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A collection of Lamello biscuit joinery products, including two large, oval-shaped biscuits with a diamond-patterned texture and the 'Lamello' brand name embossed on them. In the foreground, there is a red and silver Lamello 'Classic X' biscuit joiner, which is a handheld tool used for inserting biscuits into wood. The background is a dark, neutral color.

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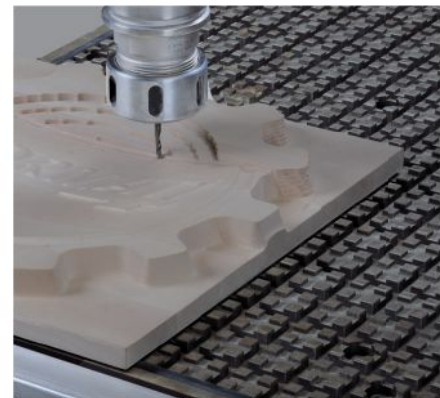
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Table of Contents



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 **ALTENDORF GROUP**

Features

- 24 STICK TO A SCHEDULE:** Sharp tools and well-tuned machinery makes for a safer and more profitable shop.
- 30 SHOPPING FOR NAILERS & STAPLERS:** There's a plethora of cordless and pneumatic options available in today's marketplace, where innovation rules.
- 36 WHEN THE TOUGH GET GOING:** Saratoga Custom Cabinets got its start during difficult times but continues to grow and expand its market.
- 42 IDENTIFY AND ELIMINATE:** Controlling waste starts with a clear understanding of where it's occurring.

News Desk

- | | |
|---|---|
| 10 Cerritos College benefits from gift to woodworking program. | 14 Networking, education part of CMA conference. |
| 10 AHFA promoting furniture safety awareness. | 16 Yellow birch flies under the radar. |



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22



45

Columns

- 35 PRO SHOP:** The real cost of borrowing.
By Mark E. Battersby

Tools & Techniques

- 18** Laguna rolls out three Fusion saws.
20 Grizzly router tables offer precision, support.
22 Add-ons stretch NGX Clamp Edge.
23 New CNC's Talent T3 now AL/UL compatible.

Departments

- 8** Taking Stock
45 At the Galleries
46 New Products
51 Calendar
53 Classifieds
56 Out of the Woodwork

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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

Congratulations: It's a two-story raised ranch

My wife and I are expecting another house. We're so excited. We've been trying for months.

We're about three weeks away from closing on a four-bedroom investment property. It's not a flip, as I see it, because we're not going to turn around and sell it in six months. Instead the plan is to have it ready to rent by next spring. It's a 50-year-old house that needs a new kitchen and bathrooms, so I'll be busy.

For inspiration, I've been on a YouTube tear. Renovation videos sort of fall into two camps: showing how to do something or what was accomplished. The best, in my opinion, show a project from start to finish. Not in real time, of course, but with enough detail to cover every step of the process.

Here are some of my favorite YouTube channels:

The Essential Craftsman: Scott Wadsworth shares his knowledge on construction and blacksmithing. Currently explaining how to build a house in painstaking detail. We're 50 episodes in and the walls are just going up. But the tricks of the trade are invaluable.

Home RenoVision DIY: Jeff Thorman, a general contractor in Ottawa, is a natural in front of the camera. I've picked up some painting and tiling tips that will definitely help.

Homemade Home: Hosted by the Homestead Craftsman, who renovates really cheap houses. There aren't many \$10,000 houses in my neighborhood, but he can find

them. Wish I had his plumbing and electrical skills.

Finish Carpentry TV: Richard McMurray basically brings viewers to his jobsite, sharing the tricks of the trade. A fine example of how to market a business with YouTube.

The Handyman: Focuses on operating a handyman business with lots of how-to instruction. Makes me think about a career change.

The Wood Whisperer: Long-time fan of Marc Spagnuolo's channel that often incorporates humor with solid woodworking knowledge. The projects are great, but I especially appreciate the videos that focus on setting up shop.

April Wilkerson: Picks a project and dives right in. It's been impressive to watch her skills grow, and over a million subscribers seem to agree. The series on "Building a giant bandsaw mill" is quite good.

Pure Living for Life: Watching this married couple build a house with structural insulated panels makes me wish they hadn't. I'm rooting for them, but everything is just so hard.

The Samurai Carpenter: The Samurai uses the third person too much, but he's got skills. Good source for Japanese joinery, blacksmithing and old tool information.

AvE: Canadian MacGyver who doesn't give a puck with his tool reviews. He's a man of mystery, smarter than your average bear, and happy to expose a tool's underbelly.

Looks like I've strayed from my original home renovation topic, but YouTube has a way of leading us down a rabbit hole. **W**

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

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Cerritos College benefits from gift to woodworking program

By Jennifer Hicks

The Cerritos College Foundation has received a \$2.3 million gift from the late John B. Smith, Jr. to support the school's woodworking program. Smith, an alumnus of Cerritos College in Norwalk, Calif., designated the gift for woodworking scholarships. It is the school's largest financial donation to date.

"We are truly humbled and inspired by Mr. Smith and his family's generosity," Dr. Jose Fierro, president and superintendent of Cerritos College, said in a statement. "Mr. Smith's gift will help students attain advanced skills in woodworking and master the artistry of woodcrafts for many years to come."

The foundation will establish the John B. Smith Scholarship Fund to benefit students enrolled in woodworking courses at Cerritos College. Scholarships will be available starting later this year.

Cerritos College has offered woodworking courses for more than four decades. The program emphasizes hands-on training and real-world experience in more than 40 classes, including face frame and frameless cabinet construction, CNC woodworking, architectural millwork, table and casegood construction, hand tools, woodturning, and veneering.

"Woodworking can be a very rewarding career for students who are just graduating from high school or people looking to develop a highly skilled hobby," said Reuben Foat, chair of the college's woodworking program. "The job market for woodworking is very strong with careers that range from cabinet makers, furniture finishers, machine operators, and craft woodworking artists. Students who

complete the program generally are incredibly satisfied working within this meaningful and gratifying vocation."

Smith established a trust to create a woodworking scholarship fund at the college following his and his mother's death. He was born in Wichita Falls, Texas, and graduated from North High School in Torrance, Calif. in 1962. He worked as an engineering draftsman in the aerospace industry for ten years. He took woodworking courses at Cerritos College before moving to Paso Robles, Calif., where he lived at the time of his passing. He also donated his woodworking equipment, including a drill press and bandsaw, to the college.

For more, visit www.cerritos.edu. **W**



Students working in the Cerritos College woodworking shop.

AHFA is promoting furniture safety awareness

By Jennifer Hicks

In effort to elevate safety messaging on home furnishings websites, the American Home Furnishings Alliance is taking on an industry-wide education initiative to better communicate key furniture safety information to consumers.

The 20+20 Project was announced at AHFA's 2019 Regulatory Summit in October with the goal of getting 20 manufacturers and 20

retailers to help launch the initiative.

"Although we initially are seeking 40 industry leaders to spearhead the effort, we intend for the 20+20 Project to eventually result in better safety communications on hundreds of home furnishings websites," says AHFA vice president of communications Patricia Bowling.

The AHFA wants to achieve safety awareness by first addressing the most high-profile

websites, so more consumers understand the importance of selecting compliant furniture and how to identify it in the marketplace. The project follows an AHFA review of its member company websites.

"Our member companies are leaders in product safety. But, when we reviewed their websites, we discovered that their efforts and significant accomplishments are mostly hidden from public view," she adds.

Specifically, the AHFA found that most companies fail to state that their products comply with the voluntary furniture stability standard, ASTM F2057-19. Also, companies seldom mention the tip restraint kit for anchoring to a wall that is included with the purchase of any compliant product.

For more, visit www.ahfa.us. **W**



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Remodeling market expected to stall in 2020

Annual gains in homeowner spending for improvements and repairs are set to give out by the second half of next year, according to the Leading Indicator of Remodeling Activity released by the Remodeling Futures Program at the Joint Center for Housing Studies of Harvard University.

The LIRA projects that annual home improvement and maintenance expenditures will post a modest decline of 0.3 percent through the third quarter of 2020.

"Continued weakness in existing home sales and new construction will lead to sluggish remodeling activity next year," Chris Herbert, the center's managing director, said in a statement. "Slowdowns in other key indicators of improvement spending—project permitting, sales of building materials, and home prices—also suggest the remodeling market may be reaching a turning point."

"At \$325 billion, owner improvement and repair spending in the coming year is expected to essentially remain flat compared to market spending of \$326 billion over the past four quarters," added associate project director Abbe Will. "However, today's low mortgage interest rates may help counter some of these headwinds, which could buoy home improvement expenditure over the coming year."

ASID opens 2020 awards programs

The American Society of Interior Designers has opened four of its awards programs for submissions, including 2020 National Honors, Fellowship, Ones to Watch, and Outcome of Design.

"These awards highlight the true power of design," said Randy Fiser, CEO of the ASID. "The practice uniquely impacts the lives of the people who design and inhabit spaces. We're thrilled to honor those who advance the profession and the top projects that prove its value."

For more, visit www.asid.org.

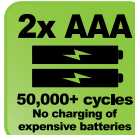
New president & CEO at Bürkle North America

Bürkle North America announced that its board of directors has appointed Kurt Palmer as president and CEO, replacing Helfried Weinzerl who is stepping down after seven years. This leadership appointment is effective immediately.

"We are fortunate to have someone of Kurt Palmer's caliber and experience step up to lead Bürkle North America," said board chairman Richard Crowe in a statement. "We are at an important moment and we need continued leadership to successfully implement our strategy of utilizing our core technologies of lamination and coating for a variety of markets."

