lined with acoustic panels. Your ears — and household members, if your shop is home-based — will be grateful.

DO: RESPECT SAFETY AND FIRE PREVENTION
DON'T: TREAT DUST AS HARMLESS

Wood dust is flammable. If the conditions are right, it's explosive. Disastrous shop explosions are extremely rare and mostly occur only in very large facilities, but dust fires can happen in any size shop. A small, quickly spreading blaze can destroy equipment, wreak havoc on your business, and burn down your house.

Never mix workpiece materials. The swarf created working steel, aluminum or other metals can be hot, and running it down the same path as wood chips is asking for trouble. Either use separate ducting and collection for metalwork or thoroughly clean out hoses and ducts before switching materials.

Simple precautions and safety practices go a long way:

- Don't suck up metal debris or nails

- that might spark against impellers.
- Do consider metal collection drums instead of plastic.
- Don't let collectors run unattended without a heat detector/alarm.
- Do keep electrical panels, wiring and switches up to code for dusty environments.

DO: PROTECT YOURSELF AND CREW
DON'T: EXPECT MACHINES DO IT ALL

No system captures every speck of dust, so use personal protection

equipment to pick up the slack. You may be surprised at the difference wearing an N95 or P100 respirator makes when doing sanding, routing or even just emptying collection bags and bins. A box of disposable masks placed in work zones and machine areas not only boosts employee compliance, but gives you a visual reminder, too.

Dust is the nemesis of finishing. Fine dust particles will ruin a finish and may act as an ignition source for solvent vapors. Separate dust-generating areas from finishing areas.



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Like an ambient air cleaner, dust masks help protect against extremely fine airborne particles.



Smoke detectors can sometimes give false positives in dusty air, but a heat detector near your dust collector is a more reliable early warning instrument.



Two-stage cyclone collectors separate dust by size. Large chips first spiral down into the barrel while only the fine dust is sent to the canister filter.



These two dust collectors are the same 2-hp model, but the one with the bag filter captures dust 30 microns and up, while the canister filter on the right grabs particles down to only 2 microns.

Dust collection and vapor ventilation should complement, not compete.

Even if it takes a training session, make sure employees are “dust aware” The best system doesn’t work unless everyone in the shop understands blast gate positions, bag or bin capacity, and basic filter maintenance. A written checklist on a clipboard at machines can help maintain discipline in a busy shop.

BRINGING IT ALL TOGETHER

Don’t consider dust collection as mere housekeeping. It’s that, obviously, but it’s also an ecosystem joining airflow, filtration, maintenance and, above all, safety. The separate parts — collector, ductwork, filters, and shop layout — must function in concert. Dropping the ball anywhere along the chain affects everything.

A dust collection system designed with purpose is all about control of airflow, particle size, safety and en-



Sharp bends of 90 degrees create drag that lowers airflow. Separating the curve into two slightly separated 45-degree angles effectively increasing the radius of the bend for less drag.

Design with purpose:

- Airflow: Smooth ducts, accurately sized, no leaks, limited bends.
- Filtration: Efficient enough to block breathable dust.
- Energy and noise: Balance return air, deaden sound.
- Future expansion: Ductwork planned to accommodate new machines.

ergy, but all those basics must be covered in the design phase for effectiveness. Once implemented and regularly maintained, your shop may start smelling cleaner and your filters will last longer. If so, you’ll know you’re on the right track.

Don’t think of a finely tuned, effective dust collection system as an

expense, but rather an investment in your health and a sign of professionalism. Customers who see a clean, breathable shop will know you care about craftsmanship right down to the air itself. In the end, the only thing that should linger at the end of the day is the scent of freshly cut wood — not the dust left behind. **W**



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Carbide 3D presents the Shapeoko 5 Pro CNC router

By Jennifer Hicks

Carbide 3D introduces the Shapeoko 5 Pro CNC router, the company's largest model for fine detail 3D machining, sign making, furniture, inlays and more on wood, plastic, or aluminum. This benchtop CNC router was designed for professional and high-production workshops, and includes software, clamps and training to get users started quickly, according to the company.

"The whole idea behind Shapeoko is we make a high-quality CNC router here in the U.S. that comes with everything you need to get going. We include work-holding clamps, software and training all in one package," says Robert Grzesek, CEO of Carbide 3D.

"The CAD/CAM software is included in a way where everybody can have a copy of it without a separate license code or anything. You can also run any third-party software that you happen to like, if you've got one.

"Because we've got an entire package, we can do training and all of that with the machine. When you buy a machine, you get four 30-minute one-on-one training sessions on anything you want. You can talk about a project, get a software overview, or help with assembly or bit selection. Anything you want to talk about to get you up and running quickly."

The machine is available with 2'x2', 4'x2', and 4'x4' table sizes. Spindles are sold separately.

Features include front-to-back openings that can handle full sheets of material, a table with T-slots and clamps to



secure workpieces, a bit-setter for easy tool changes, remote pendant control, and built-in LED lighting.

The included Carbide Create design and machining software works with Mac or Windows. It allows users to start with a blank design or import at DXF/SVG, trace an image, create contour, pocket, V-care or inlay toolpaths, and simulate projects in 3D, the company said.

"The other thing is, we've got a 60-day 'mistakes are on us' policy where anything you do in the first two months that you own it — you cut through the bed, you break the cutter, etc. — we're willing to repair and replace at our cost, in addition to our one-year warranty on all parts and electronics. We want you to use it and not be afraid of damaging your new tool," adds Grzesek.

Pricing for the Shapeoko 5 Pro starts at \$3,200. Learn more at carbide3d.com. **W**

Kreg debuts 20-volt plunge saw in new Ionic Drive lineup

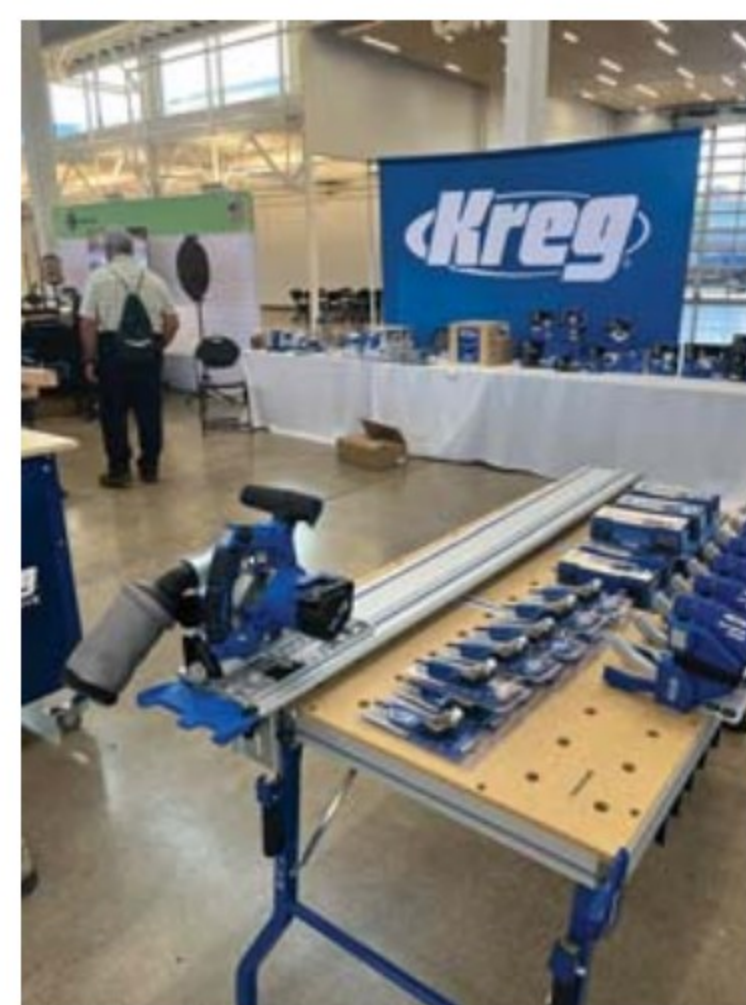
By Jennifer Hicks

Kreg Tools has launched the Adaptive Cutting System Saw + Guide Track Kit as part of its new 20-volt Ionic Drive Power Tools lineup. The kit includes a 6 1/2-inch plunge-cut track saw and 62-inch guide track.

The saw is designed for cutting solid wood and plywood accurately using the guide track, according to Kreg Tools.

"We've had a corded plunge saw for about seven years, so this is part of the launching of the new Ionic drive tools," says Andy Young, regional sales manager.

"The adaptive cutting system saw runs off a 20-volt battery and has a new brushless motor on it. The saw



blade is a thin-kerf blade now. The corded saw has a thicker blade, but with this thin kerf you get longer cutting on a battery, so you're not going to go through your battery as fast. You get a lot more cutting capacity with it."

The saw cuts to a depth of 2-1/8" at 90 degrees and 1-1/2" at 45 degrees, and bevels from -1 to 47 degrees. Safety features include a fully shrouded retracting blade, riving knife,

electronic blade brake, and anti-kickback control.

"The blade is on the left side. It's a right-handed design. When you're cutting, you can stand on the side of the saw, and you don't have to look over it. So, it's a little bit more comfortable when you're running the saw because you can see exactly where that blade is," says Young.

The kit sells for \$499 and includes the saw, a 40-tooth saw blade, guide track, 4.0 Ah battery and charger.

Learn more at kregtool.com. **W**

Rikon updates 14" and 10" band saws

By Jennifer Hicks

Rikon Power Tools has announced two band saws, the 14" model 10-1414 and 10" model 10-3062S, with upgraded features and a redesigned aesthetic.

The 10-1414 now offers a 14" resaw height, up from 13" on the previous model.

"This advancement gives woodworkers greater flexibility and power, enabling them to handle larger stock and achieve professional-level results," says Joe Taylor, Rikon's president.

The company has also updated the appearance of its band saw lineup. "If you look at the panel on the door, we're upgrading the overall look and the contour of the doors on the entire band saw lineup to just give it a fresh new look," Taylor says. "We've also SP-coated the cast iron tables to prevent rust, because we all know with cast iron in woodshops there's a lot of humidity that can affect them."

The 10-1414 features a 1.75-hp motor



The Rikon 10-3062S.

and two blade speeds of 1,476 and 3,280 feet per minute, according to Rikon. It includes a quick-adjust drift fence system with a 6"-tall fence and micro-adjustment for precision resawing.

Additional features include a patented spring-loaded tool-less guide system, an enhanced blade tension system with quick-release lever, two dust ports, the rust-resistant coated cast iron table, a hinged safety blade guard with magnetic closure, and an

updated storage cabinet base.

The model 10-1414 sells for \$1,699.99.

Model 10-3062S is designed for woodworkers with limited shop space. Its key upgrade is a standard miter gauge slot.

"On the 10-inch model, we standardized the miter gauge slot to a standard 3/4" x 3/8" T slot, because the previous version didn't have that. It was an odd size, so when users were building jigs, etc., they couldn't use a standard miter gauge," Taylor says. "Now it's a standard in the industry so it's a lot easier for a user to build a jig, build a sled, or to use an existing miter gauge they have."

The 10" model now includes a steel stand that was previously sold separately. It sells for \$649.99.

