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November 2016

Feelin' good

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Lasers earn their keep in the shop

Cordless market on power trip

Bosh responds to SawStop suit

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- **Powermatic CNCs**
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- ◆ Maximum profile width: 6 3/4"
- ◆ Planing width: 7"
- ◆ Minimum stock length: 9"
- ◆ Minimum stock thickness: 1/4"
- ◆ Maximum stock thickness: 7 1/2"
- ◆ Dust port: 4"
- ◆ CSA certified meeting CSA C22.2 #71.2-10 and UL 987-7th standards
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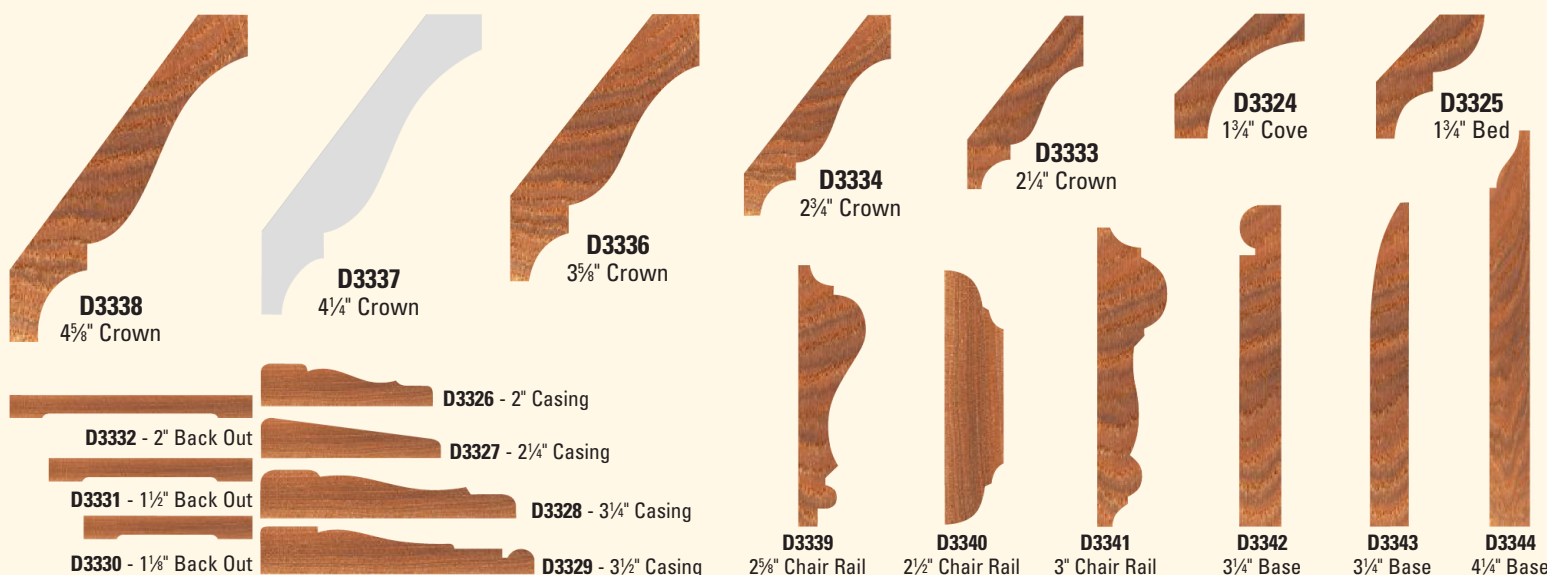


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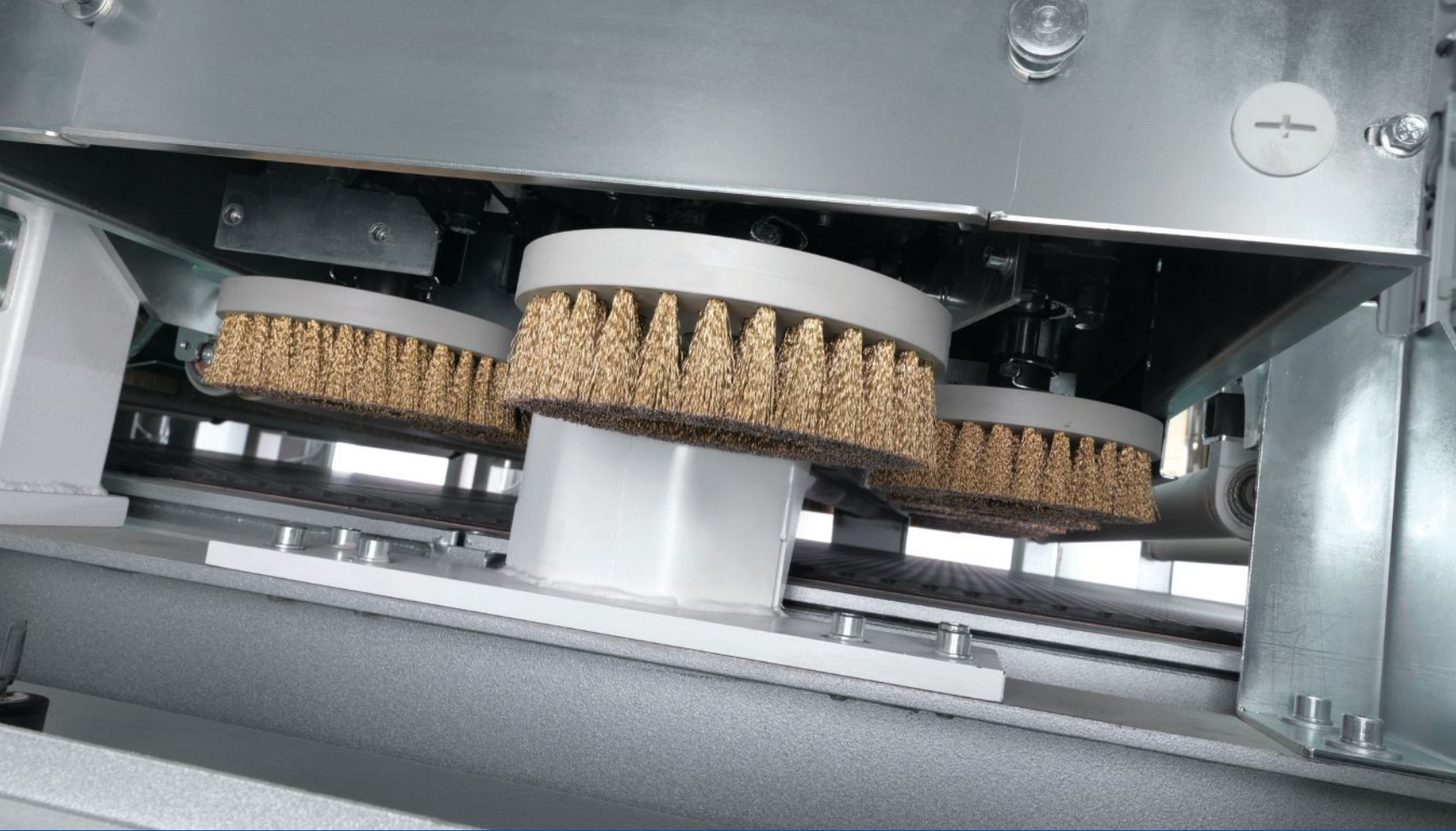
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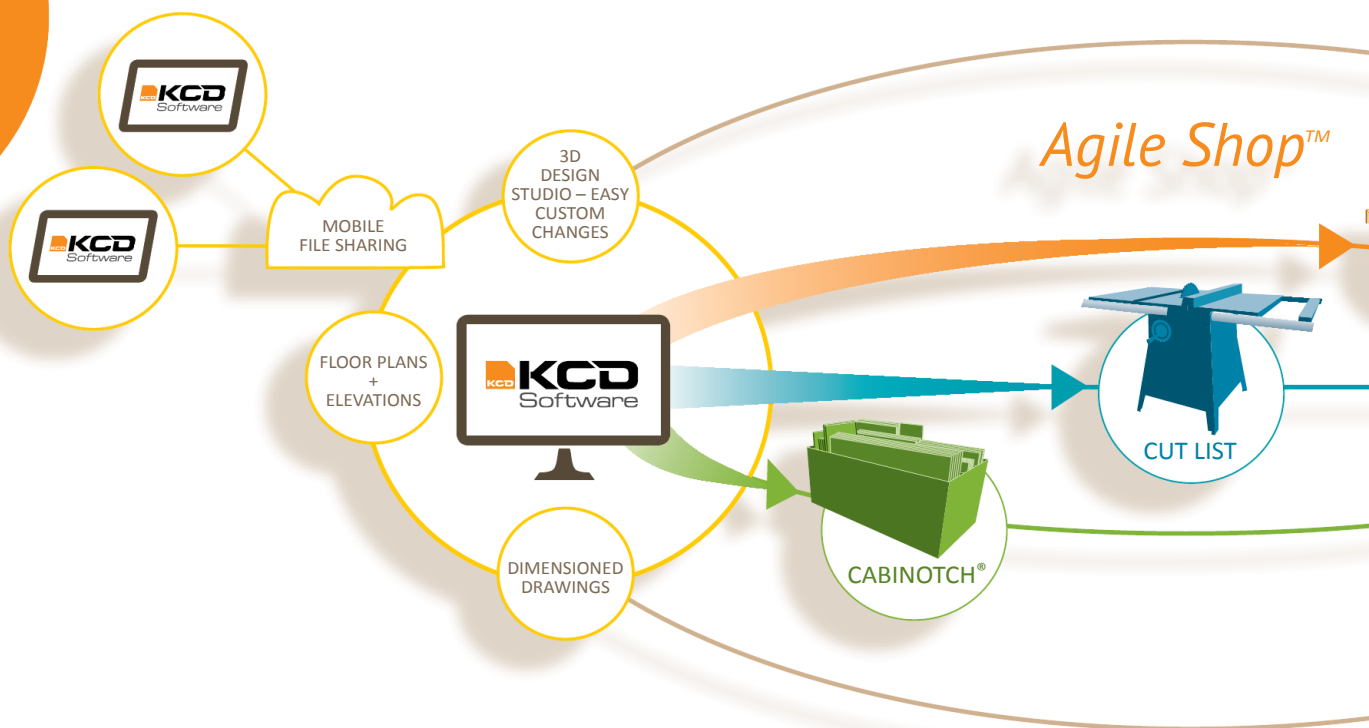
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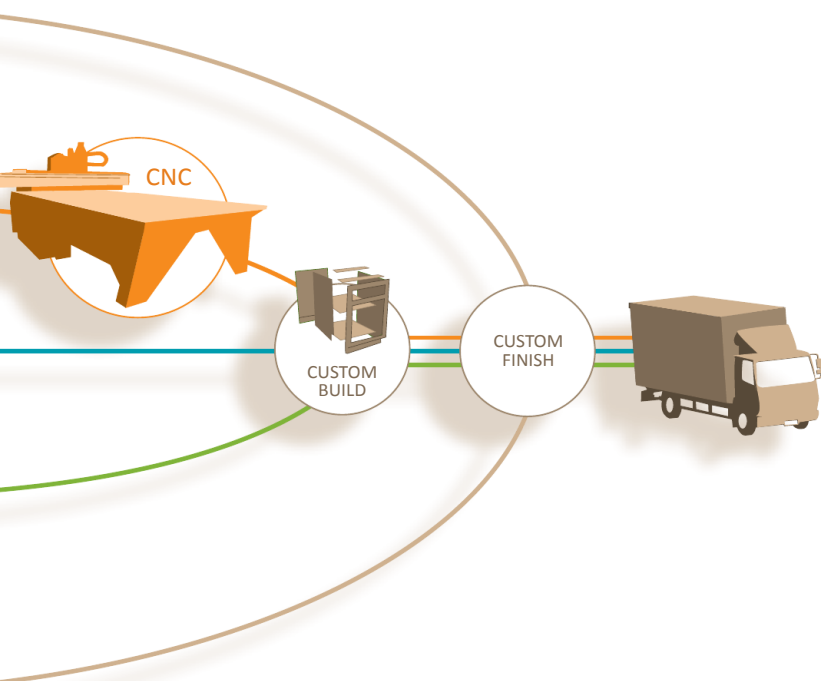
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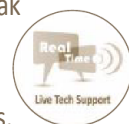
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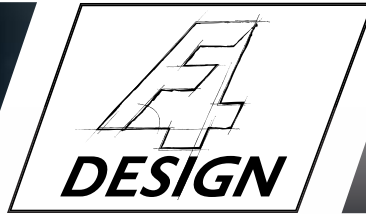


Drilling Head



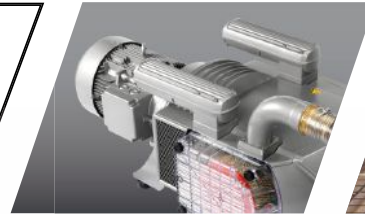
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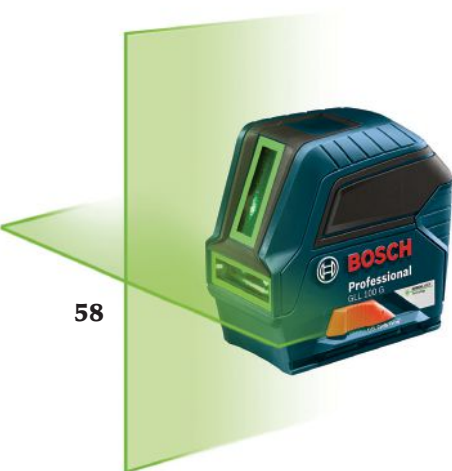


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BLOGS



Over the Workbench

Talkin' shop with former editor A.J. Hamler



This Business about Woodworking

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TAKING STOCK

with TOD RIGGIO

Stanley Black & Decker boosts portfolio with new acquisitions

Stanley Black & Decker can start its own woodworking supply store following its recent acquisition of the Lenox and Irwin tool brands from Newell Brands. It certainly has enough inventory.

The deal was announced Oct. 12 and more details are in our Page 12 story, but it boils down to Newell Brands getting out of the tool business and Stanley Black & Decker growing its extensive portfolio.

Stanley Black & Decker is a global company with business interests including commercial security, hospital and healthcare services, and infrastructure products. But to many woodworkers, Stanley makes their tape measures, hammers and chisels. And a lot of other stuff, too.

Stanley, which merged with Black & Decker in 2010, also owns DeWalt, Porter-Cable and Bostitch. Other holdings include Mac Tools (automotive tools), Proto (industrial tools) and Vidmar (storage and workspace solutions). Now it has Irwin, a brand featuring Vice-Grip pliers, clamps, drill bits and saw blades, and Lenox, which is known for its band-saw blades and hand tools.

The publically traded company views the acquisition as an opportunity to enhance its leadership position in the tool industry. That's a pretty safe bet.

Also in this issue is Bosch's response (Page 12) to SawStop's suit before the U.S. International Trade Commission over patent infringements. In a statement, Bosch says it "has vigorously defended, and will continue to defend, its ability to make Reaxx table saws available in the United States. In addition, Bosch will continue to pursue its own claim of patent infringement against the competitor filed in the U.S. District Court for the Northern District of Illinois. The ongoing litigation has

no effect on distributors' ability to buy or sell Bosch Reaxx table saws."