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Networking, education part of CMA conference

By Jennifer Hicks

The Cabinet Makers Association expects about 200 members to attend its second national conference – exploring the theme, “2020 Vision: A Clear View of the Woodworking Industry” – scheduled for Mar. 4-6, 2020 at the Q Center in St. Charles, Ill.,

The group’s executive director, Amanda Conger, says woodworkers and related industry counterparts, whether CMA members or not, are invited to attend and benefit in several ways.

“It’s important for a few reasons. One is



Stay in your lane: Guy Bucey will open the conference.

stepping out of your shop into a different perspective. You’re so focused on your day-to-day responsibilities. At the same time, you get that perspective of other people in similar situations or who’ve been there and succeeded. Networking is huge at these events. We try to keep everyone busy with educational sessions, but we provide them with a ton of experiences to just talk to other members,” says Conger.

Guy Bucey, a decorated Marine turned woodworking plant manager and COO at Inova in Guilderland Center, N.Y., will give the opening keynote address, “Stay in Your Lane”, on being an effective leader.



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Get answers from experts at the CMA conference.

Bucey’s “presentation will discuss how to be a servant leader, not a domineering leader. He talks about how it’s important to know your role, not overlap, and allow your employees to do their job. He touches on culture, employee retention and general management and leadership strategies,” Conger says.

Dominic Rubino, a woodworking business consultant, will close the conference. Rubino “will talk about how you need a plan to get where you want to go. He’ll provide strategies for people to do that and implement so they walk away with specific marching orders,” says Conger.

Local plant tours are also on the agenda.

For more, visit www.cabinetmakers.org. 

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Yellow birch flies under the radar

By Jennifer Hicks

While certain mainstream domestics dominate the hardwood market year after year, there's a less appreciated species just waiting to be brought into the workshop: yellow birch (*Betula alleghaniensis*). Comparative to hard maple in density and appearance, it has its own set of advantages with price and stark color contrasts, according to suppliers interviewed by Woodshop News.

Yellow birch offers a few different products with its muted yellowish white sapwood and a bold red heartwood, says Ron Baker of Baker Lumber in White River Junction, Vt.

"You could get a combination of color if you want by getting it unselected which has the red and white together. Or you could just get the sapwood, which is pretty close to white, or you could go to the red birch, the heartwood, which is very pretty. It's got that real red color to it for something a little different, and it's not super expensive," says Baker.

Baker, who gets his supply from Canada, says boards are available in all of the above and in standard widths from 4" to 7" to wider selections at 8" and above. Still, customers tend to be a bit hesitant.

"Yellow birch is not exactly a real hot item. We don't sell large volumes of it. I'm not quite sure why. It could be that yellowish color. It's not exactly white like maple, and the grain is

also pretty coarse, so it's a little harder to work with," Baker says. "But if you get the unselected you still get the red and you get both colors and it makes a really nice looking floor, or you can buy just the sap and better, which is what we buy the most, that is pretty close to white and you can use it for cabinet doors."

Doug White of Doug White Hardwoods in Marissa, Ill. is a proponent of yellow birch, but says it has had its heyday and is rather difficult to find.

"It's not really selling like it should be. We don't push it that much. It's just out of favor right now. In the 50's and 60's, all kitchens around here were made with yellow birch, but in more recent times we went through the oak stage," says White.

"Hickory and hard maple are comparative to it and they're the two selling for us. Birch just isn't asked for. We are trying to push this white birch, but if I had my preference, it would be the yellow birch. It's a very nice-looking wood. We sold some to a guy making bookshelves and when he put the finish on this yellow tone just popped out. It was just beautiful," says White.

White also says appearance and workability varies greatly depending on its growing location.

"I try to get it whenever I can. The only place I've ever found a good source for it was out of Canada. Canadian birch grows slower

and has a tighter grain, so it works a lot better and stays straighter than anything we get around here."

Doug Grove of Groff & Groff lumber in Quarryville, Pa. says he doesn't sell much yellow birch but sees an increased interest in the figured red when available.

"The flamed birch is pretty, and it seems to sell quickly. It's tough to get. It's not as prevalent as curly maple would be. But birch is less stable and gets more tear out. Maple is a lot easier to work. It's a good substitute for beech if you can't find beech," says Grove.

Retail prices for 4/4 yellow birch were quoted at \$3.56/bf for unselected, \$3.75/bf for sapwood, and \$5.85/bf for red in 4"-7" widths. **W**



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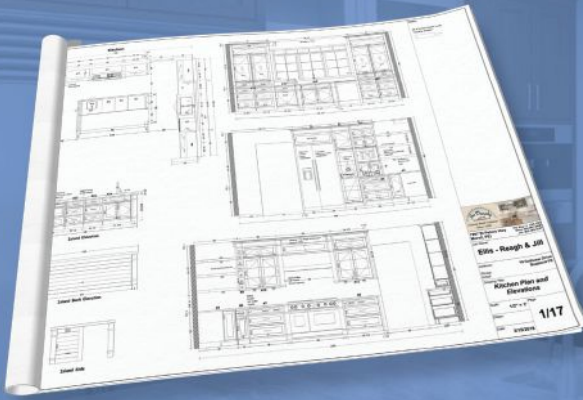
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TOOLS & TECHNIQUES



The Fusion F1.

Laguna rolls out three Fusion saws

By Jennifer Hicks

Laguna Tools has introduced its new line of Fusion F1, F2 and F3 tables, featuring three price points.

The F1 features a 110-volt, 1.5-hp motor and 30" aluminum rip fence. "Laguna's goal with the F1 was to bring a high-quality hybrid saw to the market for under \$1,000," says Laguna's Benjamin Helshoj.

"The big difference with the F1 compared to the F2 and F3 is that it sits on a tabletop. It includes an enclosed stand, which makes it more compact and easier to ship to bring the price down."

The F2 is a unibody design featuring a solid cabinet as part of the base. It has a 110-volt, 1.75-hp motor. The rip capacity in-

creases to 36", and the fence is made of steel.

The 220-volt, single-phase F3 has a 3-hp motor, 36" steel rip fence and special miter gauge.

"It's got a much bigger body than the F1 or the F2. The trunnion is cast iron instead of aluminum. The fence is also steel throughout the bar and rails so it's heavier than the others," says Helshoj.

The F2 and F3 have built-in mobile bases. All three models come standard with an overhead hose for dust collection.

Prices are \$999 for the F1; \$1,399 for the F2, and \$2,199 for the F3.

For more information, visit www.laguna-tools.com. 



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Grizzly router tables offer precision, support

By Jennifer Hicks

Two new router tables from Grizzly Industrial feature built-in, micro-adjustable router lift assemblies and cast-iron tables.

Model T28780, with a table measuring 32" wide x 24" deep, sells for \$795. There are two extension wings on model T28781, creating a 56" x 24" table, which sells for \$1,095.

Both tables are ideal for making raised panel doors, molding, decorative boxes or embellished edges on workpieces destined to become tabletops, bookcases, cabinets and more, says Grizzly product manager Todd Young.

"Many cuts that one would tackle with a hand-held router can be performed with improved efficiency on a stationary router table. This type of setup allows for greater cutter capac-

ity to make cuts with larger bits not designed for use with a hand-held router. These tables provide cutting capacities that are nearly equivalent to a smaller dedicated shaper," says Young.

He adds that the tables particularly excel when working with small stock, which can be difficult and risky to make with a hand-held router.

"The entire workpiece is supported, and the router is held firmly in place, so there's very little chance of bit bite or other irregularities caused by an improperly supported router," he says.

Both models are sold with a 32" x 2-3/4" aluminum fence, an aluminum table insert and stand, and have T-slots for hold-down accessories.

For more information, visit www.grizzly.com. **W**



Model T28781 with extension wings.

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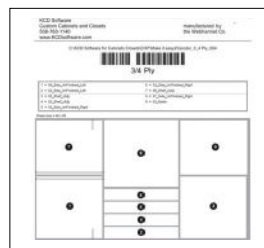
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Add-ons stretch NGX Clamp Edge

By Jennifer Hicks

Bora Tool's new NGX Clamp Edge is all about the accessories. It is available as a standard clamp edge guide in 24", 36" and 50" lengths, but extends to 100" when a 50" extension is combined with a 50" clamp edge.

Additional accessories include the Pro Saw Plate Guide and T-Square attachment which allow users to experience track-saw like results with a circular saw, says the company. The basic clamp edge works as a cutting guide and features one-sided adjustability for faster cuts.

"From the clamping side, you place the NGX Clamp Edge across the wood, pull it back to you and the clamp mechanism slides in the extrusion for you to clamp down. So, there's no need to place it, walk around, and keep adjusting. You can do all of that from one side," says product man-

ager Rod Bonham.

The saw plate guide is a key accessory, according to Bonham. It includes a non-chip strip that is especially beneficial when working with expensive materials and doing on-site applications.

"The non-chip strip will go on the bottom of your NGX extrusion and it is a support to the top edge of your material, so as the blade is cutting the material, some materials want to tear out that top edge, and the non-chip strip is giving support for a flawless cut," he says.

A router plate is offered with the system as well, useful for cutting dados and more. Track clamps can also be fitted for angled cuts.

The NGX Clamp Edge system with accessories retails from \$50 to \$120.

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



The NGX Clamp Edge offers one-sided adjustability.

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New CNC's Talent T3 now AL/UL compatible

By Jennifer Hicks

The Talent T3 CNC Router from New CNC is an industrial-grade, panel-processing machine geared for cabinetry production, furniture making and more. Available with a 4' x 8' (model 408) or 6' x 12' (612) table, the machine is fully loaded with innovative components that offer end-users efficiency and flexibility at an affordable price, according to the company.