Learn more at rikontools.com. **W**



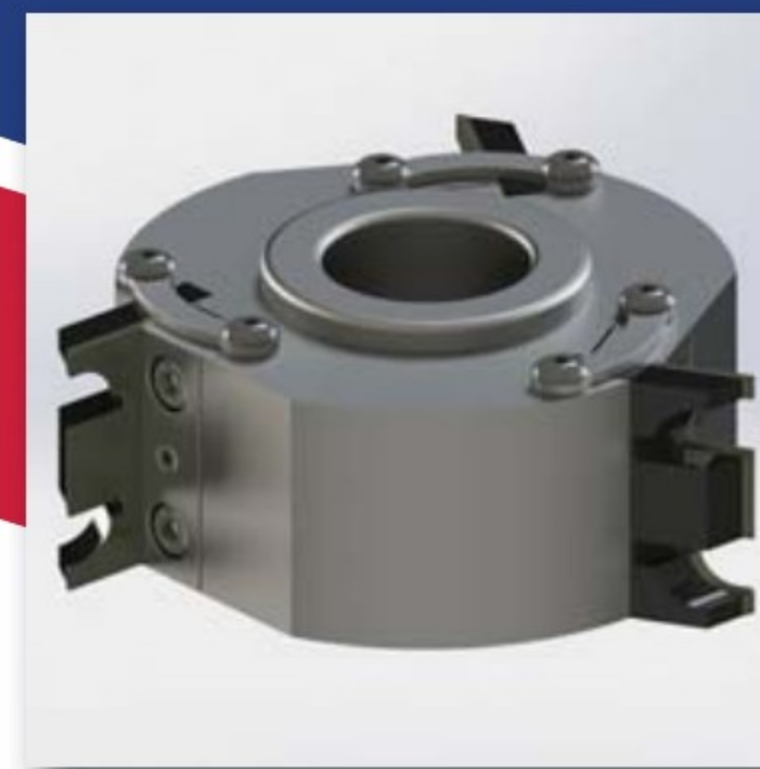
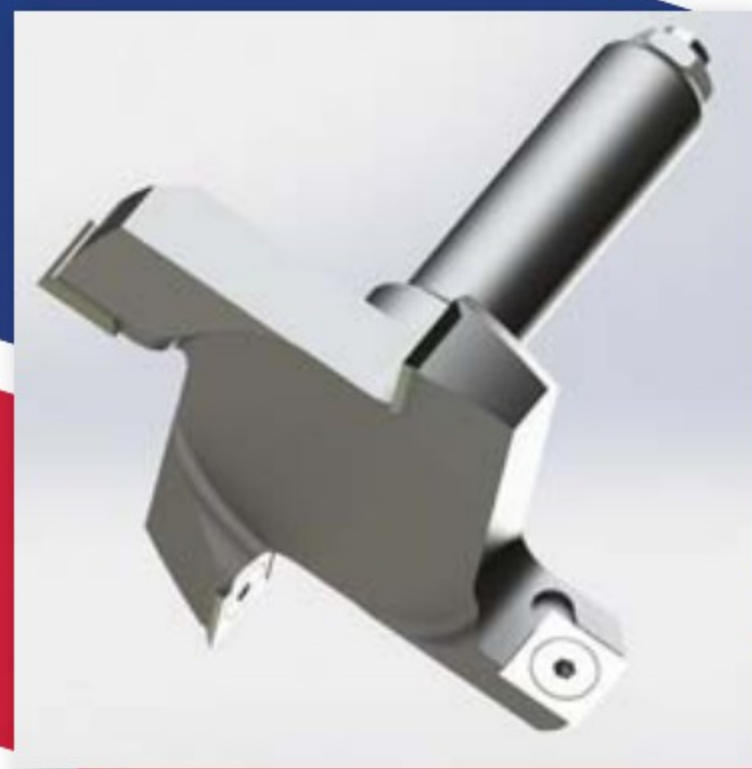
The Rikon 10-1414.

Courtesy of Rikon



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Carbon Method's FlowComp 90 reduces turbulence

By Jennifer Hicks



90-degree elbow with a 12-to-14-inch radius. We've engineered this to get as much of the performance of that in a small footprint, so you can still have that outfeed table tied up against your table saw, planer or whatever the tool is."

Thompson says the increased efficiency and reduced turbulence allows the blower to deliver more cubic feet per minute with less power, noise and energy use, reducing operating costs. The contoured design offers efficiency comparable to a much larger sweeping 90-degree fitting, with a 40 percent reduction in pressure loss compared to a flex hose bend, all in a compact 6-inch x 6-inch footprint, he adds.

The FlowComp 90 is offered in three variations: FlowComp for Cabinet Saws, 2.5-inch Flex Hose to 2.5-inch ToolPort, and 4-inch Flex Hose to 4-inch Tool Port. FlowComp products can be used without other Lightning Lock fittings as they are designed to mount to a tool and accept a flex hose with a clamp at the opposite end.

Pricing ranges from \$24.99 to \$59.99. Learn more at carbon-method.com. **W**

Carbon Method, a manufacturer of woodworking supplies, has introduced the FlowComp 90 as part of its Lightning Lock dust collection fittings line. The FlowComp 90 is a contoured fitting that guides air smoothly around tight corners, enhancing airflow efficiency.

"This allows for super high airflow performance in a very small footprint. A lot of tools will have a dust port coming off of them, where you almost have to have a hard 90-degree with a flex hose connected to it. The problem there is you lose a lot of airflow, a lot of static pressure, and that tight 90 in the flex hose creates a ton of turbulence, so it's really bad from an air velocity and airflow standpoint," says Zack Thompson, head of sales for Carbon Method.

"To compensate for that, most people would use a big, gradual sweeping 90-degree elbow or something. But when we're talking about a table saw that has an outfeed right up against it, you don't have room for a big sweeping

RICHELIEU'S RICHARD LORD INDUCTED INTO PEMBROKE'S HALL OF FAME

Pembroke Management, a Montréal-based portfolio management firm investing in Canadian growth, has inducted Richard Lord, President, Chief Executive Officer and major shareholder of Richelieu, into its Hall of Fame.

"Under Mr. Lord's leadership, Richelieu Hardware's revenue increased from \$27 million to \$2 billion in 2025 thanks to a growth strategy focused on innovation and customer satisfaction, supported by more than 98 acquisi-

tions. As a result of his ambition, Richelieu is now a North American leader in the distribution of products for the construction and renovation industries," said Nicolas Chevalier, managing partner of Pembroke, in a statement.

"Our teams have been working very hard for years to expand our offerings and strengthen our presence across North America. This honor reflects on everyone who is part of the Richelieu team," said Lord.



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Decoding sanding sponge labels

Why your 100-grit sponge delivers a 220-grit finish — and how to choose the right grade

By Diane Shattuck

In our exploration of sanding and the abrasives used to prepare wood surfaces for consistent color, sheen and finish adhesion, we've covered sanding machines, backup pads and abrasive minerals. All are essential components of the system.

Several factors affect sanding, but one of the most important is that it's a contact sport. The contact between abrasive and workpiece matters as much as the type of mineral used.

Nothing illustrates this better than sanding sponges. Just because a sponge says "80 grit" doesn't mean it will deliver aggressive scratching or quick leveling and removal.

Why do sanding sponges carry labels like coarse, medium, fine, superfine and ultrafine instead of grit numbers like sandpaper? Why do some sanding sponges work better and last longer than others?

Many woodworkers appreciate sanding sponges for their ability to conform to edges and profiles. The sponge wraps around surfaces, providing consistent scratching while lasting longer than sandpaper.

The woodworking industry adopted sponges for the ease and contact they provide when sanding profiles and curves. However, we've always identified abrasive materials by grit, not description. This can make choosing the right sponge confusing when trying to create the ideal surface profile for finish adhesion.

While sanding sponges have abrasive minerals applied to them, the sponge backing creates a much finer scratch pattern than the mineral grit would suggest. For example, a sponge with 100-grit mineral might produce a finish scratch of 220-280 grit.

When selecting a sanding sponge, don't judge by touch alone. A sponge's actual scratch pattern

differs significantly from what you might expect based on surface feel. A medium sanding sponge could have minerals ranging from 50-80 grit, depending on the manufacturer's definition of "medium."

Only a few primary manufacturers exist. Most brands contract with them to produce sponges to specific requirements for foam density, adhesive type and mineral specifications. These three components determine the sponge's performance.

Sponge density comes in open-cell or closed-cell varieties. Open-cell foam is more pliable and available in thicker styles. Closed-cell foam creates firmer sponges best suited for sanding edges or flat surfaces quickly and evenly.

The adhesive plays a crucial role in performance and longevity. All sanding sponges experience grain shed — the loss of loose minerals. Solvent-free adhesives minimize grain shed, while solvent-based adhesives may cause sponges to tear easily.

Mineral size varies by manufacturer, but finish scratch patterns remain consistent with industry standards:

- **Coarse:** 60-80 grit finish scratch
- **Medium:** 120-180 grit
- **Fine:** 220-280 grit
- **Superfine:** 450-600 grit
- **Microfine:** 800-1200 grit

The confusing part is that the actual mineral applied is much coarser than the finish scratch. When you press down while sanding, the mineral partially sinks into the sponge, reducing contact with the surface. This creates a less aggressive, shallower scratch — making sponges ideal for sanding between finish coats.

Sanding sponges come with aluminum oxide or silicon carbide minerals. Aluminum oxide versions can last five to 10 times longer than sandpaper

sheets because of differences in mineral application and cutting action.

Sandpaper manufacturing uses electrostatic application. Minerals drop onto a conveyor beneath the abrasive backing where adhesive is applied. The minerals shoot upward, sticking with their wider ends on the backing and points facing down, creating a saw-tooth effect. Once the sharp points dull, the abrasive is spent.

Sponge manufacturing differs significantly. The foam backing travels on a conveyor while adhesive is sprayed on top. Minerals are then sifted down onto the sponge. As the conveyor angles upward, it shakes off excess minerals. This process layers abrasives at various angles with points facing multiple directions, ensuring fresh sharp minerals continuously contact the work surface.

Sanding sponges can be used wet or dry and blown clean of buildup lodged between minerals — a significant advantage over most sandpapers. Remember to blow off loose minerals regularly to avoid dragging, tearing or scratching the surface. Worse, grain shed trapped in your finish creates rough, unsightly results.

The sanding profile from a sponge producing a 120-150 grit finish differs from that of 120-150 grit sandpaper. Always make test boards and check your color before proceeding.

Understanding sanding sponges helps you find the perfect application for your shop. Until next time, respect the process — because "shift happens". **W**

Diane Shattuck is a finisher, consultant, guest speaker, writer and teacher. She can be contacted at dianeshattuck@msn.com. Questions, suggestions and comments are always welcome.

