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January 2020

Two brands, one direction

**Owner Greg
Bettencourt
raises the profile of
New Hampshire shop**

***Hardware heaven:
New slides & hinges***

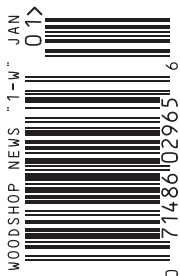
***Multi-function
space savers***

***Getting to
know abrasives***

NEW TOOLS

- Altendorf Hand Guard
- Milwaukee 12" miter saw
- Ott edgebanders
- Yeti SmartBench

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7" 2 HP PLANER/MOULDER W/ STAND

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- Cutterhead speed: 7000 RPM
- Max. profile: 6 3/4"W x 3/4"D
- Planing width: 7"
- Min. stock thickness: 1/4"
- Max. stock thickness: 7 1/2"



W1812 7" 2 HP Planer/Moulder w/ Stand



D3393 Elliptical Jig for W1812



18" 1 1/2 HP OPEN-END DRUM SANDER W/VARIABLE-SPEED FEED

- Sanding motor: 1 1/2 HP, 120V, single-phase, 13 Amps
- Sandpaper speed: 2600, 3400 FPM
- Max. stock dimensions: 36" wide x 4 1/2" thick
- Min. board length: 6"
- Min. board thickness: 1/8"
- Sanding drum size: 4"
- Dust port: 4"



W1854 18" 1 1/2 HP Drum Sander

18" AND 16" VS SCROLL SAWS



W1870

Includes Rotary Tool Attachments!

W1870 18" VS Scroll Saw with LED and Rotary Tool Kit

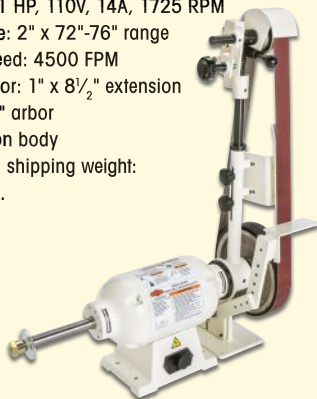
W1872 16" VS Scroll Saw with Foot Switch, LED, Miter Gauge, & Rotary Shaft



W1872

KNIFE BELT SANDER/BUFFER

- Motor: 1 HP, 110V, 14A, 1725 RPM
- Belt size: 2" x 72"-76" range
- Belt speed: 4500 FPM
- Left arbor: 1" x 8 1/2" extension with 5/8" arbor
- Cast-iron body
- Approx. shipping weight: 113 lbs.



W1843 Knife Belt Sander/Buffer

8" x 76" PARALLELOGRAM JOINTER

- Motor: 3 HP, 230V, single phase
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- Fence system: positive stops at +/- 45 degrees and 90 degrees
- Approximate shipping weight: 470 lbs.



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PHOTOS: MICHAEL GORDON (TOP, COVER)

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BLOGS



Over the Workbench

Talkin' shop with former editor A.J. Hamler



This Business about Woodworking

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TAKING STOCK

with TOD RIGGIO

An eye for design or just wasting time

One of my more enjoyable moments in any creative process is to imagine the possibilities. Whether it's writing or woodworking, I like to envision what can be accomplished before I sit down at the computer or ever pick up a tool.

The hardest part of writing is organizing your thoughts beforehand. I often struggle with the introduction, spending hours or days thinking about the first couple of paragraphs. Most of this happens while driving to and from work, or when I have some alone time. The words flow effortlessly after I've cleared that first hurdle.

It's the same in the shop. My wife has caught me more than once just staring at the walls. "I thought you were out here working," she'll say. My go-to response is that I'm just thinking it through, which doesn't seem to be very convincing.

So, as I begin a kitchen remodel, I've spent considerable time imagining the possibilities. The old kitchen has yet to be demolished. I haven't discussed the new layout with anyone. I just kind of stare at the space or imagine what it can be. When I've got it, progress will begin.

This is a 70's kitchen in a fairly modest New England home. The goal is to attract a renter or buyer with a more modern, functional design. I'm thinking about adding an island, finding a better home for the refrigerator, and creating more storage. And I'm thinking about playing it safe design wise, which means white cabinets and appliances, gray walls, a subway tile backsplash, and vinyl flooring. I'll have another staring contest after demolition. Then the work will begin.

I'm curious if anyone else works this way? Granted, I don't have any other jobs on the schedule and can proceed at a somewhat leisurely pace. But does anybody else just stare and think, or should I seek help? It works for me.

2020 trends

My kitchen design is pretty basic, calling on design elements – Shaker doors, granite countertops and neutral colors – that are quite common in my neck of the woods. But we're all looking for the next big thing and here are some pretty safe bets:

Quartz countertops: This engineered stone has it over marble because it's more affordable and less prone to stains. It isn't porous like granite but costs a little more. Its rise in popularity will continue.

Luxury vinyl flooring: Easy to install, extremely durable and waterproof.

Pantries: Anybody who's ever had one appreciates the extra storage space. Not to be confused with a pantry cabinet.

Butcher block countertops: They're natural, low maintenance and break up the sterility of an all-white palette.

Reclaimed wood: Use it for cabinets, trim and accents. The notion of recycling materials plays very well in today's market.

Black appliances: Manufacturers are adding shades of black, slate and "black stainless steel" as tastes begin to change.

Open shelving: A great way to display decorative items or increase accessibility.

Concealed range hoods: Hiding anything in a kitchen, including appliances, seems like a good idea for a less cluttered look. [W](#)

Working with tools and wood is inherently dangerous. We try to give our readers tips that will enhance their understanding of woodworking. But our best advice is to make safety your first priority. Always read your owner's manuals, work with properly maintained equipment and use safety devices such as blade guards, push sticks and eye protection. Don't do things you're not sure you can do safely, including the techniques described in this publication or in others. Seek proper training if you have questions about woodworking techniques or the functions of power machinery.

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SAPFM honors Tony Kubalak with its Cartouche Award

By Jennifer Hicks

Twenty years ago, Tony Kubalak only dreamed about building period furniture worthy of an award. Now he's the recipient of the 2020 Cartouche Award from the Society of American Period Furniture Makers.

"I knew I was in the running, but this is a surprise. It's humbling for sure and I have to pinch myself a little. My instructor was one of the early recipients of it and now I'm on the same page as him," says Kubalak, referring to Gene Landon, the 2003 winner.

Kubalak will receive the award at the Working Wood in the 18th Century conference in Williamsburg, Va. on Jan. 17.

Kubalak specializes in Queen Anne and Chippendale pieces. He came to woodworking in the mid 80's after seeing a Newport six-shell secretary in a magazine. He learned the basic skills on his own then began taking classes with Landon at the Olde Mill Cabinet Shoppe in York, Pa. in 1999, traveling from his Midwest home several times a year.

"I never thought I'd be able to do it, especially the carving because I thought you had



Tony Kubalak and a sampling of his extraordinary work.

to be an artist to do that. When I met Gene that changed, and I realized over time that the carving was learned. I realized you don't have to be Michelangelo to do this, and that was quite liberating," says Kubalak.

Kubalak has won numerous awards at the Minnesota Woodworker's Guild's annual Northern Woods Show. He was listed for nine consecutive years in Early American Life's Directory of Traditional American Crafts. He



has written two books – *Carving 18th Century Furniture Elements* and *Carving 18th Century Motifs* – and is working on third about building a Chippendale dressing table.

Hoping to give back for the guidance he's received from his peers, Kubalak recently started teaching. He says with a little persistence and dedication, combined with inspiration and mentorship, almost any student can develop the skills to produce quality work.

"If I can do this, a lot of people can," he says. "I recognize people think they can't do it but I'm here to tell you that with the right persistence and being willing to make some mistakes and try again, and get over some of the frustrations of failing at it, you can make some decent progress because I'm living proof of that."

For more, visit www.tonykubalak.com. [W](#)

AWFS supports career counseling legislation

By Jennifer Hicks

In effort to show continued support for states, counselors and students when it comes to career counseling, the Association of Woodworking & Furnishings Suppliers is backing the "Counseling for Career Choice Act", introduced by Congressmen Jim Langevin (D-RI-2) and Glenn 'GT' Thompson (R-PA-15). The bill would provide grants to states to establish a comprehensive school counseling program.

"School counselors play a critical role in the information students receive about career opportunities and the choices they make," AWFS

executive vice president Angelo Gangone said in a statement. "We welcome any efforts to strengthen the counseling system and allow more resources to reach students."

The act would establish a competitive state grant program for an initial period of two years. The grants can be used to implement counseling programs, identify school counseling activities, identify regional workforce trends, train school counselors, establish partnerships with local agencies and industry, and more.

For more, visit www.awfs.org. [W](#)

New door tracking feature for Cabinet Pro, RazorGage users

Support for RazorGage positioners and automated saw systems has been enhanced in the Cabinet Pro and Door Pro design and manufacturing software.

"Any door report or cutlist generated by Cabinet Pro or Door Pro can now have unique door tracking numbers displayed in the report," according to a release from Cabinet Pro.

"So, if you have hundreds or even thousands of doors being processed thru RazorGage, there is now a systematic and efficient method to label each part."

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Industry groups partner to present Compliance Week

By Jennifer Hicks

The International Wood Products Association is partnering with the North American Building Material Distribution Association and the North American Association of Floor Covering Distributors to host its Wood Trade Compliance Week, scheduled for Feb. 24-27 at the One Century Place Conference Center in Nashville, Tenn.

The event will provide wood industry executives and compliance professionals with a comprehensive analysis of the requirements of the Lacey Act and other laws relevant to trade in wood products.

"IWPA developed the due diligence training and resources for wood trade professionals to empower the wood products industry and provide them with the tools they need to successfully fulfill their role in sourcing decisions," IWPA's executive director, Cindy Squires, said in a statement.

"There is no 'one-size-fits-all' approach to sourcing and compliance. These due diligence tools reflect the legal requirements and the industry's need for flexibility to adjust their corporate standards and procedures based on the particular specifications of their product, the country of origin and the complexity of their supply chain."

For more, visit www.iwpaatwood.org. 

Rugby expands distribution operations in Texas

Rugby Architectural Building Products announces the opening of a new distribution facility in Grand Prairie, Texas on Jan. 2, 2020.

The 125,000-sq.-ft. facility is being configured to accommodate Rugby's increasing volumes, the diverse product assortment and evolving customer base. One of the most notable improvements and areas of specialization is the creation of a 33,000-sq.-ft. will-call facility set within the warehouse. This area is set-up to provide will call customers with an expedited shopping, buying and procurement experience. Specially trained Rugby will-call staff will assist customers with product selection, technical knowledge, and order processing, according to the company.

The facility will stock a wide variety of architectural interior building products including decorative surfaces, hardware, lumber, veneers, molding, sheet goods, Wilsonart laminates, Wilsonart adhesives, Staron solid surface, high gloss panels and more.

"After a thorough assessment of the needs of our customers then by matching those needs to the products stocked, we believe we have created an industry leading facility for the express benefit of our customers," said Tommy Heard, Rugby's central region general manager.

For more, visit www.rugbyabp.com.



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Sherwin-Williams expands Color Express program

Sherwin-Williams, through its Industrial Wood Coatings division, announces the expansion of its Color Express Visualizer Program to kitchen cabinet manufacturers. This online solution is now available as a customized tool that allows homeowners to preview alterations to their home's kitchen virtually.

The program includes a variety of sample images, and offers an "upload your own" functionality, so consumers can see cabinets, countertops, flooring, wall color and more blended with Sherwin-Williams colors.

"The kitchen is considered the heart of the home, and when looking to make changes to it, the infinite number of options available can make decisions a challenge," said Jake Miller, Industry Director for Sherwin-Williams.

"By offering this customizable tool, it gives kitchen cabinet manufacturers the ability to make the decision-making process easier for the consumer," Jake Miller, Industry Director for Sherwin-Williams, said in a statement.

For more, visit www.sherwin-williams.com.

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Today's Homeowner reaches milestone

Today's Homeowner with Danny Lipford, the nationally syndicated TV show now in its 22nd broadcast season, has filmed its 500th episode.

The 500th episode follows couple Ronnie and Cindy McCarson and the renovation of their 1970's style bathroom. Hosts Danny Lipford and Chelsea Lipford Wolf help the couple raise the bathroom vanity, reface cabinets and install new ceramic flooring and lighting to give the bath a stylish, modern look.