The T3 features optional auto load and unload (AL/UL) attachments. Company president Doug Huizenga says for about \$15,000, end-users dealing with labor shortage issues or who otherwise want to focus on one-person operation can benefit from these add-ons.

"The T3 can be purchased as a stand-alone CNC router but it's preconfigured to put the AL/UL on it so our customers can add it at a later date if they don't purchase it initially," says Huizenga.

The 3-axis machine is also configured with Delta servo motors and a 12-hp

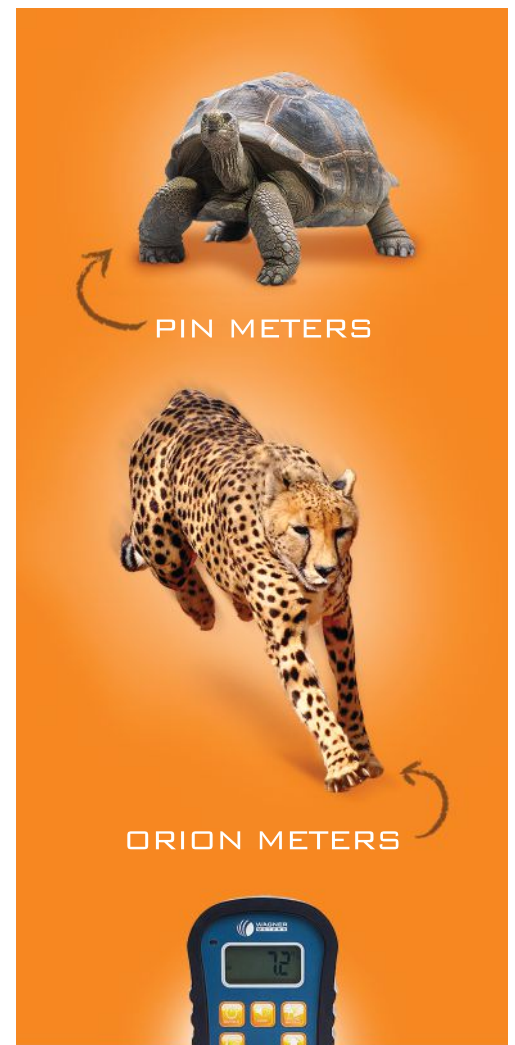
main spindle, capable of 18,000 rpm. The automatic tool changer has a 12-position traveling carousel with servo positioning and there's a nine-spindle independently controlled drill block, according to the company.

"The carousel tool changer is a ride along. We have chip to chip times of about eight seconds from the time you initiate a tool change to the time it's picked up. The drill block saves about 50 seconds per nested sheet," says Huizenga.

The company's Clean Sweep technology automatically engages between panel processes. The table features automatic twin vacuum manifolds for cleaning. There is a single vacuum pump on model 408 and two vacuum pumps on the 612. A 6" diameter outlet is available for dust extraction.

The Talent T3 480 starts at \$52,780. The AL/UL upgrade brings the cost to \$67,780. Model 612 starts at \$62,780.

For more information, visit www.newcnc.com. **W**



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Stick to a schedule

Sharp tools and well-tuned machinery makes for a safer and more profitable shop

By John English

Tools are expensive, but tools that don't do their job well are very expensive. They cut slower, create lots of re-work and touch-ups, and even present some dangers. Basic maintenance can go a long way toward eliminating those negative effects.

Almost every tool in a woodshop will benefit from occasional cleaning with a pitch and resin remover. This liquid or aerosol solution can be used on bits, blades, tables, bearing guides, splitters, riving knives, even zero clearance inserts. Proper dust collection is another key aspect of tool maintenance, not only for your own well-being but also for the longevity of honed edges. Without it, we're often asking tools to cut the same material more than once. And guide bearings on router bits and shaper cutters need to be occasionally cleaned and lubed. There are slip lubes for

tables that don't contaminate wood or cause finishing problems, and special treatments for V-belts that prevent slipping. Replacing some V-belts with segmented link belts can also reduce vibration and drag, both of which can help tools and edges last longer.

All this maintenance can be organized into three loose categories – hand tools such as chisels and planes; dimensioning tools that include saw blades and planer knives; and milling or profiling tools such as router bits, shaper cutters and CNC tooling.

Hand tools

On a recent fall afternoon, Ken Froelich watched as his shop cat, Trip, stretched languidly across his workbench. The man is surrounded by hand tools, and I swear both he and the cat were purring.

Froelich, a furniture artist and master crafts-

man, thinks he knows why so many shop aprons have empty tool pockets nowadays. It's not just because machines are more efficient, but also because woodworkers no longer feel that they have the time to invest in sharpening.

No matter how much Industry 4.0 seeps into woodshops, Froelich maintains that there will always be a need for a few hand tools. He also notes that woodworkers who know how to sharpen and maintain tools always seem to accumulate – and use – more of them. Even those who show little respect for manual methods will usually have at least a block plane and a few bench chisels lying lazy in a drawer somewhere. Froelich thinks it's time to drag them out and tune them up. His point is there's not really all that much to their maintenance. It takes a little time to sharpen and tune tools, but the payoff is that it usually takes a lot less time to bring a sharp hand tool to the workpiece than it does to carry the part to a machine and process it. That's because there are so many steps in machining such as setting fences, locking in the depth of cut, hooking up the dust collector, running the board through and perhaps making more adjustments before bringing it back to the bench.

Time saved isn't the only benefit, according to Froelich. Breaking an edge with a freshly sharpened block plane is definitely more satisfying than using sandpaper. It's also more accurate and controllable. The resulting tiny chamfer looks so much more professional than a crude round-over that was gouged by garnet.

Sharp tools are safer, smoother, faster and more enjoyable. And sharpening is no longer the chore that it was back when Ken (who is currently enjoying his ninth decade) learned his trade. For establishing a primary bevel, a slow-speed bench grinder (available from companies such as Rikon and Grizzly) that's equipped with a Norton white wheel is a good combination for minimizing heat. And for honing a secondary bevel, there's an inexpensive solution from Rockler called the plate glass system (item GRP5983_2).

If you're doing some serious hand tool work, then take a look at Tormek (tormek.com/usa/en). This slow-speed and highly accurate Swedish system will not just tackle bench tools, it will also work for many machine knives and blades.

The bottom line here is that there are all kinds of jigs and machines available for sharpening, so the guiding principle is to find one that keeps tools cool as it grinds. Woodturning forums are great places to pick up brand recommendations, because turners need to sharpen constantly. That means they'll know the options for sharpening hand tools better than most machine-biased woodworkers will.



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Dimensioning tools

The first step in maintaining tools for ripping, cross-cutting, thickening and dressing is to invest properly and buy the best. These knives and blades can last an incredibly long time if they are built with the right quality carbide and steel. Upgrading to industrial saw blades from top grade manufacturers such as Forrest, Carbide Processors, Total Saw Solutions or Freud can elevate both the processes and products of a woodshop. These blades can handle more work, more sharpening and more heat than mass market versions. And when they do eventually go dull or have damage to a tip, most of these industrial manufacturers offer service and sharpening that meets the original factory specs.

A well-tuned and adjusted machine will help tools and blades last longer. Improperly aligned tables and fences make the knife or blade work harder, burn hotter, and wear unevenly. They're also unsafe. High quality aftermarket fences can upgrade a contractor saw to a thing of beauty. The factory fences and miter gauges on



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these machines often feel like an afterthought, while the table, motor, shaft and trunnions are all quite acceptable. Adding a highly accurate and reliable fence can really improve their performance. Some brands worth exploring are Vega, Incra Precision Tools, Very-SuperCool Tools, Delta and Shop Fox. When it comes to miter gauges, Brad Witt's Woodhaven makes a dandy version, too.

Blade stabilizers can reduce wobble in thin-kerf blades. These are essentially giant washers that are slipped onto the shaft on either face of the blade, adding an element of sturdiness.

Knives can often be sharpened in-house, and sometimes even while they're still on the machine. For example, several manufacturers such as Wood River (Woodcraft) make aluminum oxide hones for touching up jointer knives without removing them. And if the long, flat knives from jointers or planers need to be sharpened off the machine, that's also pretty easy to do in-house.

After removing them, degrease them with an industrial aerosol. Then

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use any of dozens of jigs from manufacturers such as Grizzly or Rockler to touch up the bevels. Woodworkers who like to make simple shop jigs will enjoy an article on the Paoson Woodworking website (paoson.com) that outlines a simple wooden jig used to sharpen planer knives.

Band saw blades are rarely worth sharpening, either in-house or sent out. Once again, the key here is to buy the best blades your budget will allow. Adding aftermarket blade guides can seriously upgrade the performance of many small- and medium-sized band saws. If possible, try to stay away from using band saws to cut solid surface materials. It initially feels like they're cutting through butter, but the blade dulls quickly and won't follow a straight line afterwards when you try to cut wood. If it's an option, use a router to machine these materials.

Many models of band saw can be retrofitted with a wheel brush that removes sawdust build-up from the tires. And those tires tend to wear out, too. Some of the new aftermarket replacement tires are easy to change out and can really help tracking.

Profiling tools

While sharpening saw blades in-house doesn't usually pay for itself (all those tips can take a long time to process properly), woodshops that profile a large volume of manmade sheet stock such as multiply or MDF might want to look into in-house sharpening of router bits. Here, the concern is usually just two to four faces rather than dozens of tips as it is with a saw blade. The core requirements of an accurate sharpening system are a diamond-tipped cone and a vise that holds the bit at the correct angle. Once set up for a specific bit, workers on the production line can usually touch up a handful of bits in a few minutes. The resulting fine dust would need to be evacuated properly.