New portable tools are covered on Page 18, while the use of lasers in the shop is considered on Page 54. Recent environmental regulations are changing what's available in the wood components marketplace, beginning on Page 48.

I'd also like to draw your attention to Jerry Hund's Pro Shop column on Page 30. Hund is a shop teacher, about to retire, who has something to say about the need to revive vocational training. It's first-read material.

And final preparations have been made for our 2017 editorial calendar. Highlights include:

January

Cabinet hardware trends
Spindle repair and service
Sign-making tools

July

Smartphone apps
Aggregate heads
Woodworking education

February

CNC for larger shops
Assembly equipment
Tools for trim carpenter and installers

August

Sanding machinery
Work-holding for CNC
Adhesives

March

New finishes
Desktop CNCs
Table saw trends

September

AWFS post-show report
Prefinished panels
Laser cutting and engraving

April

Joinery options
CNC tooling
Controlling dust, spray and fumes

October

Finish nailers
CNC for small shops
Business software

May

CNC software
Edgebanding
Finishing equipment

November

Cabinet and furniture components
CNC turning
Hand-held sanding

June

Outsourcing
Hidden fasteners
Jigs and cutting guides

December

Wood market review
Fire suppression/avoidance
Compressors and pneumatic tools

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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Bosch stands its ground after SawStop ruling

By Jennifer Hicks

SawStop LLC was recently issued a favorable preliminary ruling in its ongoing patent-infringement lawsuit against Robert Bosch GmbH and its subsidiary Robert Bosch Tool Corp. for the Bosch Reaxx Jobsite Table Saw. Based on Bosch's response, the controversy is far from over.

In September, administrative law judge Thomas B. Pender at the U.S. International Trade Commission issued a ruling saying that the Reaxx infringes on SawStop's safety technology patents. The ruling follows SawStop's complaint filed in July 2015 that seeks an injunction from the ITC that would stop Bosch from importing its saw from Germany, where it is manufactured.

"Based on the foregoing, it is my Initial Determination that there is a violation of Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importa-

tion, or the sale within the United States after importation of certain table saws incorporating active injury mitigation technology and components thereof, in connection with the asserted claims of U.S. Patent Nos. 7,895,927 and 8,011,279," Pender wrote in the ruling.

Meanwhile, Bosch maintains that its safety technology does not violate any of its competitors' rights. Bosch North America spokeswoman Linda Beckmeyer has explained in previous interviews with Woodshop News that the Bosch Reaxx job-site table saw is based on more than a dozen patented innovations done by the Power Tool Institute, with engineers at the Robert Bosch Tool Corp. in Mount Prospect, Ill. After the recent ruling, she says Bosch is still standing its ground.

"At this time legal proceedings are still under way. The International Trade Commission (will review the initial determination provided by the Administrative Law Judge on Sept. 9, 2016, as well as additional arguments from the par-



ties, before it makes any decision in the matter. The commission's decision is not expected until early January 2017. Contrary to any other implication, the patent legal proceedings are ongoing and not final," Bosch said in a statement.

Public opinion on the matter is mixed, according to discussions on blogs and other social media. One school of thought supports SawStop pursuing the litigation as a matter of business in a capitalist society. Other positions suggest that effective public safety measures shouldn't be a matter of legal consequences but that, from an ethical standpoint, should be supported and even mandated by government agencies to protect consumers. But SawStop president Stephen Gass, who is also a patent attorney, says it's the U.S. patent system that enabled the safety technology to

get to the market to begin with.

"We have invested millions of dollars in research and development to protect woodworkers from serious injury and our inventions have been awarded numerous patents. Bosch chose to introduce the Reaxx saw in disregard of our patents and we were left with no alternative but to defend our patent rights in court. We are very pleased Judge Pender confirmed that Bosch infringes our patents," Gass said in a statement.

Bosch is now pursuing its own claim of patent infringement against the competitor filed in the U.S. District Court for the Northern District of Illinois. The ongoing litigation has no current effect on distributors' ability to buy or sell Bosch Reaxx table saws.

"It is disappointing that a competitor is continuing its campaign to stop the sale of patented Reaxx technology to consumers. The patents asserted against Reaxx are based on applications filed more than 15 years ago; Bosch does not believe they apply to Reaxx technology. In addition, Bosch believes that if the U.S. Patent and Trademark Office had complete information it would not have issued certain patents in the first place," the Bosch statement said. **W**

Stanley Black & Decker buys Irwin, Lenox brands

Stanley Black & Decker announced a deal to acquire the tools business of Newell Brands, which includes the industrial cutting, hand tool and power tool accessory brands Irwin and Lenox, for \$1.95 billion in cash.

"Newell Tools is an important step in our quest to further strengthen our presence in the global tools industry," Stanley Black & Decker president and CEO James M. Loree said in a statement. "The addition of the iconic Lenox brand and very strong Irwin brand, as well as their associated power tool accessory and hand tool products, opens up exciting new sources of global growth in similar ways, albeit on a smaller scale, to what Black & Decker did in

recent years. Thus, the acquisition of Newell Tools, our first major acquisition since 2013, will provide both a source of inorganic growth in year one and an organic boost thereafter."

Newell Brands is selling other businesses to comply with its new corporate strategy, including the Völkl and K2 winter sports units; heaters, humidifiers and fans business, and Rubbermaid consumer storage business.

"Newell Brands' new strategic plan establishes a sharp set of portfolio choices and investment priorities that will focus resources on the businesses with the greatest potential for growth," Newell Brands CEO Michael Polk said in a statement. "The actions we are taking will strengthen

the underlying performance of the company and help unlock the unique opportunity for transformative value creation connected to the combination of Newell Rubbermaid and Jarden Corporation. While our tools brands have been very good contributors to our results, we believe they will benefit from being part of Stanley Black & Decker, a global leader in the tools category."

Stanley Black & Decker says it expects to fund the acquisition with a combination of available cash and debt.

The transaction, which is subject to customary closing conditions, including regulatory approvals, is expected to close in the first half of 2017.

For more, visit www.stanleyblackanddecker.com. **W**



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- V-nail sizes: 5, 7, 10, 12, 15mm
- Frame/moulding width range: ¼"–3½"
- Frame/moulding thickness range: ¼"–3½"
- Floor-to-table height: 37½"
- Extension tables: 13¾"W x 13¾"D
- Dual foot pedals for front or rear operation
- Powder-coated finish
- 90°, 120° and 135° fence inserts for 4-, 6-, and 8-sided frames
- Indicator light for completed V-nailing (9V battery required)
- Right foot pedal operates front clamp; left foot pedal inserts V-nails
- Steel base and tables
- Overall size: 28½"W x 30"D x 48½"H
- Footprint: 15"W x 18"D
- Approx. shipping weight: 121 lbs.



T27577 ~~\$695⁰⁰~~ **SALE \$650⁰⁰**



SLIDING TABLE SHAPER

- Motor: 5 HP, 220V, single-phase
- Spindle travel: ¾"
- Spindle sizes: ¾", 1" & 1½"
- Spindle capacity: 5½" (1½" spindle)
- Spindle speeds: 3600, 5100, 8000, & 10,000 RPM
- Max. cutter diameter: 5½"
- Sliding table: 35½"W x 13¼"D
- Table travel: 21½"
- Table fence: 39½" extruded aluminum w/ adjustable stop
- Epoxy finish
- 4" dust port
- Cast iron miter gauge w/ 60° angle capability in two directions
- Lever actuated stock hold-down
- Approx. shipping weight: 757 lbs.



G8621 ~~\$3395⁰⁰~~ **SALE \$3095⁰⁰**



16½" DOVETAIL MACHINE

- Motor: 1 HP, 110V/220V, single-phase, prewired 220V
- Table size: 24" x 7¾"
- Floor-to-table height: 46½"
- Number of spindles: 1
- Spindle speed: 18,500 RPM
- Dovetail bit size: 10° angle x ⅜"L
- Dovetail shank diameter: ½"(12mm)
- Max. dovetail height: ¾"
- Minimum dovetail height: ⅜"
- Max. thickness: 2½"
- Minimum thickness: 1½"
- Max. stock size: 59"L x 16½"W
- Minimum stock size: 7½"L x 2½"W
- Overall size: 38½" W x 26½" D x 56½" H
- Approx. shipping weight: 539 lbs.

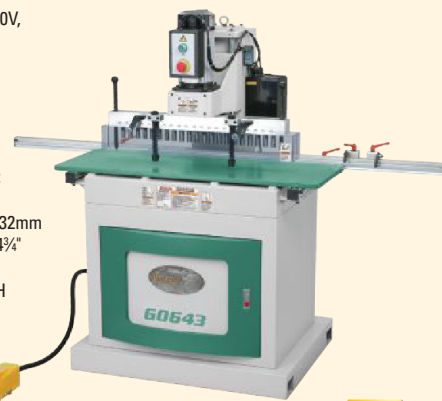


G0611X ~~\$3550⁰⁰~~ **SALE \$3350⁰⁰**



21-BIT LINE BORING MACHINE

- Motor: 2 HP, 110V/220V, prewired 220V, single-phase, 20.8A/10.4A
- Air requirement: 70 PSI
- Table size: 43½"W x 15¼"D
- Floor-to-table height: 33¼"
- Spindle travel: 3½"
- 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: 74¾"
- Stroke operation: Pneumatic
- Overall size: 75" W x 28¼" D x 58½" H
- Footprint: 36¼" x 28½"
- Approx. shipping weight: 514 lbs.



G0643 ~~\$3795⁰⁰~~ **SALE \$3450⁰⁰**



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- Motor: 5 HP, 220V, 3-phase, 2-speed, 25A
- Table size: 30" x 23½"
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- Swing: 51"
- Floor-to-table height: 36½"–42½"
- Spindle stroke: 4"
- Table travel: 6¼"
- Pneumatic cylinder: 1½"
- Max. distance spindle to table: 9½"
- Table tilt: 45°
- Overall size: 30" W x 50½" D x 61½" H
- Approx. shipping weight: 915 lbs.



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- Floor-to-table height: 35"
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- Approx. shipping weight: 1260 lbs.



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NEWS DESK



Society of Arts and Crafts awards North Carolina artist

By Jennifer Hicks

The Society of Arts and Crafts picked Annie Evelyn, an artist in Penland, N.C., as its 2016 John D. Mineck Furniture Fellow, which includes a cash award of \$25,000, for demonstrating skill and commitment to her craft.

"First awarded in 2009, the John D. Mineck Furniture Fellowship developed from Mineck's love for making fine furniture and the skill, passion and dedication exhibited by those in the field. Today it serves to encourage and support a young-in-career furniture artist with the financial assistance to help them succeed in their journey," the Boston-based Society of Arts and Crafts said in a statement.

Evelyn graduated from the Rhode Island School of Design and holds a master's degree in fine arts. She's been in residence at the Penland School of Craft, exploring furniture upholstery in non-traditional materials such as concrete, metal and Swarovski crystals. She plans on using the award to purchase tools for a stu-

dio that can function as a community space.

Evelyn was selected from approximately 40 applicants.

"What we could tell from her application is that Annie is a superstar," Society of Arts and Crafts associate curator Luiza deCamargo told Woodshop News. "We wanted to give her the opportunity to keep moving forward with the speed and excitement that she'd been generating. I think we can expect to see some really great things from her."

For more, visit www.annieevelyn.com and www.societyofcrafts.org. [W](#)



Annie Evelyn's "Floe," in collaboration with Ian Henderson, made with sapele, foam and cement. Cast cement tiles were "upholstered" to the sapele frame using a traditional button tufting technique.

PHOTOS: MERCEDES JELINEK

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Craft fund honored by American Craft Council

By Jennifer Hicks

The Craft Emergency Relief Fund, which helps artists in crisis, was honored with the American Craft Council's Award of Distinction.

The annual award is presented to individuals, museums, organizations, publications or schools with at least 25 years of service who have made significant contributions to the craft field.

"The ACC is pleased to recognize CERF with the Award of Distinction for more than 30 years of leadership, compassion and support to professional craft artists in need. CERF encourages artists to think proactively and to safeguard their careers from emergencies. They are an organization with hu-



manity and love for artists at their core," American Craft Council director of education Michael Radyk said in a statement.

CERF, based in Montpelier, Vt., was founded in 1985 as a mutual aid organization for craft artists facing challenging times and has since expanded significantly.

"The ACC's recognition comes at a time of great need for our services as artists prepare

for, and recover from, an ever-increasing number of natural and physical disasters," CERF executive director Cornelia Carey says, citing daily calls from artists in Louisiana suffering economic losses from flooding.

To date, CERF has provided more than \$2.4 million in grants, interest-free loans and in-kind assistance to hundreds of artists working in craft disciplines such as metal, wood, ceramics, fiber and glass who have experienced career-threatening emergencies.

CERF has also played a leading role in the National Coalition for Arts Preparedness and Emergency Response, and the National Endowment for the Arts.

For information on CERF, visit www.crafte-mergency.org. **W**

WOOD MARKETS

Price changes lead customers to hard maple

By Jennifer Hicks

Soft maple is catching up with hard maple in price, according to hardwood dealers interviewed by Woodshop News. As a result, buyers are choosing hard maple.

"Soft maple is slowing down a little because the price is going up, practically to where hard maple is," says Bob Laurie of L.L. Johnson Lumber Mfg. Co. a retailer and wholesaler in Charlotte, Mich. "So soft maple has lost its price advantage."

He adds that soft maple currently sells for about \$.15/bf less than hard maple. The difference was closer to \$.30/bf earlier this year.

"Soft maple finishes easier, but hard maple holds up better, especially for countertops and butcher blocks. Either way, customers are looking for a clear, light grade."

"There's not as much of a price difference as there was years ago," adds Chad Muterspaw of C.R. Muterspaw Lumber, a retailer in Xenia, Ohio. "The soft used to be a lot cheaper, but now there's not much of a difference. Now, they're so close, people just go with the hard just to have extra durability."

Muterspaw says customers are looking for bright, white stock to accept stain and clear-coat finishes.

"We are also seeing people want ambrosia and spalted maple because they pick up in-



teresting color variations which people only looked at as defects in the past. The ambrosia is typically soft, and the spalted and clear good white are typically hard."

On the veneer side, Matt Gilland of Superior Veneer in New Albany, Ind., says hard white-maple sales have stayed strong throughout the summer.

"I don't really see that changing," Gilland

says. "We have requests for both, but we sell more hard maple than soft. Customers want it as white as they can get it and they want it predominantly plain sliced for staining and clear coating."

Nationally, 4/4 soft maple is selling for \$3.25 to \$3.70/bf, based on quantities of less than 100 bf, according to quotes received. Hard maple is selling for \$3.40 to \$4.40/bf. **W**

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TOOLS & TECHNIQUES

New portables put more power in your palm

By John English

There's a mini-revolution happening in the world of portable power tools. Some of the old stalwarts are getting complete makeovers, while bigger batteries are allowing manufacturers to convert some stationary tools to portable ones.