"It's the best feeling when Chelsea and I can walk away at the end of a project, and know that we've helped someone with a problem, shared a handy tip, or given them some inspiration for their next project," said Lipford. "We've delivered practical, quality home improvement advice on our show for 22 years now. We're so grateful that our audience keeps coming back to watch week after week, so we honor them by staying true to our mission."

For more, visit <https://todayshomeowner.com>.

mirknig.su

Laguna Tools acquires Dake Corp.

Laguna Tools has completed the acquisition of Dake Corp. from its parent company JSJ Corp. Dake is a metalworking company specializing in presses, bandsaws, and other machine tools.

"The acquisition of Dake Corporation will build upon Laguna's presence and market share in the metalworking space. Dake Corporation has skillfully built its brand, and by combining forces we will take it to the next level," said Stephen Stoppenbrink, CEO of Laguna Tools.

"We continue to be impressed by the dedication, loyalty, and skill across the board with the Dake team. We are excited and eager to see what we will all accomplish together."

For more, visit www.lagunatools.com.

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Butternut is available while supplies last

By Jennifer Hicks

Valued for its soft velvety texture, butternut (*Juglans cinerea*), also known as white walnut, has seen better days. Many butternut trees in North America are currently affected by a fungal disease known as the Butternut canker, according to the Wood Database. The U.S. Fish and Wildlife Service has listed it as a species of federal concern.

Louis Irion of Irion Lumber in Wellsboro, Pa. says the butternut tree is a relatively minor species to begin with, not nearly as prevalent as oak or maple, and that a lot of mills are cutting it now because of its plight with the canker disease.

"I don't know if it's doomed or not, but it's definitely a highly stressed species," Irion says. "When people tell us they have the trees, we try to tell them if they're healthy not to cut them because some of them may not get the blight. But if you start to see them fall apart, the leaves yellowing in the summertime and other problems, it's time to cut them and salvage them because once they reach that point it's just a matter of time."

He says standard butternut trees average around 7"-8" in diameter, but there are a fair number in the 10"-15" range. While the wood is not ideal for tables or flooring due to its softness, it is a good choice for carving and architectural millwork.

"It's a member of the walnut family but it's much lighter in color and it's one of the softer hardwoods. Essentially, it finishes out to a light brown color. It doesn't have a lot of strong grain, but it has a real depth and beauty to it," says Irion.

John Sliney of Vienna Hardwoods in Vienna, Va. says 4/4 boards are readily available.

"It's a slow mover but a lot of people like it for carving. Boards thicker than 1" can be hard to get, and of course people want it thick for carving," says Sliney.

"People like the swirly grain of walnut, and butternut has almost the same grain patterns. It makes beautiful paneling. It would be great for a library or library shelving," Sliney adds.

On the veneer side, Matt Gilland of Superior Veneer & Plywood in New Albany, Ind., says that although the color is pretty, it can display dark pockets called cigar burns.

"People will see it and love the look of it, and it has a really nice appearance, but I tell them to expect defects in it," says Gilland. "The defects are dark pockets dispersed throughout the veneer. Usually availability is pretty limited. From what I hear from veneer guys on the mill side, they don't want to work with it."

Retails quotes for 4/4 butternut averaged about \$6/bf. **W**



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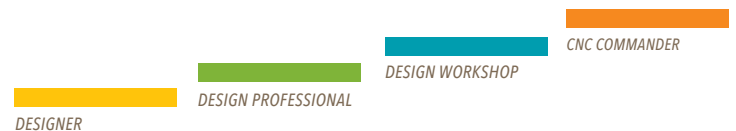
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TOOLS & TECHNIQUES



Altendorf's Hand Guard gets closer to market

By Jennifer Hicks

Altendorf is making progress bringing its Hand Guard accident protection system to market. The safety feature was introduced and demonstrated on the company's F45 sliding table saw at the 2019 LIGNA trade show in Hannover, Germany.

Victor Cortes, managing director at Altendorf Group America, says the concept is to keep table saw users from suffering serious injuries through cautionary warnings and actual blade retreat inside the saw.

"It works with a combination of cameras and hand-recognition software. The cameras basically detect the position of the [operator's] hands at all times," says Cortes.

If an operator's hand gets too close to the blade guard, a yellow warning light is activated along with an automatic slowing of the saw blade. Then, if the hand continues into the blade's path, it drops below the table.

"The operator doesn't have to touch the blade. You can even wear gloves and it will still work because the system is not dependent on the hand itself, just the positioning of it," Cortes says.

The Hand Guard will be available on the F45 because it has the necessary space requirements to accommodate the system.

Altendorf is currently following certification requirements in Europe and Germany to make the Blade Guard an optional accessory for pur-

Cameras monitor hand position in relation to the blade with Altendorf's Hand Guard system. If a hand gets close, the blade slows and warning lights display. If it gets real close, the blade drops belows the table.

chase on the F45. Cortes also says it will be exhibited at the Holz-Handwerk woodworking trade show in Nuremburg, Germany in March where Altendorf expects to be able to sell the system in Europe, starting with field test customers. The plan is to eventually follow a similar process to bring it to the U.S. market.

"This process takes time. However, authorities are extremely interested which is a very positive sign for us. It's a game changer in our industry. There are other systems out there, but they have limitations. This is the first system that really will make a difference in the market. It prevents accidents completely," says Cortes.

For more information, visit www.altendorf-groupamerica.us. [!\[\]\(ce2ec3be86913388b376b7085a0aa5b2_img.jpg\)](#)

Milwaukee Tool adds cordless 12" miter saw

By Jennifer Hicks

Milwaukee Tool introduces the M18 Fuel 12" dual bevel sliding compound miter saw featuring the company's One-Key digital technology, a cloud-based platform that gives users the ability to customize, track and manage information related to tool use.

The cordless saw matches the power of a 15-amp corded 12" saw but weighs about 15 percent less, according to the company.

It also combines Milwaukee innovations including the Powerstate brushless motor, Redlithium battery pack, and Redlink Plus intelligence.

"Milwaukee created a brand new Powerstate brushless motor for this saw, which delivers 3,500 rpm for smooth, fast cuts without bogging down," the company said in a statement.

"Boasting the same impressive capacity users have come to expect on a traditional corded miter saw, the tool can complete a wide range of core carpentry applications, from frame to finish, including 6-3/4" vertical capacity for cutting large base up against the fence; 2" x 14"



horizontal capacity for cutting stair treads and large stock, and 7-1/2" crown nested for cutting large crown molding in position."

With Milwaukee's new M18 Redlithium HD12.0 battery, the saw can deliver more than 330 cuts in 3-1/4" base on a single charge. In addition, a redesigned Redlink Plus Intelligence package ensures maximum performance of the tool under load and prevents against overload and overheat, according to the company.

The saw sells in a kit (2739-21HD) for \$849 with a battery, charger, blade and more. The bare tool (2739-20) sells for \$699.

For more, visit www.milwaukeetool.com. [W](#)

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Ott edgebanders available from NuTek Machinery

By Jennifer Hicks

Ott edgebanders are now available from NuTek Machinery, the Austria manufacturer's North America distributor in Bedford, Ohio. Ott edgebanders can process EVA and PUR glues, and include the Pacific, Tornado+, Storm+, StrongEdge and TopEdge models.

"My personal favorite that has the most flexibility would be the Storm+, and that's the



Ott's Storm+.

unit we're bringing into the U.S. for our showroom," says NuTek's president Rob Young.

"The Storm+ is the first machine in the line size-wise that allows us to put the Transtart Fence automation unit optional feature onto the front of the machine. What that is, if a board is fed in crooked or at an angle, it will basically force the board against the fence so it goes in parallel and will provide a perfect edge."

Ott edgebanders also feature the Combimelt gluing system that simplifies the changing of glue pots and hoppers, plus a dry storage system for heated PUR glue to be kept up to seven days. The company's patented Glue Pot drive system mounts above the glue pot, eliminating the issue of glue contamination on the drive shafts and motors.

"Every edgebander in the line is based on the Combimelt system, so it comes down to whether the customer wants to use EVA glue or PUR glue for zero glue line," says Young.

Ott's edgebanders start at \$125,000.

For more, visit www.nutekmachinery.com



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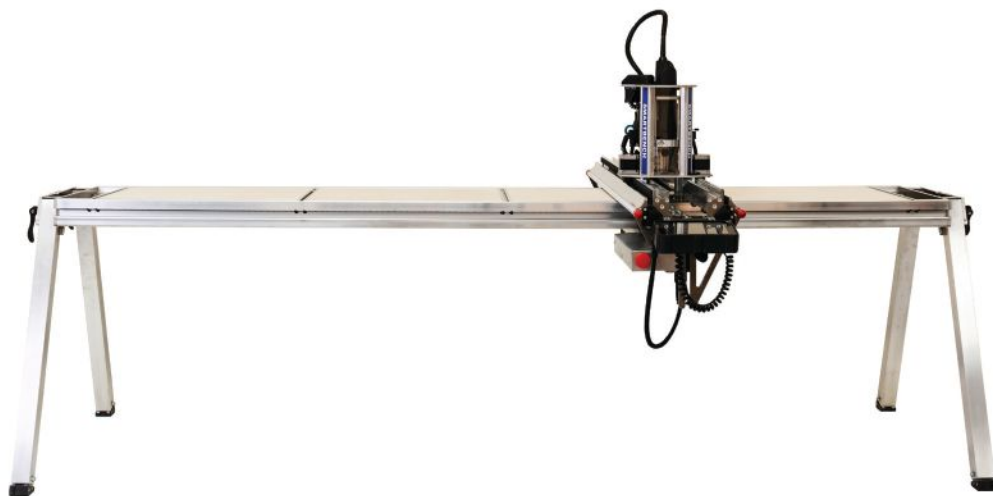
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Dura Supreme expands paint match program

Dura Supreme has added Benjamin Moore's entire paint palette to its Personal Paint Match program that now offers over 5,000 color choices.

For more information, visit www.durasupreme.com.



The Yeti SmartBench won a Visionary Award for product innovation at the 2019 AWFS Fair.

Yeti SmartBench takes CNC machining to jobsite

By Jennifer Hicks

The Yeti SmartBench from Yeti Tool Southeast is a portable 3D CNC router with a setup time of less than five minutes, making it ideal for precise machining of cabinetry, casework and other projects at the jobsite, according to the company.

The SmartBench, which rides on a collapsible frame, can process 4' x 8' panels up to 6" thick in softwood, hardwood, composite materials and certain forms of plastic. Longer panels can be machined using the feed-through mode.

"The concept was to be able to have a portable machine that can be set up to produce a product, then taken down and either moved to a different jobsite or just stored out of the way. That has worked very well, and so far, most of our customers are setting this up as a permanent machine in a warehouse that has plenty of space," says product manager Eric Schiller.

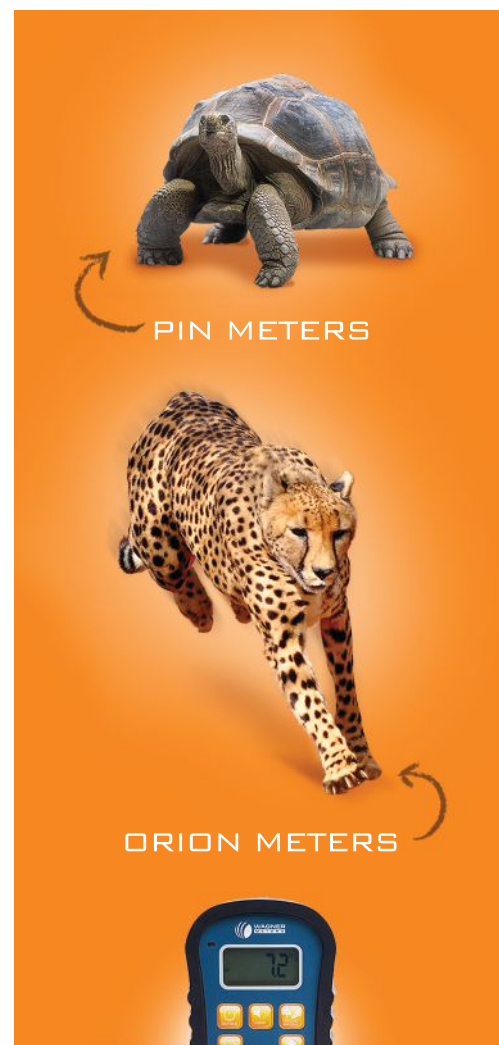
Featuring a hand-held color touchpad control unit, the SmartBench can receive cutting instructions from Wi-Fi or a USB drive. Recommended software, not included with a purchase, includes Vectric Aspire, VCarve Pro or Autodesk Fusion 360. Other G-code generating CAD/CAM software brands are also compatible.

