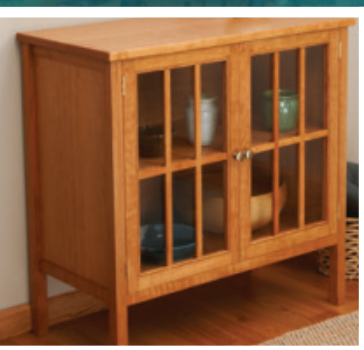
WIN a **SHOP FULL** of **TOOLS!** pg. 25

WOODCRAFT® magazine

Projects, Techniques, and Products



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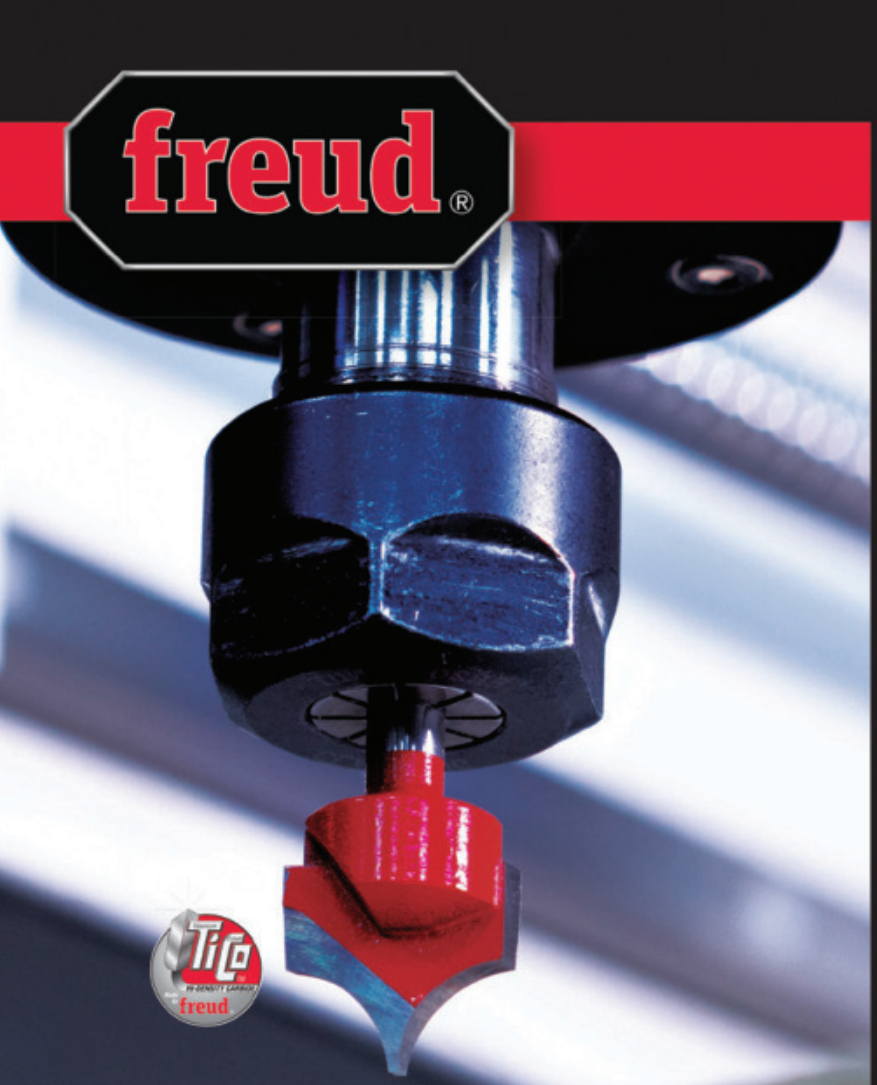

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A cause for celebration

Woodcraft Magazine is proud to present its 100th issue! Much has changed since we embarked on this adventure 16 years ago, but our dedication to producing accessible woodworking content has endured. The team here delights in delivering knockout projects, valuable woodworking advice, honest tool reviews, and shop-proven tips. In general, we just flat out love woodworking and want you to, too.

To that end, we went all out for this issue. To start, Woodcraft Supply and a few top-notch toolmakers have joined us in creating the 100th Issue Giveaway Sweepstakes, offering you a chance to win a shop full of tools! You'll find all the details on page 25. Then, if you're reading this, you already know about the 6 Best Boxes magazine bundled with the issue. Plucked from our previous 99 issues, these skill-building boxes are among our most popular projects. We've updated them and are presenting them here together for your building pleasure.

The revelry continues in the form of the *Woodcraft Magazine* USB thumb drive. We've collected all 100 issues—that's 16 years of stellar woodworking content at your fingertips—hundreds of projects, techniques, and products in one convenient, searchable package, available this Spring.

Bonus boxes, gadgets, and contests aside, this issue contains excellent content of its own. Reflecting on the changes seen in the shop over the last decade or three, we've presented awards (p.26) to some of the most groundbreaking woodworking tools in recent history. Veterans of the craft share their second-nature shop practices to benefit the up-and-comers among you (p.41). And, for projects, on page 32, you'll find a straightforward method for building a splendid accent cabinet. Rounding out the offerings is a set of side tables to make with your CNC machine (p.22), and a pair of shop cabinets designed to hold finishing supplies (p.46).

But we all know the true cause for this celebration is you. Readers of *Woodcraft Magazine* have kept us kicking over the years. Producing this periodical is our passion, and you grant us that privilege. So thank you. Enjoy *your* 100th issue. And here's to 100 more!

Caveat lector: To our jocund readers, keep an eye out for some April Fool's rib-tickling, and rest assured no animals were harmed (or shaved) in the making of this issue.

Share your ideas.

We love hearing from readers! And there are all kinds of reasons to get in touch with the crew at *Woodcraft Magazine*. Check out the details below.

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Here's your chance to help someone become a better woodworker and get rewarded for the effort. Published tips become the property of *Woodcraft Magazine*.

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Important: Please include your phone number, as an editor may need to call you if your trick is considered for publication.

Have a tough woodworking question?
We'll do our best to find the expert and provide the answer. Email us at *editor@woodcraftmagazine.com* and put "Expert Answers" in the subject line.

News & Views:
This catch-all column is where we do our best to correct mistakes, publish feedback from readers, and share other noteworthy news items. It's easy to participate in this discussion. Just email us at *editor@woodcraftmagazine.com* and put "N&V" in the subject line.

Submit an article idea:
Do you have a story idea? We'd love to hear about it. To find out how to submit an article, email us at *editor@woodcraftmagazine.com* and put "Submission" in the subject line.