One of the more noteworthy battery advances is the FlexVolt system from DeWalt (flexvolt.dewalt.com). It not only ups the amps, but it also allows the tools to demand and use only the amount of power they need. Kitchen and casework installers are going to love having the ability to run a real, full-strength miter saw or even a small table saw on battery power, especially on job sites where temporary power is limited and other subs are shouldering for room.

The heart of the FlexVolt system is a battery pack that delivers either 20- or 60-volt juice, depending on the tool's requirements (the pack automatically recognizes which power level to supply). You can even sequence two of the packs to deliver a full 120 volts of current on site, which is required for the company's new cordless 12" sliding miter saw. FlexVolt has also been engineered to work with a shop's existing 20-volt DeWalt portable tools and chargers. When used in those tools, the 60-volt battery pack runs four times as long, so most woodworkers

DeWalt introduced the FlexVolt system earlier this year.



Makita's new 36-volt jobsite vacuum.



will be able to get through a full day on an overnight charge.

There are also some new DeWalt tools that have been specifically built to take advantage of this huge power source, including a 7-1/4" circular saw, a 1/2" drill, the 8-1/4" table saw mentioned earlier, a reciprocating saw (with more power than a 13-amp corded version) and even a 6" grinder. The FlexVolt comes with a "fuel" gauge that lets a woodworker check on the charge level visually. It can be fully charged in an hour (using an optional fast charger), provides 120 watt-hours of energy and has no battery memory.

The power tools division of the Bosch Group (boschtools.com) has been working hard, too. Bosch recently introduced its new GTS1041A-09 Reaxx 10" job-site table saw that includes the company's injury-mitigation Active Response Technology platform. As with other saws on the market, it drops the saw blade below the tabletop when it detects human flesh, but this one does so without damaging the blade. And, after activation, the system can be reset in less than 60 seconds, so downtime is minimal. The saw also includes a modular blade guard (called Smart Guard System) that includes an adjustable riving knife, anti-kickback pawls and a barrier guard. The fence is heavy-duty with the feel of one on a cabinet saw. And the saw, with a 15-amp, 4-hp, soft-start motor, comes on a quick-rise, wheeled platform that is designed for tough terrain, easy setups and fast takedown.

Circular saw innovations

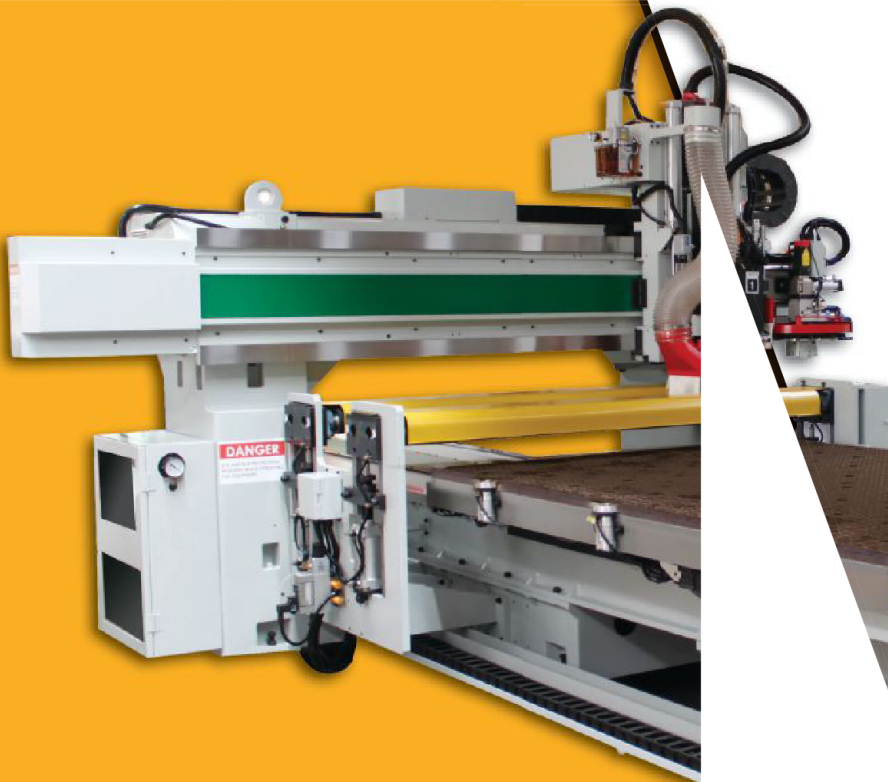
Another very interesting innovation that is especially attractive to installers is the Straight Flush Saw from Cuz-D Industries in Lacey, Wash. Though not in full production yet (it can be ordered for \$575 for delivery next year and will come with a lifetime guarantee), it's a promising alternative to existing options. Invented by construction vet Jake Cuzdey, it delivers more power, has better built-in dust collection and gets into more tight spaces than most of the competition.

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That last attribute is what's turning a lot of heads: the saw can cut right up against a wall or a backsplash and it can do so horizontally or vertically because the handle rotates. There's even a second handle that allows the operator to use both hands to guide, which significantly improves safety.

Cuzdey also built in a trigger on the handle that allows the operator to retract the guard one-handed at the start of a cut and let it fall back in place before the cut is finished. This saw makes it very easy to do accurate undercuts, so that laminate flooring or even countertops can be installed up to and even under a wall without visual gaps. The blade on the Straight Flush Saw tilts from negative-5 degrees to an impressive 65 degrees, which can come in very handy when framing complex roofs, bay windows and other irregular construction challenges, and can be heaven-sent when installing odd-shaped islands and trim. The front end is hinged and can fold up so the blade can get really close in corners. There's a long rip guide (the full length of the saw) that's a lot sturdier than almost any other manufacturer's and allows accurate sheet stock ripping at very fast speeds. The saw can also be con-



MicoFence has new light rings for its plunge bases.

verted to cut metal or concrete, using water or CO₂. The demo video on the company's website is pretty astonishing (cuz-d.com/see-the-saw-in-action).

Festool USA (festoolusa.com) released a series of new tools in North America this fall, including the HK 55 and HKC 55 portable circular saws. The company says that they deliver

"benchtop miter saw precision and functionality" in a portable power tool. These are essentially superb circular saws with an attachable retracting guide rail for panel and straight-line work. There's a corded AC version (the HK 55) and a cordless 18-volt version (HKC 55). Festool also released its new DWC 18-4500 cordless drywall gun this fall.



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Airing it out

A portable power tool is one that a woodworker can transport to the job site easily and that certainly includes small compressors and air tools. In that configuration, air-hoses have traditionally been a bit limiting onsite, especially in cold weather. In March, Senco (senco.com) released its Hybrid Hose, which has been designed to provide the ultimate in flexibility and memory resistance, even in extreme temperatures (-40 degrees to 150 degrees). It lays flat and won't kink under pressure. These new hybrid polymer hoses have the flexibility of a rubber air hose, but the long life of PVC, for uninterrupted air pressure.

If your compressor tank is having a hard time keeping up, take a look at the new Airkeg from Rolair (rolair.com). It's installed between your compressor and the air tool to increase reserve air and also minimize frictional loss over extended distances. It provides the user with more air, which prevents the air compressor from cycling too often. As a result, gas engines get better fuel economy and electric motors run cooler. It also means that the user can work farther from the air compressor while minimizing frictional loss and it delivers a quieter, safer work environment without sacrificing performance. Plus, additional air means there's consistent pressure to the tool for longer periods of time, so there are fewer "stair-stepped" nails.



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Festool's new circular saw features an attachable retracting guide rail.

Senco's new Hybrid Hose lays flat and won't kink under pressure, according to the company.



Airflow is also essential to the new 36-volt brushless, cordless ½-gallon XCV05Z dry vacuum from Makita Tools (makitatools.com). This vacuum is an ideal solution for job sites, especially residential installs and clean environments such as medical facilities because of its low noise level (47 dB). Equipped with a HEPA filter, the vacuum is designed as an extremely portable and com-

compact backpack. It eliminates extension cords, and tool connection adapters are available (sold separately). Two 18-volt lithium-ion batteries, which are also sold separately, power the XCV05Z, and its brushless motor generates 53 cfm of suction and 28.5" of static water lift. The batteries deliver up to 90 minutes of continuous operation on low setting and 60 minutes on high. And, with the

batteries on board, the entire unit still only weighs 9.4 lbs., according to the company.

Speaking of light, the latest news from MicroFence (microfence.com) is the release of a couple of light rings for its aftermarket plunge bases. The company has been working on these ever since the miniature LED lights it used to offer were discontinued. The solution to the problem is a printed circuit board light ring that features six LED lights that bathe the work area. They provide virtually shadow-free illumination, without the need for batteries. The light rings can be retrofitted to any plunge base that MicroFence has ever made.

For woodworkers who use hand tools a lot, especially when carving or doing restoration or on-site trim work, Rikon has a new 8" wet sharpener that, at 23 lbs., is both portable and powerful. The model 82-100 (rikontools.com) comes with a 220-grit, 1-5/8" wide stone wheel that revolves at a staid 115 rpm and a leather strop wheel. The unit includes a reverse switch and a water trough (bring your own bottle of water). [W](#)

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Komo introduces spindle programming feature

Komo Machine, celebrating its 50th anniversary, presented its new Independent Programmable Technology, available with the company's Fusion or Mach III CNC series.

"IPT delivers complete flexibility via fully programmable center spacing as well as individual spindle feed, speed and axis control," the company said in a statement.

"The spindles can be programmed to operate with complete flexibility. They can be slaved together to cut multiple parts, or they can be split up to cut dissimilar parts on separate tables simultaneously. This gives you the option to run multiple short cycles on one table while running a long cycle on the other."

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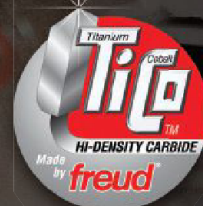
User went from changing blades every 2 shifts, to changing every 4 shifts with the LSBX blade, significantly cutting down production times.

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All-metal PantoRouter adds options and safety

By Jennifer Hicks

The Hybrid PantoRouter, introduced at IWF 2016, is a template-guided router assembly for producing mortises and tenons, box joints, half-blind and through dovetails and more.

"The PantoRouter uses a pantograph mechanism with a 2:1 mechanical advantage to guide the router's movement so the operator can control the cut precisely while his hands are well away from the spinning router bit," WoodCraft Solutions principal Mac Sheldon says.

"Mortise and tenon has never been faster and more accurate and both can be done using the same template. Box joints and dovetails can be evenly or variably spaced, quickly and

AWFS opens Fresh Wood student competition

The AWFS is accepting entries for its 2017 Fresh Wood student woodworking competition.

The competition, which will be showcased July 19-22 at the 2017 AWFS fair in Las Vegas, is open to high school and post-secondary students in accredited woodworking or related programs. It includes a special lighting category.

"This theme offers students the chance to do something really unique and spectacular, and will hopefully encourage students to take a step outside of their comfort zone," AWFS assistant education director Adria Torrez said in a statement.

Any type of lamp, task light, accent light, hanging light, or outdoor light will be accepted. However, its must be made of at least 50 percent wood or wood composite and plug in to a standard 100/120-volt North American electrical outlet.

The other entry categories are case goods, seating, tables, design for production, and open.

The entry process for the 2017 Fresh Wood competition is now completely online. Students can go to <https://freshwood17>.

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The Hybrid PantoRouter is an all-metal version of the original PantoRouter invented by Mathias Wande. The work piece is machined horizontal to the router, so it can be of any length. The practical size limit for the work piece is 4" high x 8" long, but the piece can be indexed when cutting dovetails and box joints to make much longer pieces in multiple passes.

Commercial shops are using the Hybrid PantoRouter for prototyping and production runs, while schools are discovering it as a safer way to introduce students to using a router, according to Sheldon.

The Hybrid PantoRouter also features a spindle lock to change bits, micro adjustment capabilities, and a tilting table for compound angles.

The Hybrid PantoRouter sells for \$1,095 with templates for mortise and tenon. It's also available as a kit — with a router, dust collection accessories and additional templates for box and dovetail joints — for \$1,849.

For information, visit www.hybridpantorouter.com. 

artcall.org to create a user login, upload images, and submit all entry information.

For more, visit <http://awfsfair.org>.

NWFA University off to fast start

The National Wood Flooring Association reports that 2,800 courses have completed online at NWFA University in the first eight weeks of operation.

"While we were confident that our members would respond positively to the courses we took more than a year to develop before launching, we never imagined that the University would be successful this quickly," trade group president and CEO Michael Martin said in a statement. "Nearly 3,000 courses completed is an unbelievable number to achieve in just eight weeks."

NWFA University currently offers about 50 individual courses. A series of courses leads to the earning of badges. These badges lead to certifications, with defined career paths, for installation, sand and finish, sales, and inspection.

Courses for architects, designers, and consumers will be added in the future.

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Mike Lent is the Vice President of Claims at PLM/ILM. With over 26 years working in the commercial insurance industry, he has an extensive background in multi-line claim handling and management. His team's experience and industry knowledge of wood-related businesses allows them to know what's important and what's not to settle your claim fairly and on a timely basis. Working with a claims staff with access to vendors with extensive backgrounds in the wood industry means that they can assess damages and recommend payments faster. Their goal is to be there in your time of need and to get you up and running as quickly as possible.

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TOOLS & TECHNIQUES



Powermatic offers three-axis CNC routers

By Jennifer Hicks

Powermatic has entered the CNC market with a pair of three-axis models, PM-2X2RK and PM-2X4SPK, which differ by spindle travel.

"Our new CNC routers answer the demand by many woodshops and enthusiasts for the wide-ranging applications and precision of these computer-controlled cutting machines," product manager Katie Davidson says. "These versatile machines can accurately and efficiently produce quantities of identical items, as readily as intricate one-of-a-kind creations."

The PM-2X2K provides 3-axis travel of 24" x 24" x 6"; the PM-2X4SPK offers 24" x 48" x 6".

The machines feature welded steel frames and can cut wood, plastics, composites, aluminum and foam.

They feature a handheld controller that is connected to the CNC with an 8' cable. There's a USB port for convenient file transfers and both models function with mainstream CAM software, including VCarve Desktop, VCarve Pro, Vectric Aspire and others.

The models are priced at \$5,720 (PM2X2RK) and \$8,500 (PM2X4SPK).

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





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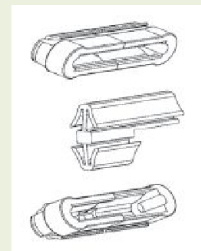


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Rikon adds power to Deluxe band saw

By Jennifer Hicks

Rikon Power Tools redesigned its 14" Deluxe band saw, model 10-326, to include a more powerful 1-3/4-hp motor.

"We increased the power and torque in this model for bigger cutting operations," product manager Ron Burrow says. "Our previous model had a good ability to resaw at 13" with a 1-1/2-hp motor, but competition has driven that horsepower up to 1-3/4, so we are offering the same. It's great for kerf cutting, resawing, pre-rounding of bowl blanks for turners. There are a lot of good applications for that higher horsepower."