Schiller says several new shape cutting apps are expected to launch in upcoming months.

The machine is manufactured in the United Kingdom. North American shipments currently feature an 800-watt AMB air-cooled spindle with 110-volt wiring. A 220-volt version with a 1,050-watt, variable-speed spindle is available for an additional \$200.

The Yeti SmartBench starts at \$5,995.

For more, visit www.yetismartbench.com. 



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Getting to know abrasives

Choosing the best abrasive for a specific task begins with an understanding of how they're made and perform

By John English

Given how fast technology moves, keeping up with abrasive options can be a challenge.

When cabinetmakers or furniture builders are choosing the best abrasive for a specific task, they need to consider the material's physical properties, its grit size and the nature of the backer (paper, fabric etc.). It helps when a manufacturer volunteers lots of information up front, but woodworkers still need to know some basics just to interpret what they're being told.

A good example is Festool USA (festoolusa.com), which describes its Granat abrasive as hardened aluminum oxide, synthetic resin and closed coat-

ed. But that also describes several of its other sandpapers, including Brilliant, Rubin and Titan. All three of those are also built with aluminum oxide and synthetic resin, but the differences lie in the treatments they receive. Brilliant has an anti-static coating that works well with waterborne finishes, while Rubin has a special coating that sheds wood fibers. And Titan has a high-quality latex coating on its backing that increases flexibility, which in turn allows it to adapt to surface contours. Another Festool product, Vlies, can be ordered with either aluminum oxide or silicon carbide abrasive, and Festool offers a stearate option on the silicon carbide version. (Stearate is a soapy ingredient that reduces clogging.)

Given so many variations on the same theme, it's easy to see why a woodworker needs to know something about abrasive technology before making informed choices. And that information needs to cover aspects such as a sandpaper's durability, resistance to clogging, the ability to self-renew, its scratch patterns, and its cost.

One of the first choices relates to density. Most abrasive discs and belts have open coat structures where there is less abrasive and more space between the grains. Closed coats deliver fewer scratches but clog up faster than open coats. With more material on them, closed coats can erode faster than open coats, so they are often used to fine sand coatings and tight-grained hardwoods. The voids on open coats are designed to relieve clogging, so open coatings are more appropriate in the earlier stages of sanding. They are also more suited to sanding resinous woods such as pines, and resinous coatings such as paint.

The main choices for backing are paper, cloth/fabric, and film. Paper is flat, which makes it ideal for sheets. It's also flexible, and how much so depends on its thickness. That is graded using letters, where A is the most flexible. Stiffer paper gives less, so it cuts faster

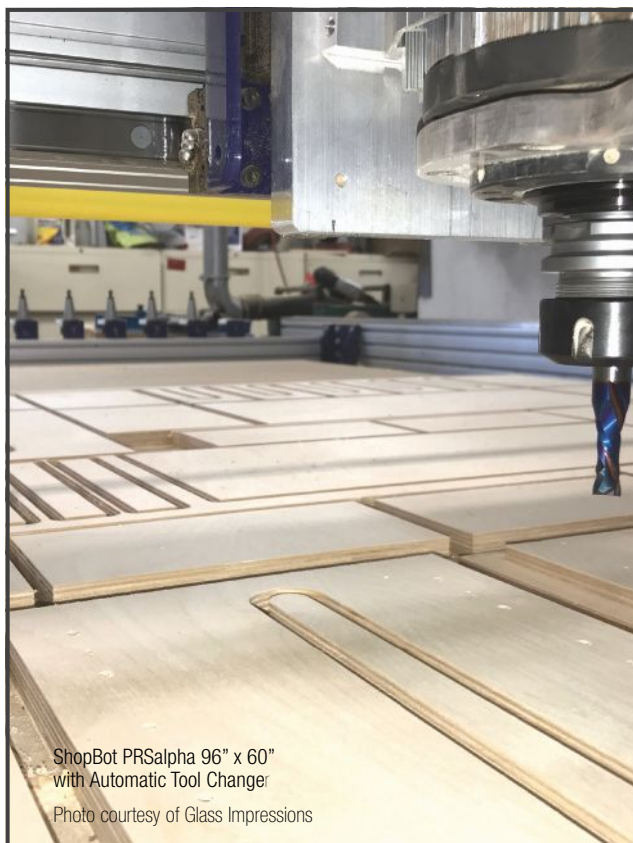
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and deeper in the coarser grits. Thin paper is used in fine grit grades because the granules of abrasives can move slightly, and act in a gentler manner. Thin papers are also better at working profiles such as moldings and round-overs.

A lot of belts and random orbit discs use a cloth or fabric backing, which is usually infused with a resin. Most cloth backers are relatively stiff (denoted as X), such as the belts in a portable belt sander. Highly flexible cloth backers are identified with a letter J, and there are further variations within each category that are also described using letters.

Film is essentially a plastic backing and is most often used in fine and very fine grits because it offers such a flat and even base upon which to build. It's very common in the auto-body industry where it can be used with soaps and other liquids.

Types of abrasives

The least expensive, and probably the least effective abrasive choice, is old-fashioned brown flint paper. It's not very common anymore and is really not a commercially viable solution for production shops. One indication of an abrasive's durability is how easy it is to

crush and grind it to create the 'sand' on sandpaper. Flint doesn't do well here – it comes in at last place after zirconium, aluminum oxides, silicon carbide and emery.

The next cost option, garnet, is one of the more widely used abrasives among hobbyists, and especially so for hand sanding. That's probably because it's inexpensive to manufacture as a sheet or disc, so marketing may have as much to do with its popularity as actual results do. This orange-red material occurs naturally and is mined and ground but is not usually altered much beyond that. It's more aggressive than flint, but many professional furniture builders find that it wears down too quickly when used with electric sanders. Garnet is essentially a rock so it can be found in several chemical varieties, including iron and magnesium-based aluminum silicates.

A finer and more durable choice, aluminum oxide, is very popular in most facets of wood-working and is also relatively inexpensive. This is a manmade material that lasts longer and abrades better than garnet. It's not very crystalline in shape, and under a microscope it looks more like a series of wide-based, narrow topped spikes than traditional crystal forms.

Because of that, it doesn't always renew by breaking down to expose new facets (that is, it's not overly 'friable'). In fact, the abrasive edges can round over before they shatter, and that can lead to some clogging. Overall, this is a great choice for working wood.

Another bauxite derivative, alumina zirconia, is a manmade abrasive that has distinct crystalline facets and these allow it to renew its edges. Unfortunately, it works best in coarse grains, so it isn't the abrasive of choice for final passes. But it does a great job of removing stock in a hurry. Zirconia is a manmade diamond and can be used as a stand-alone abrasive as well as being incorporated into compounds. Diamond abrasives can also contain low quality (impure) natural industrial diamonds, including dust and chip residue harvested from other commercial processes. Diamonds are incredibly hard, which is both good and bad. It means that they last a long, long time, but it also means they can cost a lot. Ceramics are produced in a somewhat similar manner, and they continue to grow in popularity.

Silicon carbide is another manmade abrasive, and this material is known for its brittle, crystalline nature. It is both very hard and



sharp, and renews well, so it's perhaps a better choice for finish sanding. It's also a bit more expensive, but that seems to even out because of the time it saves, and the avoidance of reworking. It can usually be used wet or dry (depending on the backer) and is generally black in color. There is a slight chance that the dark grains will dislodge and become visible on some light-colored wood species, but this usually isn't a problem.

Emery is technically an abrasive but is often considered more of a polishing agent. It's a natural aluminum oxide corundum, and it can be purchased in very fine grits. It's most often used between coats in built-up finishes. However, it can have an uneven texture and may leave visible lines in a finish. Plus, it can sometimes have an adverse effect on tannin in woods such as oak, where it may alter the color over time. Very fine grits of silicon carbide and even aluminum oxide will deliver fairly comparable results.

Another cloth, sometimes but not very often employed to polish a coating, is crocus. It's a fabric that is used to apply a rouge (such as is used in sharpening). Crocus is more commonly used as an abrasive among silversmiths and the like than in woodshops.

Restorers, rather than production cabinet-makers or even furniture artists, are more familiar with older solutions such as rotten stone, pumice and powdered glass. These abrasives often have very narrow applications and are perhaps more of an art than a craft solution. Also popular with hand sanding artisans and sometimes wood turners are steel wool and abrasive sponges, but some furniture and casework shops try to avoid these because of residue and rust issues.

Sources

Many woodworking abrasives were born in body shops. For example, the Cubitron family of abrasives from 3M (3m.com) was

originally created to meet the needs of metalworkers. It has 3M's patented Precision-Shaped Grain, which is designed with sharp, angular structures that continuously fracture to form points. These allow the abrasive to slice faster, run cooler, and last longer than other abrasives that can generate heat buildup, and thereby have a shorter life. 3M says that its latest generation of Cubitron II products can cut faster and last up to twice as long as competitive products.

Over the past 30 years, Mirka USA (mirkawoodworking.us) has grown into one of the world's largest producers of coated abrasives. Its product range includes not only familiar abrasive products such as Abranet and Deros, but also tools, accessories and polishing components.

Unedda Enterprises in Spring Valley, N.Y. (sandpaper.com) offers "the widest range of abrasive products for the woodworking industry, from wide belts to sanding discs," according to the company.

SuperMax Tools (supermaxtools.com) carries a full range of abrasive wraps for its drum sander line.

Gator/Ali Industries (gatorfinishing.com) has a large catalog of power and hand sanding products, and Ali also offers premium, professional quality abrasive products through its Shopsmith brand (shopsmithabrasives.com).

Klingspor (klingspor.com) has been manufacturing abrasive technologies since 1893 and offers a huge range of discs and belts.

Keystone Abrasives (keystoneabrasives.com) in Reading, Pa. offers belts, discs, sheets, drums and other abrasive products.

Maryland-based 2Sand.com is an online supplier that carries a wide range of sanding discs, sanding belts, sandpaper sheets, specialty products and sanding accessories.

Sungold Abrasives (sungoldabrasives.com) also manufactures a full line of sanding belts, sheets, discs, rolls and related products.

Indianapolis-based Sandpaper America (sandpaperamerica.com) offers a similar range of products. And for contour and detail sanding, Opti-Sand (opti-sand.com) offers machines and abrasives in a flexible finger format. [W](#)



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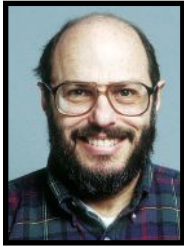
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Get the sheen you want

The key is to start with an understanding of how flattening agents work

You can buy finishes in a number of sheens, ranging from gloss to dead flat. But you aren't limited to just the sheens provided from any given manufacturer. You can create any sheen you want just by understanding how flattening agents work. Flattening agents are the solid stuff that settles to the bottom of the can and has to be stirred into suspension before using.

Of course, you can also control sheen by rubbing the final coat of finish with abrasives such as steel wool or rubbing compounds but doing this is lot more work.

Flattening agents are composed of small par-

ticles of solid material, the nature of which makes them invisible and fairly transparent in the dried finish film. As the wet finish shrinks during drying, it pulls taught over the particles that are floating close to the surface, and this creates the microscopic roughness that gives the flatted effect.

The particles aren't exposed; they are "shrink wrapped" by the finish film. You see the shrink wrapping occurring as you watch a flatted finish dry. At first, when you apply the finish, the film is glossy. But as the solvent or thinner reaches a certain point of evaporation, the flattening appears rather suddenly.

In most cases you buy the finish with the flattening agent already added. Manufacturers use loosely defined terms, such as semi-gloss, satin, eggshell, flat, and matte, to identify these finishes. Becoming more common, manufacturers use a more helpful numbering system, such as a 20 sheen for fairly flat or 90 sheen for gloss. You can blend any of these sheens with each other to get your own flatted effect, or you can add a separately packaged flattening agent to a finish. The more you add, the flatter the resulting appearance.