Share photos of your projects:
We'd like to see what you're building. To show off your work send your photos to *editor@woodcraftmagazine.com*, or find us on social media.

WOODCRAFT® magazine

April/May 2021 Vol. 17, Issue 100

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Safety First! Working wood can be dangerous. Always make shop safety your first priority by reading and following the recommendations of your machine owner's manuals, using appropriate guards and safety devices, and maintaining all your tools properly. Use adequate sight and hearing protection. Please note that for purposes of illustrative clarity, guards and other safety devices may be removed from tools shown in photographs and illustrations in this publication.

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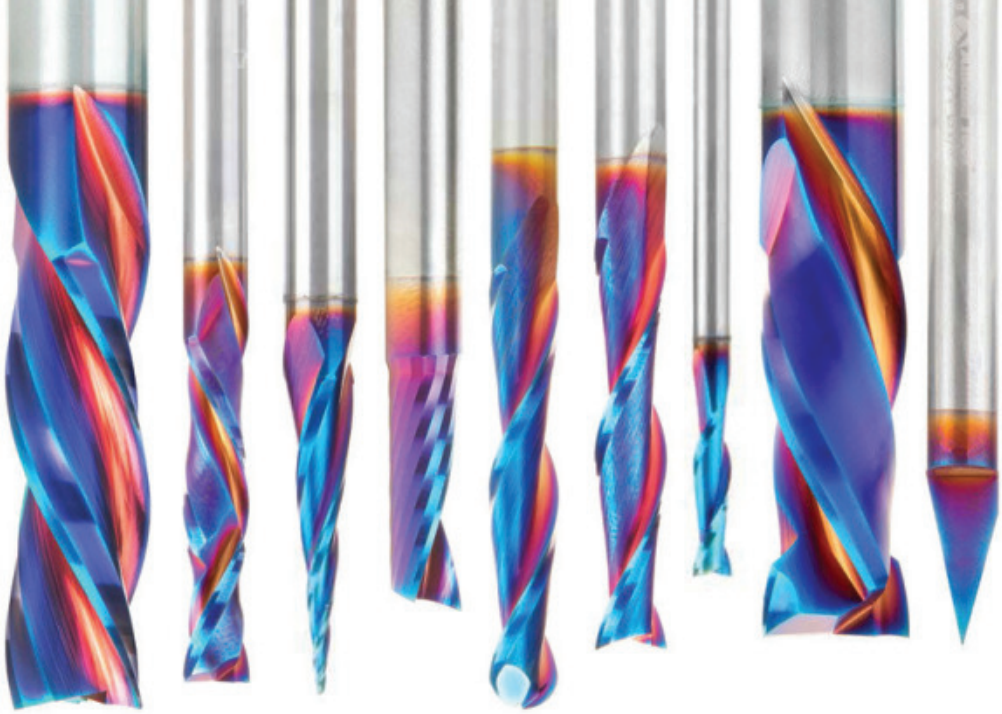

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Rock on. Hannah combined an electric guitar body with the three-string design of a cigar-box guitar. Built as a trial run for a charity auction build, it's now enjoyed by her youngest child.

TAMAR HANNAH

Mother of invention

When Tamar Hannah sees a need, she meets it head-on. The mother of three school-age children took to woodworking five years ago when even an exhaustive internet search didn't yield the piece of household furniture she was seeking—a bench with built-in firewood storage. So, she built it. Since then, she has designed and created beds, bars, benches, and guitars. "Everything comes from a need. I need storage, I need a guitar—we all need guitars," she quipped. Hannah's self-taught woodworking education combined YouTube videos with a healthy dose of trial and error. When she noticed most of the instructors were men, Hannah saw a need for a female woodworking role model. True to form, she met that need too by creating her own YouTube channel, 3x3 Custom. Putting her media studies degree to work, Hannah writes, films, and produces her own instructional woodworking videos. I chatted with Hannah by phone about woodworking, family, and the need for balance. Here's part of our conversation. **—Derek Richmond**

WM: How did you learn woodworking?

TH: Mostly trial and error. I'll try something and it won't work, so I'll try something else. YouTube has been the best source for me when it comes to learning new skills, but you can't just take someone's word. You have to discover things for yourself. You can get basic knowledge and ideas, but woodworking is something people need to figure out individually.

WM: Given the limit to what new woodworkers can learn from videos before heading to the shop, why put yourself on YouTube to teach the craft?

TH: I didn't see anyone like me who was teaching, and there was a need for that. Young girls interested in woodworking turn to YouTube only to see elderly gentlemen teaching everything. Now these girls can see someone that looks like them working wood. The best comments I get are, "I watch your channel with my daughter, and she loves it." When I first started,

Kiddie table. Hannah included a hidden compartment to store her kids' arts and crafts supplies when family dinner time rolls around.

> *"Taking your time with the small details will help with the bigger things."*

Form and function. Hannah says she designs her projects to combine utility and beauty.

people would leave comments like "you're not really doing that, it's your husband doing it and you're just on camera." The thought of my husband using woodworking tools is actually quite comical to me.

WM: How do you choose what to build?

TH: Everything comes from a need. When there's a need, there's a problem to solve. Figure out the function then solve the design. I started woodworking because I needed firewood storage that doubled as a bench. There was something that didn't exist, I thought of it, then I built it, and now there it is. Creating something with your hands is just the most amazing thing.

WM: So what was your second project?

TH: Another firewood bench to fix the mistakes in the first one.

WM: Is there a mistake that stands out most for what you learned from it?

TH: I built a bed with a built-in bookshelf for my son. I measured the width of the mattress but didn't include the posts. I went to install it, and the whole bookshelf was six inches too narrow. So I had to completely rebuild it. Most mistakes are small but can end up being costly if you're not careful. Taking your time with the small details will help you with the bigger things.

WM: What do your kids think about their woodworking mom?

TH: When I started, I messed up a lot and would get discouraged. I started to think woodworking wasn't for me. But when talking with my kids about the mistakes I needed to fix, they were hearing "I'm gonna keep going." I was struggling, but I was teaching my kids a valuable lesson. Now, I expect mistakes with every build, and I enjoy jumping over those hurdles.

WM: What's next?