Beyond three axes

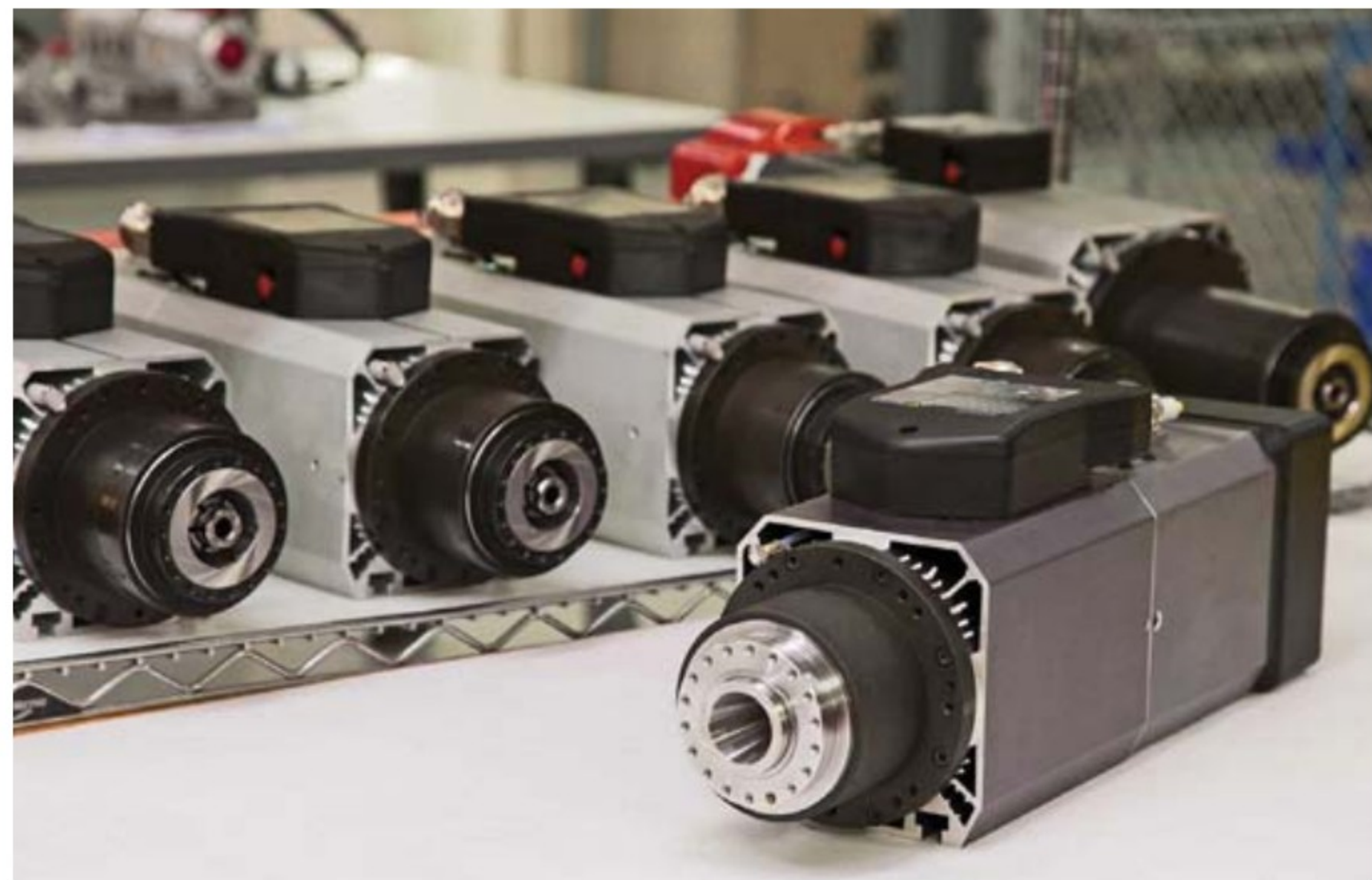
How aggregates transform standard CNC routers into multi-directional machining centers capable of edge drilling, bevel cutting & complex joinery

By Ralph Bagnall

From small to large, every CNC uses some sort of motor to spin the tool. This may be a hand-held router motor, but on industrial CNCs and machining centers, it will be a spindle. At any size or horsepower, a spindle differs from a hand-held router motor in two important ways; First, it is a constant duty motor, designed to run for hours at a stretch. Router motors are rated for intermittent use. Second, spindle motors are controlled by an inverter which maintains a constant rpm in the motor even when the load changes. This consistent rpm makes for better milling results.

When purchasing a CNC, you will likely have a couple of options for spindle selection; the manufacturer has already chosen the best matches for the machine at hand. Be open to your vendors about your needs and they should help you find the best fit. Horsepower can be important but should not be the only criteria you use to decide. The tool holder type matters based on your needs and the type of tool changer that will best serve you will depend on the workflow through your shop.

Like any equipment, maintaining spindles is critical. Most industrial spindles use air to actuate tool changes and to pressurize the spindle body to prevent dust from getting in-



In most cases, spindles can be repaired or fully rebuilt for about half the cost of new.

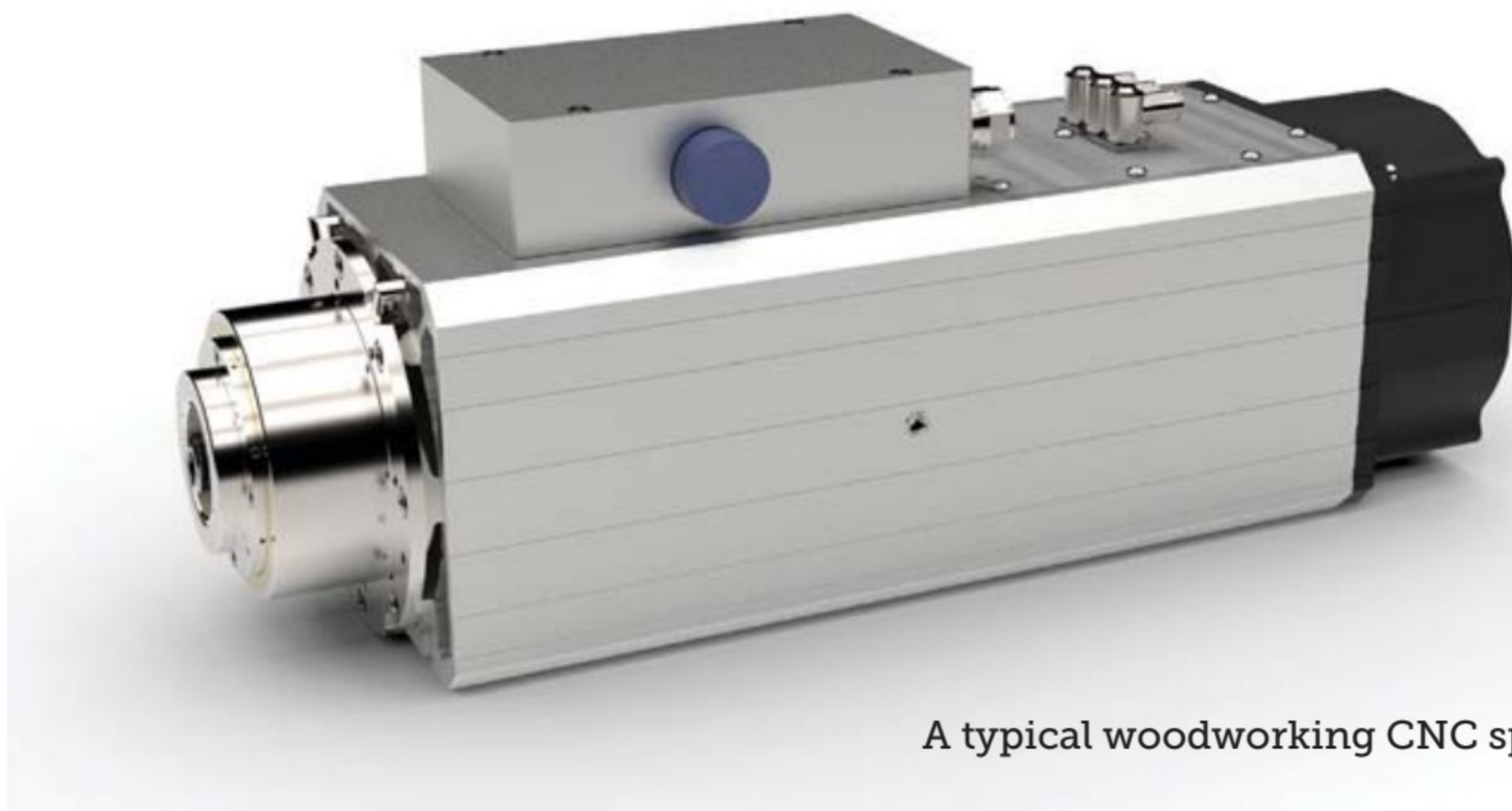


Aggregates allow the use of saw blades as an alternative to router and drill bits.

side the motor. This steady airflow through the motor when running can be problematic if your air supply is not dry. The pull studs that hold the tools and the bearings that support the shaft should be monitored and inspected according to the manuals.

If needed, spindles can be replaced or rebuilt. If you need a new spindle, your machine manufacturer can help you get one, or you can order from the spindle manufacturer as well. Precision Drive Systems (PDS) is one company that can rebuild a used spindle for about half the price of a new replacement, and often in less time than shipping in a new one. PDS recently announced that they will begin offering a new line of spindles in the second quarter of 2026.

Three-axis CNC machines generally have the spindle mounted perpendicular to the machine bed allowing for a broad range of cutting and shaping operations. But what if you need something more like boring edges, sawing or bevel cuts? You can look to aggregates to add capability to your machine. Aggregates are basically a gear box that changes the rotation axis of the spindle to another angle. Typically, 90 degrees, but it can be a wide range of angles. Aggregates can be quite simple or massively complex, but almost all of them change the spindle rotation to another direction.



A typical woodworking CNC spindle.

TYPES OF AGGREGATES

Let's start by looking at simple aggregates that change the vertical cut into a horizontal one.

Drilling holes or milling slots in the edge of a panel is the most basic aggregate function. The rotation is translated to 90 degrees from the spindle with gears. This horizontal gearbox may have a pair of opposed collets, one collet and one saw arbor, or four collets, and each collet can hold a drill as well. Simple aggregates like this are manually loaded into the spindle, which is fitted with an adapter collar that orients the aggregate to the X or Y axis and fixes it in place. Programming is a bit more

complex, but usually only requires filling in the parameters of the hole or slot needed; the software manages the actual movements.

With a single bit mounted, the aggregate can drill or mill into a part edge in one direction. With opposed shafts, opposite edges can be milled, and with a four-way head, any edge of a panel can be worked. Fitting one of the drives with a saw blade allows for slot cutting and trimming parts in either X or Y. These operations require clearance around the workpieces to accommodate the aggregate body. They are not typically used on the flat bed of a panel processing CNC.

An exception to this is a copy aggregate, which has a floating ring that precisely controls the depth of cut on the surface of a panel. This is highly useful as it automatically maintains the cut depth of engraving even in panels that may have slight thickness variations. There are also aggregates that act as a square chisel mortiser. At last year's Ligna show, Benz Tooling exhibited its new Sofiarro aggregate. It does not change the axis of rotation; the bit cuts perpendicularly, but it features four adjustable blower nozzles for cleaning out kerfs to improve cut quality, dust extraction and reduce the cleanup necessary when changing sheets.

Courtesy of PDS

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Angled operations are a major advantage of aggregates.



An example of a dual output aggregate.



A copy aggregate maintains depth of cut even over slightly uneven surfaces.



Aggregates can be mounted to spindles fitted with an appropriate mounting collar.

Other aggregates use gearing to allow for a bit or blade to work at an angle other than 0 or 90 degrees. These tilt heads can drill holes, mill slots or even saw bevels at whatever angle needed between vertical and horizontal. The angle of the bit is set manually by the operator before loading the machine. Many of these tilt heads are also capable of being set to a rotation angle. This means that the operator can set them to mill along X or Y, but also along an edge that is angled off the axes. This sort of capability adds a lot of options for companies making furniture parts or even doors and windows. There are even aggregates that can literally reach underneath a part to mill the underside, or "D Face", of a panel. Adding a lock set mortise under a door in this fashion will save an entire second milling setup, adding significantly to the bottom line.

These simple aggregates are set in position manually. They have no provision for rotating them automatically between the X and Y axis. For that, you need a C-axis motor attached to the spindle. A C-drive collar is fitted with a drive motor allowing the gearbox to be rotated automatically by the machine. With a C-axis drive, the single horizontal bit mentioned above can be rotated during the program run to drill or mill at any angle through 360 degrees. Saw blades can score or trim panels along any side or at any angle. Router and drill bits can work all four edges of a workpiece without needing four output shafts or the operator to change the aggregate position. It is easy to see the advantage of the C-drive even when accounting for the added cost

Courtesy of Homag

Aggregates can be simple or very complex depending on the need.



Reconfiguring your shop?