There are a number of substances that can be used as flattening agent, including synthetic amorphous silica (silicon dioxide), stearates, diatomaceous earth, waxes and talc. Manufacturers choose between these substances for cost and performance characteristics.

The best flattening agent is amorphous silica because of its high efficiency and better transparency. Most manufacturers use amorphous silica in their flatted finishes, but unfortunately, they rarely tell us on the can or in their literature, so we can't know for sure. If you are having any trouble with the product you're using, and the manufacturer doesn't solve it quickly, change to a different brand.

You may have noticed that the flattening effects of a flatted finish are greater the more you thin

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The sheen is created in the last coat of finish applied. Previous coats have no impact. On the left one-half of this panel, I brushed on three coats of gloss finish. On the right half, I brushed on three coats of satin finish. Then I brushed satin finish onto the right half of the gloss side and gloss onto the left half of the satin side. The resulting glosses and satins are the same irrespective of what's underneath.

the finish. The reason is that the finish spreads out thinner so more of the flattening agent is exposed near the surface of the film. Conversely, the thicker the finish during application the less effective the flattening agent; more of it is embedded deep within the film. On any given project you should thin your finish the same each time you refill your cup or pot, so the flattening effect will always be the same.

Because the flattening effect is created by a microscopically roughened surface, it should be obvious that a flatted sheen can be made glossy by simply leveling with fine sandpaper and polishing with very fine abrasives.

Measuring sheen

Sheen is the reflection of light when a surface is viewed at a low, or grazing, angle. In a high-sheen or high-gloss surface you see glare or a distinctly reflected image. In a low-sheen, satin, or flat surface, glare and reflection are softened to the point of non-existence.

Though the methods aren't perfect, manufacturers have ways of measuring sheen and assigning a number when the surface is viewed from different angles. In some cases, manufacturers provide us with this number, which usually makes it easier to match existing sheens.

Clumping

You may have noticed that now and then you get some white specks in your finish caused by flattening agent that has clumped. Clumping occurs when the particles of flattening agent are allowed to bond together either at the bottom of a can or by drying around the lip of the container. Once flattening agent has clumped, it cannot be effectively separated again. You should change to a fresh product.

Myths

There are two common myths about flattening agent. First, the flattening effect is cumulative either because each coat adds to the flatness of the previous coat, or because, in the case of lacquer, all the flattening agent from each coat floats to the top of the last applied coat.

Second, flattening agent weakens the scratch resistance of the film.

Cumulative effect

Because the flatted effect is created not by the particles embedded deep within each coat of finish film, but only by those particles located near the surface, there is no cumulative effect caused by applying more coats. The only way to increase the flatness of a finish is to add more flattening agent to it or to thin the finish so it spreads into a thinner film. You can continue to apply coat after coat of any given flatness and the resulting sheen will not change.

You can easily test this by applying a gloss coat over a satin or flat coat. When the finish has dried, the surface will be glossy just as if all the coats had been gloss.

Nor does flattening agent rise to the top of a coat of lacquer. If anything, the flattening agent settles, just as it does in a can. At any rate, flattening agent surely doesn't transfer from one coat to another. This myth may have gotten started because finishers have noticed that a flatted finish can become glossy after years of use. What really has happened, of course, is that the microscopic roughness on the surface has been leveled and polished by wear, not that all the flattening agent has been removed from the film.

Continued on Page 27

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THE CUTTING EDGE

with R.W. LEE

Get with the program of writing G-code

Though software programs are becoming more and more user friendly, this leaves the user more and more dependent not only on the program they are using, but on many other software programs that are becoming necessary to complete a task. Nowhere is that more evident than in the CNC industry.

First there is the CAD program that changes an idea into a vector-based drawing. Then there's the CAM program that changes the vector drawing into step-and-direction files (G-code), which are fed into a controller and converted into electrical signals that drive the stepper or servo motors to produce a part.

While much of this is done automatically, the first two steps certainly require input from a skilled operator. By skipping those steps, overall production increases. But the operator has to be able to program CNC function with G-code.

In my previous column (November 2019), the base elements of G-code were introduced, as was the technique of subprograms which can control the CNC to execute the same program over and over without any operator intervention. Subprograms use the functions M97, M98 and M99. The M97 function uses a subprogram that is within the main program (local subprogram), while the M98 function calls a subprogram that is stored in the controller. The M99 function ends the subprogram and transfers the processing back to the main program.

Another set of G-code functions, known as work offsets, program zero or fixture offsets. These are generally G-54 through G-59, though depending on the make of the controller, there may be up to 255 work offsets.

A work offset is an envelope within the machine's total work area. All work offsets are relative to the machine's home position (0,0,0).

Work offsets increase productivity if a shop needs to manufacture 50 radiused top rails, for example. A fixture could be made to hold six top rails and the location of the work offset program zero could be determined for a corner of each rail. The program zero could be found through the use of an electronic probe, such as the Haimer 3D manual probe, or an electronic touch plate that is connected to the controller.

The electronic touch plate is the most functional of the three alternatives as it can be used to set work offsets for the X-, Y- and Z-axes. It is also the least expensive option. However, the controller needs to have additional ports and pins to be able to hook the wiring from the plate to the controller breakout board.

Also, the programming within the controller must be able to have a small program added to it so the controller recognizes the electronic plate and its operation.

In our example, the work offset must be identified for each of the six slots on the fixture that holds the uncut rails for the benefit of the controller's memory. While this example has only six doors cut at a time, fixturing could be developed that covered as much of the CNC router's table as possible.

M97 local subprogram format:

M97 Pxxxx Lnn

'Pxxxx' indicates which line number within the main program the subprogram is located and 'Lnn' is the number of repetitions for the subprogram.

Main program:

O01234 (Program number and start of main program)

N0001 T02 M06 (T02: use tool No. 2; M06: tool change)

N0002 M03 S20000 (instructs spindle to run at 20,000 rpm)

N0003 G90 (G90: absolute distance mode)

N0004 G00 Z0.50 (G00: non-cutting rapid move; Z0.50: Z-axis set 0.50" above stock)

Portions of the main part program:

N019 G54 (First work offset coordinates)

N0020 M97 P0115 (Program jumps to the P address, line 115)

N0021 G55 (Second work offset coordinates)

N0022 M97 P0115 (Program jumps to line 115)

N0023 G56 (Third work offset coordinates)

N0024 M97 P0115 (Program jumps to line 115)

N0025 G57 (Fourth work offset coordinates)

N0026 M97 P0115 (Program jumps to line 115)

N0027 G58 (Fifth work offset coordinates)

N0028 M97 P0115 (Program jumps to line 115)

N0029 G59 (Sixth work offset coordinates)

N0030 M97 P0115 (Program jumps to line N0115)

Finish part program:

N0114 M30 (End of main program, return to top of program)

N0115 (Identifies the start of the local subprogram called up by M97 P0115)

Local subprogram portion of main program:

M99 (Instructs program to loop back to the main program and execute next line or return to the top) **W**

FINISHING from Page 25

Scratch resistance

Because particles of amorphous-silica flattening agent are almost always coated by a thin finish film that has shrunk around them (they are rarely exposed on the surface), there is no way these particles can reduce the scratch

resistance of the film. But they sometimes give this appearance because coarse objects can level them relatively easily leaving an apparent mark or scratch on the surface.

Amorphous silica is often made with a coating of wax on each particle to help resist scratching if the film is broken. This coating also aids in keeping the flattening agent from

clumping at the bottom of the can. Flattening agents other than amorphous silica may, however, reduce the scratch resistance of the finish film. If you are having problems, switch to a different brand.

Bob Flexner is author of "Understanding Wood Finishing" and "Wood Finishing 101." **W**



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- Motor: 13.5 HP Briggs and Stratton[®] gas engine
- Maximum log diameter: 28"
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- Maximum cut thickness: 6"
- Blade size: 1" x 144"
- Wheel diameter: 19"

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ULTIMATE 17" BANDSAW

- Motor: 5 HP, 230V, single-phase, 60 Hz, 1725 RPM, 22A, TEFC
- Table size: 25 $\frac{1}{2}$ " x 21" x 2"
- Table tilt: 5° L, 45° R
• Floor-to-table height: 35 $\frac{1}{2}$ "
- Cutting capacity/throat: 16 $\frac{1}{2}$ "
- Maximum cutting height: 16"
- Blade size range: 162"
- Blade widths: $\frac{1}{8}$ " - $\frac{13}{16}$ "
- Blade speed: 4500 FPM
- Resaw fence size: 6" H x 23" L
- Overall size: 35 $\frac{1}{4}$ " W x 33 $\frac{3}{4}$ " D x 78 $\frac{1}{8}$ " H
- Approx. shipping weight: 784 lbs. (G0636X)

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24" INDUSTRIAL BANDSAWS

- Motor: 5 HP, 220V, single-phase or 7 $\frac{1}{2}$ HP, 220V/440V*, 3-phase
- Precision-ground cast-iron table size: 33 $\frac{1}{2}$ " x 23 $\frac{3}{8}$ " x 2"
- Table tilts 45° for bevel cuts
- Floor-to-table height: 34 $\frac{1}{2}$ "
- Cutting capacity/throat: 24 $\frac{1}{2}$ "
- Maximum cutting height: 16 $\frac{1}{4}$ "
- Blade size: 180" L ($\frac{1}{4}$ " - $1\frac{1}{2}$ " W)
- Blade speed: 5300 FPM
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- Overall size: 48" W x 32" D x 83 $\frac{1}{2}$ " H
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**7 $\frac{1}{2}$ HP
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16 $\frac{1}{2}$ " DOVETAIL MACHINE

- Motor: 1 HP, 110V/220V, single-phase, prewired 220V
- Table size: 24" x 7 $\frac{3}{4}$ "
- Floor-to-table height: 46 $\frac{1}{16}$ "
- Number of spindles: 1
- Spindle speed: 18,500 RPM
- Dovetail bit size: 10° angle x $\frac{5}{8}$ " L
- Dovetail shank diameter: $\frac{1}{2}$ " (12mm)
- Max. dovetail height: $\frac{3}{4}$ "
- Minimum dovetail height: $\frac{3}{16}$ "
- Max. thickness: $\frac{23}{8}$ "
- Minimum thickness: $\frac{19}{32}$ "
- Max. stock size: 59" L x 16 $\frac{1}{2}$ " W
- Minimum stock size: 7 $\frac{1}{8}$ " L x 2 $\frac{3}{8}$ " W
- Overall size: 38 $\frac{5}{8}$ " W x 26 $\frac{1}{2}$ " D x 56 $\frac{5}{8}$ " H
- Approx. shipping weight: 539 lbs.

**EXTREME
SERIES**



G0611X ONLY \$3995⁰⁰



21-SPINDLE LINE BORING MACHINE

- Motor: 2 HP, 110V/220V, prewired 220V, single-phase, 20.8A/10.4A
- Air requirement: 70 PSI
- Table size: 43 $\frac{3}{16}$ " W x 15 $\frac{3}{4}$ " D
- Floor-to-table height: 33 $\frac{1}{4}$ "
- Spindle travel: 3 $\frac{3}{8}$ "
- Max. stock width: 8"
- Number of spindles on boring head: 21 (10 left and 11 right)
- Distance between spindle centers: 32mm
- Shank size: 10mm
- Fence length: 74 $\frac{1}{2}$ "
- Stroke operation: Pneumatic
- Overall size: 75" W x 28 $\frac{3}{8}$ " D x 58 $\frac{1}{8}$ " H
- Footprint: 36 $\frac{1}{4}$ " x 28 $\frac{3}{4}$ "
- Approx. shipping weight: 514 lbs.



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- Motor: 5 HP, 220V, single-phase, 18A
- Table size: 39 $\frac{1}{4}$ " x 31 $\frac{1}{2}$ "
- Table counterbore: 5 $\frac{1}{2}$ " dia. x $\frac{5}{8}$ " deep
- Floor-to-table height: 35 $\frac{1}{4}$ "
- Spindle travel: 4"
- Spindle sizes: $\frac{3}{4}$ " dia. x 3 $\frac{1}{2}$ " and 1 $\frac{1}{2}$ " dia. x 5 $\frac{7}{8}$ "
- Spindle openings: 2 $\frac{1}{2}$ ", 4 $\frac{1}{8}$ ", 5 $\frac{1}{4}$ ", 7 $\frac{1}{2}$ "
- Maximum cutter height: 5 $\frac{3}{8}$ "
- Maximum cutter diameter: 7"
- Spindle speeds: 5,000, 7,000 and 10,000 RPM
- Certified to UL & CSA standards
- Overall size: 39 $\frac{1}{2}$ " L x 35 $\frac{1}{2}$ " W x 50 $\frac{1}{2}$ " H
- Approximate shipping weight: 812 lbs.