Another approach is to purchase tooling with carbide insert cutters that can be rotated or replaced as they become dull. Shop owners are often surprised by the discounts offered on bulk quantities of inserts. And they'll sometimes find that several different tools can share the same size insert.

Standard twist drill bits can be sharpened many times in-house using an inexpensive benchtop sharpener such as the Drill Doctor models or grinding guides from companies such as General Tools that hold the bit at the correct angle for a grindstone.

The internal cutting bevels on a Forstner bit can be honed, but one shouldn't touch up the exterior edge as this will alter the dimensions of the hole being drilled, and possibly take the bit out of round. Run a mile from inexpensive Forstner bits – they'll burn and wander and ruin your day.

If a Forstner bit needs to be used in a portable drill (most manufacturers recommend only using them in a drill press), it's a good idea to drill through a piece of 3/8" plywood first, and then align that with the hole to be drilled in the workpiece. Clamp it in place and use the plywood as a jig that will guide the bit and prevent wandering.

It's hard to remember to perform maintenance tasks. One solution is to mark a day on the calendar every three months as the seasons change and spend eight hours doing nothing but tuning and sharpening.

Such a regimen can be as relaxing as watching a cat stretch on a workbench.

John English is the author of "Woodworker's Guide to Sharpening" and "Bench Planes & Scrapers", both of which are available from www.woodworkerslibrary.com (item Nos. 14-509 and 14-511). 

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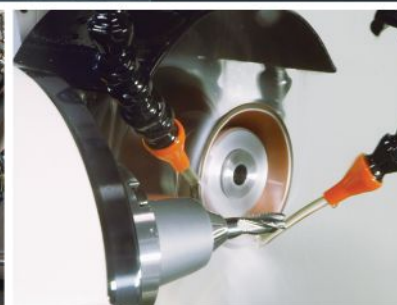
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25" EXTREME-DUTY PLANER WITH HELICAL CUTTERHEAD

- Cutterhead motor: 15 HP, 220V/440V* (prewired 220V), 3-phase, 37A/18.5A
- Table elevation motor: 1/2 HP
- Max. stock width: 25"
- Max. stock thickness: 9"
- Max. cutting depth: 1/4"
- Min. stock thickness: 1/4"
- Min. stock length: 10"
- Cutterhead type: 6-row helical with 170 indexable carbide inserts
- Feed rate: 20, 25, 30 FPM
- Cutterhead speed: 4900 RPM
- Overall size: 57 7/8" W x 54 3/8" D x 60 1/4" H
- Approx. shipping weight: 2054 lbs.

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FACTORY



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- Motor: 7½ HP, 220V/440V*, 3-phase, 20A/10A
- Table size: 99¼" x 33¼"
- Spindle travel: 5"
- Spindle speeds: 5500, 7500 & 10,000 RPM
- Spindle size: 1½"
- Max. cutter dia.: 11¾"
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- G9953ZX Motor: 5 HP, 220V, single-phase, 25A
- G9953ZXF Motor: 5 HP, 220V/440V* (prewired 220V), 3-phase, 14A/7A
- Table size: 16¼" x 99¼"
- Fence size: 43½" x 6¼"
- Maximum depth of cut: ¾"
- Maximum width of cut: 16"
- Cutterhead type: 6-row spiral with 120 indexable carbide inserts
- Cutterhead speed: 5000 RPM
- Cuts per minute: 30,000
- Floor-to-table height: 30¾"
- Overall size: 99¼" W x 45½" D x 32" H
- Approx. shipping weight: 1742 lbs.



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Push Blocks



5 HP CYCLONE DUST COLLECTOR

- Motor: 5 HP, 230V, single-phase, TEFC Class "F", 27A
- Switch: Remote-controlled, magnetic, with overload protection
- Intake hole size: 2 @ 8"
- Airflow capacity: 2577 CFM @ 1.4" SP
- Max. static pressure: 12.1"
- Filter rating: 0.2-2 micron
- Impeller: 15¼" steel radial fin
- Sound rating: 83dB
- Material collection capacity: 90 gal.
- Machine collection capacity at one time: 4
- Overall size: 62½" W x 47¼" D x 103½" H
- Approx. shipping weight: 860 lbs.

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10 HP DUAL-FILTRATION HEPA CYCLONE DUST COLLECTOR

- Motor: 10 HP, 220V/440V*, 3-phase, TEFC Class "F", 30A/15A
- Prewired voltage: 220V
- Intake hole size: 12"
- Airflow capacity: 4029 CFM @ 4.3" SP
- Max. static pressure: 16.8"
- Primary filter rating: 0.2-2 microns
- Secondary HEPA filter rating: 0.3 microns
- Impeller: 18½" steel radial fin
- Material collection capacity: 110 gal.
- Machine collection capacity at one time: 4
- Sound level: 82-85 dB
- Overall dimensions: 96¼" W x 52½" D x 139½" H
- Approx. shipping weight: 1555 lbs.



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12" SLIDING TABLE SAW WITH INDEPENDENTLY-POWERED SCORING BLADE

- Main motor: 7½ HP, 220V/440V*, 3-phase, prewired for 220V, 20A/10A
- Main table size: 35¼" x 21½"
- Sliding table size: 126" x 14"
- Rip capacity with standard rip fence: 49¾"
- Max. crosscut width with crosscut fence: 126"
- Max. depth of cut: 3½" @ 90°, 2½" @ 45°
- Main blade arbor: 1"
- Scoring blade arbor: 20mm
- Overall size: 139"W x 133"D x 45"H
- Approx. shipping weight: 1498 lbs.

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G0699 ONLY \$7295⁰⁰

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14" SLIDING TABLE SAW WITH DIGITAL CONTROLS AND FENCE

- Main motor: 10 HP, 220V/440V*, 3-phase, 26A/13A
- Scoring motor: 1 HP
- Main blade size: 14"
- Main blade tilt: 0-45°
- Depth of cut at 90°: 4"
- Depth of cut at 45°: 2¾"
- Main blade speed: 3000, 4000, 5000 RPM
- Main blade arbor: 1"
- Scoring blade size: 120mm (4¾")
- Scoring blade arbor: 20mm
- Scoring blade speed: 8000 RPM
- Scoring blade tilt: 0-45°
- Sliding table size: 15½" x 126"
- Maximum rip capacity: 51½"
- Length of crosscut: 126"
- Overall size: 132" W x 155¼" D x 65¼" H
- Approx. shipping weight: 2176 lbs.

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SINCE 1983





(Top row, from left) The SuperFinisher from Max USA; Porter-Cable's cordless 16-gauge nailer, and DeWalt's DCN662B.

(Second row) Cordless 18-gauge brad nailers from Milwaukee and Paslode.

(Third row) Ridgid's HyperDrive brad nailer and the Bostitch SB-2IN1.



SHOPPING FOR NAILERS AND STAPLERS

THERE'S A PLETHORA OF CORDLESS AND PNEUMATIC OPTIONS AVAILABLE
IN TODAY'S MARKETPLACE, WHERE INNOVATION RULES.

BY JOHN ENGLISH

Much of what's new in nail guns and staplers has to do with the cordless revolution, where batteries have replaced air hoses. That's a boon for jobsite work, but there's still a lot happening with pneumatic guns too, and those are still very popular on the shop floor. Quite often, the same companies are producing state-of-the-art tools in both formats.

The GCP650 from California-based Grex Power Tools (grexusa.com) fits that jobsite profile. Billed as 'the first and only' cordless 2", 23-gauge pinner on the market, this is a gun that drives the finest (as in thinnest) pin nail possible. Its light weight and hose-free compact body makes it a lot easier to be very accurate, which is usually a requirement when pinning fine moldings and the like.

Another cordless gun from Grex, the GC1850, came out a couple of years ago and was designed to be the most compact and lightweight 18-gauge nailer available. It can sink 2" nails in solid hardwoods. This hybrid is gas powered, and its spark comes from a couple of standard AAA batteries. The trigger feels as responsive and fast as a pneumatic nailer, but keep in mind that the gun might need to be oiled right off the shelf, for best performance. It operates at high altitudes and in cold weather, and the fuel cartridges are low cost, with minimal odor and no expiration dates.

There's a simple power adjustment knob for different wood density or nail length, and the driver tip is tapered to create the smallest mark possible. It has auto trigger lockout, a Posit-Lock nose to prevent jams, a fastener supply window and more.

Cincinnati-based Senco Co. (senco.com) has roots that stretch all the way back to 1935. In August of 2017, it was acquired by the Japanese manufacturer Kyocera Corp. Senco offers three cordless Fusion nailers – the F-15, a 2-1/2" angled finish nailer; the F-16S (no angle); and the F-18, a 2-1/8" brad nailer. They run on an 18-volt system, and the F-18 is an especially handy tool that drives both slight and medium-headed brads. It was built with trim crews and remodelers in mind. Senco also caters to shop and workbench needs with a huge array of pneumatic guns – everything from the PC1195 mini hand nailer (it literally fits in the palm of your hand and drives nails up to 3-1/2" long) to complete families of pinners, finish and framing guns, brad nailers and specialty tools for applications such as flooring, insulation and roofing. Among the pin guns is the FinishPro 23SXP, an industrial strength headless pin nailer that's useful for intricate finish and trim work.

The catalog from Milwaukee Tool (milwaukeetool.com) includes 11 nail guns and staplers, seven of which use 18-volt batteries. There's a 3/8" crown





(Clockwise from top left) The Cadex V3/90.40 stapler; Grex GC1850 18-gauge nailer and GCP650 pinner, and Ryobi P317 3/8" stapler.

stapler and a cordless palm nailer that both run on 12-volt power packs, and a couple of roofing and framing guns that use pneumatic power. The newly released 2746-20 is an 18-gauge brad nailer powered by the company's M18 Fuel battery. Milwaukee is also about to introduce a couple of cordless framing guns where the operator can switch out the stock magazines for extended capacity ones that will accept two full strips of nails. They'll be available in both 21- and 30-degree options.