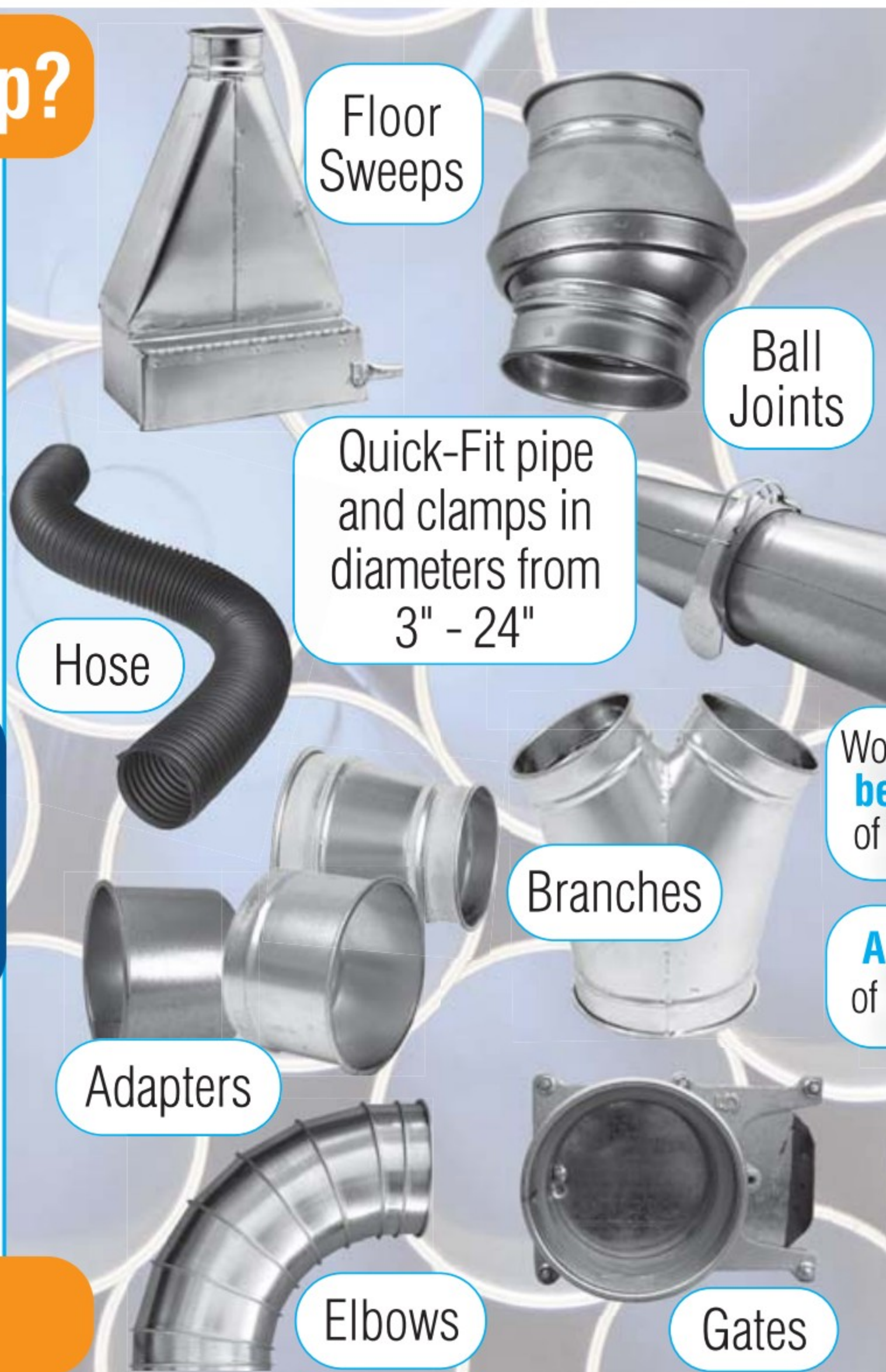
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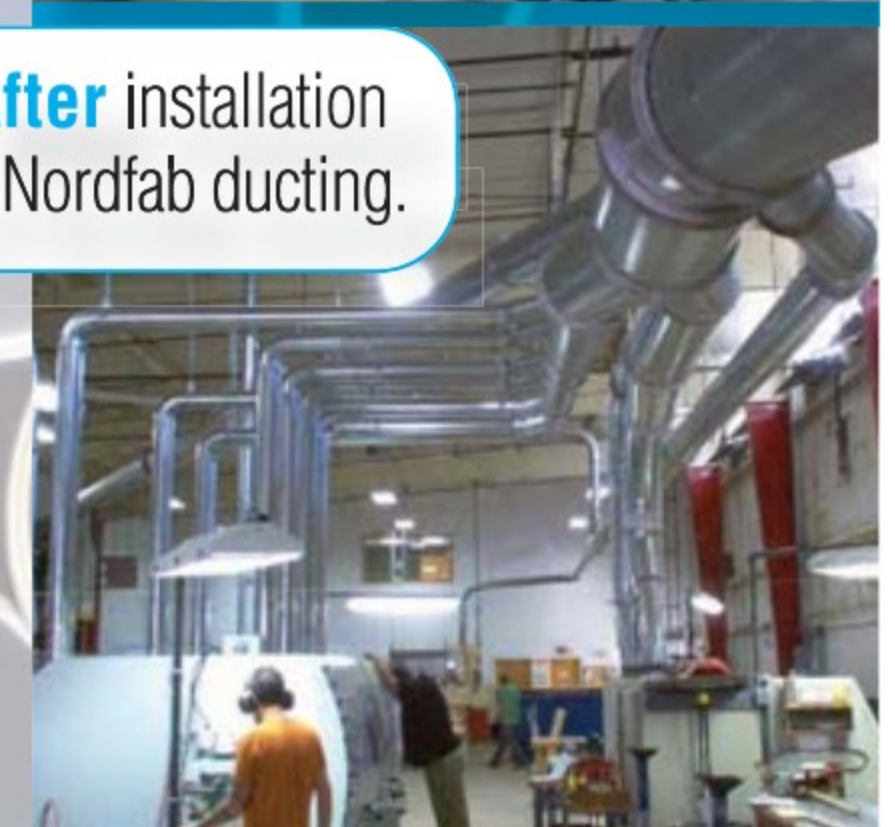
Adapters

Elbows

Gates



Woodworking facility **before** installation of Nordfab ducting.



After installation of Nordfab ducting.



Aggregates can help reduce secondary operations with options like sanding.

and programming complexity.

Other aggregates may be as simple as drill banks that cut shelf and dowel holes or as complex as a saw that can automatically rotate to cut bevels along any line. Benz Tooling even offers a chain mortiser aggregate for very deep pockets. This is especially useful for hidden hardware installations. Obviously, the heavier and more complex the aggregate is, the more attention must be paid to the CNC machine that will use it. Many machines may be able to be fitted with simple aggregates after purchase, but for more complex operations like Homag's contour edge banding aggregate, you may need to specify a machine built to handle the accessory.

MAINTENANCE & SOFTWARE

All this gearing being used to change the rotational direction requires attention and maintenance. Digital infrared thermometers can be used to monitor aggregates in real time, allowing operators plenty of warning if temperatures climb during use. And the manufacturer's maintenance schedule always needs to be followed.

Aggregates are much heavier than a typical bit in a tool



Thoughtful gearing can even allow for milling the underside of parts.

A C-axis aggregate head.



holder. They can usually be loaded and unloaded from the spindle by hand, but they can be used with the right tool changer. You will want to check your tool changer specifications to find out if it can support the weight of an aggregate or even has the room to mount one.

The software used to program an aggregate can be much more complex than needed for typical CNC operations. And aggregates are not easy to blend into more automated cabinet CAD/CAM packages, so be sure to ask both the aggregate vendor and your CAD/CAM provider about the programming issues. Most companies will use aggregates infrequently, so it may be advantageous to have two CAD/CAM packages in house: One for the aggregate and a second for day-to-day use. It can be programming everyday jobs using the more specialized software an aggregate requires. If you find you are looking at an aggregate for just one task, it would be a good



There is an astounding variety of tasks that aggregates can do, so ask your vendor if you have a special need.

Courtesy of Benz Tooling

idea to make sure that there isn't a simple tool option or secondary operation that can meet the need without the complexities of adding an aggregate to your operations.

Aggregates can add a literal new dimension to your CNC capabilities. There is a surprising variety of options available, and if you have the need, they can be very valuable. As always in business, education is key. Combining the right machine with the proper aggregate on the cor-

rect job can pay big dividends and open a new range of operations for your company.

SOURCES

Benz Tool (benztooling.com); GDP Tooling (gdptooling.com); Hiteco (hiteco.net); HSD Mechatronics (hsdmechatronics.com); Homag (homag.com), Techniks (techniksusa.com) and PDS (spindlerepair.com). **W**

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A custom kitchenette
by Steven Cabinets.

THE AGILE CABINETMAKER

Minneapolis shop applies software development methods to streamline 60-year-old woodworking business after 2021 acquisition

By Jennifer Hicks

Steven Cabinets, a high-end residential cabinet shop, has operated in the Minneapolis-St. Paul area since 1964. The Minneapolis company underwent significant changes after Kirti Agrawal acquired it in 2021.

"Steven Cabinets has grown and adapted over the years, incorporating lean manufacturing and agile tools that can significantly benefit small cabinet shops like ours. I believe our journey, spanning six decades of dedicated service and quality, would be inspiring for other shops," Agrawal said.

The business operates from a 20,000-sq.-ft. industrial building in downtown Minneapolis and employs 20 full-time workers.

BUILDING ON LEGACY

Ken Steven founded the company, and his son, Doug Steven, took over in the 1970s. As the business grew, it moved multiple times before settling at its current location in 2000. Doug Steven put it up for sale in 2021.

"Doug wanted someone who could continue the legacy of the company. I was interested," Agrawal said. "I have a background in engineering and spent most of my career working for sheet metal fabrication shops managing the engineering departments."

Agrawal previously worked at Weather-Rite, a manufacturer of air handlers and infrared heaters. He noticed similarities in how practices were implemented. He was particularly impressed with the shop setup having mul-



Cabinetmaker Eric Thompson in the Steven Cabinets' shop.

tiple departments, with a design department being the first point of contact for exploring design options and project goals. Once a plan is completed, the project goes through production all the way to finish and installation.

"Doug had a sales department of designers, engineering department, and they do all the detailed design drawings and shop drawings and everything, and then we have a production supervisor, installation and finishing — everything was set up. It was not a hodgepodge system where everyone is doing everything, or if one person was gone, they were left with an issue. I liked that it was a scalable business with people in place," says Agrawal.

After taking over, Agrawal faced challenges exacerbated by the COVID-19 pandemic but pushed through to implement process improvements.

MODERNIZING OPERATIONS

Agrawal applied agile methodology — a flexible approach common in software development that breaks large projects into small, manageable cycles — to the cabinet shop's operations.

"A majority of my background is in management, but I also have experience in the agile process. In the IT world, if you're looking at software, you do a lot of testing to com-

plete the software. Agile is to change only the modules, and get the feedback from the customer, and then make the modifications, if needed.

"How this translates to the construction world, for example, is if you're working on a three-story building, you have plans and details, but if you build everything and then customer doesn't like a color, instead of going in and doing all three floors, you start with one and then see if he likes it."

The shop now holds daily 10-minute stand-up meetings where crew members share progress updates to maintain quality control.

Agrawal also implemented Rally, a project management software platform typically used in tech industries.

"Before I took over, Doug was using a spreadsheet to manage the schedule. The software we implemented was used in software industries, not in manufacturing. It's out-of-the-box software, and I just modified it. I think a lot of small shops who cannot afford ERP would benefit from Rally," he says.

"It will tell you where every cabinet is on the shop floor, what we can do, and what we cannot do. We will map out the whole schedule, and it will tell you how much work we can take on. From my office, I can tell you what jobs are



Brian Spencer runs the shop's SCM beam saw.

being worked on, and what capacity we have if an inquiry is on whether I can take on a project this month."

MARKET POSITION

The company specializes in high-end custom cabinetry but also offers semi-custom lines for residential and commercial clients seeking unique products at lower price points.

About 90 percent of the work is residential, with remodeling accounting for 60 percent and new construction making up the remaining 40 percent. Remodeling projects typically involve homes valued at \$500,000 to \$700,000,

while new construction projects are in homes worth \$2 million and up.