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24" PROFESSIONAL PLANERS

- Cutterhead motor: 5 HP, 220V, single-phase (G5851Z), or 7 $\frac{1}{2}$ HP, 220V/440V*, 3-phase (G7213Z)
- Feed motor: 2 HP
- Max. stock thickness: 7"
- Max. cutting depth: $\frac{1}{8}$ "
- Feed rate: 17-26 FPM
- Speed: 5200 RPM
- Approx. shipping weight: 1126 lbs. (G5851Z), 1130 lbs. (G7213Z)

Z-SERIES



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**3-PHASE
G7213Z ONLY \$5395⁰⁰**



G5851Z
SHOWN

STRAIGHT LINE RIP SAW

- Main motor: 15 HP, 220V/440V*, 3-phase, 44A/22A
- Feed motor: 2 HP, 220V/440V*, 3-phase, 6A/3A
- Table size: 53" x 37"
- Floor-to-table height: 32 $\frac{1}{4}$ "
- Maximum cutting thickness: 3 $\frac{7}{8}$ "
- Minimum cutting length: 8" (with included hold-down roller kit)
- Feed speed (variable): 30-112 FPM
- Saw blade diameter: 10"-12"
- Maximum cutting width: 18"
- Arbor diameter: 1"
- Spindle speed: 4500 RPM
- Dust port diameter: 4"
- Overall dimensions: 61 $\frac{1}{4}$ "W x 43 $\frac{1}{2}$ "D x 80 $\frac{1}{2}$ "H
- Approx. shipping weight: 2243 lbs.

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G0524 ONLY \$9750⁰⁰



INDUSTRIAL-DUTY TILTING SPINDLE SHAPER

- Motor: 7 $\frac{1}{2}$ HP, 220V/440V*, prewired 220V, 3-phase, 3450 RPM, 20A/10A
- Spindle travel: 6 $\frac{1}{2}$ "
- Spindle tilt: -5 to +45°
- Spindle size: 1 $\frac{1}{4}$ "
- Spindle length: 7"
- Spindle speeds: 3900, 5000, 7200, and 9400 RPM
- Maximum cutter diameter: 10"
- Precision-ground cast iron table size: 47 $\frac{1}{4}$ " x 35 $\frac{1}{2}$ "
- Fence: wood, independently adjustable
- Footprint: 33" L x 29 $\frac{1}{2}$ " W
- Approx. shipping weight: 1096 lbs.

**EXTREME
SERIES**



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12" SLIDING TABLE SAW WITH INDEPENDENTLY-POWERED SCORING BLADE

- Main motor: 7 $\frac{1}{2}$ HP, 220V/440V*, 3-phase, prewired for 220V, 20A/10A
- Main table size: 35 $\frac{1}{4}$ " x 21 $\frac{1}{2}$ "
- Sliding table size: 126" x 14 $\frac{1}{2}$ "
- Rip capacity with standard rip fence: 49 $\frac{3}{4}$ "
- Max. crosscut width with crosscut fence: 126"
- Max. depth of cut: 3 $\frac{1}{16}$ " @ 90°, 2 $\frac{3}{8}$ " @ 45°
- Main blade arbor: 1"
- Scoring blade arbor: 20mm
- Overall size: 139"W x 133"D x 45"H
- Approx. shipping weight: 1498 lbs.



G0699 ONLY \$6995⁰⁰



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AUTOMATIC EDGE BANDER

- Required power supply: 30A, 220V, single-phase, 60 Hz
- Feed motor: $\frac{3}{4}$ HP
- Glue spindle motor: $\frac{1}{2}$ HP
- End trim motor: $\frac{1}{4}$ HP
- Flush trim motor: $\frac{3}{4}$ HP
- Buffing motor: $\frac{1}{4}$ HP
- Heating element: 1455W
- Table size: 10 $\frac{1}{2}$ "W x 78 $\frac{3}{4}$ " L
- Min. panel dimensions: 4 $\frac{3}{4}$ "W x 9 $\frac{1}{2}$ " L
- Compressed air required: 100 PSI
- Glue pot capacity: 34 oz
- Roller width: 3 $\frac{3}{4}$ "
- Roller diameter: $\frac{3}{16}$ "
- Edgebanding coil capacity: 31 $\frac{1}{2}$ "
- Approx. shipping weight: 875 lbs.



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TWO BRANDS, ONE DIRECTION

And that would be up, as in more growth, following Greg Bettencourt's acquisition of Cedar Crest Cabinetry and Revolution Furnishings in Manchester, N.H.

BY JENNIFER HICKS



Greg Bettencourt had some notable first impressions after purchasing Cedar Crest Cabinetry and Revolution Furnishings, two businesses operating under one very large roof in Manchester, N.H., in 2015.

"What we saw was a great asset in our facility with its size and fantastic location, an incredible team with strong tenure, and great growth potential. We saw the wholesale furniture line hadn't been touched in years which provided the foundation for a great opportunity," says Bettencourt.

Cedar Crest Cabinetry is a custom cabinet and furniture shop serving the residential and designer markets. Revolution Furnishings is a wholesale furniture line marketed to large retailers and boutique shops. The company was founded in 1989 as Oak Designs, a wholesaler, and added Cedar Crest in 2005.

DITCHING THE TIE

Bettencourt comes from a woodworking family. His great grandfather, Howard Custance, co-founded Custance Brothers, an architectural millwork shop in Lexington, Mass., in 1911.

Bettencourt pursued mechanical engineering at Tufts University then worked at a Fortune 100 company and a software startup.

"I went into corporate America for eight years. It was a great experience with great mentors, but I felt like something was missing. In 2013, my wife and I started getting serious about other opportunities and met the Boutin family (the previous owners) who were ready to retire."

The timing was good. Bettencourt, who credits some of his best advice to his experienced family members, noticed the industry had a promising group of consumers that were no longer interested in low-

quality imports, providing a marketing opportunity to grow the wholesale line.

"There was a yearning for better quality. I really had a strong belief that New England consumers desired better quality at approachable prices. There was a big gap between really expensive heirloom quality fine furniture and the imports with no options in the middle."

He and his team implemented digital advertising campaigns through pay-per-click options and social media, and ran some print advertisements through home magazines, a huge help particularly to the Cedar Crest side which has since doubled its output. But the wholesale side was falling by the wayside and needed a lot more work.

"The former ownership had limited ability to get the word out. They hadn't refreshed the catalog or opened a new account in a while," he says.

TURNING IT AROUND

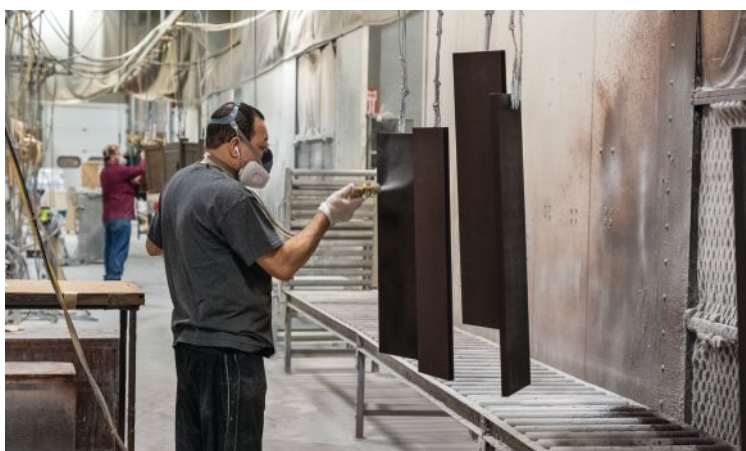
Marketing wasn't the only issue with the wholesale side. It had taken quite a hit in 2007 from an influx of imports coupled with the Great Recession. There were only 15 wholesale clients by 2015, down from a high of about 100.

Revolution Furnishings now has approximately 50 dealers and is adding accounts at a healthy clip. Bettencourt wants to grow the list beyond New England.

Much of the growth is attributed to the talent, dedication and focus of the team and up-to-date sales tools. These include a new website featuring a product catalog with virtual rooms and 3D imagery.

Revolution Furnishings can deliver a quality product very quickly to its wholesale buyers, who can then offer their store customers several custom options such as finishing, hardware, dimensions and profiles.

PHOTOS: MICHAEL GORDON



Production supervisor Jennifer Fredette pulls parts from the shop's SC-MISigma 90 Plus beam saw; Dave Chagnon assembles frames, and Mozart Ramos sprays finish.

There are 10 base styles ranging from traditional to contemporary.

"The idea is that you can get a custom product that's built with integrity locally in four weeks. No one does that at our scale in New England," says Bettencourt.

"Agility is important. The ability to serve the needs of a diverse set of customers is huge. We want to make those large stores happy. They're competitors with one another and we need to give them product segments different enough so that shoppers will see different items in different stores."

ON THE RETAIL FRONT

Cedar Crest Cabinetry generally serves clients within a 50-mile radius, from Boston and the New England seacoast to New Hampshire's Lakes Region and southern Maine.

About 80 percent of jobs are from walk-ins and referrals, with the remaining through contractors. The projects can be quite diverse.

"We see everything from transitional to contemporary, even some uses with rustic wood in a modern way. Lots of customers walk in saying they have old stained oak cabinetry from 1984 and want to replace it. We're doing a lot of two-toned Shaker paint with something like a rustic hickory contrasting island," says Bettencourt.

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Zeta P2 Anniversary Edition with diamond cutter	101402DJ
P-System connector assortment professional	145312
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Sean Yeaton (left), the shop's daily production manager, and Antonio Neto assembling a headboard on a Ritter R-250.

The shop has automated machinery and added Cabinet Vision design and manufacturing software about two years ago, which has benefitted production and sales for both sides of the operation, according to Bettencourt.

"Custom work is challenging to sell because people really want to see it. It's tough conveying their options to them through hand drawings. That's solvable with technology," he says.

MAXIMIZING THE POTENTIAL

With a 43,000-sq.-ft. facility and 20 employees, Bettencourt wants to keep growing from within. He's exploring direct retail ideas through different product segments and has had discussions about industry partnerships.

PHOTOS: MICHAEL GORDON

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"Our goal is to grow. We're exploring ways to do that, so long as it doesn't cannibalize our existing wholesale market. It's a delicate thing. What we see is a core group of people who want to touch and feel."

He also wants to focus on the bath market. "We do lots of bathrooms and we've been selling vanities for years so we're starting to build a bath furniture line to sell directly or through

A kitchen by Cedar Crest Cabinetry; bedroom set and bathroom vanity from Revolution Furnishings.

wholesalers," says Bettencourt.

Bettencourt, who has brought his father Don on board as CFO, tries to be involved as much as he can in all aspects of the company. He fills roles in the shop when needed and troubleshoots issues as they develop but relies heavily on his experienced team for daily sales and production efforts. As much as he would enjoy a more active role in the shop, his key role as business developer keeps him focused on the path forward.

"We will continue to grow. I don't see any end in sight. We've seen 500 percent growth on major market stores in the last six months. It's taken longer than we planned but we are finally achieving what we set out to do. There's always more work to be done," he says.

Contact: Cedar Crest Cabinetry and Revolution Furnishings, 9050 S. Willow St., Manchester, NH 03103. Tel: 603-606-6123. www.cedarcrestcabinetry.com and www.revolutionfurnishings.com. 



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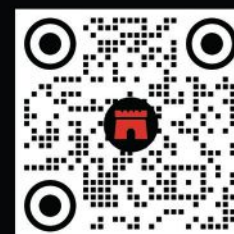


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Saw Trax Varsity vertical panel saw.

In the average woodshop, floorspace is always at a premium. And in large part, that's because so many machines need more working room than their actual footprint. They demand space to feed materials in at one end and harvest parts at the other, plus room to perform such mundane tasks as keeping aisles clear, programming, and attaching dust collection components. CNC routers are usually about as compact as they can be, where the manufacturer is able to tuck peripherals under the worktable and out of the way.