Paslode (paslode.com) is a division of Illinois Tool Works that has been in business for more than 80 years. The company pioneered fuel powered cordless tool technology (gas cylinders), and one of its more recent additions is an 18-gauge cordless brad nailer, the IM200Li.2. The tool is lighter (just 4.25 lbs.) and more compact than its predecessors, a feat achieved in part by going with a smaller magazine. The new footprint and one-strip magazine deliver better access in tight spaces, and they also improve visibility and decrease the chances of damaging the wood.

THE STANLEY FAMILY

Founded before the Civil War, Stanley Black & Decker (stanleytools.com) was once known as The Stanley Works. Among its brands are such familiar names as Bostitch (bostitch.com), DeWalt (dewalt.com) and Porter-Cable (portercable.com). In January 2017, the company acquired

the Craftsman brand from Sears.

The revitalized Craftsman division (craftsman.com) has recently released a new three-tool combination kit (item CMEC3KIT-CA) that is ready to use right out of the box. This is a good option for small shops and installers who don't want to break their budget. It comes with a six-gallon air compressor, an 18-gauge brad nailer that drives nails from 5/8" to 2" in length, and a 16-gauge straight finish gun that handles nails from 1" to 2-1/2" long. Also included is a 3/8" stapler and an air hose.

Bostitch makes more than 2,000 different fasteners, so it's no surprise that the company also offers a good choice of tools. There are 16 finish and brad nail guns, four of which feature Smart Point technology that includes smaller noses that eliminate the need to compress the contact trip to actuate the tool. This reduces work surface damage, and the risk of pushing the material out of position. The company also offers four pneumatic oil-free or oil-powered 18-gauge finish and trim staplers. Among these is the SB-2IN1, which drives both 18-gauge brads and narrow crown finish staples. This tool has another popular feature found on lots of the newer pneumatic tools – an adjustable exhaust that conveniently directs air away from the user.

Porter-Cable's catalog includes several 20-volt cordless tools and half a dozen pneumatic options. The company's new, sleek looking PCC792B cordless 16-gauge nail gun accepts fasteners from 1" to



2-1/2" long, and it has a 100-nail magazine capacity. It also showcases a couple of aspects of newer guns to be found industry-wide such as tool-free settings, dual LEDs, light weight and a well-designed center of gravity.

DeWalt's 20-volt Max batteries include 2.0, 3.0, 5.0 and 6.0 Ah (Amp hour) versions that are designed to give varying reserves of power and present a range of physical sizes. That's because sometimes one needs a smaller, lighter tool and at other times raw power is the answer. Cost is also a factor. Using the latest in Lithium Ion technology, most of the batteries have an LED fuel gauge system that lets a woodworker instantly check the state of charge. Among the newer guns from DeWalt is the DCN662B, a 16-gauge cordless straight finish nailer that drives nails from 1-1/4" to 2-1/2".

MORE INNOVATION

Among the latest offerings from Max USA (maxusacorp.com) is an 18-gauge brad nailer, the SuperFinisher (NF255SF2/18), that has a couple of new tweaks including a patented button that can send a quick blast of air to clear dust and debris from the work surface. It also has that very precise nose for guiding nails to an exact area on the work, and a flat top design that allows nails to be fired as close as 1/8" to a vertical wall. And there's simple dial-up depth adjustment that lets the woodworker drive nails into either hard or soft materials without leaving large craters (or protruding heads). Plastic guards stop the tool's metal parts from touching and damaging finished surfaces. It also has built-in dry firing protection that prohibits repetitive auto-firing when seven nails remain in the magazine. Without this, the hammer would make a dent without driving a nail.

Metabo HPT (metabo-hpt.com) offers North American woodshops a massive range of products (in the neighborhood of a hundred tools) in its nail and staple gun catalog. These include both cordless and pneumatic options. Several are powered by a gas fuel rod combined with a

Campbell-Hausfeld's 1/4" crown stapler; Makita AN924, and Metabo-HTP's cordless nailer.

Lithium Ion battery, and this means that there isn't much downtime on the job. The fuel rods can be replaced immediately upon depletion, instead of waiting for a compressor cycle or recharging a large battery.

Ryobi (ryobitools.com) is one of the brands owned by Techtronic Industries (that also include Milwaukee, AEG and Homelite, among others). One of the latest tools to join Ryobi's One+ stable is the P317, a 3/8" crown stapler. This gun handles staples from 1/4" to 9/16" and is also compatible with Arrow's T50 staples. There's an onboard attachment that will guide staples when working with window screens and a belt clip.

Makita (makitatools.com) has introduced a new 21-degree, full round head nailer (AN924), a pneumatic gun that drives plastic collated framing nails from 2" to 3-1/2" in length, and 0.113 to 0.148 in diameter. It has many of the features an installer would want such as a two-mode selector switch (bump, sequential); lightweight design (only 8.3 lbs.); a heat-treated S7 steel driver blade; a solid aluminum top-loading magazine; and a nail lock-out mechanism that protects the tool and work surface from dry-fires. There's also a tool-less depth adjustment for flush or countersink nailing.

Cadex Tools (cadextools.com/en) offers five 23-gauge, three 21-gauge, an 18-gauge and a soon to be introduced 16-gauge nail guns, all of which are pneumatic. Also powered by compressed air is a cabinetry stapler called the V3/90.40. It shoots 90 Series or Senco Type L staples, an all-metal body, a built-in air blow gun, adjustable depth control, a long two-strip magazine and a 45-degree plastic tip for angle nailing on floors and siding.



Senco's F-16S finish and F-18 brad nailers.

Ridgid (ridgid.com), part of Emerson Electric Co., offers a 15-gauge angled nailer and a 16-gauge straight gun, plus an 18-gauge brad nailer and finish stapler. All of these are pneumatic. The company's HyperDrive cordless category includes a 2-1/8" brad nailer and 2-1/2" straight finish nailer.

Campbell Hausfeld (campbellhausfeld.com) has several pneumatic brad nailers and a 1/4" crown stapler sold in a kit (CHN10399AV).

Other manufacturers' catalogs worth exploring are Apach (apach-tools.com), Arrow (arrowfastener.com), California Air Tools (californiaairtools.com), Duo-Fast (duofast.com), Freeman (freemantools.com), Grizzly (grizzly.com), Master Air Tool (masterpalm.com), Prona (pro-natools.com), Speedaire (a Grainger product, online at grainger.com), Stinger (stingerworld.com) and WEN (wenproducts.com).

For shops setting up jobs on a CNC, Senco and Raptor Nails & Staples (raptornails.com) offer plastic nails that can be used to secure

parts for milling. These composite staples, nails, and specialty fasteners can be cut and sanded without damaging router bits, saw blades and sanding belts. If a CNC cutter accidentally hits one, it won't do any damage to the carbide. Senco makes guns for its nails, while Raptor sells several Omer guns.

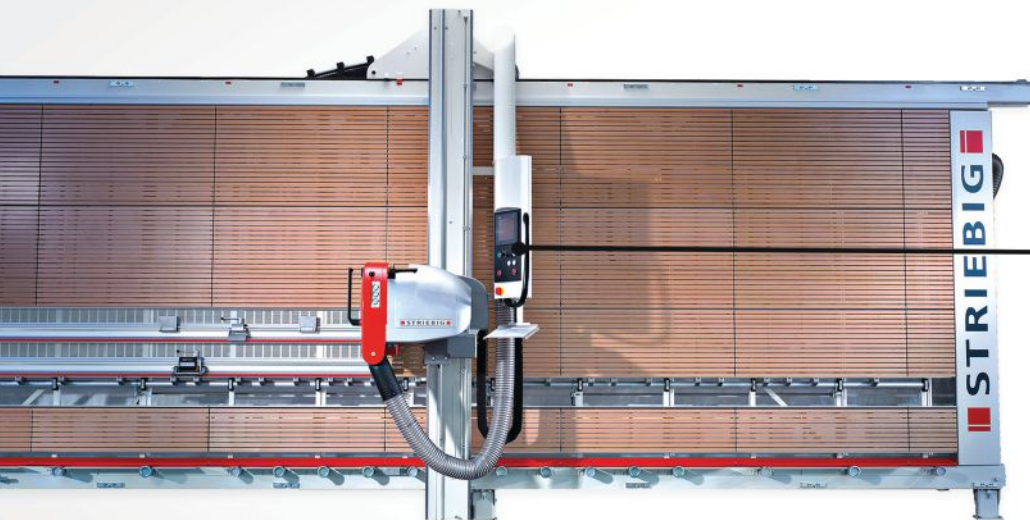
A woodshop looking to upgrade its nail, pin and staple gun arsenal may want to think about the way each tool will be used. Cordless guns and staplers are incredibly handy on the jobsite, and perfect for woodworkers who build one-of-a-kind custom furniture where power nailing is an occasional task. Shops building lots of cabinets might be better served by choosing pneumatic tools that deliver all day and have far more power available than they'll ever need.

When shopping for a cordless gun, the battery voltage (12, 14, 18 or 20) seems to be taking a back seat to the Amp hour rating. While voltage measures the strength of the current, the Ah number measures the amount or volume of juice available.

LED lights are becoming much more widely available, and these miniature spotlights that illuminate the work right at the nose of the gun can really help a woodworker produce cleaner, better nailing jobs. And those new, thinner noses also open up possibilities for better results – an operator can actually see exactly where the nail will go, rather than making an educated guess based on experience. 

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The real cost of borrowing

Small business lending has taken a significant blow over the past few years. Lower interest rates have translated into lenders being more selective. Fortunately, with many larger businesses reducing their borrowing needs, there is increased attention on small business lending.