The company completes 100 to 120 projects annually, ranging from full kitchens to smaller areas like fireplace surrounds, mudrooms and bathrooms. Most jobs are in the Twin Cities area, particularly in Edina, Wayzata and Minnetonka, though the company occasionally takes on out-of-state projects for existing clients.

"Remodeling is still strong in Minneapolis-St. Paul. There are some pretty old houses here, and we do a lot of renovations in them," Agrawal said.

Business comes primarily through word of mouth from builders, designers, remodelers, property managers and homeowners. Commercial clients have included retail stores and breweries. Agrawal aims to increase commercial work to 30 percent of the business to weather economic shifts.

Looking ahead, Agrawal is monitoring potential impacts from tariffs on overseas cabinetry.

"I hope it will bring more business to local shops," he said. "Most imported cabinetry is ready-to-assemble. If RTA becomes too expensive, demand for semi-custom will increase."

LOOKING AHEAD

Agrawal says business has been steady for the past four years, and he's confident about expansion prospects.

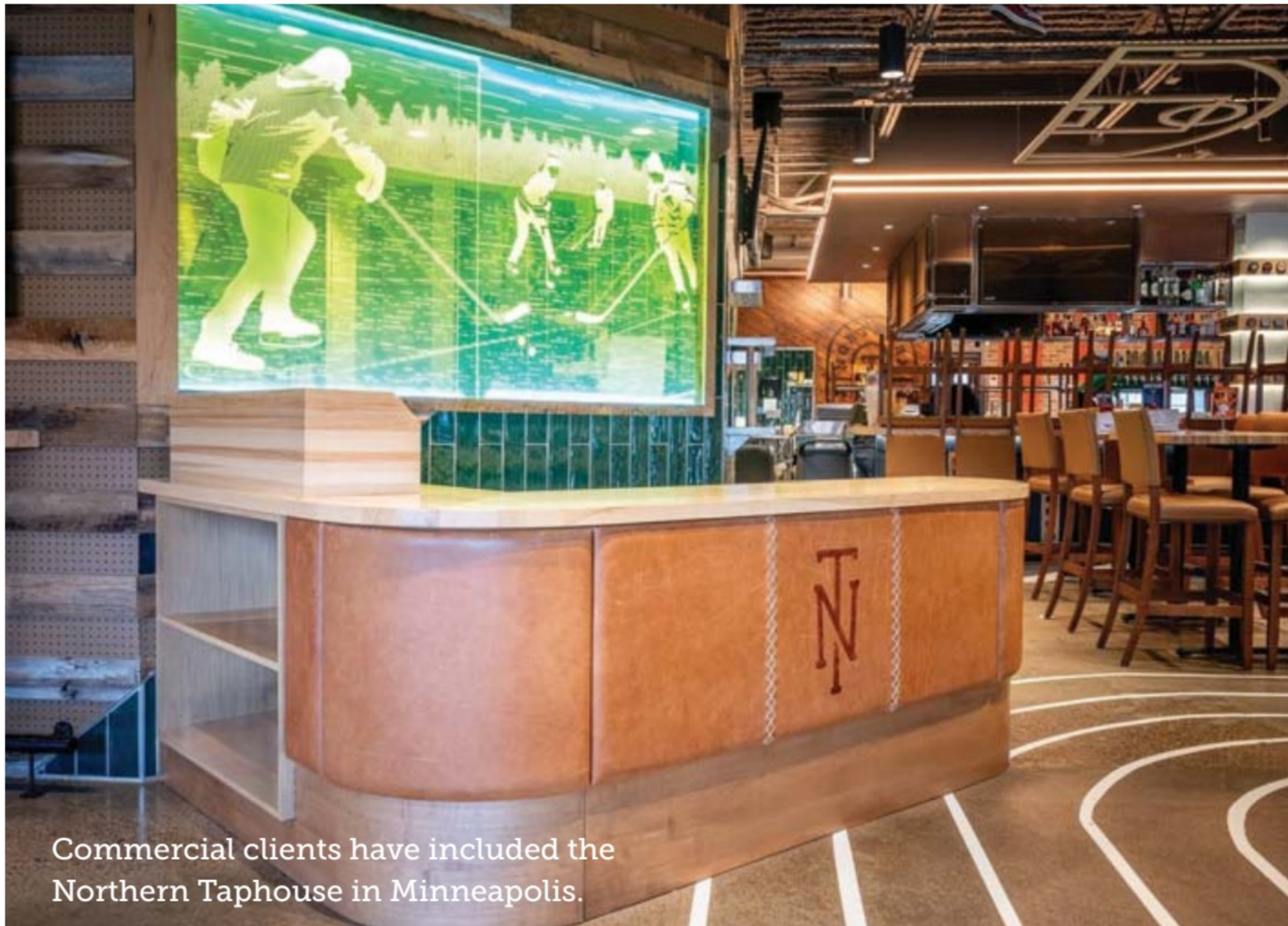
"During Covid years it was very busy for home improvement. I could have doubled sales and my business size if I had employees and material to buy. After the pandemic things flattened out and became more stable like it was pre-Covid."

In addition to his system implementations, Agrawal initially wanted to expand the size of the company and increase volume. Those plans were delayed as he had to purchase the building and invest capital in it. He currently leases an additional 15,000 sq. ft. for expansion.

Jennifer Hicks; Steven Cabinets



Steven Cabinets operates out of a 20,000-sq.-ft. industrial building in downtown Minneapolis.



Commercial clients have included the Northern Tapouse in Minneapolis.



Kirti Agrawal (left) and production manager Brian Warnke.

"When I bought this business, the landlord that originally built all these buildings had almost 1 million square feet. In 2023, they sold that portfolio of their real estate to an outside investor. My lease was up six months later, and they increased my rent. They asked me to sign a 10-year lease and all that, then we negotiated as it was more cost effective to buy. My plan was to expand the business, but instead of expanding, I had to invest in real estate. So now, I'm back to what I want to do, and going to expand."

Recently, a second showroom has been added to display additional semi-custom options and renovation services it now offers. Agrawal says the former owner is proud to see how the company has progressed and satisfied it's being well cared for.

"Doug stops in occasionally. He wants this to be successful. He wants it to grow. He's very proud that we've added another showroom."

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Digital phase converters from Phase Technologies.

Converting to 3-phase power

A practical solution for shops looking to add production machinery

By John English

While operating cost is a definite factor, the biggest benefit of 3-phase power is smooth running motors. That's why so many small- and medium-sized shops that are moving into CNC machinery or robotics are exploring this option. A woodworker might be able to get 3-phase hooked up to the shop by a power company or add a phase converter that changes single-phase into 3-phase power. There are other options, too.

The way 3-phase operates is that there are three AC (alternating current) circuits that are combined to deliver a single source of power. Think of electricity coming down a round cable and divide that cable in your mind into three pie segments. Each of these covers 120 degrees, or one third of the 360 degrees in a circle. The three circuits are out of sync with each other, so the power is flowing a little differently in each. And keep in mind that these are alternating current (rather than direct, or DC), so the power moves along the lines in pulses. By combining three circuits, a 3-phase system makes sure that when one wire is between pulses, the others pick up the slack. So, the stream of energy is very consistent.

Electricians would find holes in that description, but it does describe the concept.

Because there are three circuits, their combined amperage can be much higher than a single-phase circuit,

so they can power bigger motors more efficiently. And a 3-phase motor is more apt to maintain rotational speed under load. That's because it isn't constantly catching up and jumping gaps in AC, and that saves energy. It takes quite a bit of effort to get up to speed but once there, maintaining the rate is relatively easy. The concept here is akin to pushing a flywheel or launching a spinning top. The mechanical principle is called rotational inertia, where the movement stores kinetic energy and once in equilibrium, resists change. A simple example would be that it takes more energy to roll a ball up a hill at, say, 10 mph, but once the top is reached and the ground is flat, it's much easier to maintain that speed.

The big advantage of rotational inertia in large 3-phase motors is that they vibrate less. That smoothness lengthens the motor's useful life, which is one reason why so many vintage machines are worth restoring. Better still, a 3-phase motor drawing the same current as a single-phase one will deliver more power per dollar. And because they don't use a capacitor to get rolling, there are fewer parts, so they tend to fail less frequently.

The word capacitor will keep popping up in discussions about power, and there are two kinds. A start capacitor is basically a way to store energy in a device that looks a bit like a cylindrical battery, and this provides a power boost to get a motor to start rotating (push-



Smart converters from Phoenix Phase Converters have digital voltage monitoring and cloud-connected controls.



work more, 3-phase power may be the most economical and efficient choice. There are, of course, some caveats. The voltage is much higher, so wires need to be heavily insulated and worked on by a specialist who knows how to load-balance (or tune) the system to avoid overloads. That's necessary because 3-phase doesn't handle overloads well, so motors need to be protected with relays and breakers. That hardware can be a bit costly, too.

So, converting to 3-phase means that machines will run more efficiently, have more torque during start-up, and cost less to power

ing that ball up the hill). There are also run capacitors, which operate constantly and help the motor to run smoother by evening out the strength of the current (rolling along on the flat ground).

WHEN TO UPGRADE

As the amount of material being processed by a woodshop increases and the machines need to be bigger or

over time. But it also means higher voltage, and probably a higher initial investment.

The machines that will benefit most are going to have high-draw motors. These will include vacuum pumps, central dust collection systems, large planers or jointers, table and beam saws with blades larger than 10" in diameter, wide profile molders and shapers, material handling equipment that uses vacuums, and full-sheet CNCs.