TH: Once my YouTube adventure dies down, I want to focus on making guitars. I put my heart and soul in them, and it's just so much fun to play an instrument I made. When I started woodworking, a musician friend suggested I build guitars. I laughed it off because it seemed to require more precision than I was capable of. But as I gained confidence, I circled back to the idea and attempted a guitar kit. While building that guitar, I realized the kit parts were all pieces I could make. I especially enjoy the freehand shaping of wood that can come with building a guitar. It's a natural, organic form, and the only math involved is in placing the electronics and frets. My oldest son plays a guitar I built, and I made a stand for my daughter's keyboard. Now my youngest son needs a bass. ■

Photos: Courtesy Tamar Hannah

Oops! Wrong number

The Black Walnut & Copper Vase story (Feb/Mar 2021) has an error. The drawing lists the sides at 11¾" tall, but the story says to mill a single piece 22" long to yield these two sides. What gives?
—Herman Susser, via email

Associate editor Derek Richmond replies:
The error is in the drawing dimension. Each side should be 10¾" long, which can be milled out of a single piece 22" long, as instructed. The correct dimension is shown here, and it will be corrected in the online version of the article as well. Thanks for keeping us honest.

Guide to buying?

Some of your projects use unique items, like the ball bearing in Shoot the Moon and the tree topper on the Kissmas Tree (Issue 98, Dec/Jan 21). Where can I purchase these items?
—Patricia Theodore, via email

Woodcraft Magazine staff replies:
Specialty parts, tools, finishes, and other items used in our projects are listed in the Buyer's Guide section of each issue. There, we include current prices, Woodcraft item numbers where applicable, and websites with product numbers for items not available from Woodcraft.

How to reach us

Email *editor@woodcraftmagazine.com*
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No more for me

Like nearly everyone else this past year, I've had a lot on my plate and am just now getting around to reading the June/July 2020 issue of Woodcraft Magazine. What a hoot on page 64, "There's always one more" I'd bet just about every reader has experienced this same thing. How many times I've gone scavenging for a nut, bolt, screw, drawer pull or knob...I don't know! But it's been more than a few times. I would need, for example, four screws, just alike...you guessed it, there were only three, only three! There's gotta be one more. Unfortunately, in my case, there seldom was.
—Jack W. Stanford, via email

Glitchy? Not us!

Yu may find some grammatical, typographical, philosophical, and ethical errors in the pages of this issue. Rest assured, deer reader, that each and every 1 of these was carefully and intentionally placed their by our crack(pot) staff of editors for your April Fools' Day amusement. ■

Sneak peek at next issue

Fast, Flawless, and Frugal
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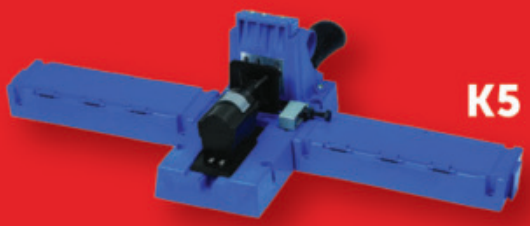

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Reader **Showcase**

PATRICK MCELROY,
MONUMENT, CO

Open bar wedding. In search of a wedding present for his son, McElroy came across Paul Anthony's liquor cabinet in Issue 87 (Feb/Mar 19). McElroy's version features a wider center cabinet and deeper case than the original. He also added drawer slides to the shelves making it easier to reach the good stuff stored in the back. The doors feature laminated walnut, maple and padauk panels, and the back is paneled to match. Milled brass pulls and a textured glass center panel finish off this top-shelf booze box. We'll drink to that!

BILL CHURCHHILL, ANAHEIM, CA

Pretty and poplar. Professional woodcarver Bill Churchill carved this 29" tall beauty—which he named Breezy—from poplar. He shaped her using power carving tools, and finished her with linseed oil and artist's paints. Churchill says he wanted to show the beauty of the female form in a respectful way.

DENNY MIRABELLA,
CHRISTIANBURG, VA

Overdue tansu. After working on the plans for two years, Mirabella finally made this step tansu a reality. Crafted from Baltic birch with poplar drawer parts, Mirabella painted the base and drawer fronts black while the case is stained dark brown. His wife says the stain resembles bamboo. Standing almost 18 inches tall, it now takes pride of place in the family's den. Mirabella admits it's been a long time coming.

BRIAN TANDROW,
BOISE, ID

Par-tray! Tandrow, a hobbyist woodworker of 35 years, crafted these party trays from Issue 97 (Oct/Nov 20)—and three others—as Christmas gifts for family members. He used African mahogany and birch. After removing the bulk of the wood with a forstner bit and drill press, he switched to the router and template to clean up the recesses. His family is already asking what they'll get next year from Tandrow's shop. ■

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Overview

- Heavy-gauge steel wall bracket
- Separates 99% of debris before it reaches the filter
- Works with most wet/dry shop vacuums
- No bin to empty, simply replace the bag
- Replacement bags readily available

Oneida Dust Deputy Bagger
#173892 $149.99

Oneida recently came out with a wall-mounted version of their popular Dust Deputy dust separator. I've been a fan of these small portable cyclone systems since they appeared about 15 years ago. They do a great job of separating out debris before it has a chance to clog my vacuum's filter. My only complaint with mine is that it is one more object to drag around the shop—admittedly a small price to pay for not having to clean the filter as often. However, when given the chance to test one of the new wall-mounted units, I jumped at it. Gaining that bit of shop real estate back was most welcome.

Once I settled on a location (perhaps a challenge in a crowded shop), installation was straightforward. The supplied template made it a snap to locate the mounting screws on the wall plate I had put up. With the metal bracket in place, assembling the cyclone and accumulator bin was a simple matter of bolting things together.

I then ran the supplied hose from the top of the cyclone to my vac's inlet and connected the vac's original hose to the cyclone's side inlet port. Here I noticed my first strategic error. With the unit wall-mounted, I needed a longer hose to cover my shop. Nothing a visit to Oneida's website couldn't remedy. (Note to marketing—why not offer a kit that includes a long hose?)

The final bit of installation involved fitting the bag underneath. This proved to be one of those challenging, three-handed operations that will probably get easier with practice. To mount the bag, you have to hold its mouth in place around the bottom of the bin and trap it with a provided stretchy silicone band, then pleat the bag neatly under the band to prevent leaks.

The unit performed well, though operation seemed strange at first in that the empty bag collapsed in on itself. Don't be alarmed. This is supposed to happen. The manual recommends turning the vac off after about 15 minutes to allow the debris that accumulates in the bin to drop into the bag. Once the bag begins to fill, the contents help hold its shape. Note that hand plane shavings and other large debris can catch on the steel grate at the bottom of the bin, potentially clogging it and requiring you to pluck them free. Also note that you must use 4 mil thick bags (such as contractor's trash bags), as lighter ones can get sucked into the grate. Despite the added cost of the hose, I am pleased with the set up and am glad my days of dragging my vac around are done.