But there's always room for improvement, and a good example of innovative space saving is the Evolution series of vertical CNCs from Holz-Her (holzherusa.com). The three machines (7401, 7402 and 7405 4mat) can mill virtually any casework component and do so within a very small footprint – simply by handling parts on their edges instead of laying them down in a traditional flat orientation. Solid wood suction cups are available for machining solid wood frames and panels. Even curved solid wood parts and MDF furniture fronts can be cut, drilled and engraved. The Evolution machines can also handle processing of countertops. The patent-pending vacuum clamp system is material-friendly and equipped with software-controlled, fully automatic suction cup positioning with hole recognition. It can machine workpieces up to 1,600mm long (63") on all sides without re-clamping. This means there are extremely short

SAVERS

SOLUTIONS TO SAVE ON FLOORSPACE

BY JOHN ENGLISH



Cantek HB-800 32" vertical re-saw.

cycle times and maximum precision even on long parts. Evolution is compatible with Lamello's P system.

Another innovative compact solution comes from Stiles Machinery (stiles-machinery.com). The Homag DrillTeq V-200 is a line of vertical CNC processing centers that can be used for drilling, trimming and grooving, and they're particularly well-suited to just-in-time production. There is no setup required, thanks to a vacuum-free clamping system. The machines can accommodate up to 13 vertical high-speed drill spindles, including a quick-change drill system and an automatic tool change magazine. And they also come with the PowerTouch2 controller. Best of all, the footprint is only 54 sq. ft.

VERTICAL VARIETY

Holding parts on edge is a logical way to save square footage, and vertical panel saws have been doing that for a long time. They were invented by Safety Speed Mfg. (safetyspeed.com) in Ham Lake, Minn. The company offers 10 vertical panel saws and the model 3400 vertical panel router. All of them are designed to save space (they're only 3' deep), and also make work easier and safer. The panel router can perform tasks such as plowing standard dados, blind dados, rabbets or V-grooves. The vertical orientation of the saws is especially efficient for small shops where the owner is often working alone. They also come with cutting depths ranging from 1-3/4" to 2-1/8", so an operator can cut multiple panels at one time (which can be a lot quicker than single panel cutting on a sliding table saw). The saw models are designed for three different workloads – 15 hours a week, 25 hours, and 40 or more. And some of them can also accept an interchangeable router head.

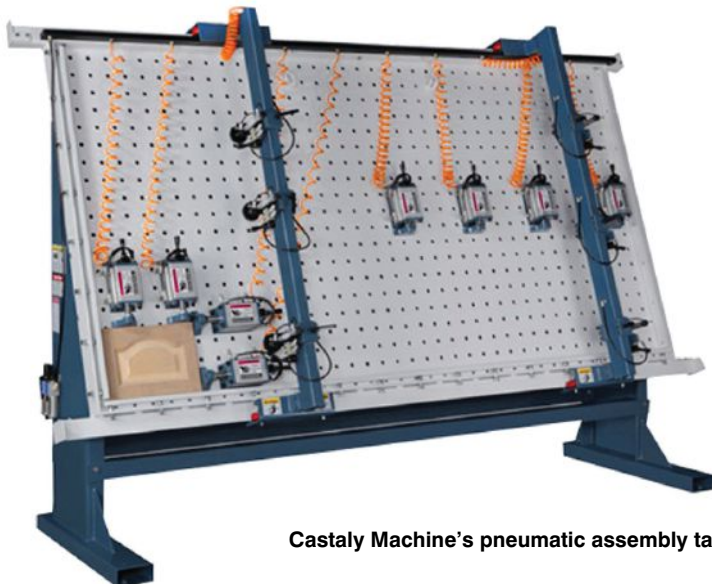
Another vertical panel saw manufacturer, Saw Trax (sawtrax.com), also



Grizzly Industrial's G0854 edgebander.



Castle's face frame assembly table.



Castaly Machine's pneumatic assembly table.

offers a comprehensive selection of space-saving options – including the extremely compact 5'-wide Varsity. In fact, many of the Saw Trax models can be ordered as either compact or wide versions, and the smaller units can be set up quickly and easily right on a jobsite to rip and crosscut sheet goods. Woodshops can also buy just the panel saw kit and build their own vertical saw at a bargain price.

That idea of having a machine perform more than one function is another way to save space because it can eliminate one or even several stand-alone, single function machines. Multi-tasking machines have always been popular in Europe, and they've been slowly edging their way into small- and medium-sized woodshops in North America. Their biggest perceived restriction is that they have to be torn down and set up again between tasks, so they lose accurate repeatability and also eat into a shop's man hours. But many newer machines are so beautifully engineered that they set up in seconds and can often retain fence and depth of cut settings so they can quickly revert to a previous task.

SCM Group (scmgroup.com) offers a half dozen Minimax combination machines, ranging from the c 26g to the larger cu 410es. They include a sliding table saw, a thickness planer/jointer, mortiser, and shaper/molder. They also have three separate single-phase motors for easy setup and plenty of power. The sliding table is well engineered with built-in support so that boards don't sag and each crosscut is at a true 90 degrees. The sliding mechanism is a linear bearing that rides in opposing tracks, and it delivers exquisite action. The larger machines have scoring blades, four-speed molding, four-knife planing and ergonomics that have been worked out over decades of Italian engineering.

Felder Group (felder-group.com) also offers a full catalog of combination machines that perform up to five functions. There are six Hammer models and five sold under the Felder brand. All have short changeover times and compact dimensions that don't sacrifice anything in terms of both performance and versatility. The functions include jointing, thickness planing, molding, cutting and mortising. The planing heads range from 12" to 16-1/8" wide, and even the smallest machine, the Hammer C3, has a sliding table saw with scoring, and the machine can be set up with optional mortising and doweling.

The Robland HX310Pro from Martin (martin-usa.com) is a five-in-one combination machine with very tight dimensions. It includes a panel saw, spindle molder, planer, jointer, and optional mortising machine. It also has a tenoning table. Martin Woodworking Machines in Charlotte, N.C. is the official U.S. importer and service partner of the Belgian machinery manufacturer Roblund.

Jet's (jettools.com) relatively new JJP-12HH planer/jointer comes with a helical carbide insert head and its 3-hp, 230-volt motor delivers 12" x 5/32" of planing capacity and 12" x 1/8" of jointing. It also features extremely quick changeovers between jointing and planing functions, and the fence does not need to be removed.

DUST, BELTS, TAPE AND GLUE

One area where smaller woodshops can save a lot of floorspace is by going to a single cyclone dust collector, rather than installing separate collectors at each workstation or machine. Laguna Tools (lagunatools.com) has

created a family of dust collectors that includes the T/Flux: 5, a single-phase, 220-volt, 5-hp unit that can handle up to 54 gallons of residue down to 1 micron. It comes with a 10" port that splits into three 4" ports. There's a remote controller with an LED warning for both clogged filters and full drum, and an automatic filter cleaner. But what's really nice about this unit is that it stands tall (110.7") on four sturdy legs that take up only 39" x 73" of shop floorspace, which is less than 20 sq. ft.

One might be tempted to think of a wide belt sander as having very little capacity for saving space. These are big machines doing a single, dedicated job, right? Well, the Timesavers 2300 series belies that notion, as it has a lot of versatility built into a relatively small footprint. Beyond having two abrasive belt length choices (75" or 103"), the 2300 is a planer/sander that can run up to three heads (knife, drum or combination). And the available 37", 43" and 52" widths make it ideal for shops that need high stock removal.

Grizzly Industrial (grizzly.com) recently introduced a new single-phase automatic edgebander that only takes up 102-1/2" x 60-1/2" (43 sq. ft.) of floorspace. The G0854 handles panels from 1/2" to 1-3/4" thick, uses edgebanding tape from 0.5mm-2.0mm thick, and features a 16 fpm feed rate and a 10-1/2" wide x 69-3/4" long table.

For shops that need to be able to make veneer and thin stock in-house for edging, Cantek (cantekamerica.com) makes a 32" wheel diameter vertical re-saw. The HB-800 takes a 4" blade and has a 20-hp motor. It accommodates the company's HF-150 feeder and can handle stock up to 15-3/8" wide.

Castaly Machine (castalymachine.com) offers several vertical assembly tables that use gravity to help keep parts aligned until pressure

is applied. Being vertical, they have very small footprints. For example, the PT-0509PC pneumatic assembly table is ideal for gluing up cabinet doors and face frames, and it has compressed air clamping on board so it's a one-person operation. It handles parts and assemblies up to 5' x 8' but takes up less than 10' x 5' of floor space.

Castle (castleusa.com) has used the vertical technique in its three frame assembly tables to augment its pocket screw system. The 4' x 5', 4' x 8' and 4' x 12' tables have quick clamps with center-mounted switching for easy access from both sides. And their open back design delivers more work area and can handle oversize frames without taking up valuable shop space.

Handling parts can take up a lot of space, too, and manufacturers such as Fanuc (fanucamerica.com) and Biesse (biesse.com) have invested major resources over the past decade to help shops remove the people in this process and to streamline movement using robots. The machines in Biesse's ROS (Robotically Operated System) can be seamlessly integrated with CNC, sizing, boring, edgebanding and sanding machines. They can position, sort and move parts, virtually eliminate downtime and parts damage, and thanks to their compact size take up less floorspace than other handling options.

Woodshops that use a table saw to crosscut stock to specific lengths might want to take a look at an up-cut saw such as the 5015 from Oliver (olivermachinery.net). With a footprint of only 31" x 30", it is much smaller and a whole lot faster than working with a miter gauge or a sliding table.

The bottom line is that many manufacturers recognize the need for compact solutions, and space saving machinery is available to perform almost any task in a woodshop. **W**



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HARDWARE HEAVEN

There's a lot of different ways to have a door open and drawer slide, evident from the current offerings from suppliers and manufacturers

By John English

Hardware is movement. It catches the eye and allows components to slide and swing and come to life.

Hardware can also be the difference between a great job and a breathtaking one, especially when it comes to the visible elements. When we think of Spanish missions on the West Coast or the great cathedrals of Europe, one of the abiding images is those ancient doors with their exposed wrought iron hinges and locks.

The hidden side of hardware also makes a statement. In kitchens and other casework, one of the first things a customer will do is slide out a drawer to check the soft close. But choosing hardware is not just a mechanical decision. It's also an aesthetic one, where clients often hold a strong opinion. Sometimes they wish to emulate a modern kitchen they recently visited, or something they saw online. And sometimes the hardware is part of their story. It might evoke a childhood memory or remind them of someone important.

It can pay to have that conversation.

FORM AND FUNCTION

Specialty hinges do one of two things, and sometimes both. They can perform a specific task, such as allowing a door to swing wide or fold away. And they can also change the entire look of a job. Cabinetmakers are familiar with the feeling of looking at a bunch of boxes and doors, and then installing hinges to create cabinets. The transformation from cubes and panels to furniture is instant and can be quite rewarding. It's especially so when the hinges are visible.

Going back to those coastal missions, there's a company in Valencia, Calif. called DeMejico (demejico.com) that began making period Spanish furniture a couple of decades ago when it was still located in Tequila, Mexico. Along the way, the owners opened a subsidiary called Old World Hardware (oldworldhardware.com), and this division now offers a range of hand forged rustic hardware from clavos (large decorative nail heads) and drawer pulls to iron straps and window grills, all with natural rust or black finishes. For cabinetmakers, the catalog also includes a selection of hand forged hinges that can transform a room, a cabinet or a piece of furniture. Their beaten, hand-worked character is a luxurious visual treat.

Less visually obvious, and more in the tradition of fine engineering, are hinges from Blum (blum.com). Among its choices are the standard size Clip-top and smaller Compact, either of which can be ordered with or without Blumotion soft-close action. Blumotion allows doors to close softly and effortlessly no matter how hard they are slammed or how heavy they are. In addition to hinges, the soft-close feature is available in Blum's lift systems and drawer systems.