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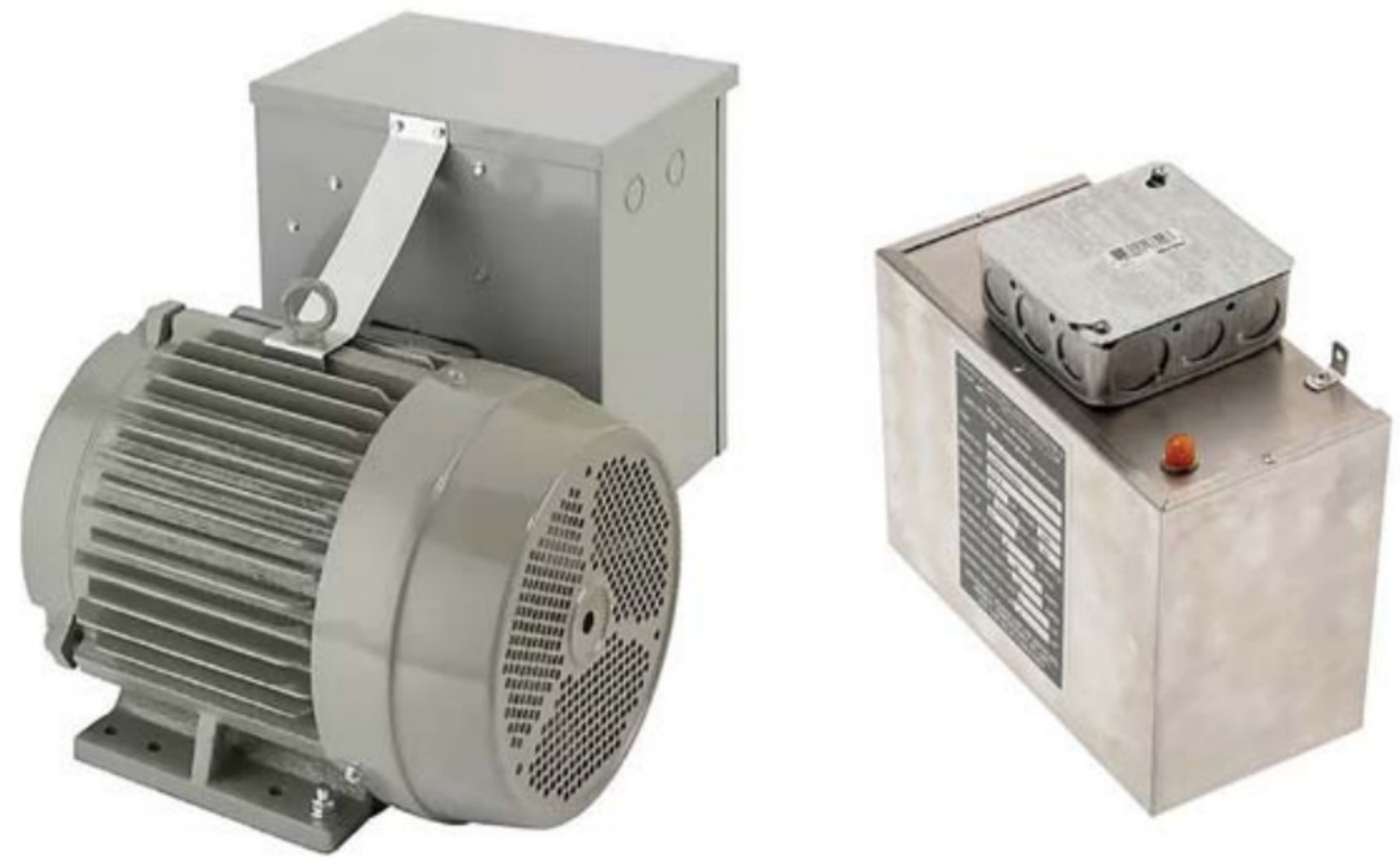
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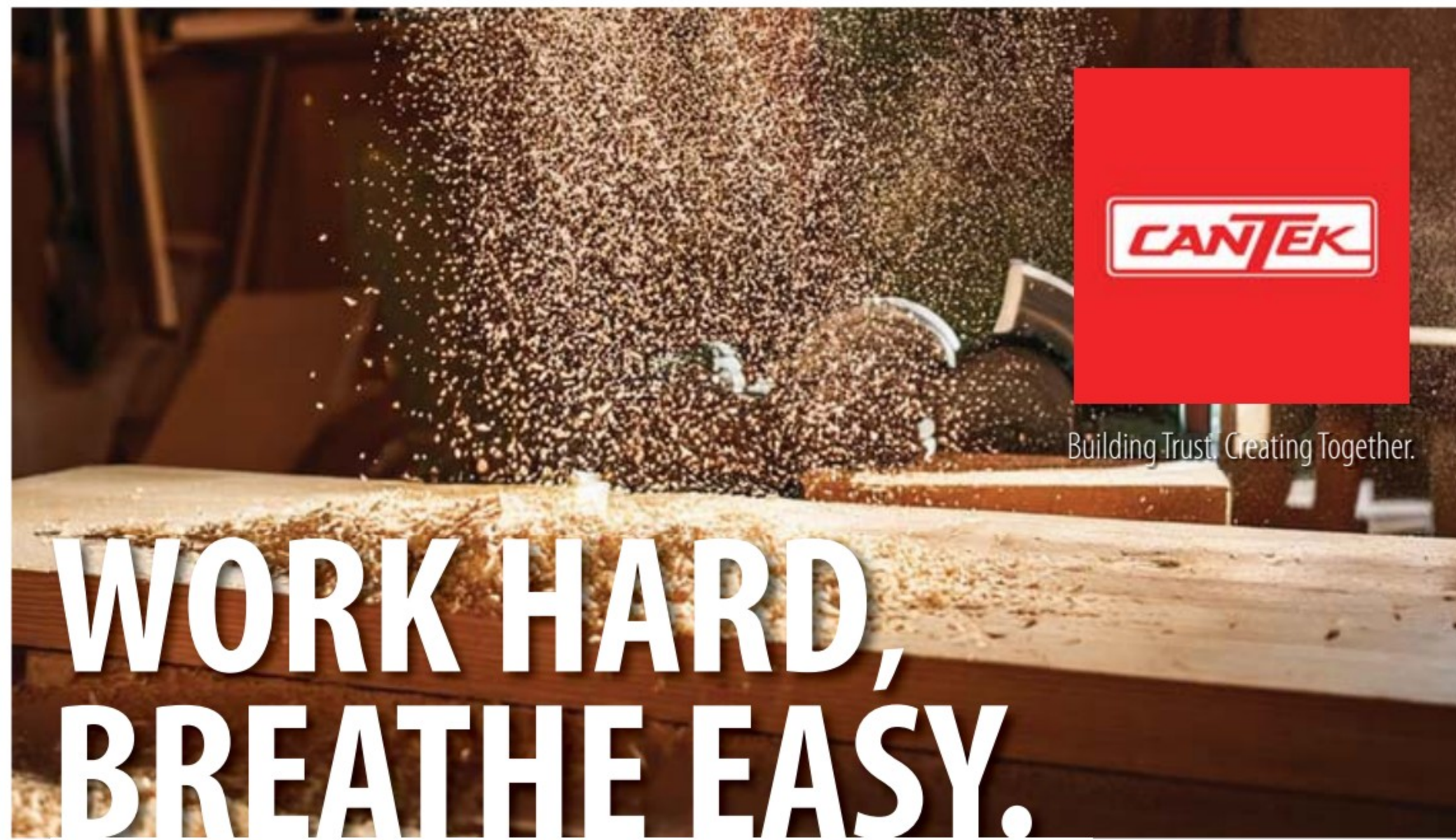
Large industrial robots usually run on 3-phase, but most cobots (smaller collaborative robotic arms that can operate safely around humans) only require 120 or 240 VAC single phase. That's because cobots use many small motors to flex and swivel, so they tend to be primary wired for AC which is then converted to low-voltage DC inside the machine. Most machine controllers and touchscreens will also use single-phase to operate, so a 3-phase machine will almost always need a single-phase feed, too.

PHASE CONVERTERS

A 3-phase inverter changes DC to 3-phase AC. A 3-phase converter changes single-phase



Grizzly offers a wide range of phase converters including the 10-hp rotary model and 1/4-hp static unit shown here.



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AC to 3-phase AC, and the term can also be used to describe devices that change voltage.

If the local power company can't provide 3-phase to the building, or the cost is prohibitive, then a phase converter might be the answer. These convert standard current (usually 220 volts) to 3-phase on a smaller scale in-house, and the most common types are rotary, digital, and static.

A rotary phase converter is actually a big single-phase motor that spins a 3-phase idler motor that then produces the 3-phase current. As you might think, these units are generally quite sizeable and bulky, but rotary converters can be quite reasonable to



Grainger carries converters, including this 3- to 5-hp output static unit that runs on 30 amps, 230 volts.



Smart-Phase from North America Phase Converters is a digital rotary converter with voltage balance control.



buy, install, and operate. Be aware that they can also be difficult to tune.

While small converters are dedicated to a single machine, it's possible to run several machines on larger rotary phase converters.

A similar solution is a digital phase converter which is a more balanced and harmonious concept. Usually preferred for CNCs, a digital converter combines digital and electronic methods to control and deliver power. Not surprisingly, AI is playing an increasing role here, so expect some advances in this technology.

There is also an option called a static phase converter that is usually less expensive than a rotary unit. It uses capacitors to start a 3-phase motor, and it's reserved for light work that doesn't require the sensitivity or reliability of more expensive systems. Static converters are generally sized from about 1/4 to 10 hp and operate on 208 to 240-volt single-phase at 50 or 60 Hz. That's the power that most of us have in our homes to run electric stoves, water heaters, and air conditioners. This can be a good solution when a small shop has two 3-phase machines and only runs one at a time. An electrician can install switches for this. Note that static devices will not

operate a 460-volt motor. For this, a shop will need a rotary phase converter or a variable frequency drive (VFD) that accepts the correct voltage.

Many high-end traditional woodworking machines are now offered with smaller 3-phase motors, but the plug going into the wall is still 220-volt single-phase. There's a small inverter right on each individual machine, and this can be an economical way to upgrade something like a lathe or thickness planer.

To size a shop-wide system, it's necessary to do an audit of all the motors that will possibly run at the same time, and then add up their maximum horsepower. Don't undersize it, as overloading can damage both the converter and the machine motors that it feeds.

The first thing an electrician will do when wiring in 3-phase machines is to install a separate 3-phase sub-panel with the appropriate breakers or fuses and then wire this into the shop's existing single-phase trip panel.

Unlike a rotary phase converter, static units can't balance the load between the three circuits after the motor has started. So, a static converter never lets the machine get to its full horsepower. That's why they're reserved for low horsepower machines with a single motor. And they



Three-phase motor manufacturers may offer features like self-braking, such as the Delphi AT line from Motive.

American Rotary says its ADX Smart provides consistent torque while starting, yet is precise enough for CNC applications.





work best when a motor starts quickly. If the machine requires a long acceleration of time, a rotary phase converter is the right choice. Static units also don't like to stop and start more than a few times an hour, and they'll run at less than 70 percent of the motor's nominal horsepower for extended periods.

FINAL THOUGHTS

In addition to the cost of a specially trained electrician and various hardware items, some inverters and converters can be quite large and heavy. So, shipping may be a cost concern.

Some units require a fused switch instead of circuit breakers, and some manufacturers require the use of ring terminals rather than twist connectors. If your electrician doesn't know that you might want to call another one.

The more motors that can be run from a single converter, the more the cost per motor operated is reduced.

A woodshop owner who is considering installing solar panels might want to take a second look at the shop's single-phase machines before doing so. Solar systems generate DC power, and a 3-phase inverter converts DC to 3-phase AC. Every shop is different, so it's worth exploring the potential there with an electrician.

Converting to 3-phase means that a small shop can upgrade to some seriously productive CNC machining centers or to large traditional machines and then run their massive motors in the most economical way.

Vintage 3-phase machines can be surprisingly affordable through online auctions, but be wary of their weight because, like larger converters, their shipping costs may be prohibitive.

On the other hand, those vintage behemoths can often handle larger parts, which reduces the number of steps in production. That can make them faster, safer, and almost always smoother than a shiny new single-phase option. **W**

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Exhibition honors artists' historical reflections

By Jennifer Hicks

JANUARY 2026

40 WOODSHOPNEWS

The Museum for Art in Wood in Philadelphia is presenting *A Usable Past: Reflections on a Nation and its Inheritance*, an exhibition of sculptural works by a diverse group of 12 artists who reckon with America's layered histories through Feb.15, 2026.

The featured works illustrate how the nation's past continues to reflect the artists and their experiences by drawing on their respective family lineages and ancestral myths.

"In *A Usable Past*, we set out to explore how artists treat history as something alive and responsive, much like wood itself, which holds memory and chronology in every grain and growth ring," Jennifer-Navva Milliken, the museum's executive director and chief curator states.



Furniture by Aspen Golann in *A Usable Past*.



"Each artist in this exhibition uses their craft to reflect on what has been inherited and what can be reimaged. Together, their works create a space where the stories of a nation are remembered and renewed, allowing the past to serve as a resource for shaping a more conscious present."

Participating artists include furniture makers Aspen Golann and Kimberly Winkle, and cabinetmaker Terry Holzgreen.

Learn more at museumforartinwood.org.



Woodworkers of Hudson Valley

Studio Tashtego, a contemporary art and design gallery in Cold Spring, N.Y., recently hosted Woodworkers of the Hudson Valley, an exhibition featuring dozens of the region's leading and emerging woodworkers.

"The Hudson Valley has long been an inspiring haven and home for an array of artists and makers. It is important that as the region develops, we support local makers' livelihoods through a strong community of peers, mentors, galleries, shops, collectors, and appreciators," the gallery states.

"The exhibition reveals the depth of expertise and the diversity of practice, from functional furniture and lighting to sculptural vessels and conceptual forms."

Featured designers and artists include Andrew Finnigan, Andrew Harris, Abigail Castañeda, Brian Persico, Christopher Kurtz, Chris Lehrecke, Jason Roskey, Jessica Wickham, Jonah Meyer, Katie Grove, Kentaro Takashina, Kieran Kinsella, Michael Robbins, Nadia Yaron, Rexhill Studio, and Zach Hadlock.