—Tester, Ken Burton

Prices subject to change without notice.

Photos: Ken Burton

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New tricks set Skil router apart

Skil 14-Amp Plunge and Fixed Base Router Kit

Overview

- 14 amp, 2½ HP motor
- Plunge and fixed bases included
- ½" and ¼" collets fit most bits
- Computer-controlled speed selection
- LED worklights illuminate cutter

The name Skil conjures an image of the ubiquitous circular saw synonymous with the brand. What it doesn't call to mind is routers. So when Woodcraft started carrying Skil routers, I was skeptical.

That skepticism was unwarranted, as testing proved Skil's router kit to be chock full of features—some standard, others not—packed into a solid chassis.

All of the usual features are there. Two and a half horses provide plenty of power, while plunge and fixed bases mean versatility. The included edge guide attaches securely and easily to both bases. A micro-adjust knob finely tunes the bit depth. And the interchangable ¼" and ½" collets fit most common router bits.

What makes this tool really shine are two features not typical in other routers on the market. First, a trio of LED worklights around the collet activate automatically when the router is turned on. Many trim routers feature worklights, but they're almost unheard of on full-size routers. Lighting the work surface proved incredibly helpful, especially during plunge work, though the ability to turn on the lights independently of the motor would help in lining up cuts.

The second notable difference is the smart electronic speed control. While many other routers have speed control, Skil's helps you select the proper speed. An LCD screen atop the motor shows three fields: bit type, size, and material type. Pushing the set button toggles between the fields, while the +/- buttons select options within each field. Start by setting the bit type: options include bullnose, rabbeting, roundover, ogee, dovetail, and straight. Each type is represented by a pictograph on the display. Next, set the size range. Most cutters fall within the 0-1" smallest range, but with 2½ horsepower, this tool can power bits up to 3½". Finally, choose between softwood, hardwood, or plastic. The router then automatically sets the motor RPMs.

It takes some imagination to match the pixelated

image on-screen to the bit in the chuck, and the manual doesn't provide much guidance, but I found cycling through the options a few times helped. The bigger issue is that there's no indication which field is active, which sometimes led me to accidentally change a setting already made–switching bit type when I meant to change material type, for instance. It's also possible to manually set the speed, but in testing I found the computer-selected speed nicely balanced power and control across all bit and material types.

Skil may never become eponymous to routers the way it has with circular saws, but if it does, this is the router that will lead the way. ■

—Tester, Derek Richmond

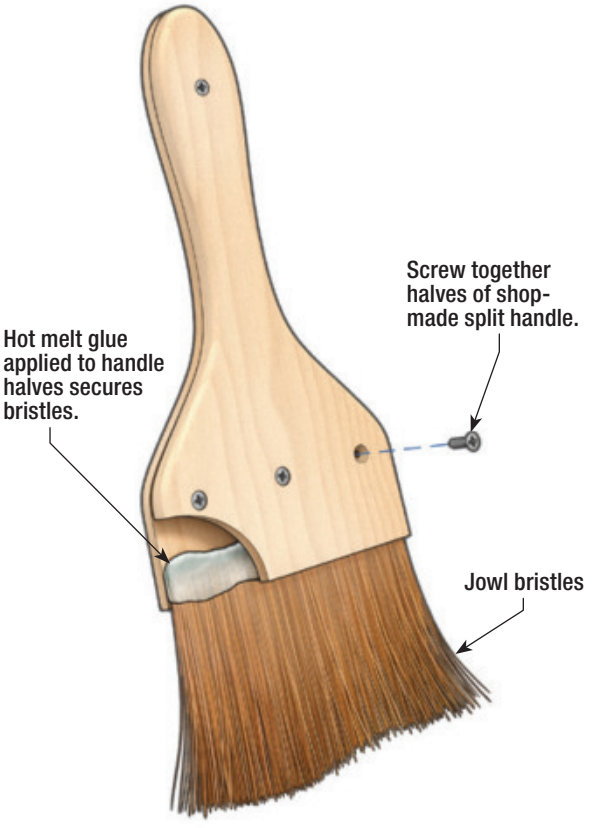
Skil 14-Amp Plunge and Fixed Base Router Kit
#174809, $139.99

Photos: Ken Burton

TOP TIP

A Yorkie brush

While my wife was away on business, I decided to make her a new jewelry box as a return surprise. Things went well until it came time to finish, when I discovered that my only brush was fouled with hardened varnish from my last job. Unfortunately, I didn't have time to get a new one. I was pondering my predicament when I remembered I needed to feed my wife's Yorkshire Terrier. As I entered the kitchen, there sat the solution. I grabbed a pair of scissors and got to work making myself a custom doghair brush. I trimmed off a handful of belly fur and secured it between two handle-shaped scraps of wood as shown, applying hot-melt glue to each half to keep the bristles in place. It worked pretty well, but the finish didn't lay down as nicely as I wanted. Some trial-and-error snipping here and there revealed that the fur from Peppy's jowls did the best job of dispensing the varnish with beautiful flow. It worked so well that I went ahead and made a few extra brushes while I was at it. I'm happy to say that my wife loves her jewelry box and promises to let me out of the doghouse soon.
—Rube Clemens, Moline, Illinois