"We've also gone to a toolless, spring-

loaded design for guide bearings, making it easier to adjust all of your guide bearings for a blade change. And we increased the size of the table to 21-1/2" x 15-3/4" and changed it from aluminum alloy to cast iron for sturdiness."

Rikon has also increased the height of the rip fence and resaw bar to 6" for added support.

Other features include upper and lower ball-bearing blade guides, fine depth-of-cut adjustment and an easier-to-read inch scale. There's also a 115-volt outlet on the back of the saw and an enclosed base for storage.

Model 10-326 sells for \$999.99. Optional accessories include a mobile base, T-slot miter gauge and zero-clearance inserts.

For more, visit www.rikontools.com. **W**



Wood Wizz rolls out new surfacing machine

By Jennifer Hicks

Wood Wizz Machinery of Australia introduced a flatbed timber surfacing and finishing machine at IWF 2016, distributed by Baker Products of North America.

Baker sales representative Clyde Reed says the machine is designed to surface and finish slabs, burls, tabletops and recycled timber, and says it is ideal for those wanting a perfect finish without any tear, ridging or burn marks.

"There's been no machine on the market until now that would take these live-edge slabs and plane them down to where they are basically ready for finish. People have been mainly doing this work by hand and it's been very, very labor intensive," Reed says.

"And for those who try to send the slabs through wide planers — the rollers inside won't feed them because they have irregular shapes. They are really thick, really wide slabs, and when they dry, they dry unevenly with humps and bumps and high and low areas. This machine refaces and resurfaces both sides of the slabs and when they get done they're just perfect."

The machine is available with flatbeds 56" and 72" wide, and 4, 5 and 6 meters long. A 5" cutterhead, powered by a 3-hp variable-speed motor,

moves on an overhead gantry to surface the slab. The cutterhead features 10 square cutter inserts. Sanding disks with pads and paper are also included, as well as an edging/joining cutter.

The machine has a base price of \$17,000.

For more, visit www.bakerproducts.net and www.woodwizz.com. **W**



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PRO SHOP

with JERRY P. HUND

Ours is the generation that can save woodshop classes

I started teaching in 1973 at a well-equipped shop in a junior high school. That shop no longer exists; it was replaced long ago with a technology lab.

When I graduated from college, there were numerous schools that offered career and technical education degrees in the state of Illinois. Today, I can think of only a few. Just like many professions, retirements today far exceed the number of new people entering the profession. My name will soon join this elite group.

One approach to counter the loss of technical education teachers is for schools to switch to a new curriculum called "Project Lead The Way."

The goal of this curriculum — available to more than 600,000 students nationwide — is to reverse the shortage of engineering professionals. During the last few years, the curriculum has changed slightly to incorporate more math and science to accommodate today's federal Common Core standards. As a result, design and drawing instruction has taken on less importance.

Some schools have replaced most of their career and technical education classes with "Project Lead The Way," while others run more traditional shop programs.

Shop programs are often easy targets when budgets have to be cut, especially since they re-

quire expensive machinery and raw materials to be run properly. They also take up a lot of floor space that schools now need for other programs. And, to make matters worse, there's less funding available from state and federal governments.

But there are other factors in play.

Rigor and relevance

These are the new buzzwords in education. Administrators want to see improved test scores. Their survival and future ambitions are based solely on this fact. Test scores are also a major factor for real estate property values. In many schools, students are routinely directed into college readiness classes more so than career readiness classes.

But in many schools across my state, less than half of the high school graduates are considered college-ready. Those below the line are often short on math and English courses. In some districts, students not interested in college are limited in what they can take. Electives continue to be cut. In short, the perception is that these classes don't support the rigorous agenda that is being pushed today. Many times, schools inflate their advanced placement or honors class enrollments just for it to look good on paper when, in reality, many of these students don't belong there.

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Teacher shortage

At a recent college job fair in Illinois, 125 schools came looking for teachers and only found about 20 candidates. One local university started a one-in-four campaign nearly three years ago, asking every technology and engineering teacher in the state to identify just one student every four years who they believe would make a great teacher. The response has been very poor.

As a teacher, I wonder why anybody would consider the profession, especially with the increased licensure requirements and diminishing retirement benefits. The level of respect from students and their parents isn't what it used to be. Do you remember disrespecting your teachers when you went to school? If you did, there were serious consequences from your teacher and your father. Today's unruly students receive counseling and pleas to behave.

Perception

Industrial arts and automotive repair have become dumping grounds for students deemed to have little interest in academics. But the reality is these students are being taught math, science, physics and other subjects to learn skills they'll need in these demanding professions.

In my opinion, the most important skills being taught are a strong work ethic, how to work with others, completing what you started and having pride in your accomplishments. In other words, traits for which employers are looking. So why is it that some administrators continue to place little importance in these classes? These traits can't be measured with test scores.

Today, the term Common Core is frequently used. In essence, this means using a common curriculum for all students with a common set of expectations. How can woodworking or autos programs increase test scores? If taught correctly by knowledgeable instructors and given the monetary support to have the latest equipment, it can succeed.

Less time

The days of having a sequence of cabinet-making classes at most schools is over. But it's not for a lack of teachers. Students no longer have the time in their schedules, which are dominated by increased graduation requirements in English, math and science. Think of it: how much can you really accomplish in a class that lasts 50 minutes or less?

Several years ago, students could take multiple class periods of woodworking each year of school. Our district used to have a build-

ing trades class that designed, built and sold a house every year. It was a shame when this ended. Time was a big factor in its demise. I wonder how many schools still have the luxury of doing this program.

Call to action

So what can be done?

First, write your local politicians and voice your support for career and technical education in your school district.

Donate machinery, tools and supplies.

Attend school board meetings and voice your concern over cut backs or the lack of career and technical education opportunities.

Ask to join advisory committees.

Finally, consider teaching. Visit a local college or call a high school administrator and ask what their requirements are to teach. Many states, like Illinois, offer provisional licensure for career and technical education instructors that allow you to teach. Sometimes a few extra classes taken at a local college can get you in the door.

Your input is critical for the survival of woodworking education in our schools. Please help before it is all gone. **W**

Jerry Hund has been a high school career and technical education instructor for nearly 20 years.

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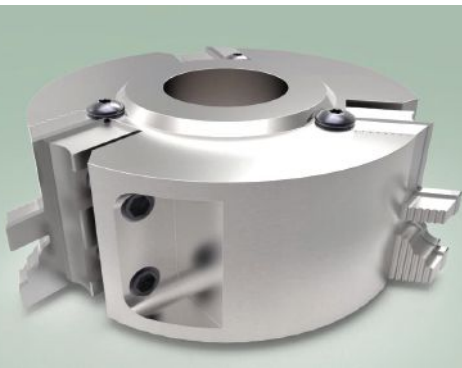
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THE CUTTING EDGE

with R.W. LEE

Shaper Origin is a giant leap in CNC router technology

Installation of a three-axis CNC router for panel processing is, obviously, a significant capital investment. But other challenges remain, such as space and electrical requirements; dust collection and compressor upgrades; software buying decisions and employee training. There are other considerations, but this list is enough to scare off many small-shop owners.

But digital technology is ripe with innovation, especially for shops that are cutting sheet goods with traditional machinery and want CNC for value-added details in their cabinets and furniture. The latest is the Shaper Origin, a hand-held CNC machine from Shaper Tools that's about the size of the Porter-Cable 7518 Speedmatic production router.

The Shaper Origin uses a small trim router, controlled by stepper motors and smartphone apps that receive design files and translate them into cutting instructions. The magic happens with the signal-positioning information used to orient the Shaper Origin to the workpiece.

In a bit more detail, the Shaper Origin is a three-axis CNC router whose large movements across the workpiece are done by the operator. The cutting pattern the operator is working from is displayed on the on-board touch screen of the Shaper Origin rather than on the workpiece. The operator makes these larger movements just like if he were routing from a pattern cut with a band saw and smoothing with an oscillating sander. But instead of carefully keeping the bearing of the pattern bit tight against the pattern, the operator watches the pattern on Shaper Origin's on-board touch screen for movement directions. The stepper motors inside the Shaper Origin make tiny correcting movements so the router bit follows the cutting pattern in the on-board computer's memory. This is all possible with a camera on the Shaper Origin that reads special marking tape applied to the workpiece.

But before the cutting can take place, the shape of the object to be cut has to be drawn. The shape, or cutting pattern, can be entered into the Shaper Origin three ways:

First, a cutting pattern can be drawn in

a CAD program that exports a Design Exchange File (DXF). The Shaper Origin translates DXF to a Scalable Vector Graphic (SVG) file for the cutting pattern. SVG files are not common to the woodworking industry, but they are compatible with the popular commercial programs CorelDraw and Adobe Illustrator and the open source OpenOffice Draw and Inkscape programs.

The second way is to use the Shaper Origin's internal processor and touch-screen control. Currently, the design options are limited to simple geometric shapes such as squares and circles, which are used quite often in cabinet and furniture making.

The last method, using the machine's Pen Tool, makes it possible to trace a physical drawing. The current model will only trace straight lines but, again, that's sufficient for many woodworking designs.

The Shaper Origin has a USB port and WiFi connection for importing SVG files. The cutting patterns can be modified after they are downloaded to the Shaper Origin, using the machine's onboard cutter offset capabilities. For example, if the parts don't fit precisely for one reason or another, the original cut path can be fine-tuned to shave off as little as .001".

But there's a catch. The Shaper Origin is not in production yet.

The manufacturer is currently taking orders at a significantly reduced price with a projected delivery date of September 2017. The design of the machine could change between now and then, and customers can opt out with a full refund.

The digital fabrication community has some concerns with the Shaper Origin. It's not a high production tool, for starters. Its cutting speed pales in comparison to a fixed-base machine. And, as with most hand-held tools, the operator's skill, quality of tooling, material choice and design complexity are factors in how it performs.

The Shaper Origin is suited for one-offs and short production runs. It can also be used to make prototypes and for projects that won't tie up a fixed-base machine. Both are appealing options for larger shops. **W**

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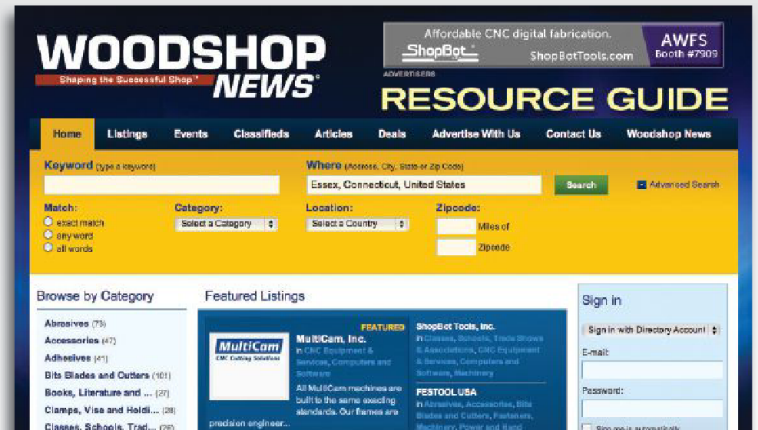
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FINISHING

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Finishes are defined by how they dry

The reactive, evaporative and coalescing processes are better indicators than the type of resin used

Most people try making sense of finishes by identifying the resin they're made from: polyurethane, nitrocellulose, alkyd, acrylic, etc. But doing this doesn't work well.

Consider, for example, that polyurethane resin is used in varnish, water-based finish, two-part finishes and in some lacquers. If you have used any two of these finishes, you know

they are very different. The curing or drying process the finish goes through is far more significant for understanding each finish and its characteristics.

There are three large categories of finishes, grouped by the way they cure or dry: reactive, evaporative and coalescing. Understanding these three categories is equivalent to understanding the tools used in wood-

working. Just as the tools are the first thing taught in a beginning woodworking class, the three categories of finishes should be the first thing taught when learning finishing.

Reactive finishes

Varnish (including polyurethane varnish) and all two-part finishes cure by a chemical reaction that takes place after the thinner has evaporated. The reaction is brought about either by the absorption of oxygen in the case of varnish, or by the addition of a second part (often called a catalyst, hardener or cross-linker) in the case of two-part finishes.

Because the chemical reaction causes the molecules in these finishes to join up or "crosslink," you can picture reactive finishes as Tinker Toys on a molecular scale. It's the crosslinked network that gives reactive finishes their defining characteristics. It makes them very protective and durable.

They are protective because there is so little space between the molecules in the tightly networked cured film for water or water vapor (humidity) to easily get through.

They are durable because objects have to be quite coarse and considerable pressure has to be applied to tear apart the chemical bonds

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enough to make a scratch. And it takes high heat (from a heat gun, for example) or strong solvents, acids or alkalis to soften and stretch the bonds enough to cause the film to blister or separate from the wood.

Because reactive finishes don't re-dissolve after they have cured, new coats often don't bond well to previous coats. It's a good idea to scuff-sand between coats if a lot of time has elapsed so the coats can bond mechanically.

Other tradeoffs include invisible repairs and stripping. These are more difficult because of the resistance to heat and solvents. In addition, the resistance to scratching makes rubbing to an even sheen more difficult to achieve.

Also, in the case of varnishes, because it takes a long time for oxygen to penetrate and bring about the crosslinking, these finishes take significantly longer than others to become dust-free.

Evaporative finishes

Lacquer and shellac dry entirely by the evaporation of their solvent. No crosslinking occurs. These finishes are composed of long, stringy molecules that resemble spaghetti on a molecular scale. In a solvent, these molecules float around and become intertwined like stirred spaghetti in a pot of hot water. When the solvent evaporates, the interlocked molecules form a hard, solid film. And when the solvent is reintroduced, the film first becomes sticky and then re-dissolves.

Because of the resemblance, I find it helpful to think of evaporative finishes as "spaghetti" finishes in contrast to the reactive "Tinker-Toy" finishes.

Just as with spaghetti dried and hardened in a pot, evaporative finishes always have microscopic spaces through which tiny water molecules can pass. As a result, evaporative finishes are not as moisture-resistant as reactive finishes.

Nor are evaporative finishes as durable as reactive finishes. The forces that hold the stringy molecules together are very weak and the molecules separate easily when scraped by coarse objects or brought in contact with heat, acids, alkalis or many solvents.

For example, no more heat than that from a hot coffee cup can leave an indentation in shellac and lacquer films. Also, acids in body oils break down these finishes over time as is often evident on chair arms and backs and around knobs and pulls on cabinets.

On the other hand, weak resistance to solvents makes evaporative finishes the easiest of all finishes to recoat, repair invisibly and strip, and their susceptibility to scratching translates into easier rubbing to an even sheen.

Because evaporative finishes dry entirely

by solvent evaporation, drying time varies according to the solvent's evaporation rate. This is usually quite rapid, so evaporative finishes present few dust problems.

The long, stringy nature of the molecules, however, requires a lot of solvent to separate them enough so they can be sprayed through the tiny orifice in a spray gun without getting severe orange peel. This is becoming an increasing problem in some areas because of environmental laws limiting the use of solvents.