Learn more at studiotashtego.com. **W**

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Measure twice, expand

Wisconsin craftsman rebuilds custom woodworking business after 15-year construction detour

By Jennifer Hicks

Since 2012, Dan Brantner has been rebuilding his custom woodworking business in Eau Claire, Wis., expanding from furniture making to full custom cabinetry, millwork and more.

Brantner, founder of Dovetail Design, first attempted a furniture business in 1993 but closed it four years later. After 15 years in construction, he launched his current venture with broader capabilities.

"My time in the construction world really helped me with my focus in the cabinet world. I was installing cabinets on a weekly basis, sometimes two or three kitchens a week for years," says Brantner. "I learned the shortcomings of the box cabinets."

His services now include custom cabinetry, millwork, room additions, molding, doors and windows throughout the greater Chippewa Valley area.

EARLY INTEREST

Born and raised in Eau Claire, Brantner discovered

woodworking in high school during the 1980s.

"I was what you would call a shop rat, because every spare moment I had in school I was in that shop. I needed to do something with my hands," Brantner said.

In 1993, he started his first business in a workspace "basically the size of a walk-in closet" at his father's property where he made entertainment centers, bookcases, and tables for clients.

"I got out of that in 1997 and got into construction. I realized with custom furniture, it's really hard to make a living at that," he says.

"I had been getting asked all the time about building cabinets and at the time I wasn't interested in building cabinets. I had never built a kitchen and didn't know much about it, and I realized I just wasn't ready to become a businessman. So, I decided to get into construction."

Brantner worked for several companies, including one of the larger residential builders in Eau Claire and another specializing in finished carpentry.



Kitchen cabinetry by Dovetail Design.



Dan Brantner in his garage shop.



"That's something I really enjoyed," says Brantner. "Hanging doors, putting on trim, installing cabinets, installing stairs, all that good stuff."

RELAUNCH

After construction work slowed during the 2008 recession, Brantner started Dovetail Design in 2012.

"I thought there was a lot more I could do with cabinetmaking," he says. "By then I had 12 years installing cabinets."

He set up shop in his three-bay garage, adjacent to the home he built in 2005. His brother helped him develop his first website, and he was ready to go.

"Everything was word-of-mouth. I contacted several friends of mine to let them know what I was doing. One was a couple

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that had started their own construction company. Another owned one of the local paint stores in town. He put me to work right away because he needed millwork. Then a friend, who also has a custom woodworking business, started a large residential house and we began collaborating.

"Then there was an interior designer who happened to cross my website. She had a pretty nice sized remodel project and a company that she had been using previously decided to quit doing casework altogether. I went in for a 20-minute interview, and she gave me the work."

Brantner completes about 24 projects annually, ranging from two-day crown molding installations to multi-month house projects. Most clients are residential homeowners in the upper middle-class bracket.

"I've not been able to tap into real high-end people yet. That is my focus. That's where I want to go," he says.

One notable project involved designing ship ladder stairs



The award-winning ship ladder stairs.

for a Wisconsin lake house with limited loft access. The steep, angled design included storage underneath and won a Wood Diamond Award from the Cabinet Makers Association.

His service areas include Eau Claire, Chippewa Falls, Altoona, Menomonie, and Lake Wissota. Most jobs are within 40 minutes, though he has traveled as far as Motley, Minnesota — a four-hour drive.

GROWTH PLANS

Brantner is seeking a larger workspace and has his eyes on an abandoned farm with a barn nearby.

"I want to get the shop out of this garage because it was never planned for the long-term," he says. "That's something I'm going to be working diligently on this winter and next spring. I need to get in contact with the owners and see if they're willing to sell because the barn would be perfect."

Equipment priorities include a wide belt sander and CNC machine. He occasionally hires independent contractors for larger jobs but is considering full-time employees if volume justifies it.

"I would like to be able to employ somebody and would like additional help from time to time, but the added responsibility — that part I'm not looking forward to."

His immediate goal is expanding beyond word-of-mouth marketing to reach higher-end clients and establish relationships with contractors for steady work.

"I'm busy with sales, design, engineering, ordering, fabrication, finishing and installation, but I would like to start better promoting myself. I'm mostly dealing directly with clients, but I think an area I need to start working on is building up a list of contractors I work through on a regular basis. I've got a few that are friends, but there's not a steady line of work through them."

Learn more at dovetail-cabinet.com. **W**

KREG TOOL 

introduces the Cabinet Hardware Jig Pro XL and Drill Guide Pro for hardware installation. The jig's modular, reversible design makes it adaptable for virtually any cabinet door or drawer setup, according to the company. The drill guide offers angle adjustments from -45 to 45 degrees, a built-in depth stop, GripMax non-slip pads, a dust collection port, and a V-groove for round stock. Learn more at kregtool.com.



MICROJIG 

is celebrating its 25th anniversary with the release of a limited edition GRR-RIPPER package containing two special edition GRR-RIPPERS, all their accessories and some new products not yet available to the public. Only 1,526 numbered editions of this package will be available through select MicroJig retail partners. Learn more at microjig.com.

PALMGREN 

presents the Straight-Line-Pull Combination Bench & Pipe Vise with a patented new design. "Most vises rely on a U-channel design, which over time can bend, bow and even break screw or bolts," the company explained. "Palmgren's Straight-Line-Pull design eliminates that weakness by pulling perfectly linear along the lead screw." Learn more at palmgren.com.





HARDWARE RESOURCES

introduces the new HR MAX Wooden Pilaster System, a simple yet flexible solution for adding customizable rollout drawers to any cabinet large or small. “Crafted from real wood to blend beautifully with natural cabinet interiors, the HR MAX Wooden Pilaster System allows homeowners and cabinet-makers to create adjustable storage in base, pantry, or vanity cabinets. The system’s intuitive design makes it easy to reconfigure drawer heights without tools—simply unclip the drawer, reposition the slides, and reconnect the drawer,” the company explained. Learn more at hardwareresources.com.



HARDWARE RESOURCES

presents the Universal Overhead Swingout for hard-to-reach storage spaces over refrigerators and ovens. With a 30 lb. weight capacity, the swingout is ideal for storing small appliances like air fryers, blenders, and mixers that often clutter kitchen countertops. The no-measure, easy installation design allows installers to simply place and screw the unit into position, according to the company. Learn more at hardwareresources.com/organizers.



WOODPECKERS introduces the SteadyCurve 2.0 Band Saw Template Guide as a faster method for cutting pattern projects. The template follower works much like the ball bearing on a flush trim bit. "SteadyCurve 2.0 physically guides you just outside the lines when band sawing contoured projects, leaving just the right amount for your router to clean up," the company explains. Learn more at woodpeck.com.

OLIVER MACHINERY introduces a redesigned 8" parallelogram jointer, model 4235.230, featuring an HCX helical cutterhead with four-sided carbide inserts, a cast iron frame, fully enclosed cabinet with a 4" dust port, built-in mobile base with lockable wheels, and lever-controlled infeed and outfeed table adjustment. Learn more at olivermachinery.net.



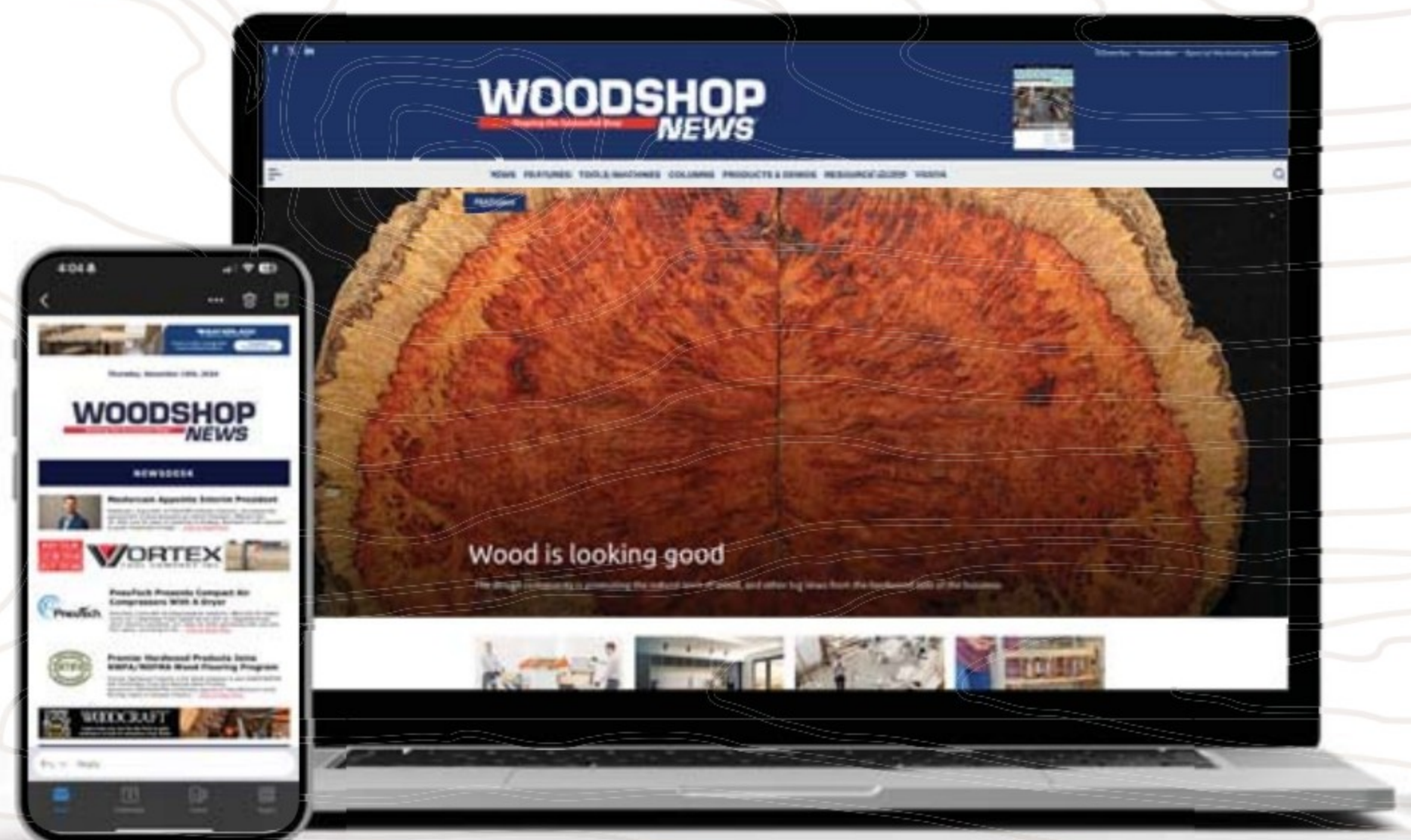
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Organizations sponsoring meetings, classes or shows of interest to professional or hobbyist woodworkers are invited to submit items to editorial@woodshopnews.com.

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

April 29 - May 1 — Wood Industry Conference hosted by the Wood Industry Association. Connect with woodworking machinery importers, manufacturers, distributors and suppliers, attend keynotes with business solutions and strategies, and more. Location: Fairmont Scottsdale Princess. woodindustry.org

CALIFORNIA

Monthly — San Fernando Valley Woodworkers meetings are held on the third Thursday of each month at 7 p.m. at the Balboa Sports Center in Encino. 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. tampa-woodcrafters.org



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Feb. 17-19 — Design & Construction Week. An industry event, co-hosted by the Kitchen & Bath Industry Show and the International Builders' Show, featuring the latest products, trends and networking opportunities for residential construction and design professionals. Location: Orange County Convention Center in Orlando. designand-constructionweek.com

GEORGIA

Aug. 25-28 — International Woodworking Fair. North America's largest woodworking event for new products innovations, ideas and technologies. Location: Atlanta. iwfatlanta.com

IDAHO

March 21-22 — Idaho Artistry in Wood Show. Annual event featuring wood artists from the region and beyond. Location: JUMP in Boise. idahoartistryinwood.org

MAINE

Ongoing — The Center for Furniture Craftmanship 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. woodschoool.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.