Epoxy be dammed

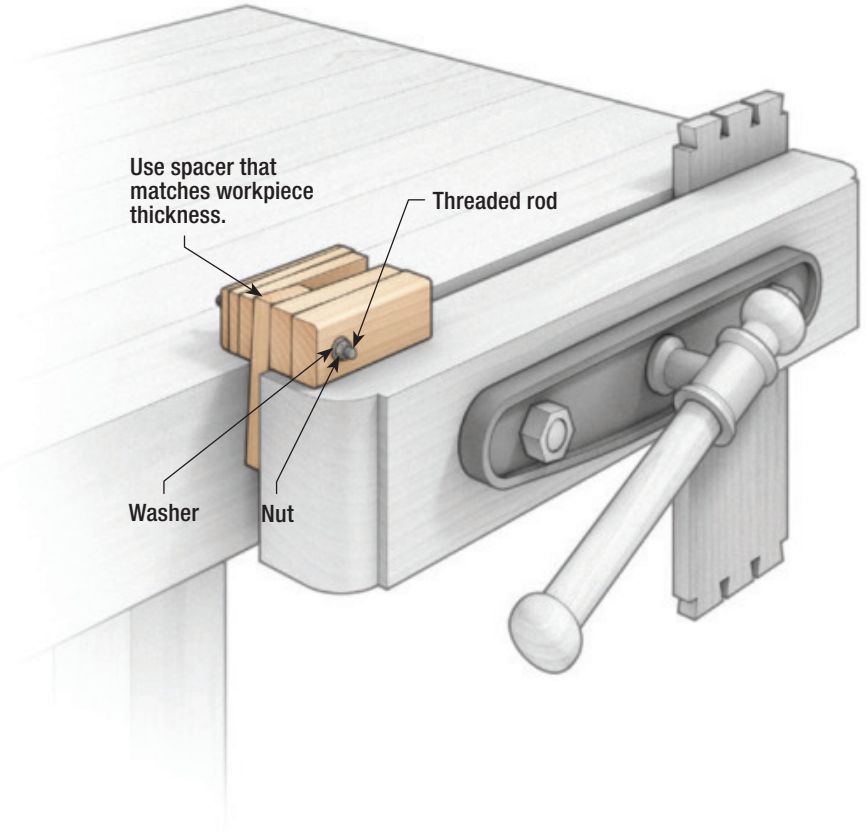
Like many woodworkers, I use slow-curing epoxy to fill cracks and voids in slabs and other boards. The problem is that you have to babysit the application, often refilling it multiple times as it settles and seeps into the void, which is time consuming. I've discovered that you can use hot melt glue to create a "dam" around the recess that creates a reserve to replace seepage. It also keeps the epoxy from oozing across the surface where it's not needed. After the epoxy cures, just use a card scraper to remove the hot melt glue and epoxy overfill for a flat, smooth, void-free surface.
—Brett Whited, Washington, West Virginia

Illustrations: Christopher Mills

Anti-rack vise jig

Clamping a workpiece at one end of a wooden bench vise often racks the jaw, compromising its grip. The common prevention for this is to clamp a scrap of equal thickness at the opposite end. But it's a nuisance searching for the right size scrap and unwieldy trying to hold both pieces in place while tightening the vise. This multi-fingered jig—consisting of various spacers mounted on a threaded rod—provides a great solution. Simply place it atop the bench with the appropriate sized finger dangling between the vise jaws. To make the jig, drill a ¼" diameter cross-hole in one end of a 4" long 2×4. Then rip the piece to yield a series of incrementally sized strips. Mount the strips on threaded rod between washers and nuts.

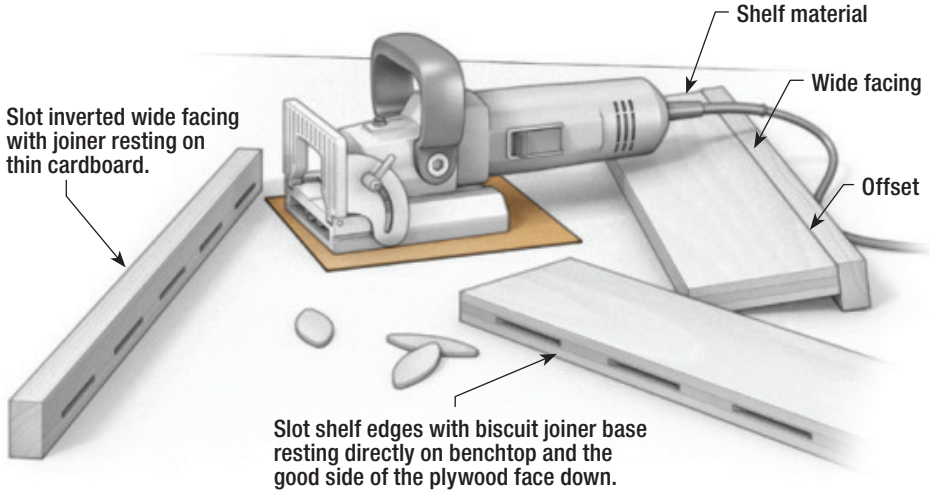
—John Esposito, Foster, Rhode Island



Easy offset biscuits

When applying wide solid wood facing to plywood, it's wise to offset the facing a little bit to allow trimming it flush to the plywood surface afterward. I like to attach facing with biscuits, but creating the offset requires first slotting all the shelves, then resetting the fence to cut the edging slots. Instead, for more efficiency, I begin by cutting the slots in the shelf edges with the biscuit joiner resting on the bench, then I simply slip a piece of notepad cardboard under the tool when slotting the mating edging, which is inverted for the job. ■

—Chad McClung, editor-in-chief



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A Trio of Round-top TABLES

CNC joinery and plywood combined

By Ken Burton

As CNC routers have found their way into small shops across the country, makers have been exploring how best to use their strengths to create beautiful and useful objects. While these machines can easily be used to cut solid wood parts to incorporate into traditional designs, they have also spawned a unique way of making entire pieces of furniture using plywood and slotted joinery. For this inaugural Digital Woodworking department offering, I designed a trio of three occasional tables that make use of this CNC-centric way of working. The three table heights work well beside a wide variety of chairs and sofas, and can also serve nicely as plant stands.

Make the parts from Baltic birch plywood, using 1" (25mm) for the legs and ½" (12mm) for the tops. One of the advantages of using this material is that you can simply rout and sand the edges to finish them rather than applying edgebanding. The uniform, void-free core looks good and finishes well. I added plastic laminate to the tops of my tables for carefree use, but you could just as easily finish the plywood to match the legs.

onlineExtras

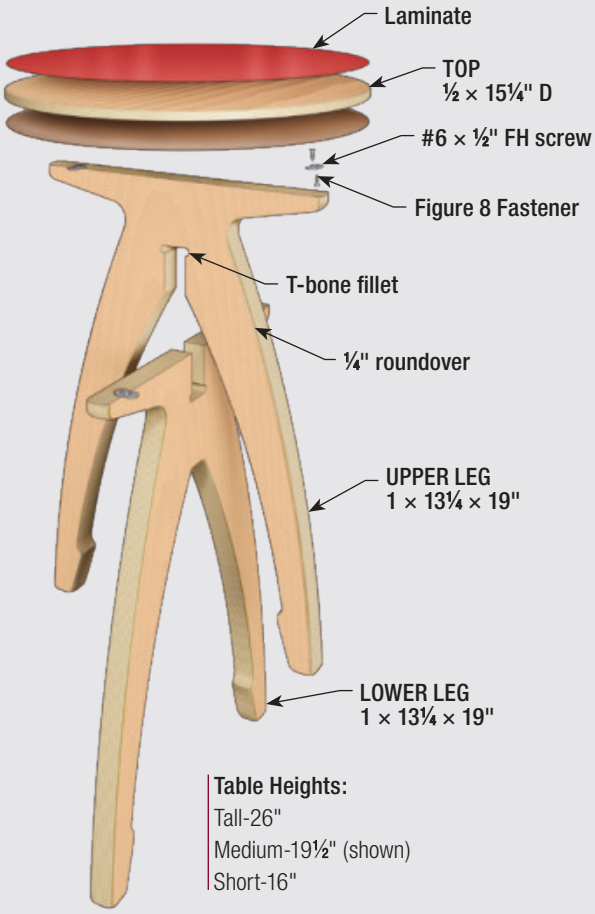
- Downloadable CNC Cutting Files
- No CNC? No problem. Printable leg patterns available