Although often overlooked, two factors impact on how much a business loan will cost: the interest rate charged and the fees required before, during and after the loan process. These factors combine to create the annual percentage rate (APR), which is the real cost of the loan every year a balance remains.

In reality, it is the type of loan needed by a business that directly affects the interest rate charged. All too often the interest rate stated by lenders does not reflect the true cost of a loan. The loan agreement may require borrowers to maintain compensating balances and pay a number of fees.

Among the most common fees are:

Packaging: When applying for a loan, borrowers are usually required to provide a lot of information about their business, its finances, etc. all of which generally needs to be backed by a great deal of documentation.

Processing/application: Checking the credit of both the borrower and their business, as well as perhaps a personal background check, are often required. The processing fee compensates the lender for the time, work and expertise required to complete this analysis.

Underwriting: Once a loan application package is complete, it normally goes to the lender's underwriting department, where it is studied to verify all information provided is true. The lender also assesses the risk it would be taking by approving or denying the application.

Closing costs: These are usually associated with mortgage loans and can include – but are not limited to – expenses such as attorney fees, title search, realtor fees, etc. If a loan includes a real estate transaction, the lender will certainly incur closing costs that may be absorbed by the lender or the seller in order to encourage the sale.

Maintenance or servicing: These are fees the lender may charge on an ongoing basis

(monthly, quarterly) to service a loan, such as handling payments, sending out notices, responding to inquiries, etc.

SBA guaranty: When an SBA loan is granted, the borrower usually reimburses the fee the lender is required to pay to the SBA. Similar to points, this fee is based on a percentage of the amount of the guaranty that SBA is providing. Fortunately, the fee can be financed, allowing the borrower to add it to the principal amount to be repaid.

In addition to these potential fees, the loan agreement may require the borrowing shop to maintain “compensating balances,” pay a “commitment fee” or the loan may be “discounted.” And these are only the more frequently encountered terms:

Discounted loans: When a loan is discounted the interest is subtracted from the total loan amount. Thus, the proceeds received by a borrower, and available for use, represent the difference between the face amount of the loan and the amount actually available. Discounted loans are usually short-term loans.

Compensating balances: Similar to discounted loans because the bank requires the borrower to leave a portion of the loan in the bank, effectively reducing the amount of funds available for use. Of course, the borrower pays interest on the entire loan.

Doubling up: Surprisingly, a business could find itself subject to both requirements, that is, the loan could be both discounted and compensating balances required.

Insult to injury: The commitment fee can be assessed in combination with either a discounted loan and/or a compensating balance requirement. When calculating the combined effect remember to reduce the amount of the loan proceeds available for use and increase the interest cost by the amount of any special charges.

Before shying away from borrowing, every shop or business owner should remember that there are costs associated with not borrowing. One common misconception is that using savings and investments to finance needed purchases or to keep the business going, saves on finance costs.

Consider the shop owner who lends his or

her own funds to the business. In this case, the cost, often called a “lost opportunity” cost, is the amount those same funds would have earned had they remained in savings or invested. Today's low interest rates earned by savings might substantially reduce that lost opportunity cost, but it remains a factor for consideration.

Another, frequently overlooked cost to not borrowing is that the business may stagnate, be forced to pass up growth opportunities, and even be left in the dust by expanding, modernizing competitors, or those better able to finance increased efficiency.

Borrowing isn't the only way to finance a business. In order to expand, grow or even exist, many shop owners find it necessary to tap a variety of financial resources, usually falling into two categories, debt and equity. “Debt” involves borrowing money to be repaid, plus interest, while “equity” involves raising money by selling interests in the business.

*The interest rate
stated by lenders
does not reflect the
true cost of a loan.*

Which alternative is the most economical, debt or equity financing? According to a report issued by the Joint Committee on Taxation, “the after-tax effect of debt financing is more favorable than equity financing because of the deductibility of interest.” That's right, when it comes to managing debt, the interest paid on borrowed funds – even with the TCJA's business interest limited deduction – is deductible by a business borrower, while funds directed to equity investment are not.

Due to the recent uncertainty of state and federal tax rates, along with healthcare costs, many businesses have taken a wait and see approach when it comes to decisions about expansion, acquisitions, and financing. Now might be a good time for every shop owner to weigh the cost of borrowing against the benefits of the decision.

Obviously, taking out a business loan is a big step in today's uncertain economic climate. However, by calculating the cost of all available loan options, every woodshop business owner will be in a position to make a smart borrowing decision that will help the business grow and prosper for years to come. **W**



OFF TO T



SARATOGA CUSTOM CABINETS
GOT ITS START DURING DIFFICULT
TIMES BUT CONTINUES TO GROW
AND EXPAND ITS MARKET
BY JENNIFER HICKS

HERACES



ared Phillips, 34, bravely opened his cabinet shop during the last recession when other shops were going out of business. But you should know that he's pretty good at beating the odds.

The owner of Saratoga Custom Cabinets runs a four-person shop in Ballston Spa, N.Y., serving what's known as the Capital Region in and around Albany, N.Y. The plan is to expand the market, but let's go back to 2006 when Phillips was working as a chef at the Culinary Institute of America in Hyde Park, N.Y. He was injured in a motorcycle accident and spent a month in intensive care. He had broken bones throughout his face and rib cage, along with severe bone, tissue and nerve damage to his right arm and hand. And he probably needed a new career.

"The start of everything happened while I was sitting in a waiting room for physical therapy," says Phillips. "I opened a magazine and there was a bar for sale in a kit you could order. I thought, 'that would be really nice to have'. I wasn't working, so buying anything like that was out of the question. But I wanted to make it."

He built that a bar and impressed a friend, who put it on eBay. Over 20 orders rolled in, so Phillips hired some help and got busy. About a year into his recovery, he decided woodworking was a viable career.

Rapid growth

In March 2008, Phillips rented a 900-sq.-ft. warehouse in Saratoga and formed his company under his name with

PHOTOS: MICHAEL GORDON



Jared Phillips is a hands-on owner, spraying finish (left page), working in the shop or “doing whatever needs to be done”.

a DBA status. He hired occasional help and returned to the restaurant business part-time to help fund the operation. In 2009, he took out his first and only ad in a local flyer. The work poured in.

“I was getting calls before I even knew the ad ran. That’s when I decided I needed to put all of myself into the business. It just evolved immediately from there. I offered anything and everything in wood-working. If you could imagine it, we could make it happen.”

By 2011, he relocated to a 3,000-sq.-ft. warehouse in Ballston Spa, renamed the business Saratoga Custom Cabinets and formed a website. Working only through referrals, he quickly attracted a client base that included residential and commercial developers and homeowners seeking renovations. All were within a 50-mile radius, spanning from Albany to Lake George.

Phillips also accepted furniture restoration work through home insurance mitigation companies. One company he worked with frequently presented him with a job for over 100 pieces of antique furniture for house in Malone, N.Y. that got struck by lightning. It was a tall order, but possible in the larger facility.

“All sorts of quality antique Victorian era furniture had been damaged from smoke, soot, water and cleaning solvents. There were solid mahogany, cherry and walnut tables and dressers and a dining room set. At that point we had been in business over three years, so refinishing was second nature,” says Phillips.

“Our clients are mostly local. Some are visiting the area in the summer and live

elsewhere, and we just go to where they are. We’ll go down to New York City and west to Utica and Syracuse for kitchens, insurance work, or whatever they need. We’ve had clients that live here in the summer and Florida in the winter. We’ve installed four kitchens in Florida. It’s easy as that. There’s an incentive to go, too, because it’s warmer.”

His clients know the value of the shop’s knowledge and skill level, and simply want first rate work.

“There are a lot of people who’ve had a bad experience with retail cabinetry and are at the point where they’re either getting into their final home or at the point they want to spend money and invest it properly. They want a cabinet that has the duration to last and will not settle for anything less,” says Phillips.

The shop is attuned to the various and ever-changing style trends clients present to them. In recent years, there’s been a transition from contemporary styles to more traditional and rustic looks that coincide with the Adirondack feel.

The new shop

As the business continued to grow, so did the shop. In 2015 Phillips learned about a commercial property in the center of town, where a mini-golf course once stood, and decided to build to suit.

“I loved the idea of building a new building, but cost was on my mind. I was very apprehensive on building a building that fit with Ballston Spa’s aesthetics. The [seller, an engineer] offered to do the design and cost analysis, but the biggest thing to me was what could be done with the inside of it,” Phillips says.



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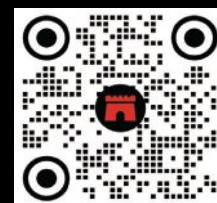


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Construction on 10,000-sq.-ft. building began in 2016. He's been in since 2018 and rents out the other half. He's still working on the showroom when not busy estimating, creating CAD designs or helping in the shop.

"I wear many jackets here. In culinary it appalled me when the boss could not do the employee's job. Here I can do anything I ask them to do. I spray finish, put cabinets together, whatever needs to be done."

Shop employees, including Phillips, Matt Fosmire, Thomas March and Ray Thomas, have come up with a twist on "Sons of Anarchy", a television series about an outlaw motorcycle club, with "Sons of Cabinetry". Everyone has a unique set of shirts, titles and patches with show catchphrases like "Men of Mayhem" and spinoffs such as 'Hardwood Original'. Phillips says the customers love it and he enjoys the fun

and feedback.

"It started out as a joke, having work shirts to do with the Sons of Anarchy, but people thought they were the coolest thing. We wore them to a Chamber event and so many people came up to say they love our shirts, asking if we rode our bikes there. It was a way to give us a uniform," says Phillips, who incidentally chooses not to own another motorcycle.