The Aventos lift system (*photo on opposite page*) is all about hanging wall cabinet doors at the top, rather than at the sides. There are seven versions of this overhead hinge system, the latest being HK. It's compact, easy to install (each lift mechanism has an integrated positioning template, eliminating the need for measuring and pre-drilling), and it works on cabinets up to 72" wide and 24" tall. There's an integrated safety mechanism to stop doors from slamming on fingers and an opening angle stop that lets the homeowner partially open the door. Plus, the doors open very easily and close silently and effortlessly. Aventos is sleek, compact and nonintrusive, which makes it a great choice for minimalist projects. The beauty of a lift system is that doors open out of the way (kind of like a single panel garage door), allowing customers to easily see everything in their upper cabinets. And because they're up and away, nobody walks into the doors. Aventos also comes in a HK-XS version, which is specifically designed for shallow cabinets.

Woodworkers wishing to explore these options can visit a new portal on the Blum site called The Product World. It's an interactive tour of a home and office, and each room has casework with orange dots. Click on a dot and you'll be given a very brief introduction to Blum's hardware options for that particular application. Click on that for a more detailed summary. It's a handy tool to use when showing customers their hinge and slide options.

Samet (samet.com) is a Turkish manufacturer that is familiar to woodworkers who attend the major trade shows. The company recently introduced its Supreme brand soft-close concealed hinge. The soft-close can be turned on or off and done quite easily by turning a screw in the socket. The idea here is that a shop can use the same hinge for any application, and simply switch the feature on when needed. It's simple enough that the woodworker can quickly show a client how to make the switch, if needed. The hinges can also be adjusted quickly in six directions.

Another overseas manufacturer, the Slovenia-based Titus Group, received a Gold Medal at the Polish trade fair Furnica for its T-type concealed hinge that has integrated soft closing. Designed to install quickly, the hinge has a three-way snap on system for intuitive, tool-free mounting. It has opening angles of 110, 120 and 170 degrees, and comes in full overlay, half overlay, inset and angled options.

Salice America (salice.com) has locations in both Charlotte, N.C. and Cucamonga, Calif. The Italian manufacturer's Silentia+ hinge "delivers a consistently perfect closing action across a truly comprehensive range of hinges for doors of all sizes, weights and applications," according to the company. Its Series 100 is for light thin doors and the Series 200, 300 (with a compact 45mm operating profile) and 700 accommodate thicker stock. The hinge's decelerating effect is powered by twin silicone-oil dampers that are housed in the hinge cup, and Silentia+ has a switch to adjust the mechanism. Salice also offers the Wind system, which is for top-hinged cabinet doors.

Amerock (amerock.com) has a full catalog of cabinet hinges, including the unusual CMR2606W. This specialty knife hinge comes in burnished brass or white, and is a self-closing, partial wrap, concealed 1/2" overlay hinge.

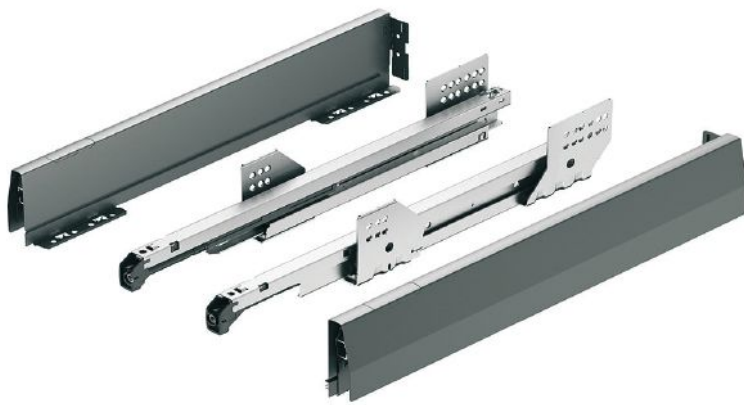
The Sensys hinge from the Hettich (hettich.com) can be ordered with or without an integrated Silent System. It has a wide automatic closing angle.

Van Dyke's Restorers in Hodges, S.C. (vandykes.com) carries an extensive selection of cabinet hinges with special focus on hard-to-find pieces from mortise to non-mortise, lift-off, offset, and surface-mount models. Here you'll find anything from a 22-1/2" long no-mortise parliament hinge (used on very tall cabinet doors) to Art Deco, Colonial, rustic and panel hinges.

Marlboro Mfg. in Alliance, Ohio (marlborohinge.com) is an unusual supplier of specialty hinges that include slip-joint, strap and multi-leaf custom solutions. These latter are made up of three or more butt-hinge leaves with barrels and/or pins on both sides. They're used in applications that require more than one point of rotation and can be found in residential cabinetry plus industrial doors and windows. Marlboro can fabricate them to fit custom specs.

Shops looking for shutter or café door specialty hinges might want to swing by the National Hardware website (natman.com) and investigate the Specialty Hinges page.

Another supplier with a wide catalog offering is The Hardware Hut (thehardwarehut.com) where a woodworker will find H and HL hinges, a vast array of pivot door hinges, Sugatsune systems for large cabinet doors, and a selection of intermediate door hinges that complement



pivot hinges in large doors.

Ovis (ovisonline.com) is a division of WIM Corp. and the company stocks many specialty hinges for unique applications including fold-down flap doors, vertical lift doors, very thick doors, and flipper doors.

SLIDING HOME

Blum also makes drawer slides with its soft-close technology on board. And Rev-A-Shelf (rev-a-shelf.com) has taken those slides to another level by offering Glideware, which uses the slides to create pull-outs that allow homeowners to securely hang accessories such as pots and pans inside cabinets that are 14" to 22" deep. A housing around the metal slide can be ordered in maple or gray colored solid wood, and the entire device is just screwed to the inside top of the cabinet. The full-extension slides can be ordered in a few different formats and they can hold up to seven hooks.



Glideware pull-outs from Rev-A-Shelf; Richelieu's Fiore system; ZBox from Grass, and the Matrix drawer system from Hafele.

There's a new option for woodworkers who want to install high quality slides on a drawer that includes quick and simple assembly. Grass America (grassusa.com) has added ball bearing slides to its Zargen metal drawer system to create the new ZBox. It offers standard and deep drawer heights, a railing system, and a Pendaflex filing system. The drawer sides have a white epoxy finish and the slides are zinc-coated steel. Shops can assemble a ZBox drawer in two minutes or less using the company's Pro1 machine and ZRam. The Pro1 drills holes for the front and backs, while the ZRam presses the slides into the parts. ZBox comes in three side heights – 3-3/4", 5-3/4", and 8-3/8" – and there are five drawer lengths.

Grass also offers Maxcess, a full-access, soft-close, undermount slide that was designed for both face frame and frameless cabinetry. The Maxcess easily fits conventional drawer construction, handling material thicknesses ranging from 1/2" to 5/8". A new liquid damper is integrated into the slide and provides a continuous, smooth easy-close. The result is a full view inside.

In 2017, Lockdowel (lockdowel.com) won a Visionary Award at AWFS for its new drawer slides that incorporate Channel Lock technology. The cabinet assembly system has been adapted to accommodate products such as drawer slides, face frames and castors. Using the same system to slot for assembly hardware, hinges and slides can simplify the manufacturing and assembly processes. Both undermount and side mount slides simply snap in place without any tools.

Another innovative concept is the 0363 two-way slide from Accuride International (accuride.com). It allows cabinet shops to build two-way drawers in residential islands and peninsulas, and also be creative in

(From top) Accuride's 0363 two-way slide and 3160EC wide drawer slide; Amerock's CMR2606W knife hinge, and Van Dyke's Parliament hinge.

designing commercial and retail solutions such as supply carts in hospitals, or drawers and trays in drive-through pharmacies or banks. Essentially, the slide lets a drawer be operated from either side of a cabinet. It is specially crafted with full extension from a centered point, supports loads up to 100 lbs., and is sold singly, rather than in pairs.

Accuride's new 3160EC is a commercial-grade undermount designed to support upscale and ultra-wide drawers up to 5' wide (30"-40" standard, and 41" to 60" with the optional Companion Kit that prevents racking). The slide can handle loads up to 100 lbs., has an easy-close feature, and is a great solution for boutiques, upscale residences, and fine galleries.

Made for tall and heavy pocket doors, Accuride's new CB1332 slide is designed for projects such as media centers, armoires, and concealed storage. It includes the company's advanced cable system, which eliminates the racking that is often found when opening or closing tall cabinet doors. The company also recently introduced the ADA-compliant 116RC for sliding doors, large screens, panels, movable walls, barn doors, and more. It supports loads up to 793 lbs. And Accuride's new 115RC can be side, flat, or vertically mounted for movable walls, sliding racks, screens, panels, partitions, and even assembly lines. It supports loads up to 265 lbs.

Accuride recently launched a new online store and an updated website.

Fulterer (fultererusa.com) has a new family of heavy-duty, full-extension, ball bearing slides named the FR56 Series that are rated at 225 lbs. And the company's Vertical Pull-Out Slides Brochure is now available as a download.

Holmes County, Ohio is home to Century Components (xseries-bracket.com). The company's new X-Series Bracket System is designed to provide affordable, high quality, tool-free adjustability for roll-out shelving systems. Installation is quick and easy for kitchen builders, and simple to use and adjust for consumers.

Häfele (hafele.com) has a new drawer system called Matrix that has three distinct choices for cabinetmakers. Box S is a European-style, double-walled drawer system with integrated soft close. Box Slim A is a thin-walled version with soft close and optional push-to-open. Box P has simple assembly and easy adjustment as well as the widest range of accessories.

The new BFPO2-6SC from Hardware Resources (hardware-resources.com) is a 6" no-wiggle base filler pullout. That is, it's designed to make use of that last few inches of space where a filler might normally go. It has premium soft-close drawer slides and the sides of the unit are paneled in case it's being used at the end of a run of cabinets. (The panels can be removed.) Another great specialized use of slides is Hardware Resources' new Storage With Style wire pullout basket. It comes with removable gray acrylic liners, and widths are 21" and 27".

King Slide (kingslide.com) is a Taiwanese company with U.S. offices in Houston. The company's Simlead system features a Vibration Safety Design. That means the drawer won't pop out under accidental shaking or vibration. And a drawer can be push opened from a closed or partially opened position, and then smoothly soft-closed without bouncing back. The push-open function can be enabled or disabled with a simple flip of a switch.

The Canadian manufacturer Richelieu (richelieu.com) is also using drawer slides in a creative way. The company's new Fioro system is a family of pull-out shelves that can make easy work of

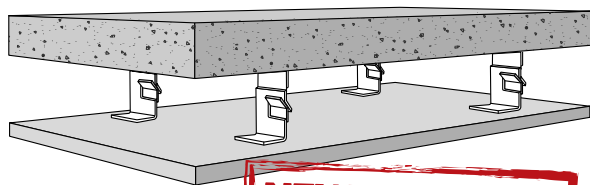




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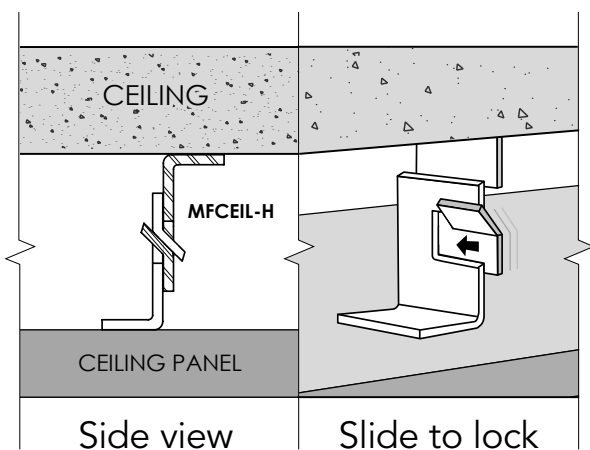
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accessing items in difficult spots such as tall pantry or library cabinets. These are metal shelves with wooden fronts and sides, and they're available for tall, base and corner casework. The wood can be switched out for any other material such as glass, laminate or melamine. Each shelf includes two oak rails and anti-slip mats that keep stored items in place.

Richelieu has also come up with a hands-free way to open a base cabinet recycling or waste bin. The Libero 2.0 Electronic Opening System works in base cabinets from 12" to 24" wide that are equipped with a top-mount bin. It mounts in the toe-kick and uses a low voltage device with a USB socket, so it can use a charger or be wired in. Just move a foot in front of the sensor and the bin will slide out. It's designed so that there is no unintended opening, and its integrated lighting can be dimmed or switched off using an Android or IOS smartphone app. The push-out force is also adjustable with the app. Its intelligent control can identify obstacles thanks to a friction clutch system, and it's even splash waterproof. The extension will vary depending on the weight of the bin and the width of the cabinet.