Coalescing finishes

Common water-based finishes are the only coalescing finish. They dry by both chemical reaction and solvent evaporation. (Latex paint and white and yellow glue also dry in this combined way.)

A coalescing finish is made up of tiny droplets of reactively cured resin dispersed in solvent and water. Within the droplets, which you can think of as microscopic soccer balls or peas with a Tinker-Toy-like network inside, the resin is crosslinked. As the water evaporates, the droplets "coalesce" (that is, they come together) and the slow evaporating solvent softens them so they stick together.

Then, when the solvent evaporates, a solid film is left just as in evaporative finishes.

Coalescing finishes are thus protective and durable at the location of the droplets, but penetrable and dissolvable at the points where the droplets join. Water vapor passes through at about the same rate as through shellac and lacquer (think of the "breathing" characteristic of latex paint).

Also, heat, many common solvents and relatively weak acids and alkalis can break down the film at these points.

But because the droplets are reactively cured and make up almost the entire surface area, coalescing finishes are scratch-resistant — enough so that they can be used effectively on floors.

Coalescing finishes are also relatively difficult to recoat, repair invisibly and strip when dry, because most of the film is reactively cured. As with purely reactive finishes, you should sand between coats to create a mechanical bond unless you apply the coats within a few days of each other.

Because the evaporation rate of water is tied so closely to temperature and humidity, drying time is influenced more by weather conditions — very slow when it's cool or humid, fast when it's hot or dry. As a result, you will have more problems applying water-based finishes in intemperate weather conditions. **W**

Bob Flexner is the author of "Understanding Wood Finishing" and "Flexner on Finishing."

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- Max. cut height: 12"
- Blade size: 143"L
- Blade widths available: ⅜"–1¼"
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G0514X2B \$1755⁰⁰ SALE \$1675⁰⁰



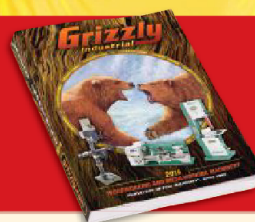
*Prewired for 220V. If you require 440V operation, Grizzly must convert your machine at the time of purchase to maintain the machine's warranty. A \$250 non-refundable fee will be added to your order. Please allow extra shipping time for the conversion. If you need more information, please contact technical service.

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10" HYBRID TABLE SAW WITH RIVING KNIFE

- Motor: 2 HP, 120V/240V, prewired 120V, single-phase, 60 Hz, 15A/7.5A
- Precision-ground cast iron table w/ wings: 40½"W x 27"D
- Floor-to-table height: 35½"H
- Footprint: 19½"W x 21"L
- Arbor: ¾"
- Arbor speed: 3450 RPM
- Rip capacity: 30" R, 15" L
- Overall size: 57¼"W x 37½"D x 35½"H
- Approx. shipping weight: 348 lbs.



FREE 10"
CARBIDE-
TIPPED BLADE
Cast iron
TRUNNIONS

G0771 ~~\$795⁰⁰~~ **SALE \$655⁰⁰**



10" HYBRID TABLE SAW WITH RIVING KNIFE

- Motor: 2 HP, 110V/220V, single-phase, prewired to 220V, 16A/8A
- Precision-ground cast iron table w/ wings measures: 27"W x 40"D
- Arbor: ¾"
- Arbor speed: 3850 RPM
- Capacity: 3½" @ 90°, 2½" @ 45°
- Rip capacity: 30" R, 12"L
- Quick-change riving knife
- Cast iron trunnions
- Approx. shipping weight: 416 lbs.



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G0715P ~~\$850⁰⁰~~ **SALE \$825⁰⁰**



10" HEAVY-DUTY CABINET TABLE SAWS WITH RIVING KNIFE

- Motor: 3 HP, 220V, 13A, single-phase (G0651), 5 HP, 440V*, 12A/6A, 3-phase (G0652)
- Precision-ground cast iron table w/ extension: 27"W x 75¼"D x 34¾"H
- Arbor: 1" • Arbor speed: 4000 RPM
- Max. dado width: ¾"
- Capacity @ 90°: 3¾", @ 45°: 2¾"
- Max. rip capacity: 52" R, 18" L
- Approx. shipping weight: 702 lbs. (G0651), 716 lbs. (G0652)



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3 HP, SINGLE-PHASE

G0651 ~~\$2050⁰⁰~~ **SALE \$1975⁰⁰**

5 HP, 3-PHASE

G0652 ~~\$2195⁰⁰~~ **SALE \$2095⁰⁰**



12" EXTREME TABLE SAWS

- Motor: 5 HP, 220V, single-phase, 18A (G0605X1), 7½ HP, 220V/440V*, 3-phase, 19¾A (G0606X1)
- Precision-ground cast iron table size w/ extension: 69½" x 78¾"
- Arbor: 1" • Arbor speed: 3600 RPM
- Max. dado width: ¾"
- Max. rip capacity: 52" R, 18"L
- Max. depth of cut: 4" @ 90°, 2¾" @ 45°
- Approx. shipping weight: 854 lbs.



EXTREME
SERIES

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5 HP, SINGLE-PHASE

G0605X1 ~~\$2550⁰⁰~~ **SALE \$2450⁰⁰**

7.5 HP, 3-PHASE

G0606X1 ~~\$2550⁰⁰~~ **SALE \$2450⁰⁰**



14" SLIDING TABLE SAW

- Main motor: 10 HP, 220V/440V*, 3-phase, 25A/12.5A
- Sliding table size: 15" x 126" • Main blade arbor: 1"
- Main blade speed: 3000, 4000, 5000, 6000 RPM
- Scoring blade motor: 1 HP, 3A/1.5A
- Scoring blade size: 4¾"
- Scoring blade arbor: 22mm
- Scoring blade speed: 8000 RPM
• Scoring blade tilt: 0–45°
- Depth of cut: 4" @ 90°, 2¾" @ 45°
- Max. rip capacity: 52½"
- Max. sheet capacity: 126" x 126"
- Approx. shipping weight: 2932 lbs.



126" LENGTH OF CROSS CUT

G0772 ~~\$11,250⁰⁰~~ **SALE \$10,750⁰⁰**



AUTOMATIC EDGE BANDER

- Required power supply: 30A, 220V, single-phase, 60 Hz
- Feed motor: ¾ HP
- Glue spindle motor: ½ HP
- End trim motor: ¼ HP
- Flush trim motor: ¾ HP
- Buffing motor: ¼ HP
- Heating element: 1455W
- Table size: 10½"W x 78¾" L
- Min. panel dimensions: 4¾"W x 9½" L
- Compressed air required: 100 PSI
- Glue pot capacity: 34 oz
- Roller width: 3¾" • Roller diameter: ¾"
- Edgebanding coil capacity: 31½"
- Approx. shipping weight: 875 lbs.



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G0774 ~~\$11,500⁰⁰~~ **SALE \$9695⁰⁰**



THE ULTIMATE 12" JOINTERS

- Motor: 3 HP, 220V, single-phase, TEFC
- Precision-ground cast iron table size: 12½" x 80"
- Max. depth of cut: ¾"
- Bevel jointing: 0–45°
- Cutterhead speed: 5900 RPM
- Center mounted fence: 4¾"H x 39¼"L
- Approx. shipping weight: 1265 lbs. (G9860), 1241 lbs. (G9860ZX)



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G9860 ~~\$3750⁰⁰~~ **SALE \$3595⁰⁰**

SPIRAL CUTTERHEAD / CUTS PER MINUTE: 35,400

G9860ZX ~~\$4850⁰⁰~~ **SALE \$4595⁰⁰**



THE ULTIMATE 8" JOINTER WITH EXCLUSIVE DIGITAL HEIGHT READOUT

- Motor: 3 HP, 220V, single-phase, TEFC, 3450 RPM, 15A
- Total table size: 8½" x 82½"
- Infeed table size: 8½" x 42"
- Cutterhead: 4-row spiral w/ 36 indexable, solid-carbide inserts
- Cutterhead speed: 7000 RPM
- Cutterhead diameter: 3½"
- Floor-to-table height: 31"
- Fence stops: 45°, 90°, 135°
- Deluxe cast iron fence size: 1½"W x 38"D x 4¾"H
- Approx. shipping weight: 796 lbs.



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Feelin' good

Irie Cabinetry of Denver combines an upbeat West Indies attitude with a bustling backlog

By Jennifer Hicks

Irie Cabinetry of Denver brings a touch of the West Indies atmosphere to its clients throughout Colorado, something owner Scott Kelley strives for. Originally from St. Thomas in the U.S. Virgin Islands, Kelley says the word "Irie" (I'-ree) is used often where he's from. It's a positive term used to describe how someone is feeling.

"Irie means you have a good feeling. If you are feeling excellent, you say you are feeling Irie. So we wanted to name the company Irie Cabinetry. We want people to feel great in their kitchen. We want to give people the Irie experience of an Irie product from Irie people," Kelley says.



The team at Irie Cabinetry includes (from left) Don Fiddes, owner Scott Kelley, shop foreman Pat Wagner and Julio Rosales.



The four-man shop offers a full range of custom cabinetry. Sometimes people unfamiliar with the word and its pronunciation associate it with the town of Erie, a small town just north of Denver. The misunderstanding has actually brought in a few jobs.

"They thought we were located in Erie, which is fine because we will travel all over for whatever business. No job is too big or too small," Kelley says.

Exploring opportunities

Kelley came to the U.S. when he was four years old, along with his two brothers, because his father was ill with a brain tumor. He stayed with his aunt and uncle in Denver while his father received advanced

gested for our children's and for our own opportunities we move up here. That was in 1998 when we came here to Denver."

The beginnings

Kelley found a job doing installation work for cabinetry shops and then started his own installation business that year. He literally had his foot in the door.

"If you're the homeowner, you got to know me as the installer. I also got to know many builders and designers. They called on me because I did a good job installing. At first, when they wanted me to do their cabinets, I didn't want to. Ethically, I didn't want to take their work from them. But eventually we got away from that and stopped installing for other people and started making our own products. That's where we are today."

His next challenge was finding a way to get his designs into people's homes.

"I didn't have a shop back then (in 2001). I was designing at home and pretty much working out of my van. I would sell the client the job, then I would go up to Fort Collins where there was a shop with CNC machinery. So I'd give them my plan and get a price, then sell the job to the customer. So that shop would make the cabinets and I'd go pick it up and deliver and install them. I got paid for the design and for the completed work."

The jobs accumulated and eventually Kelley had enough to invest in his own shop where he could finally fabricate his designs. He purchased a computer design program and hired an employee, Don Fiddes, who still works in the shop's drafting department.

"I did that because it was right after [the Sept. 11, 2001 terrorist attacks] and nobody knew what was going on and the cabinet shops said they



Don Fiddes handles the shop's design duties.

treatment. He moved back and forth between the islands and Denver after his father died, trying different vocations and deciding what to do with his life.

"I moved to the islands again in ninth grade, but realized I needed to get my education because things were a lot slower there. My transcripts were never sent and we were on the beach fishing every day. I was just getting older and older and saw myself not going to school. I asked my aunt and uncle if I could move back in and then I finished high school here in Colorado," Kelley says.

He went back to the islands after high school, where he started a small farm with his brother, ran a bicycle messenger business and began taking general classes at the University of the Virgin Islands. His direction in life changed again when he met a woman, Kizzy, who is now his wife of almost 20 years.

Once they started a family, Kelley knew he needed to find gainful employment. He began doing some cabinetry work for one of his college professors at UVI, a person who also became his mentor.

"I started out making storm shutter doors for him. He taught me how to do that at night after teaching in a classroom during the day. Then, when we finished all of those, we started on the cabinets in his rental units and that's when I started learning cabinetry."

After a short while, he wanted to expand on his horizons and show his family a better life.

"Kizzy had never been anywhere and I had been up here. So I sug-



Julio Rosales joined the team recently.

didn't have any installs for us. I had two kids and a wife and needed to feed them so I knew not to put all my eggs in their basket. I bought this design program for \$3,000 and that was a big deal for me. I taught myself how to run it, but Don has been running it for a long time."

Kelley opened his first official shop in 2005, which was across town in Englewood. In 2010, he got himself closer to home with his current shop, a 2,000-sq.-ft. space in an industrial complex. Things are pretty cramped now and Kelley is actively searching for a larger space to suit the needs of the business and have a showroom. The goal is to find a suitable 5,000-sq.-ft. space by early next year.

"The challenge of buying a building right now in Colorado is that the

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Pat Wagner and Scott Kelley, assembling cabinets.

marijuana industry runs the show. Cash is king. So if a distributor wants to come in here, they will buy us out in no time at all," Kelley says. He is referring to Colorado Amendment 64 that led to the January 2014 legalization of cannabis use within the state with certain restrictions. Conflicting federal laws prevent certain money tied to the industry from being put into federally insured banks.

Networking pays off

While at his first shop, Kelley joined a professional networking organization called LeTip, where he and other likeminded members could exchange business referrals and other information.

"That was a good marketing tool. You get to meet lots of people at the meetings and they only allow one member per profession in your area. So there was no other cabinet guy there. We would meet every week and give tips. I could refer a customer to a dentist if they needed dental work and then the dentist would know somebody who needs a kitchen. We would give each other leads."

Each member got 30 seconds for a "commercial" at the meetings. He would start his off asking how everyone was feeling and the whole group would respond "Irie." He started talking about where he wanted to find work, one of the places being in the nearby upscale community of Park Hill, and the jobs came in.

"I did that for nine years, but just quit this year because I started getting leads that I didn't really want, like repairing a drawer. I felt obligated to do it, but then I had to waste all my time building that drawer when I could have been selling or building a kitchen."

He still relies on networking through word of mouth from customers and their acquaintances.

Prospective growth

Urban sprawl has defined Denver during the last 15 to 20 years. And this has been good for business, according to Kelley.

"The [Stapleton International] airport used to be near my shop and there were planes flying over every minute," he says. "Now the [Denver International] airport is way out in the country and city is growing in that direction. But the businesses around here, a bunch of hotels that used to serve the old airport, are being turned into businesses and residences, so there's a lot going on."

The local remodeling market is also strong. Kelley estimates about 90 percent of his shop's work comes from remodeling. "We specialize in a

lot of small space planning," he says.

"All of our work is residential. We worked with one commercial builder, but we really don't prefer that because they don't appreciate it. It's a one-time deal. With homeowners, they have kids who grow up and get a home and we do their homes and we keep doing work for all of these generations. We are more into making connections within the community."

The shop considers all of Colorado as its primary market. From Kelley's perspective, the state has just about everything one could want.

"The main ritziest place is Aspen. There are famous rich people there with high-end houses and big money. We have done three houses there. Working up there, it's nice; you actually feel like you're living up there. I entered into a bike race, practiced with (the locals) and got to know them. Everybody's always up to something in this state."



An 'Irie' touch

Black or white painted kitchens are the hottest trend going, Kelley says. Shaker is the most popular cabinet style and he's made sure to infuse some of his offerings with a touch of home.

"I have this solid, raised-panel Shaker door I make with this molding inside that we call Savan. It's one of our most popular doors right now. It is named after an inner-city neighborhood my grandmother is from in St. Thomas. It was the first African

American area there once the slaves were free. They just congregated there. Even though it is kind of run down, I still love that area.