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A contemporary kitchen from the shop's extensive portfolio, featuring maple cabinets with an opaque finish, pantry, and island.

Future plans

The immediate plan is to get a showroom ready for a grand opening. "I would like to see that happen within a year," says Phillips. "The thing is, we have to keep up with the workflow. Ultimately I want to get the showroom up and going and have a customer service person on staff to take care of walk-in clients."

The shop has an eight- to ten-week backlog

that Phillips is striving to reduce to four to six weeks.

"I would like to expedite lead time. That would be incredible. The thing is, lead time can go by very fast. It depends how many clients you're multi-tasking at same time. Right now, we're on an average of multi-tasking 20 to 30 clients a month. What's nice is if one gets delayed, you can go to another one. Prioritiz-

ing is important. I never want to see a customer angry over a deadline."

Taking nothing for granted, Phillips clearly wants to take the time to do everything just right. He's not only proud to have overcome that life-changing feat in his early 20s, but to be able make a name for himself even when the odds were against him.

"Age was a big thing when I started. I was young and had to undergo

skepticism, so being able to rise above that was okay. I told myself I was going to do this and put the quality in and it shows, and that's a big thing. It's just a matter of my clients seeing their ideas brought to life." [W](#)

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Identify & Eliminate

Controlling waste starts with a clear understanding of where it's occurring, so follow the money

By John English

Think about where your money goes.

In most shops, the largest expense is usually payroll. That's generally followed by inventory, and after that probably the rent or mortgage. Then there are operating costs such as vehicles, loan payments and perhaps a lease on the CNC. The list usually wraps up with monthly expenses such as utilities and insurance.

If you're not sure of the exact order, then you either don't have a budget, or don't use it as a vital tool. One can't tackle waste until it is identified. A simple spreadsheet showing expenses for the past couple of years (grouped in categories such as the ones above) can quickly pinpoint where the money goes. Once you know that, you can start sharpening your pencil.

When a shop owner thinks about controlling waste, his/her mind naturally goes immediately to what's going into the dumpster. But that's probably one of the areas with the smallest potential for savings. Lean manufacturing looks at every aspect of every task and expense in the shop, not just materials, and it's fairly ruthless when it comes to avoiding waste.

You need to be, too.

That's because on average it takes about eight dollars in sales to add a dollar to a shop's net profit. But it only takes one dollar in waste avoidance to achieve the same result.

PAYROLL OPTIONS

The size of a woodshop is a determining factor when it comes to cutting payroll. If it's a one-man shop, there really aren't many options unless an accountant recommends a different business form (perhaps an LLC or an S Corp). But that's usually done for liability and insurance reasons rather than taxes. A sole proprietorship may well be the most efficient form for many small shops such as furniture artists and turners. Woodworkers who are building casework that will be attached to walls probably need the liability protection of a corporate structure. But again, that's a legal issue more than a budgetary one so it needs input from a lawyer.

Small- to medium-sized shops with several employees have a number of options available when it comes to trimming payroll. Most of them seem a little heartless, and because of that they're often adopted as a result of attrition (somebody quits or retires) rather than dismissal. Outsourcing is the most obvious way to scale down. If a shop orders casework that is finished and delivered to the jobsite ready to assemble, that can save a whole lot of man hours. Robots are quickly becoming a close second. Robotic arms start out at about half the cost of hiring somebody for a year, and the new generation of collaborative robots are safe, efficient and extremely robust. They can handle mundane tasks such as parts movement, sorting, and even some milling/drilling and assembly tasks.

Design software has come a long way of late, and programs are much more intuitive with huge libraries and simpler cut/paste/transform options. It may be time to upgrade the CAD software and save some time (that is, payroll dollars). Many shops are also going to outsourced design, but the trick there is to find a designer who has intimate expertise in all aspects of the type of work you do (such as face frames, work in the round, specialty materials, hardware and so on). If you have to constantly retrain him/her, or suffer through costly errors, you might be creating more waste than you eradicate. Outsourcing design tasks can also invite delays, especially if the designer is in a different geographical location and must rely on the shop to visit the site every time a measurement or other piece of information is needed. Before you send out a job, find out how CAM files are going to get to your machines. Software compatibility is essential.

INVENTORY OPTIONS

One of the primary tenets of lean manufacturing is the concept of just-in-time, which essentially boils down to ordering materials for each job as it comes online and thereby minimizing how much money is tied up in inventory. That approach often needs to be tempered by experience. It works well for easily sourced materials, but it may be necessary to warehouse some items that vary in supply, price and even quality. For example, a local mill may not always have the right species or cut available on short notice. However, a woodshop can certainly look at minimizing inventory levels on ubiquitous items such as drawer slides and MDF.

Reducing waste in parts processing usually begins with intelligent buying, and that can be informed by good optimizing software. On the shop floor, adding an automatic stop system to machines such as cross-cut or miter saws can save both time and materials, especially if the system has good repetitive features (that is, it remembers several dimensions and can automatically move to them). Adding an aggregate head to a CNC (not always an option on smaller machines) or upgrading the automatic tool changer (ATC) can dramatically reduce set-up and tool changing time.

A centralized control panel for an automated dust collection system can significantly reduce a shop's electric bill. Central vacuum systems draw a huge amount of power to generate adequate suction, and an

upgraded control system can operate the gates so that the pressure and volume requirements are always at their most efficient.

If your dust is going to the landfill, there might be a better option. Shops that work in solid woods may be able to find a market for animal bedding, composting and other landscape uses. Shops that mill sheet goods may want to locate the nearest MDF or stove pellet manufacturer, and ask if they buy. If a shop's waste volume is even somewhat significant, it may be time to take a look at buying or leasing a briquette machine and either selling the briquettes or using them to heat the shop.

RENT/MORTGAGE OPTIONS

This may seem to be one of the least likely areas to reduce waste, but there are some solid options here. Some of them are tied to other shifts in policy. For example, a shop that begins to outsource most of its processing and some of its assembly will need a lot less square footage. That opens the possibility of subletting some space or renegotiating the lease with the landlord.

Similarly, a woodshop that adopts a just-in-time policy as part of its move toward lean manufacturing may not need as much warehouse space.

If the business has any high-interest debt and owns its premises, this may be a good time to look at refinancing. Interest rates on secured debt such as mortgages and equity loans are generally quite a bit lower than other forms of financing. Most analysts agree that rates will continue to trend upward now, so refinancing is probably going to become a little less appealing every quarter. It's also necessary to lock in a fixed rate, and while that costs a little more initially, it is good insurance. If the bottom falls out of the economy, variable interest rates can be deadly.

OPERATIONS OPTIONS

The most obvious way to reduce utility costs is to weather-seal and insulate the shop. In bad times, energy costs are the first to rise, and they often stay high for a long time. On the cusp of the last major recession, gas prices in the summer of 2008 hit a national average of \$4.11 a gallon, and other fuel costs followed suit. Per calorie, natural gas looks like it will continue to be a much more economical option that electricity for the foreseeable future, so woodshops might want to take a look at how their heat system and drying/curing is fueled. Ceiling fans can make quite a difference in shops with high ceilings, and they don't cost a lot to install or run.

The choice between buying and leasing larger equipment such as beam saws, CNC routers, forklifts and edgebanders is something that should be looked at by an accountant. Doing a detailed cost analysis involves looking at more than just the monthly payment. There are tax implications, interest rate concerns, service and support issues, even insurance questions.

For smaller shops that don't do a lot of installs, it often makes a lot more sense to rent a delivery truck when needed rather than buying one. Renting means lower insurance costs and no maintenance expense for things such as oil changes and tires. It also eliminates a monthly lease or loan payment, and perhaps a parking space rental in some cities. This is a good subject for a detailed cost/benefit analysis, because it depends so much on variables such as miles driven and gas mileage, or subjective values such as convenience – for example, the right sized U-Haul truck may not be available on short notice.

The bottom line for woodshops is that waste control doesn't have as much to do with what goes in the dumpster as it does what goes into the bank account. Any saving in any aspect of the business is worth pursuing, and it can be hard to see savings until all the numbers are on paper. So, when it comes to waste control, a good budget is the most important tool in the shop. **W**



Mackintosh exhibit opens in Baltimore

By Jennifer Hicks

The exhibit, "Designing the New: Charles Rennie Mackintosh and the Glasgow Style," opened Oct. 6 and runs through Jan. 5 at the Walter Arts Museum in Baltimore. It is the first U.S. exhibition in a generation to highlight the architect and designer's innovative work and explore the larger circle of artists and craftspeople with whom he collaborated.

Featuring a variety of media including furniture, posters, textiles, architectural drawings, books, and ceramics, the exhibit celebrates the 150th anniversary of Mackintosh's birth. Approximately 165 works are on display, drawn from Glasgow Museum, The Hunterian, University of Glasgow, The Glasgow School of Art, and private collections.

For more, visit www.thewalters.org.

Port Townsend show

The annual Port Townsend Woodworkers Show took place Nov. 2-3 at the American Legion Hall in Port Townsend, Wash. The show features original works by over two dozen furniture makers, cabinetmakers, instrument makers, turners and carvers.

Tim Lawson, who heads the Splinter Group that organizes the show, says the purpose of the show is to increase awareness of the variety of skilled woodworkers in the local area. "We've tightened up our reach this year limiting the show to woodworkers in immediately adjacent counties. It's a delight to have more local talent to share but also sad as we are missing some long-time exhibitors from further afield," says Lawson.

The show is sponsored, in part, by the Port Townsend School of Woodworking. For more, visit www.splintergroup.org. [W](#)



The Port Townsend Woodworkers Show featured this carved harp by John Edwards; lounge chair by Kevin Reissig, and bench by Tim Lawson, all from Port Townsend, Wash.