The new ClickFixx system from Kessebohmer (cleverstorage.com) is designed for the company's Wastebin and Base brand pullouts, and its Dispensa pantry. ClickFixx cuts assembly time by quite a bit and also guarantees a high level of error-free assembly. Both the front panel and the support frame connector are just clipped on in a quick, tool-free process. And all it takes for gap adjustment is a screwdriver. Kessebohmer's SoftStopp system delivers damped closing, while its SoftStoppPro delivers damped opening, and SoftSTOPplus delivers both damped closing and self-closing. Shops building commercial cabinets might also want to look at Arena Plus, which stops items sliding around when a shelf/drawer is opened or closed.

The folks at Horton Brasses, Inc. in Cromwell, Conn. (hortonbrasses.com) have been making top quality hardware for 70 years. The company makes elegant brass and nickel cabinet hinges, plus handmade iron hinges for kitchens and cabinetry. Among their specialty hinges are drop leaf table, Mackintosh (Arts & Crafts), butler tray and H hinges.

Finally, woodshops looking for the widest choice in specialty hinges and slides can find an impressive assortment in the Cabinet Parts online store (cabinetparts.com). 

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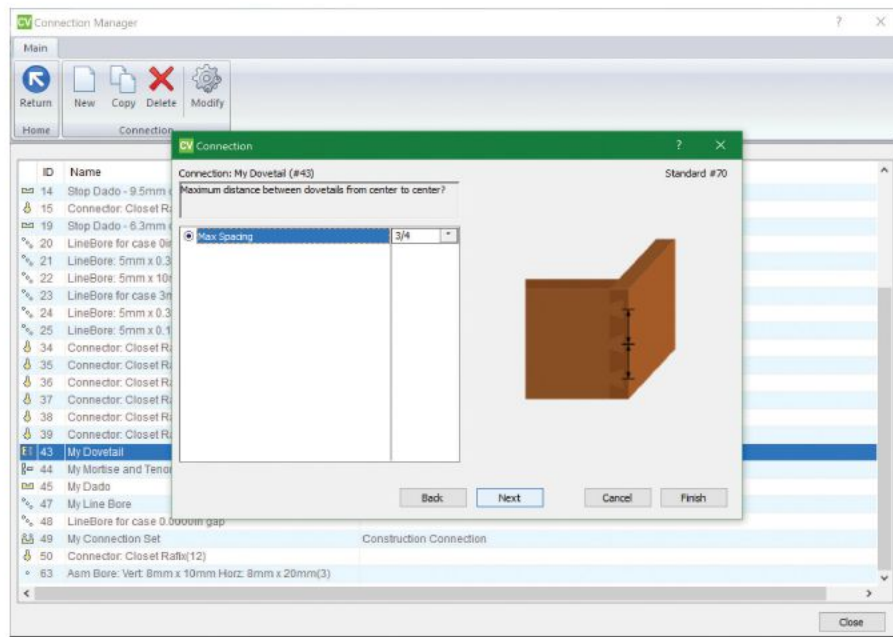
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►► DEWALT has upgraded three tools in its FlexVolt System, including the new 60-volt 7-1/4" circular saw (model DCS578), 4-1/2"- 6" grinder (DCG418), and reciprocating saw (DCS389). It has also introduced a cordless 1/4" sheet sander (above). For more, visit www.dewalt.com.





▲ **ROCKLER WOODWORKING AND HARDWARE** has expanded its line of dust collection solutions for handheld power tools with a new kit featuring a 12' fixed-length hose and four sizes of rubber-ended couplers that flex to fit the ports on a wide range of tools. For more, visit www.rockler.com.

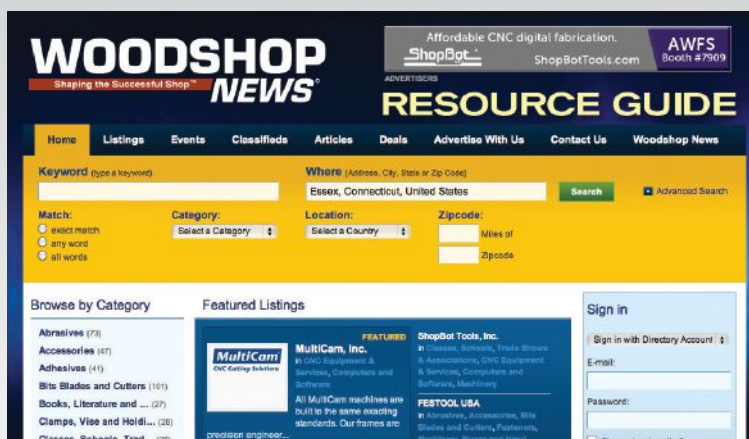


▲ **DURA SUPREME** has announced its new Curated Color Collection, six shades of trending colors readily available for custom cabinetry. The colors include Gale Force (SW 7605), Cyberspace (SW 7076), Software (SW 7074), Rock Bottom (SW 7062), Silver Strand (SW 7057), and Cast Iron (SW 6202, shown above). For more, visit www.durasupreme.com.

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The Chattanooga Show and Sell featured (clockwise, from top left) this four-post bed with carved headboard, John Sevier high boy, and Vanderbilt library table.

Tennessee school holds student/faculty exhibit

By Jennifer Hicks

Chattanooga Woodworking Academy in Chattanooga, Tenn. held its first Show and Sell exhibit Nov. 1-10 at the Chattanooga Choo Choo, a historic train hotel. The show featured a variety of fine furniture by the school's students and faculty, which offers a four-year program with a mastery certification degree.

"We had about 10 students show their work. The show was great. We had a good response and will plan to do this every year now," says school director Bill Carney.

The show also presented carving, dovetail joinery and other demonstrations of traditional techniques, and welcomed inquiries about commissioning made-to-order pieces

from the school's two product lines – Tennessee Traditional and Mission on Main – which include beds, tables, high boys, hope and blan-



ket chests, and end tables.

For more, visit www.chattanooga woodworkingacademy.org.

Artistry in Wood

The 31st annual Artistry in Wood exhibition, presented by the Sonoma County Woodworkers Association, opened Nov. 23 and will run through Jan. 12 at the Museum of Sonoma County in Santa Rosa, Calif.

The show features 75 pieces, including turnings, furniture boxes and art forms. There were 400 attendees at opening night, according to SCWA member and show coordinator Don Jereb.

Staged every year since 1982, Artistry in Wood is recognized as one of the premier fine woodworking shows in North America. Pieces accepted for exhibition must pass stringent criteria established by a board of jurors. Those accepted are then judged by a non-member panel of experts that awards prizes to the finest pieces in each of several categories.

For more, visit www.museumsc.org or www.sonoma woodworkers.com. [W](#)

CALENDAR

Organizations sponsoring meetings, classes or shows of interest to professional or hobbyist woodworkers are invited to submit items to: Calendar, Woodshop News, 10 Bokum Road, Essex, CT 06426; 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 a minimum of 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

CALIFORNIA

Monthly — San Fernando Valley Woodworkers meetings are held on the third Thursday of each month at 7 p.m. at the Balboa Park Sports Complex, Gym Building, in Encino. www.sfvw.org

Monthly — Society of Wood Manufacturing, a chapter of AWFS consisting of educators, manufacturers, hardware and industrial suppliers, and machinery dealers, meets dur-

ing the second week of each month. For location and dates, visit www.awfs.org.

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. www.tampawoodcrafters.org

Feb. 19-23 — Appalachian Hardwood Manufacturers' 2020 annual meeting will feature sessions on the export and domestic markets, networking events and more. Location: Naples Grande Beach Resort. www.appalachian-hardwood.org

GEORGIA

Apr. 1-3 — 64th World of Wood Convention by the International Wood Products Association, featuring industry speakers, exhibitors and other events. Location: Hyatt Regency Savannah. www.iwpaawood.org

Aug. 25-28 — International Woodworking Fair. Location: Georgia World Congress Cen-

ter in Atlanta. www.iwfatlanta.com

ILLINOIS

Mar. 4-6 — Cabinet Makers Association National Conference – 2020 Vision: A Clear View of the Woodworking Industry. Inspirational industry event featuring educational sessions, plant tours and networking opportunities. Location: Q Center at St. Charles. www.cabinet-makers.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. Open to all those working in wood. For information, email Manny Flecker at aaron0641@hotmail.com.

NEW YORK

Monthly — The Woodworkers of Central New York hold meetings on the first Thursday of each month at 6:30 p.m. at the Belgium Cold Springs Fire Department in Baldwinsville. www.woodcny.org

Monthly — Northeast Woodworkers Association meetings held on second Thursday of the month at various locations in the Albany area. www.woodworker.org

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NORTH CAROLINA

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

Feb. 21-23 — 33rd National Arts & Crafts Conference. Thousands of Arts and Crafts enthusiasts gather for seminars, workshops, exhibits and more. Location: Omni Grove Park Inn in Asheville. www.arts-craftsconference.com

SOUTH CAROLINA

May 5-8 — 2020 Woodworking Industry Conference. Jointly sponsored by the Woodworking Machinery Industry Association and Wood Machinery Manufacturers of America, the event features business development sessions, professional and personal networking opportunities, and more. Location: Wild Dunes Resort in Charleston. www.woodworkingindustryconference.com

SOUTH DAKOTA

Monthly — The South Dakota Woodworkers Guild meets the last Thursday of every month (except August) at various members' shops. The club has hand tool and woodturning groups. www.sdwoodworker.org 

AkzoNobel reinvesting in North Carolina facility

AkzoNobel is modernizing its industrial coatings manufacturing site in High Point, N.C., with a capital infusion of \$55 million.

"Through this reinvestment in our High Point site, we are driving a historic stake into the ground to push forward our wood coatings business in North America and reinforce our leadership and our commitment to customers in this crucial market," Thierry Vanlancker, AkzoNobel's CEO, said in a statement.

"This year, we are marking the 100-year anniversary of our North America wood coatings business, and this \$55 million project ensures our market leadership for the next 100 years and beyond. The U.S. is a strategically important market for AkzoNobel, and we are committed to maintaining, building, and expanding our market positions across our portfolio of coatings segments."

For more, visit www.akzonobel.com.

Woodcraft to sponsor Krenov School scholarship

As part of its corporate focus on woodworking education, Woodcraft Supply has decided to support The Krenov Foundation Scholarship Program for the school that internationally acclaimed author, teacher and cabinetmaker James Krenov founded in 1981.

The Krenov Foundation, established in 2014, awards several substantial scholarships each year to students attending The Krenov School, supports fine furniture shows, and has begun digitizing images of Krenov's work.

"Woodcraft welcomes the opportunity to help students who wish to pursue a fine woodworking education at The Krenov School, an institution that continues to pursue excellence in woodworking instruction that reflects James Krenov's legacy," Jack Bigger, Woodcraft's President and CEO, said in a statement.

For more, visit www.thekrenovfoundation.org and www.woodcraft.com.

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This universal kitchen design by Julie Leverett at One Eleven Ltd. in Las Vegas was the overall winner.

60 Grit

Rough humor by Steve Spiro

Dealer's choice

Showplace Cabinetry of Harrisburg, S.D. held a national design contest for sales and design professionals employed by its authorized, independently owned kitchen and bath dealerships. The custom and semi-custom cabinet manufacturer was flooded with over 100 entries in nine categories.

"The originality of design and the quality of these kitchen and bath projects were exceptional," says Paul Sova, president and CEO of Showplace Cabinetry. "It's important to remember that all the design entries were from actual projects, place in homes across the nation. The pride of the designers and creating functional and beautiful rooms for their clients shows through in each entry."

Entries were judged by a panel of design professionals. Julie Leverett at One Eleven Ltd. in Las Vegas won for best overall design and took first in the contemporary kitchen category.

Showplace products are sold through independent kitchen and bath dealers in all 50 states and parts of Canada. The company has over 600 employees with three manufacturing facilities, two in Harrisburg and a third in Beresford, S.D. It also owns five retail showrooms in Harrisburg and Sioux Falls, S.D., Urbandale, Iowa, Parker, Co. and Fargo, N.D.

To view the other winning entries, visit www.showplacecabinetry.com.



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