"We have a door color that is also popular and call it Mahogany Run, a golf course in St. Thomas. It's on alder, but it looks like mahogany."

Behind the scenes

Staying ahead financially is always difficult, but Kelley says it's gotten better in the last few years.

"My guys really push me to make moves like buying machinery. I was stuck in dinosaur land. I wanted to expand, but I didn't know what it meant to expand," he said, referring to a few recent purchases of used machinery. In addition to Fiddes, the crew includes shop foreman Pat Wagner and craftsman Julio Rosales.

Kelley is probably one of the few woodworkers who can make light of the recent economic recession. Perhaps it's his laid back Irie personality.

"Sure, we got affected by the recession. But I didn't pay attention because I was too busy. We've always had work going. And I also think we kept our prices low and did really good work. We've always done everything ... build it, install it and work night and day to make it happen. We were busy, but not busy making money. We were taking on anything and everything."

Kelley has clearly come a long way from starting with installs. But he's still all about the end result.

"We run things lean and mean. We are working a lot and we don't have a big enough space to hire anyone else right now. We want to save as much as we can because we want to buy a building." **W**

Contact: Irie Cabinetry, 3910 Niagara St., Unit A, Denver, CO 80207. Tel: 303-388-7211. www.iriecabinetry.com

Retooling for 2017

Compiled by BHSW Inc.



Sometimes a solution is so obvious that we miss it. For decades, BESSEY has been making all kinds of specialty deep throat and hold-down clamps for metalworkers, but the bases wouldn't fit the standard bench dog holes in a woodworker's bench. Then one day a BESSEY engineer slapped his forehead... and invented the TW16AW19 adaptor. Now a woodshop can include the whole range of TW and TWV Series light metal-working clamps when re-tooling for the new construction season.

Sometimes a solution is so well engineered that we think it will be cost prohibitive. Not so the new Python XPR from CNC Factory. It's a complete CNC routing package with automatic loading and unloading at a surprisingly affordable price – from an American company that provides some of the best customer support in the industry.

Sometimes a solution is so timesaving it can completely revolutionize how we do something. Two new AccuStain products – a solvent-based stain system and a spray stain – let a woodshop maximize color choices and minimize matching time as they deliver unprecedented speed and repeatable results.

And sometimes a solution is so comprehensive that we simply can't move forward without it. The sales team at SCM Group is part of a world-wide family of companies that supply the planet's most wide-ranging and innovative line of solutions for the woodworking industry. What they know about re-tooling is everything that you need to know.



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There's A Whole New World of Bench Clamps for Wood!

Clamp Envy.

It's something that woodworkers experience every time they walk through a welding shop. Some of those fancy metalworking hold-downs and clamps would really come in handy on cabinet projects...

It just so happens that clamping specialists at BESSEY® work in wood and metal clamping, and they've come up with a very cool new crossover accessory. It's an adaptor (the TW16AW19) that drops into the standard 3/4" dog holes in a wooden workbench. The top of the adaptor is constructed to accept BESSEY 16 mm hold down clamps (TW and TWV Series) that one would normally find on a matrix table. This means that light duty metalworking clamping elements from the company's TW and TWV ranges can now be used on cabinetmakers' benches. The 16 mm crossover clamps are light, easy to maneuver, allow for quick movement anywhere on the



workbench table and are appropriately sized for accurate work on a bench. There is a choice of variable throat depth (TWV Series) or fixed throat depths (TW Series), and each series has a choice of lever handle, a T-Bar handle or the ubiquitous 2K handles that are found on most of BESSEY's traditional bar

clamps. All add a flexibility to clamping that is not so common on woodshop workbenches.

Something that is not immediately apparent is that while these clamps will fit into 3/4" dog holes on a workbench (such as Veritas or Sjöberg tables), they are not limited to that. Using a thick board, a woodworker can drill a hole that will accommodate the adaptors and make a fully custom hold down system!

The TW Series clamps come with a fixed throat depth of 4", a clamping height of 8", and a nominal clamping force up to 550 lbs. The TWV Series clamps have a variable throat length from

1-3/16" to 6", a clamping height of 8", and a nominal clamping force of 650 lbs.

BESSEY. If you know clamps, you know the company's reputation for quality and reliability. You might also know that the name stands for more than 126 years of German engineering, backed by the strength of its products and its reputation.

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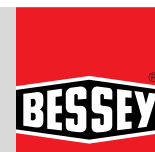
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Improve Production With Robotic Loading

Robotic loading and unloading significantly reduces CNC operator time and fatigue, and that's precisely what the new Python XPR from CNC Factory is designed to do. It's a complete CNC machining center, fed by a hydraulically assisted loading table that can accommodate up to forty sheets of $\frac{3}{4}$ " stock. The table height adjusts automatically in response to the amount of material that has been loaded.

Production rates are significantly faster with robotic stocking than with manually fed machines, as the CNC router doesn't need to be stopped between sheets. And because the Python XPR also includes robotic unloading, the time spent harvesting is also minimized: the Python's unloading arm will move parts to the unloading table and then automatically load a new sheet and begin cutting.

Completed parts move toward the user on an automatic conveyor, so the operator can stay in one spot during the entire unloading process and perform part separation and/or edge banding. The machine will begin cutting a new sheet of material as soon as the processed parts have been harvested. And again, this can be accomplished without the employee having to reach over the machine bed to lift and move parts, further reducing fatigue and avoiding any delay in CNC operations.

The Python also performs spoil board cleaning, which is a huge bonus for shops that are used to having to stop in mid-operation to clean up and remove debris between sheets. The Python does this automatically, and this built-in feature delivers continuous production, a cleaner environment and more free time for the operator to perform other tasks.

The Python is available as a stand-alone ma-

chine that can be operated in the traditional manner with manual loading and unloading. It will accept single piecework coordinates, and the loading and unloading tables can be removed and stored elsewhere while not being used. This flexibility allows the Python to use a small footprint when not in full production mode, and be upgraded to a fully automatic work center when larger jobs call for it.

Built for production, this machine features state-of-the-art CNC robotic technology in its 12HP HSD spindle; 12-tool Rapid Rotary tool changer; 2,000 inches per minute of rapid travel; Delta direct helical rack and pinion servos; dual layer high-flow vacuum table; automatic positioning pins; and automatic dust collection channeling. The Python XPR includes posts for Cabinet Vision, KCD, Mozaik, 2020 and Autodesk, and is virtually compatible with any Cad/Cam program. It can also be highly customized in terms of drill banks and table sizes.

CNC Factory, Inc., is an American manufacturer with locations in both Southern Califor-

nia and New Jersey. The team has thirteen years of experience serving woodshops, and company president Chris Corrales owned and operated a cabinet shop for more than eighteen years.

"Our machines, customer support and corporate values," he says, "are built upon a personal knowledge of the challenges and opportunities that face woodshops and cabinet manufacturers."

CNC Factory enjoys an industry-leading track record in customer service. For example, the new Python XPR carries with it the company's impressive support package that is designed to keep customers up and running at full speed. Included as standard are a year of on-site service, pre-training at the factory, on-site installation and on-site training. This combination of superior front- and back-end support is key to CNC Factory's core values.

The Python XPR ships for \$69,900, fully loaded with a 4' x 8' bed. Guaranteed Financing is available to the woodworking industry. Designed to help you capture more opportunities in your current market, the new Python can also properly position your business for the future.



CNC FACTORY



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Nested Based Manufacturing Without Expensive Software

What if it were possible to do complex, true-shape nesting without the expense of complicated software?

Nesting, or 'nested based manufacturing' with CNC routers is a process where a vacuum pulls through raw MDF boards to hold down flat sheets of wood or plastic stock. Mechanically, the process is pretty simple. But woodshops that have researched the technical aspects have discovered that it's not all that simple to produce the complex programs that

cut these nested sheets.

Larger cabinet and furniture manufacturers have the resources to buy more expensive software that automates the programming process for nesting on a CNC router. But what about smaller shops...

What if there was a way to create a complex program for nested sheets from lists of cabinet parts? In that case, expensive software would no longer be a significant reason for a woodshop not to invest in a CNC router.



As a result of some serious co-operation between the engineers and the software development team at Duluth, Ga. based Casadei Busellato, the company can offer a more simple approach to this complex programming problem. Each Busellato CNC router now comes with a software package that allows the programmer to simply list his/her cabinet parts, with the quantities required, and the software will then create the nesting. It will then run each program on the machine until all the parts on the list have been completed. One can see a Busellato Jet Optima RT auto unloading work cell doing this by clicking on the video link below.

This solution doesn't compete with popular cabinet design software programs, but is rather an opportunity for smaller companies to buy the machinery for automation well before cabinet design software or CAD/CAM software becomes necessary. Design software automates the building of lists, and also eliminates guesswork for larger production shops. But at a critical time in small cabinet shops, woodworkers can now buy factory automation equipment that reduces direct labor without the need for expensive software.

To better understand nested based manufacturing and CNC routers contact the North American product manager for Busellato directly: Aross@casadei-Busellato.com



Whether you are small shop or a large corporation, we focus on individual production requirements to ensure we provide the best solution possible. We are experts in complete and integrated manufacturing facilities as well as individual machines including CNC routers, CNC machining centers, nested base router with loading and unloading, edgebanders, panel saws, bore and dowel machines, wide belt sanders, plus an array of single and multi-purpose machines.



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AccuStain

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Features & Benefits:

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- Deeper, richer, cleaner colors
- Enhanced resistance to hard settling for improved package stability
- Wider range of custom colors
- No reportable HAPs as packaged
- Stain library with color trends updated annually

The Accustain Spray Stain

When it comes to staining interior wood products, color consistency is key. For example, kitchen cabinet components that don't match lead to costly rework, wasting time and cutting into profit margins.

The Accustain Spray Stain offers manufacturers of kitchen cabinets, furniture and wood building products a spray (no wipe), high production alternative to traditional wipe stains for application on interior bare wood. In comparison to traditional stain application methods, Accustain Spray Stain can significantly reduce time in your application process, thus boosting your operation efficiency and providing a custom spray stain appearance.

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GREEN

IT'S AN OPEN-AND-SHUT CASE:

CABINET AND FURNITURE COMPONENTS MANUFACTURERS
HAVE TO ADAPT TO NEW EPA REGULATIONS

By John English



Kerfkore's KerfGreen
bendable panel.

WAVE

The manner in which components are manufactured has changed a lot in the last decade with quantum advances in areas such as design, CNC processes and management theory. During that time, a lot of the advances in materials had to do with aesthetics as the segment evolved through lacquer and foil to a whole new world of coatings and colors. Adhesives and finishes have also changed a lot as the industry learned more about VOCs, green architecture and international regulations.

In the coming decade, cabinet and furniture components will continue to change as new technologies such as 3-D printing and formaldehyde-free resins take center stage. The latter reached a significant watershed in late July, when the Environmental Protection Agency issued a final rule regarding “the protection of the general public from exposure to formaldehyde.” As most

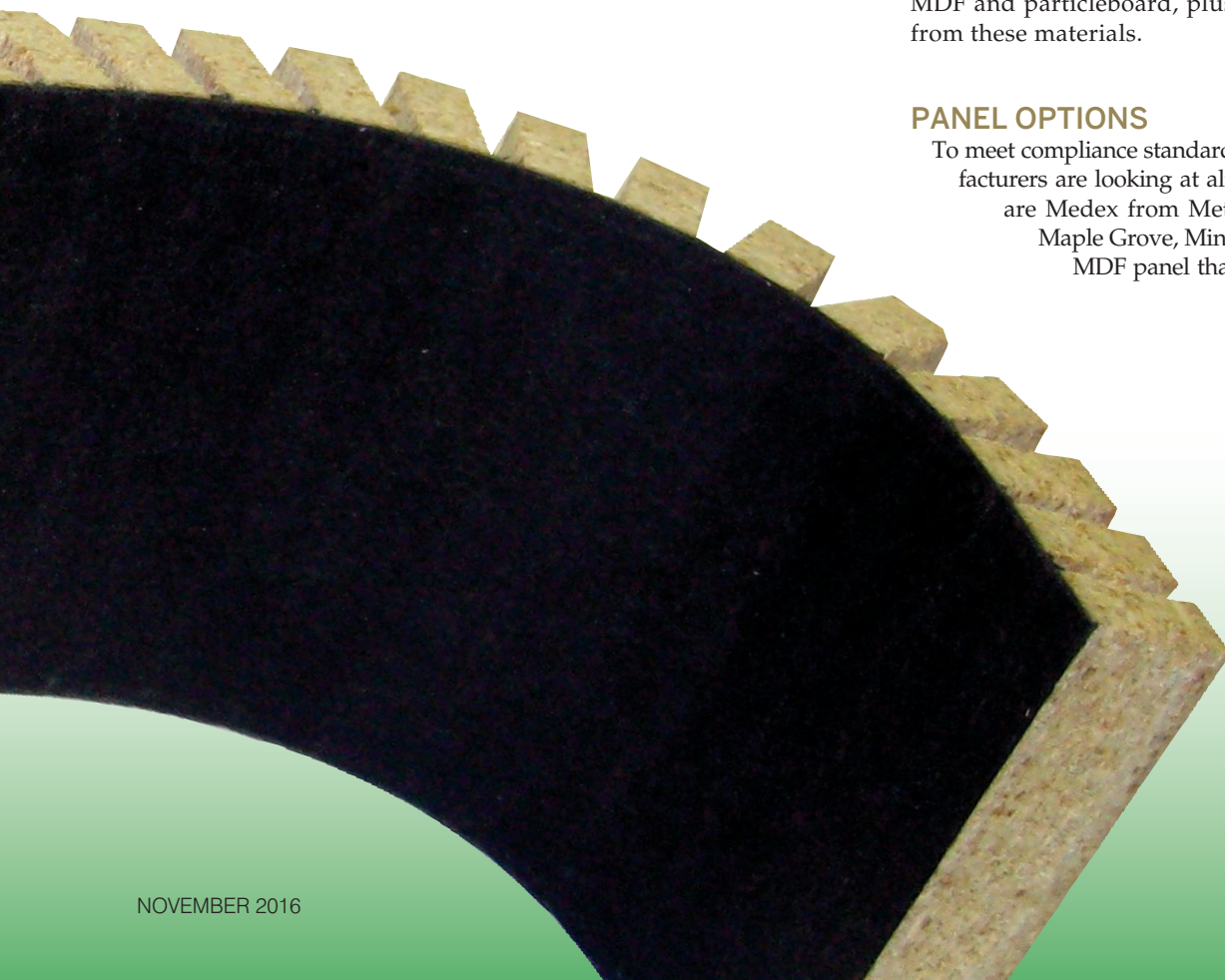
cabinet and furniture component suppliers already know, the ruling affects formaldehyde vapors from certain wood products that are either produced domestically or, more importantly, imported into the United States.

“The new rule,” says Jim Jones, assistant administrator for the EPA’s Office of Chemical Safety and Pollution Prevention, “will level the playing field for domestic manufacturers who have a high rate of compliance with the California standard and will ensure that imported products not subject to California’s requirements will meet the new standard and thus not contain dangerous formaldehyde vapors.”