Feb. 18-19 — American Craft Made Baltimore. Location: Baltimore Convention Center. craftcouncil.org

MICHIGAN

Feb. 14-15 — Farmhouse Table with Peter Densmore and Michael O'Connor. Location: Sam Beauford Woodworking Institute in Adrian. Fee: \$850. sbwi.edu

March 2-6 — Veneer Mastery with Scott Grove. Learn the fundamentals of working with veneer, including selecting, cutting, seaming, matching, pressing, inlay and more. Location: Sam Beauford Woodworking Institute in Adrian. Fee: \$1,275. sbwi.edu

March 23-29 — Windsor Continuous Arm Chair with Luke Barnett. Students will start with logs on Monday and finish with a continuous arm chair on Saturday. Location: Sam Beauford Woodworking Institute in Adrian. Fee: \$1,450. sbwi.edu

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MINNESOTA

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

Monthly — The Minnesota Woodturners Association meets on the first Saturday of each month (except July) in Plymouth. They also offer a wide range of classes for beginners and advanced turners. mnwoodturners.com

MISSOURI

April 28 - May 2 — Stairbuilders and Manufacturers Association' annual conference, featuring seminars, networking opportunities and more. Location: Marriot Country Club Plaza in Kansas City. stairways.org

NEW JERSEY

Monthly — The North Jersey Woodworkers Association 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 holds meetings 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. liwoodworkers.org

NORTH CAROLINA

Monthly — Triangle Woodworkers Association meetings are held on the third Tuesday of each month at 7 p.m. at Klingspor's Woodworking Shop. Location: MacGregor Village in Cary. trianglewoodworkers.com

Monthly — Charlotte Woodworkers Association meets the third Tuesday of each month, except December, at 6:15 p.m. Location: 8801 Park Road in Charlotte. charlottewoodworkers.org

Feb. 20-22 — 39th National Arts & Crafts Conference and Shows featuring exhibitions, demonstrations, networking opportunities, and more. Location: Grove Park Inn in Asheville. arts-craftsconference.com

April 25-29 — Spring High Point Market, a wholesale home furnishings trade show. highpointmarket.org

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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 Tuesday of the month at the Woodcraft in Allentown. Various craftspeople provide presentations on their woodworking techniques. lvwwg.com

SOUTH DAKOTA

Monthly — The South Dakota Woodworkers Guild meets the last Thursday of every month, except August, at a member's shop. Learn more at sdwoodworker.org. **W**

GLOBAL SHOP SOLUTIONS LAUNCHES AI AUTOMATION TOOLS

Global Shop Solutions, a provider of ERP software for manufacturers, announces two new AI-powered features designed to make every day manufacturing processes faster, more accurate and easier to manage.

"AI Accounts Payable (AP) Automation and AI Sales Order Entry continue the company's mission to simplify manufacturing by reducing manual tasks and empowering customers to focus on high-value work," the company explained.

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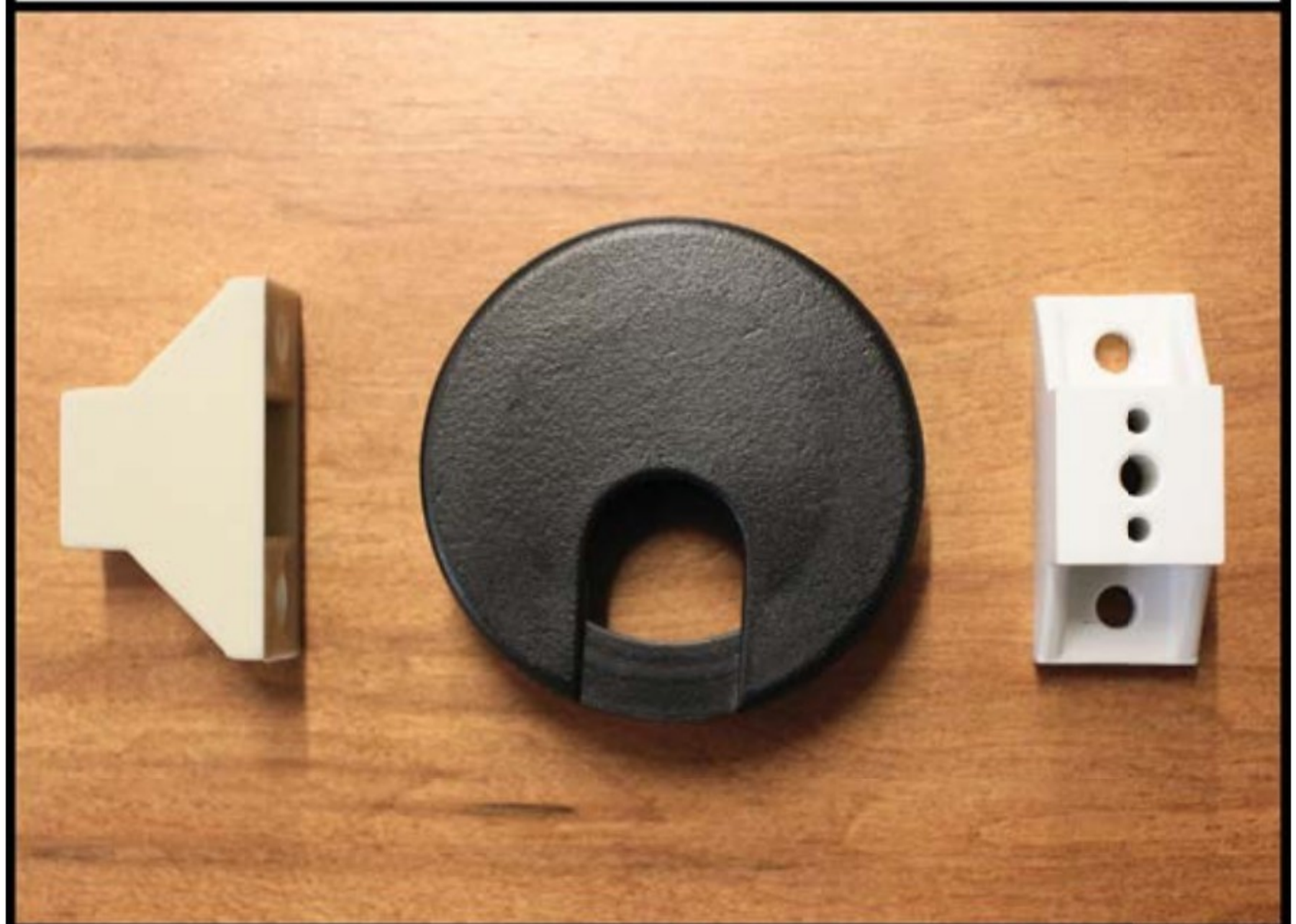
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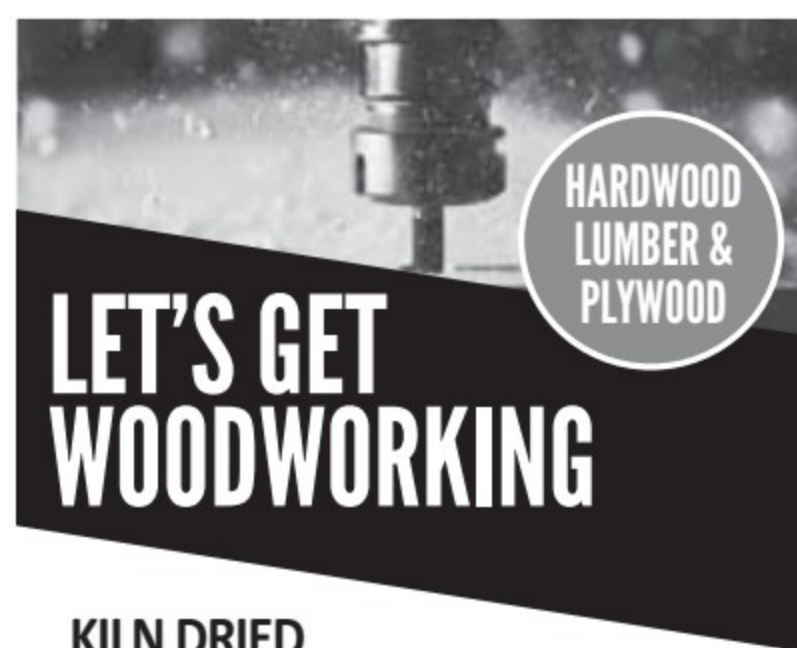
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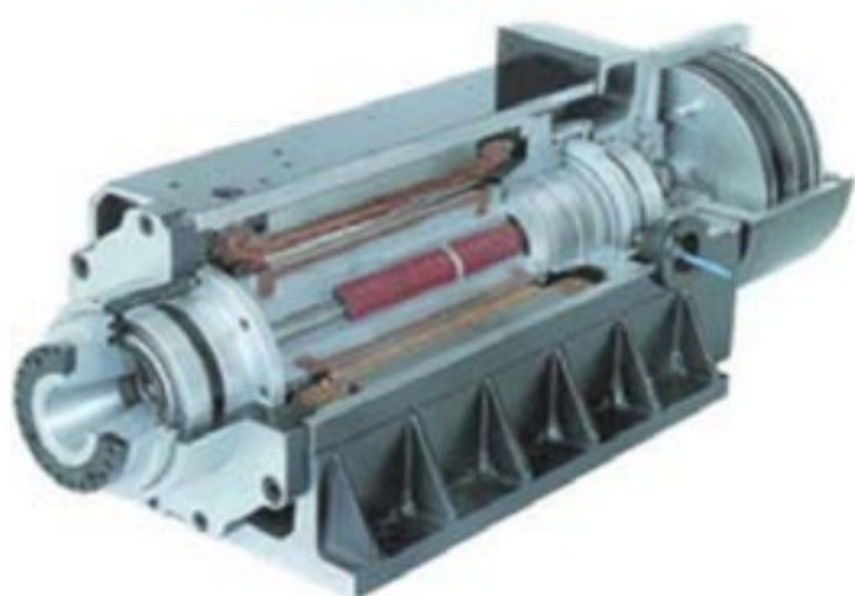
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Sawmill dreams take shape

Wood-Mizer has announced the winners of its 2025 My Wood-Mizer Project Contest, which recognizes portable sawmill owners for their woodworking projects.

The contest, which began in 1985, drew more than 150 entries ranging from miniature sawmill replicas to entire timber-frame homes. The sawmill and woodworking equipment manufacturer awarded more than \$17,000 in prize credits across six categories.

"The two-month contest showcases the limitless possibilities of a Wood-Mizer sawmill, featuring projects that in some cases take years to build," the company stated.

Charles Singleton of Butler, Ga., won first place in the People's Choice category for his Dovetail Cabin, built from wood felled by a tornado that hit his county. After being inspired by a friend who owned a Wood-Mizer, he decided to fulfill his lifelong dream of building a home from the ground up.

Other category winners are Paul Sirba of Webster, Minn. (Utility Buildings); Geoff Phillips of Baker, Ore. (Furniture & Indoor); Devin Klein Corrigan of Warren, Vt. (Landscape & Outdoor); Caleb Hodnefield of Clearwater, Minn. (Specialty), and Andrew Flynn of La Grande, Ore. (Residential Structures).

Learn more at woodmizer.com. **W**

—Jennifer Hicks



Utility Buildings: The Big Shed.



Specialty: Timber Frame Sauna.



People's Choice: Dovetail Cabin.



Furniture & Indoor: Kitchen Flood 25.

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60 Grit

Rough humor by Steve Spiro



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