Order of Work:

- Cut blanks
- Download CNC files
- Cut out parts
- Laminate tops
- Shape edges
- Sand, assemble, and finish

Construction notes

Download the CNC Cutting files to your computer and use them to generate tool paths for your router. As drawn, they use a ⅜" straight bit to make the cuts. Zero the bit in the center of the blanks, and cut the legs and then the top for the table(s) you want. There are two main things to be aware of: First, check the thickness of your material. These files worked well with the 1" sheet I purchased, which measured between .995 and 1.024" thick when I checked it. If necessary, you can tweak the horizontal scale of the file to change the width of the notches. Secondly, take note of the little overcuts at the corners of the notches. These "T-bone fillets" are a hallmark of CNC joinery. They allow the notches to nest together without your having to chisel the corners square. Once the legs are cut, bandsaw them free of the waste before shaping the edges with a ¼" roundover bit in your router table. Avoid rounding the tops of the legs and the insides of the notches. Laminate the top as described below before rounding its edges. Then sand and finish all the wood surfaces, avoiding the notch faces. I stained the bases of the tall and short tables with General Finishes Mocha and Slate oil stains, respectively, then applied polyurethane to all three tables. To assemble, slide the pieces together with glue in between, then attach them to the underside of the top with four Figure 8 fasteners.



Laminate the top

For each table top, you'll need two pieces of plastic laminate approximately 16" square. (Laminating both sides of the top prevents it from warping.) You may be able to buy cheap offcuts from a local cabinet shop. Bandsaw the pieces into circles about ½" larger than the tops. Spread a thin coat of contact cement on the underside of one of the laminate pieces and one side of the table top. Allow the cement to dry before bonding the pieces together. Before laminating the second side, round over the first side on your router table. Sand the edges to prepare for finishing.

Rollin', rollin', rollin'. To fully bond the laminate to its substrate, you need to apply heavy pressure to the surface. While you can do this using a scrap of wood with a bullnosed edge, a J-roller is the proper tool for the job.

Trim 'n' shape. Trim the laminate and shape the plywood's edge at the same time with a ¼" roundover bit. Note that contact cement frequently gums up router guide bearings, which can leave a choppy profile. I usually make a second pass after thoroughly cleaning the bit. ■

Photos: Ken Burton; Illustration: Dan Thornton

WOODCRAFT magazine

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GREAT INNOVATIONS IN WOODWORKING

We salute ten game-changing advances in tooling

By WM Staff

Here at *Woodcraft Magazine*, we're big believers in credit where credit is due. So we thought that our 100th issue should include a salute to some of the best tool innovations in woodworking's recent history. Some of these ingeniously designed tools provide better ways to join workpieces, some expedite cutting and smoothing, some offer great versatility for holding workpieces, and some have broken ground in terms of health and safety. We even give a tip of the hat to design software that's proved to be a boon to woodworkers.

It's a good bet that you've seen a number of these products in the press, at stores, and in online videos. However, without actually putting a tool through its paces yourself, it's hard to know whether to believe whatever sales hype may have been spewed about it. Well, we're here to vouch for these particular brainchildren. They have been around now long enough to prove their real worth, aside from any grandiose advertising claims. So if you have been considering buying anything you see on these pages. you have the encouragement from your woodworking pals here. We're glad *we* got 'em!

What innovation has made a real difference in your shop? Email us at *editor@woodcraftmagazine.com.*

For sources to the products shown in the photos, see page 62.

Table saw safety

The table saw has long been the primary workhorse in most woodshops, but it's been known to bite and kick, chewing up hands and/or hurling workpieces across the shop. For decades, the only safety bridle on American saws was a splitter/guard combo that was so cumbersome that many of us simply removed it—a big invitation to danger.

Then SawStop joined the rodeo and tamed this magnificent beast with its proprietary blade brake technology. The mere touch of skin against the spinning blade activates the safety mechanism, stopping and dropping the blade in milliseconds to eliminate injury. That groundbreaking trick in itself is deserving of applause, but SawStop didn't stop there. The machines that the company produces are top-notch—solid, accurate, and rich in features you need in a table saw.

Even saws without blade brake technology have gotten safer, A little over a decade ago legislation forced manufacturers to incorporate European-style riving knives into their offerings to help prevent kickback, which occurs when a workpiece is allowed to wander away from the fence and into the blade's rising rear teeth. It's about time every saw had this simple, but very effective piece of safety equipment. Bravo!

SawStop. SawStop table saws incorporate microprocessor technology that stops a spinning blade in milliseconds to prevent serious injury.

Riving knife. As opposed to a splitter, a riving knife rises, falls, and tilts with the blade, so you never need to remove it, exposing yourself to risk.

Parallel jaw clamps

Back in the day, woodshop panel- and case-assembly was ruled by pipe clamps and traditional bar clamps. These can do the job, but their short, metal jaws can misdirect clamping pressure and dent workpieces. Then along came parallel jaw clamps, named for their most salient feature: jaws that remain parallel under clamping pressure. This ability contributes mightily to accurate, efficient assemblies because parts tend to self-square under pressure. The 3- to 4"-long jaw depth provides extra reach when clamping case dividers and other parts with limited clamp access. A parallel jaw clamp can also be used sideways when throat depth isn't important, reducing the number of clamps necessary for a given span. The steel-reinforced resin jaws are glue-resistant, flat, and built to withstand enormous pressure and abuse.

With clamping forces typically rated at at least 1000 lbs., these clamps provide more than enough muscle for most woodworking jobs. They are available in a variety of lengths, and the bars on even the longest versions are stiff enough to resist significant deflection. Most modern versions have handles that are contoured and/or covered for good grip.