The bottom line here is that by next July, composite wood products that are sold, supplied, offered for sale, manufactured or imported into the United States will need to be labeled as TSCA (Toxic Substances Control Act of 1976) Title VI-compliant. The affected products include a list of materials that furniture and cabinet components manufacturers use, including hardwood plywood, MDF and particleboard, plus the end-user products that are made from these materials.

PANEL OPTIONS

To meet compliance standards for emissions, many component manufacturers are looking at alternative sheet stock. Among the options are Medex from Metro Hardwoods (metrohardwoods.com) in Maple Grove, Minn. This is a sustainable, moisture-resistant MDF panel that uses a formaldehyde-free adhesive sys-





Hardware Resources has nine new wooden corbels to choose from.

tem and pre-consumer recycled wood fiber. A similar product, Green T Arreis, is also an MDF sheet with a formaldehyde-free adhesive system and 100 percent post-industrial recycled wood fiber.

Another option, Myco Board, is a product from Ecovative Design (ecovativedesign.com) in Green Island, N.Y. The sheet stock uses relatively inert mycelium, rather than formaldehyde, as a bonding agent, hence the name.

PureBond (purebondplywood.com) hardwood plywood, from Columbia Forest Products, uses a soy-based adhesive and is compliant with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standards, earning one point for LEED's EQ Credit 4.4 for Low-Emitting Materials: Composite Wood, and satisfies the emissions standards of the California Air Resources Board (CARB) Phase 2 regulations.

NU Green SOYA NAF (no added formaldehyde) particleboard from UniBoard (uniboard.com) is Forest Stewardship Council-certified, and Eco-Certified Composite by the Composite Panel Association. It contains 100 percent recycled and recovered pre-consumer wood



fiber. The company uses a process whereby no formaldehyde is added with the soya resin, so the board is environmentally friendly and exceeds CARB Phase 2 standards. It's also NAF-certified (Ultra Low Emission Formaldehyde) by the CPA. This designation, determined by CARB, is intended only for products with formaldehyde emissions that are below 0.04 ppm. It comes in a wide range of melamine colors.

For bending applications, Kerfkore (kerfkore.com) in Brunswick, Ga., offers Kerfkore-Green, which combines a NAF latex-impregnated paper with a NAUF (no added urea formaldehyde) core material. A sister product, FlexGreen, consists of a Eucalyptus fiber 0.08" hardboard face attached to a particleboard substrate that is made from 100 percent recovered and recycled fiber, which is free of any added formaldehyde. The glue used in this product also contains no formaldehyde. And Foamkore-Green from Kerfkore is an environmentally friendly NAF product that provides a lightweight panel with

structural integrity at a greatly reduced weight. It consists of a Eucalyptus fiber hardboard face with a polystyrene foam core.

SoyStrong from States Industries (statesind.com) in Eugene, Ore., is a hardwood plywood panel free from all formaldehyde resins and designated NAF. Plus, MDF and particleboard substrates carrying the SoyStrong label are No Added Urea-Formaldehyde.

For shops buying components rather than making them, Keystone Wood Specialties (keystonewood.com) in Lancaster Pa., brings something new to the table. The company has introduced a line called Superior Green paint-grade doors and drawer fronts. Made using solid soft maple for rails and stiles, the panels are milled from Plum Creek's GlacierGreen MDF. Available with any panel raise, Superior Green doors and drawer fronts can be ordered unfinished, primed for painting or prefinished in a woodshop's choice of Keystone colors. The company can also custom color match an order to a supplied color sample. Plum Creek is a subsidiary of Weyerhaeuser and GlacierGreen is a low-emissivity MDF that meets CARB II emission standards.



New table bases,
inspired by Gothic
cathedrals, available
from KE Hardware.

only certified products allowed in LEED projects were from companies that were Forest Stewardship Council chain-of-custody-certified.

"The process," the WPMA said in a statement, "was often time-consuming and it required a great deal of documentation unless a company was part of a group certificate. The U.S. Green Building Council recently started a pilot project that will allow Sustainable Forest Initiative wood to be used in LEED building products for the LEED point for sustainable wood. The SFI and the FSC are very similar in how they work, as their goals and operations are basically the same. Both programs strive to maintain sustainable harvest levels, work toward reforestation and address forest conservation. While companies are not able to mix FSC- and SFI-certified woods together for the same product, you can use either FSC- or SFI-certified wood for a job.

"It is felt that this new pilot program will help increase the amount of certified lumber and certified components available for LEED projects as well as the number of companies willing to become certified to produce the specific items/jobs."

LEED PILOT PROGRAM

The Wood Products Manufacturers Association (wpma.org) reported in August that there has been a small step forward in LEED certification for wood that is used in components. Until now, the

DIGITALLY PRINTED PANELS

The aesthetic norms of furniture and cabinet components are also changing. For example, an idea that began in Europe more than a decade ago and saw a little early success on the coasts is just now begin-

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ning to gain serious traction in the heartland. Digitally printed panels for cabinet and furniture components, such as doors and appliance faces, are finally finding a foothold among kitchen and bath designers.

R.D. Henry & Co. (formerly Custom Cupboards) in Wichita, Kan., offers a distinctive service to other shops through its network of dealerships. Named "Facets" (rdhenry.com/facetsparent), the digital transfer program allows component builders to add patterns, textures, artwork, photography or typography to furniture or casework. A designer can add a personal touch to any room in a client's home, office or retail space — and do so without losing the beauty of the wood. The Facets program uses a proprietary, patent-pending process to digitally transfer artwork, geometric patterns or even a customer's own photographs directly onto a painted white or natural maple, alder or cherry background.



WalzCraft's catalog features more distressed door options.

DISTRESSING NEWS

Distressing has been around for a century and, like many fads and fashions, it has had its popularity peaks and valleys. The technique

basically allows a shop to create a worn and antiqued look on new cabinet doors, drawer fronts or wood components.

WalzCraft (walzcraft.com) in LaCrosse, Wis., has become a leader in its application and has recently added a third type of distressing to its catalog of components. The two original options were simulated (which looks like screw or nail impacts, wear marks, nicks, wormholes, cracks or rasp marks) and Renaissance (a heavily pronounced aged or antique appearance that is achieved by using tools such as an orbital sander, chisel, putty knife, razor, rasp, claw and hammer). The company has added TexGrain, featuring a rustic, weathered look that brings rich texture to solid wood and MDF products. It pairs well with rustic décor, and is also great for cottage, industrial or transitional spaces. It is fashioned by running a wire brush over the wood surface. This removes some of the soft fibers and creates a richly textured surface that can be both seen and felt. When applied to solid wood, TexGrain distressing opens and enhances the wood grain, leaving the remaining wood with a rustic or weathered look. This option is available on all grades and cuts of alder, cherry, hickory, pine, poplar, red oak, white oak and walnut. When applied to MDF, it results in more evenly distributed texture because of the uniform surface of the material.

Another area looking at a facelift in the next decade in cabinet components is edgebanding. At the forefront of innovation here is Rehau's LaserEdge, which is a band with a pre-applied functional layer that replaces the traditional glue used to apply edgebanding. LaserEdge can be used with all zero-joint

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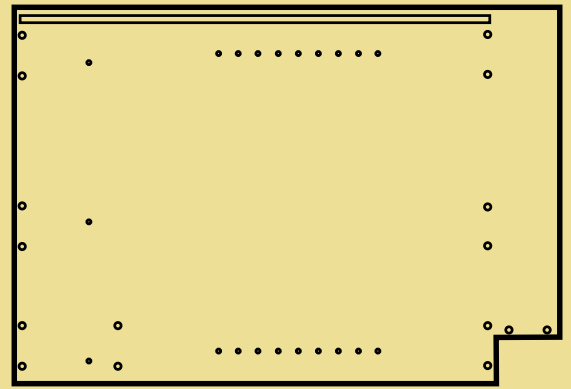
HARDWARE AND ACCENTS

For woodshops with restaurant, hotel or bar clients, table legs can sometimes be a challenge. KE Hardware of Baltimore (*ke-hardware.com*) is now carrying a new line of table bases in a retail range of \$120 to \$176. Inspired by the architectural flying buttresses of Gothic cathedrals, the But-tress Cast Aluminum base is designed to add a dramatic flair to catering decor. Its black, semi-gloss finish allows this eye-catching leg set to be used in both indoor and outdoor settings. It's available in several sizes and heights, but the catalog does note that is not intended for use with heavy stone, marble or granite tops.

Speaking of bars, Hardware Resources (*hardwareresources.com*) makes bar brackets (furniture components that support a bar-top), plus capitals, corbels, fireplace and mantle accessories, furniture legs and feet, plus an extensive range of onlays (carvings) and appliques. With six warehouses across the U.S. and a manufacturing facility in Bossier City, La., the company has recently added nine new carved wooden corbels to its furniture components offerings. Hardware Resources designs, engineers and makes an extensive line of more than 24,000 products, including components for the kitchen cabinet, bath, furniture and closet industries under our three brands: Jeffrey Alexander, Elements and Hardware Resources.

One trend that woodshops might want to pay special attention to in the next few years is called universal design, which is about creating spaces for all people, not just those of average height and build. Forward-thinking hardware manufacturers have been aware of this rapidly expanding market segment for some time and many have already introduced easy-open cabinet doors and drawers that react to a slight touch or adjustable height chopping blocks and worktops. Some manufacturers are working on upper cabinets where the shelves respond to a remote control and lower themselves through the bottom of the cabinet to countertop level.

During the next few years, cabinet and furniture component manufacturers are going to need to accommodate this trend more and more as the baby boomer population (people born between the years 1946 and 1964) ages. The oldest of them turns 70 this year and the youngest is 52. [W](#)



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AHEAD OF THE CURVE

Adding a laser to your CNC can enhance production, introduce new techniques and get the creative juices flowing

By John English

Have you ever tried using “lattice” or “living” hinges to bend wood? As anyone who has looked into adding a laser to a CNC knows, you can do that with a laser. Today’s lasers don’t just engrave. They can also cut all the way through wood, plywood and other sheet stock such as plastics and thin metals. They’re also less labor intensive and far more precise than most woodworking machinery, so they’re definitely worth considering for shops that want to offer something unique or perhaps add the ability to make wooden parts for other industries.

It’s surprising how many CNC routers can be adapted to use a laser head, so shops that are upgrading might want to check with the manufacturer before they sell the old CNC. And there are a number of small desktop lasers available at surprisingly affordable prices that allow a shop to dabble a bit and learn something about the technology before making a major investment.

A laser might be able to enhance current production, introduce new techniques and abilities and will definitely get the creative juices flowing. Designers who are competent in CAD and CAM will love the idea of being able to create a toolpath that is smaller and thinner than anything a router can manage. The lattice hinge, for example, means that a designer can bend wood by creating a cut pattern that is essentially just a series of interlocking fingers. The magic here is that there is only one long, continuous cut and when that’s done there are no parts to assemble.

The process is explained in more detail on Epilog Laser’s website (epiloglaser.com) on the Sample Club page. If you’re mulling over the decision to buy a laser and are worried that you won’t find enough ways to use it, the laser manufacturer’s site offers dozens of how-to projects with engraving files and laser settings, so they’re easy to replicate or customize. Other examples include fabricating 3-D models of furniture and casework.

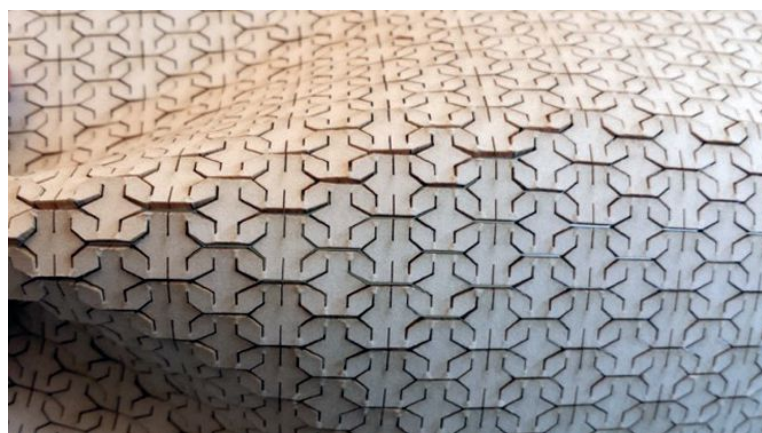
Kern Lasers also features sample projects on its website (kernlasers.com) on the Applications page.

Options galore

The ability to manufacture absolutely identical parts with razor-thin cut lines and corners means that a woodworker can begin to consider using downtime



The CNC Shark (above) from Next Wave Automation; examples of lattice cuts made with a laser.



between cabinet jobs to enter new markets. Using a laser in conjunction with the shop's existing skills and equipment can open up the possibility of building everything from award plaques to games to gearstick knobs or perhaps even jewelry boxes and other high-end gift items.

Lasers can also add a whole new catalog of kitchen upgrades from photo engraved wooden door or appliance panels to glass or acrylic accents. In fact, they're so versatile that a shop really needs to choose a direction before choosing a laser.

That's an issue for woodshop owners who are out there shopping for the perfect laser. The technology has come a long way in a short

time and the number of options available are staggering. How does a woodworker narrow the field and find exactly what he/she needs and wants?

For example, Universal Laser Systems offers more than 1,000,000 different laser system configurations. Rather than being overwhelmed by the magnitude of that statement, a small woodshop owner should find solace in the fact that Universal Laser Systems — and most other leading suppliers — can design and deliver a system that perfectly suits a shop's needs. The first step is to visit the company online (ulsinc.com), click on the Purchase page and use the Build Your Laser System app. It

walks you through the options, beginning with choosing the material. Type “wood” in the search box and it will take over from there, offering choices that include hardness; whether you’ll be cutting, engraving or marking; part sizes and so on. The site also offers dozens of application ideas.

The learning curve

Adding a laser is usually a comfortable transition from an IT viewpoint. Every woodshop already uses a computer in some way, whether it’s for CNC routing, CAD, estimates, optimizing or even book-keeping, so the essential computer skills are already in place. While the majority of laser cutting and engraving systems will work on a Windows platform — and many run on a Mac — there are some with their own integral system. For example, Limtech Industries (limtechindustries.com) offers an entry-level “LL” CNC series with an industrial software/hardware configuration that’s built on its lines of larger, industrial CNC routers. Limtech stresses that this means there’s no PC to crash and no software to update.

For small shops or shops with limited plans for a laser, then retailers such as Rockler Woodworking & Hardware (rockler.com) might be a good place to start. The advantage here is that a woodworker can choose from several desktop models. There are some very affordable and easy to learn options that allow a shop to test the concept of laser-izing without going broke.

One of the least expensive options is to invest in a laser module for a Shark HD3 and HD4 or Piranha desktop CNC from Next Wave Automation. This laser engraver module (Rockler item 59803) retails for \$800 and is easy to install and use.