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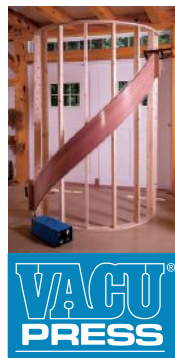


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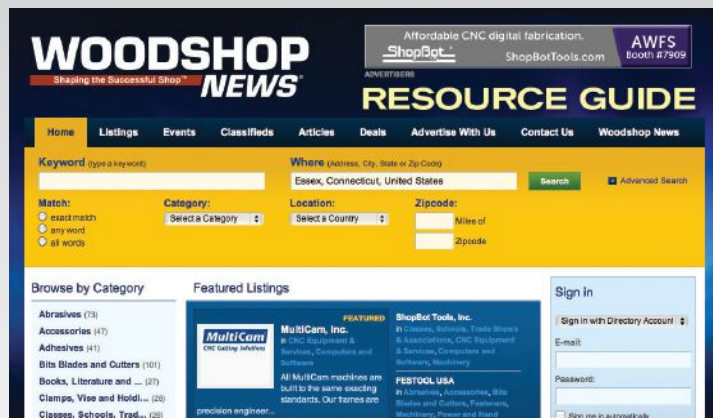
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►► **REHAU** is introducing FlipDoor, combining modern design with clever functionality. The combination of smooth movement, intuitive operation, a unique mechanism and an attractive appearance provides a refreshingly different cabinet concept, thus offering an alternative to current standard systems such as folding lift doors or swing flaps. The installation location is not limited to kitchens, as FlipDoor can also be implemented as an individual piece of furniture in shop fittings or living rooms, according to the company. For more, visit www.rehau.com.



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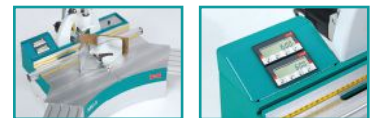


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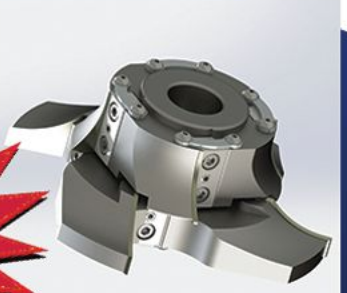


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Include name, dates, location, description of event and a contact address or telephone number. Calendar items, which should be typed or printed clearly, must be received a minimum of 60 days before the event.

Please note that fees, as listed, might not include materials or shop fees. Check with a specific class for further details.

— Compiled by Jennifer Hicks

CALIFORNIA

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

Monthly — Society of Wood Manufacturing, a chapter of AWFS consisting of educators, manufacturers, hardware and industrial sup-

pliers, and machinery dealers, meets during the second week of each month. For location and dates, visit www.awfs.org.

FLORIDA

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

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

GEORGIA

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

ILLINOIS

Mar. 4-6 — Cabinet Makers Association National Conference – 2020 Vision: A Clear View of the Woodworking Industry. Inspirational industry event featuring educational sessions, plant tours and networking opportunities.

Location: Q Center at St. Charles. www.cabinet-makers.org

INDIANA

Jan. 24-25 — 19th annual Midwest Tool Expo and Auction. Over 200 vendors displaying woodworking and construction equipment in a new 100,000-sq.-ft. convention center. Seminars on both days. Location: Michiana Event Center in Shipshewana. www.midwest-toolexpo.com

MAINE

Jan. 13 – March 6 — Eight-week Turning Intensive program with Beth Ireland. Designed to prepare woodworkers for successful careers as professional woodturners, and also open to amateurs who wish to bring their work up to a professional level. Location: Center for Furniture Craftsmanship in Rockport. www.woodschoool.org

MARYLAND

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



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NEVADA

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NEW YORK

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

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

NORTH CAROLINA

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

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

SOUTH CAROLINA

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

SOUTH DAKOTA

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

VIRGINIA

Jan. 16-19 — 22nd annual Working Wood in the 18th Century at Colonial Williamsburg. Themed "Down the Great Wagon Road: Furnishing the Southern Backcountry", the conference will explore a diverse legacy of craftsmanship with presentations and workshops from craftspeople and scholars. Location: Williamsburg Lodge. www.colonialwilliamsburg.com 

17 new WCA Evaluators in Wisconsin

Seventeen more educators completed their Woodwork Career Alliance Skill Evaluator Training at Madison College recently. These teachers are now certified to award WCA Credentials to their students.

Wisconsin has the highest concentration of Accredited Skill Evaluators in North America. Spurred on by funding from the Wisconsin Department of Workforce Development, high schools in the state can receive up to \$1,000 per student for each credential awarded.

"Interest in the Woodwork Career Alliance is accelerating," stated WCA President Scott Nelson. "Teachers see the positive benefits in aligning their curricula to industry standards and taking advantage of the many resources the WCA has to offer."

For more information, visit www.woodworkcareer.org.

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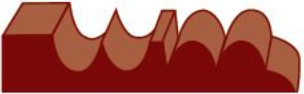
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Amana Tool.....	www.amanatool.com	C4	Laguna Tools Inc.	www.lagunatools.com	46
American Fabric Filter Co	www.americanfabricfilter.com	47	Lamello / Colonial Saw	www.csaw.com	1
Anderson America Corp.....	www.andersonamerica.com	11	Lignomat USA, LTD.....	www.lignomat.com	16
Axiom Tool Group.....	www.axiompprecision.com	40	Limtech Industries.....	www.limtechindustries.com	24
Bainbridge Manufacturing.....	www.BainbridgeMfg.com	50	Log & Timber Home Show.....	www.loghome.com/shows	55
Beaver Tools	www.beavertools.com	20, 41	Midwest Tool Expo & Auction.....	www.ToolAuctionAndExpo.com	25
Berkshire Products	www.BerkProducts.com	52	Mozaik Software Inc.....	www.mozaiksoftware.com	17
Castaly Machine.....	www.lobomachine.com	4	New CNC.....	www.NEWCNC.com	26
Castle, Inc	www.castleusa.com	39	Oneida Air Systems Inc	www.oneida-air.com	5
Century Components.....	www.xseriesbracket.com/wsn	9	Resource Guide	resourceguide.woodshopnews.com	48
Charles GG Schmidt & Co.....	www.cggschmidt.com	22	SandMan Products.....	www.sandmanproducts.com	49
Connecticut Saw & Tool.....	www.ctsaw.com	27	Scm Group	www.scmgroupna.com	14
DC Distributing.....	www.dc-dist.com	18	Stratus	www.breathecleanair.com	19
Decore-ative Specialties.....	www.decore.com	6-7	STRIEBIG / Colonial Saw Co.	www.csaw.com	34
Dispoz-A-Blade, LLC.....	www.Dispozablade.com	51	Vacuum Pressing Systems.....	www.vacupress.com	47
Felder Group USA.....	www.felderusa.com	2	Ventless Inc.....	www.ventless.ca	52
Grex Power Tool.....	www.grexusa.com	12	Vexor Custom Woodworking Tools	www.vexorcwt.com	50
Grizzly Industrial, Inc	www.grizzly.com	C2, 28-29	Wagner Meters.....	www.wagnermeters.com	23
Hafele America Co.....	www.hafele.com/us	51	WEIMA America	www.WEIMAAMERICA.com	13
Hoffmann Machine Company.....	www.hoffmann-usa.com	49	Woodworker's Showcase.....	www.WoodworkersShowcase.com	C3
KCD Software	www.KCDsoftware.com	21			



Award winners included (clockwise from top left) Stephen Antony of Hackensack, Minn. (Interior Projects); Russell Jacobs of York, Pa. (Small Homes & Cabins); Tim Lavelle of Athens, Ohio. (Exterior Projects); Daniel Goldstein of Scottsville, Va. (Large Barns & Garages); Wayne Quibell of Wilberforce, Ontario (Homes & Major Structures), and Milo Scott of Rifton, N.Y. (Goodwill).

Top of their class

Portable sawmill owners who've built their dream woodworking projects were recognized by Wood-Mizer's 2019 Personal Best Contest.

The biannual contest is open to any Wood-Mizer sawmill owner in North America interested in competing for their share of \$20,000 in prize credits. First-, second- and third-place winners were recognized in eight categories, including Homes, Small Homes, Barns, Small Barns, Interior, Exterior, Creative Showcase and Goodwill.

The contest received nearly 200 entries.

"Every year, we continue to be amazed by the creativity and craftsmanship of Wood-Mizer sawmill owners all over the world," says Darryl Floyd, Wood-Mizer's North America president. "Congratulations to every sawyer who has accomplished their dream of building a project or business with a Wood-Mizer."

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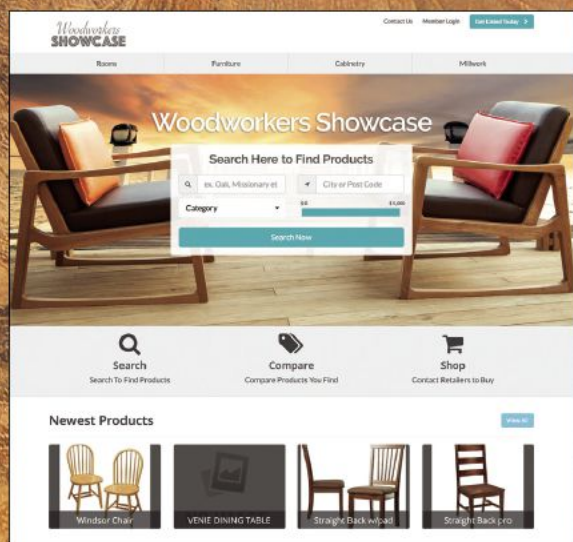
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