Like any well-made product, parallel jaw clamps are not cheap, but they're worth every Jackson. Start with just a few, and you'll find yourself reaching for them first nearly every time.

A parallel reality. Recent-model parallel jaw clamps such as the Bessey K Body REVOlution at left include anti-tip feet, grippy handles, and workpiece standoffs. Frill-free but very effective early K body clamps are shown at right.

Photos: Staff

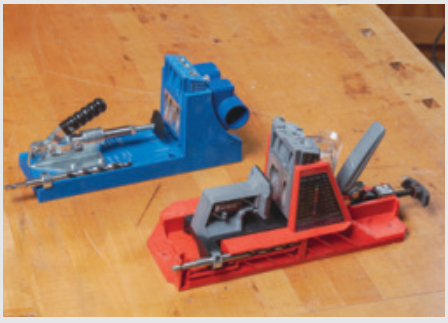
Pocket screw joinery

Pocket hole drilling jigs have been a real aid to the small shop woodworker as well as an absolute boon to the DIY crowd. That's because pocket screw joinery provides a quick, inexpensive way to connect parts. It can be a great approach for making face frames, joining cabinet panels, constructing jigs, and other applications where the screw pockets can be hidden or where aesthetics don't matter.

A pocket screw joint is essentially a butt or edge joint reinforced with special self-drilling washer-head screws designed specifically for the job. A pocket hole jig guides a stepped drill bit to bore the steeply angled holes to accept the screws, which are then driven into the mating workpiece. The bit's cutting depth is determined by locating a collar on the bit shank at the proper location to suit the stock thickness. To locate the holes, the workpiece is either clamped to the jig, or the jig to the workpiece. Simple, clever, effective.

So hats off to pocket screw joinery. Although no one should expect it to win any contests against mortise-and-tenon, dovetail, or spline joinery, it sure has been a gateway into woodworking for many, and a real help in both the shop and garage.

The jig for the job. Some of the earliest pocket hole jigs, like this one from Kreg, are not much more than an L-shaped block of aluminum that houses steel sleeves to guide a special stepped bit. Simple as it is, it does a great job.



Modern models. These days, advanced models such as the Kreg K4 (top) and the Armor Auto Jig (bottom) include easy-adjusting clamps, quick-set drill collar gauges, dust collection ports, and other features that aid efficiency and accuracy.

Adjust-a-bench

It's a wonder why some great ideas take so long to arrive. Surely woodworkers have long pondered how to adjust bench height to suit their size and the job at hand. And that's no small concern. Working too low can strain your back, while working too high is awkward in every way. Thankfully, in 2002 we finally got the ingeniously designed and rock-solid Adjust-a-bench, which can be set to the height of your choice between about 29" and 46" (depending on your chosen benchtop thickness). Without singing too many verses of praise here, let's just say that, until you have actually used the Adjust-a-bench in your shop, you have no idea just how cool it is. Routing dovetails with a jig is no longer a pain in the back, nor is assembling a large case a stretch. In fact, you'll be surprised just how many times during the workday that you-fine-tune the bench height for comfort and accessibility to your work. Check it out. Your back, legs, arms, and eyes will thank you.

The highs and lows of bench work. Routing dovetails at an elevated height is easier on your back and provides better working visibility, while a lowered work surface make for easier finishing and assembly of larger pieces. Even medium-height chores such as hand planing and scraping are done more effectively at just the right height for the job.

Loose-tenon joinery made easy

The mortise-and-tenon joint dates back to at least ancient Egypt, and is just as important today. Modern substitutes such as dowels, biscuits, and pocket screws have their uses, but the venerable mortise-and-tenon joint still reigns supreme as far as strength is concerned. But making the joint well requires time and skill. A close contender for the crown is the loose tenon joint (See page 32.) which is nearly as strong and somewhat easier to make, requiring only a plunge router and jig. However, time and skill are still required to lay out the joints, cut the tenon pieces, and so on.

About fifteen years ago, Festool introduced the Domino, a handheld mortising machine that revolutionized loose tenon joinery. The tool itself is available in two sizes: the smaller 500, which is appropriate for most furniture work, and the larger 700, which is more suited to architectural-scale projects. Both tools work the same way: a single, interchangeable bit is plunged into the workpiece and oscillates back and forth to create a mortise. The width of the mortise is controlled by the bit diameter, and its length and depth are determined by machine settings. Various fences and guides help locate the mortises exactly where you want them. Layout couldn't be easier: a simple tick mark at the center of the joint is usually enough. Once the mating mortises are cut, apply glue, insert the appropriate size of prefab Domino tenon(s), and clamp up the joint. Tenons are available in a wide variety of thicknesses, widths, and lengths to cover most situations. Wouldn't the Egyptians have loved this!

Ample muscle at the ready. The Domino's adjustable fence system makes it easy and efficient to add multiple tenons to a joint, greatly increasing its strength.

A boxful of versatility. While not cheap, the full variety of available cutters and tenons allow the Domino to handle almost all your mortise-and-tenon joinery needs.

Random orbit sanders

With sanding, anything that makes the job even a little faster and easier is worthy of applause, so random orbit sanders deserve a full standing ovation. These hand-held finish sanders are much faster than their quarter- and half-sheet "vibrator sander" predecessors and are easier to control than belt sanders. The magic of a random orbit sander stems from the simultaneous rotation and oscillation of its disk, which results in a relatively aggressive cutting action that smooths a surface without leaving the swirls typical of a vibrator sander. A random orbit sander is almost a pleasure to use, if that word can rightfully be applied to sanding. No real strength is required to move the machine across the work surface, and changing out a disk is a snap due to standard hook-and-loop attachment. Holes in the disk and sanding pad allow sucking dust into an exhaust port that, when connected to a shop vac, creates a virtually dust-free operation. We've been using these things for some decades now and we're still clapping. 'Nuff said.

Clean smoothing machines. A random orbit sander typically includes a dust bag or canister that can be removed to expose a dust port that can be connected to a shop vac.

Lathe chucks

About 50 years ago, the field of woodturning began to evolve from the making of simple utilitarian bowls and spindles to the creation of more decorative and even conceptual work. Along with this shift came a need for faster, better ways to mount workpieces than using the typical face plates, screw chucks, and spur drives ubiquitous at the time. Borrowing from the machinist's tool kit, manufacturers began offering four-jawed scroll chucks designed with woodturners' needs in mind. Over the years, these designs have been refined, with improvements to the tightening mechanisms, capacity, and jaw configurations. All of this has combined to create versatile tools that permit a blank to be mounted almost instantly, then flipped face for face.