Rockler also offers about half a dozen other desktop and small stand-alone laser engraving and cutting machines in the \$2,400 to \$15,000 range. At the top is an industrial-sized 51” x 34” CO2 machine from Full Spectrum, equipped with two laser cutting heads with two independent laser tubes, to cut twice as fast. That’s a nice feature: if one

Techno CNC Systems (technocnc.com) offers a new wide format CO2 laser (model 4896) for production shops requiring high speed cutting, engraving and marking applications.



head was to fail in the middle of a job, the project could still be completed by the other while parts were being ordered and shipped.

Beyond cutting and engraving

The incredible accuracy of lasers in both engraving and cutting tasks can deliver a degree of precision that is virtually impossible to replicate with any other woodshop equipment. Lasers can even enhance other machines, such as CNC. For example, the British company Leica Geosystems (lasers.leica-geosystems.com) offers a laser that can very accurately measure parts, and the dimensions can then be imported into a CAD program so that a CNC can replicate the part with exquisite precision.

In another application of lasers in the woodshop, SL-Laser makes laser projectors that can take the time and guesswork out of CNC setups and changeovers. They allow an operator to quickly and accurately place pods and fixtures where the laser light shines, eliminating pin stops and enabling the nesting of small parts anywhere on the table. The accuracy of the laser light makes it possible to remove and then reinstall previously cut parts for a second operation. The laser also helps with physical optimizing: it can accurately show a tool-path, which means that smaller blanks can be very precisely placed and this can save some material. And by having the laser light physically project the pod locations, an operator can reduce the chances of costly tool/pod collisions. That can save a lot of money. Maybe even enough to justify the purchase of a new laser. **W**

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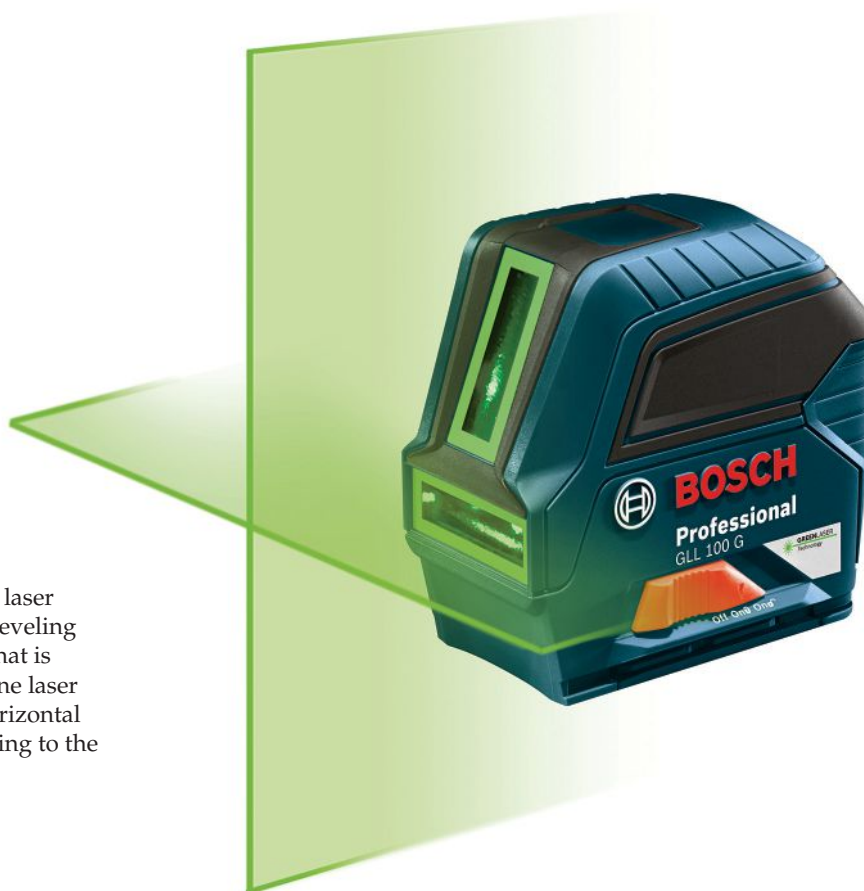
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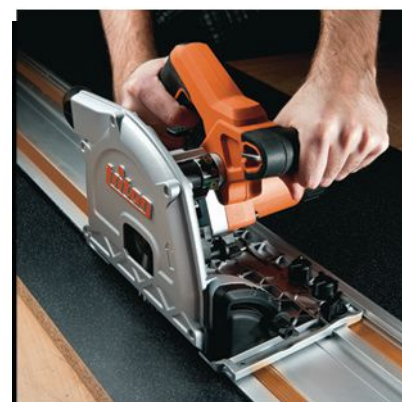
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▼ **ELIAS WOODWORK** is introducing Assemble On Site cabinet boxes, including face frame and frameless with two assembly options. "What makes this so exciting is the new revolutionary lock dowel system that makes assembly of our frameless cabinets faster and easier than ever before," the company said in a statement. For more, visit www.eliaswoodwork.com.



►► **BOSCH** is introducing an 18-volt drill/driver with a KickBack Control feature to stop the tool if a bind-up occurs. The drill/driver, model DDH183, also features 26 clutch settings, LED work-light, brushless motor and an improved ergonomic design, according to the company. For more, visit www.boschtools.com.



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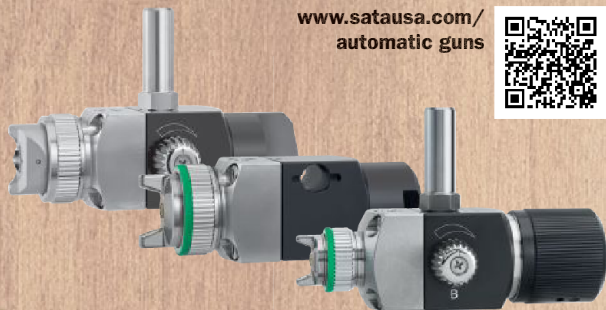
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Early Rhode Island furniture featured at Yale exhibit

Kentucky artisans showcase their chairmaking prowess through February

By Jennifer Hicks

"Art and Industry in Early America: Rhode Island Furniture, 1650-1830" is on display at the Yale University Art Gallery in New Haven, Conn., through Jan. 9, 2017. The groundbreaking exhibition opened Aug. 19 and presents a comprehensive survey of Rhode Island furniture from the colonial and early Federal periods.

Furniture pieces featured include high chests with intricate details such as shell carvings and ball-and-claw feet, traditional household pieces such as fall-front desks and bureau tables, elaborately carved side chairs and an impressive tall case clock, according to the gallery.

"Drawing together more than 130 exceptional objects from museums, historical societies and private collections, this show-

case highlights major aesthetic innovations developed in the coastal New England region," the gallery said in a statement. "In addition to iconic, stylish pieces from important centers of production like Providence and Newport, it also features simpler examples made in smaller towns and for export such as wooden benches and kitchen items like platters and tankards.

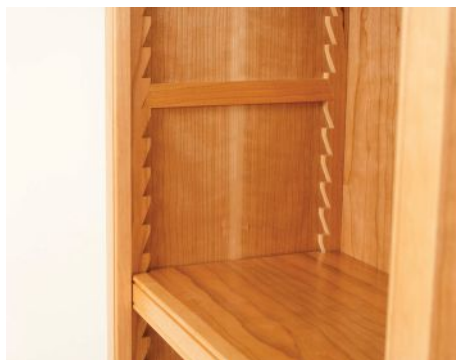
"From an educational standpoint, the exhibition addresses the broad reach of Rhode Island's furniture production, from the export trade boom at the turn of the 17th century and expansion throughout the 18th century to the gradual decline of the handcraft tradition into the 19th century."

'Have a Seat' opens

"Have a Seat: Chairs by Kentucky Artisans" opened Sept. 17 at the Kentucky Artisan



The Yale University exhibit includes this Newport high chest of drawers by John Townsend.



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Center in Berea, Ky. The exhibit, on display through Feb. 25, 2017, features original chair designs by 33 artists.

Works include functional seating and art pieces constructed from a wide range of materials, including forged iron and steel, wood, sheet metal, felted wool, wire, natural vines and bark, clay, leather, acrylic, tree branches, recycled bourbon barrels, recycled Al-toid boxes, as well as a variety of repurposed chairs, according to the gallery.

Each year, the Kentucky Artisan Center develops and presents several special exhibits to showcase works by Kentucky artisans. These exhibits focus on a specific medium, theme, technique or subject and often include artists and works not regularly on display at the center. The center features works by more than 700 artisans from more than 100 counties across the state. www.kentuckyartisancenter.ky.gov

Contacts:

Yale University Art Gallery, P.O. Box 208271, New Haven, CT 06520. Tel: 203-432-0600. <http://artgallery.yale.edu>

Kentucky Artisan Center at Berea, 200 Artisan Way, Berea, KY 40403. Tel: 859-985-5448. www.kentuckyartisancenter.ky.gov



Other pieces in the Yale exhibit include this side chair (above) from the Mabel Brady Garvan Collection, and desk and bookcase, attributed to Daniel Spencer.



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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.

The complete national calendar of events is continuously updated at www.woodshopnews.com.

— Compiled by Jennifer Hicks

ARIZONA

Jan. 9-26, 2017 — Fundamentals of Traditional Woodworking 1, a hands-on course that covers fundamental skills. This is the first of a three-class series. Location: Southwest School of Woodworking in Phoenix. www.swcfc.org

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, at 17015 Burbank Boulevard in Encino. www.sfvw.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. For information, visit www.tampawoodcrafters.org.

Jan. 10-12, 2017 — Kitchen & Bath Industry Show, an exhibition of new products, industry trends and manufacturing technologies. Location: Orange County Convention Center in Orlando. For information, visit www.kbis.com

GEORGIA

March 10-12, 2017 — Southern States Woodturning Symposium. Scheduled demonstrators include Stuart Moritmer, Dixie Biggs, Dennis Pallus and Windsor chair maker Greg Pennington. Other events include a gallery, trade show and auction. Location: Clarence Brown Conference Center in Cartersville. www.southernstatesymposium.com

MARYLAND

Monthly — The Howard County Woodworkers Guild meets the first Saturdays of the month at the Bain Senior Center at 5470 Ruth Keeton Way, Columbia, Md. from 9 a.m. to 12 p.m. Open to all those working in wood. For information, email Manny Flecker at aaron0641@hotmail.com

MASSACHUSETTS

Dec. 2-4 — Craft Boston Holiday Show. Presented by the Society of Arts and Crafts, the show features 175 exhibitors of fine contemporary craft, including hand-made



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furniture. Location: Hynes Convention Center, Boston. www.societyofcrafts.org

March 24-26, 2017 — Paradise City Marlborough. Celebrating its 20th year, the juried arts festival features fine furniture and other handmade items by over 175 exhibitors. Location: Royal Plaza Trade Center, Marlborough. www.paradisecityarts.com

NEW YORK

Monthly — Sawdust and Woodchips Woodworking Association meetings are held on the first Wednesday of each month at 6:30 p.m. at the Cold Springs Fire Department in Baldwinsville. www.sawdust-woodchips.org

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

PENNSYLVANIA

March 31-April 2, 2017 — Philadelphia Invitational Furniture Show. Annual curated show featuring handmade artisan

furniture and furnishings. Now accepting exhibitor applications. Location: 23rd St. Armory, Philadelphia. www.philadelphiafurnitureshow.com

RHODE ISLAND

Nov. 4-6 — Fine Furnishings Show featuring furniture and other handcrafted items for the home. Location: Pawtucket Armory Arts Center. www.finefurnishingsshows.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

TEXAS

Now through Dec. 3 — Texas Furniture Makers Show. An annual juried exhibit featuring furniture makers from Texas. Location: Kerr Arts and Cultural Center in Kerrville. www.kackerrville.com **W**

California adds most construction jobs

Thirty-six states added construction jobs between August 2015 and August 2016, while construction employment increased in only 24 states between July and August, according to analysis of Labor Department data released by the Associated General Contractors of America.

Association officials said demand for construction appears to be cooling in some markets but added that many firms report they would be expanding their headcount if they could find qualified workers to hire.

"The construction market has cooled off in recent months but continues to outperform the overall economy in most states, with solid year-over-year job gains," chief economist Ken Simonson said in a statement. "Despite some slowing in public construction, apartments and manufacturing projects, contractors in many states say they would be hiring more employees if they could find enough qualified workers."

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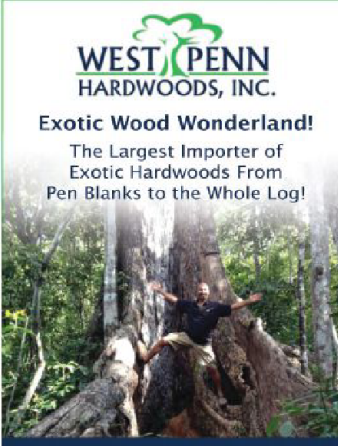
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Wood bath tubs by NK Woodworking & Design in Seattle.



Seaworthy tubs

Inspired by his experiences in boatbuilding, Nathie Katzoff, owner of NK Woodworking & Design in Seattle, is producing wooden bathtubs.

"I have the idea that baths can be something really special," Katzoff says. "In my mind, baths are often just sanitary pieces and they're all just white. I've never seen a really cool custom bath made of custom materials and it's quite an inspiration to think we can make something like this. At least part of my business has been to try to really apply to take things that are normal and apply a large amount of creativity and artistic stuff to it."

The shop opened in 2011 and specializes in custom staircases.

Katzoff, 29, is from Massachusetts and attended The Landing School, a marine industry institution, when he was 18. He worked as a shipwright for a number of years, traveled a bit to learn from artisans of different mediums and ended up working as a furniture maker in Hawaii before settling in Washington.

"I accidentally started the business. Previously, for my whole life, I had done art and always did creative-based work. Once I had my own business, I merged art and the craft of boatbuilding together. Our initial clientele wanted — and what takes us all over the country — is staircases. We are known for these ultra-custom wild floating staircases and compound curves and all that. We won national awards for that work," Katzoff says.

"But merging the elements of boatbuilding and art and design led to us to the realization that if we can keep the water out, we can keep the water in. So we started building these bathtubs and that's been a really fun hit as well."

The shop has produced about 10 tubs to date. They're also available in glass, metal and stone inlay. The wooden ones are made primarily from maple, mahogany, walnut and oak.

"The way we are building them requires some stability in the wood, but the wood is more of a decorative feature," Katzoff adds. "There's a composite finishing system that allows the wood to be protected, so we can use a lot of different materials. However, we put a lot of money into R&D to get that system working correctly. It's a whole mix of different resin systems and chemicals. It's a thick coating, but in person you can't really tell. The one unfortunate part is that the finishing is very labor-intensive and time-intensive."

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



60 Grit

Rough humor by Steve Spiro





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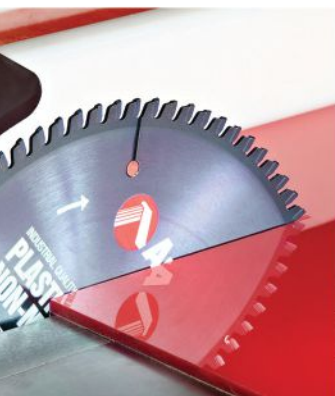
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