These days, numerous manufacturers offer chucks with subtle differences between them, much the way automobile models may vary somewhat. To kick the tires when shopping, consider capacity, interchangeable jaws, and compatibility with your lathe. But do get one of these chucks if you're a turner; it will really open up the road for you.

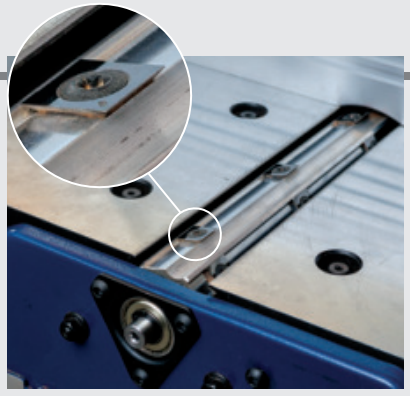
Solid spindle grip. For the spindle turner, a 4-jaw scroll chuck allows a blank to be held securely from one end while hollowing or otherwise shaping the entirety of the outboard end.

Going Bowling. Scroll chucks offer bowl turners myriad ways of holding onto blanks, including expanding their jaws into a recess, and gripping the outer rim with a set of "jumbo" jaws.

Insert tooling

Woodworkers are well aware of the benefits of carbide-tipped router bits and saw blades, with their long-lasting edges that withstand tough materials. Carbide cutters have long been incorporated into industrial jointers and planers in the form of easily replaceable individual carbide "teeth" installed in spiral rows for sheer cutting. This *insert tooling* has now found its way into smaller jointers and planers as well. While more expensive than machines with traditional full-length steel knives, these new offerings are well worth the investment. They're quieter to operate, the cutting edges stay sharp longer, and restoring a dull or nicked cutter is a simple matter of loosening its screw and rotating the tooth to present a fresh edge. Forget all the fussing involved in setting traditional knives. Nice. Very nice.

With a bit of clever innovation, these inserts have made the leap into the woodturning world in the form of carbide-tipped scrapers. While purists may scoff at the lack of finesse required to use these tools, they are capable of producing remarkably smooth surfaces on the toughest woods. Available in round, square, pointed, and semi-circular shapes, these newcomers are worth inviting into your shop, especially if you incorporate resins and other dense, non-wood materials into your work.



Nice teeth. Carbide insert cutters are available as original equipment on new machines such as this RIKON benchtop jointer or as retrofit cutterheads for many older machines. They are a huge improvement over traditional, full-length steel knives.

A tough scrape. Love turning but not sharpening? Carbide-tipped scrapers such as this one from Easy Wood Tools might be just the answer. They hold up well, leave a nice surface, and when they eventually do dull, a fresh edge is just the twist of a hex key away.

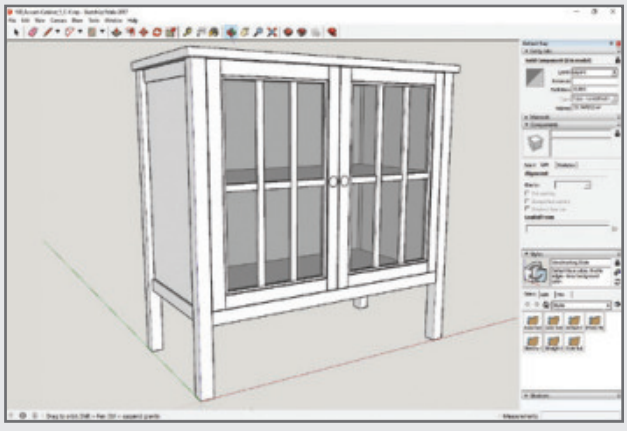
Digital innovations

Computers have taken over nearly every other aspect of modern life, so it's no surprise that they are invading woodshops too in the form of CNC (Computer Numeric Control) routers. Whether cutting parts directly or perhaps simply making forms for a bent wood project, the ability to quickly create precise, repeatable curves and other shapes is a real game-changer. In addition to two-dimensional cutting for producing flat parts, signs, and plaques, CNC routers can carve all sorts of complex 3D shapes sparked by your imagination. Along with furniture work, craftsman have been employing this technology to make everything from wooden boats to prefab buildings.

Although larger machines can be prohibitively expensive, you may be able to rent time on one at one of many maker spaces that have sprung up. Or connect with shops that own CNC equipment through websites such as *100kgarages.com*. If you'd like to own one, you'll find a number of reasonably priced smaller machines on the market. You may want to also check out laser engravers, which are capable of remarkably precise pierced scrollwork, as well as burning legible text so small that you need a magnifying loupe to read it.

Another thoroughly digital woodworking innovation has been computerized drawing. AutoCad® and many other programs have been used for decades to produce 2D and 3D versions of designs for industry. But using this software typically required extensive training. Fortunately, a more recent 3D modeling program called SketchUp has proven itself much friendlier to the novice, and has come into wide play among woodworkers. With some practice, determination, and help from online tutorials, anyone with a computer can learn to fully construct projects on screen before generating any sawdust. Check out the free version.

Computer Numeric Control. Whether big or small, a CNC router is akin to having an extremely capable assistant waiting to do your bidding. A few keystrokes and a little mouse work are all it takes to prepare a file for cutting.



Drawing on the computer. There is nothing like a good drawing to help you visualize a project. A 3D modelling program such as SketchUp allows you to build things onscreen before committing tools to wood.

Dust collector cyclones

At their simplest, dust collection systems employ a blower to suck wood debris into a receptacle, exhausting the return air through a filter. A significant problem with this kind of *single-stage* system is that the blower impeller gets overworked and the filter can clog quickly, compromising suction. But then someone came up with the brilliant idea of incorporating a *cyclone* that funnels off chips and heavy particles before they slam into the blower impeller and filter, which then have to manage only the finest dust. This greatly improves the system's efficiency and durability. Cyclones, which have been in industrial use for years, have now made inroads into the small shop, with manufacturers offering units designed for use with single-stage dust collectors and shop vacs. This type of cyclone typically takes the form of a funnel-shaped attachment that connects to a common 5-gallon bucket, which serves as the primary waste receptacle. Here's to small thinking!

Shop vac cyclone. This Oneida Dust Deputy connects inline between the dust source and the vac via intake and outlet ports on the cyclone that sits atop the easily emptied 5-gallon bucket. ■

ACCENT CABINET

A simple approach to an elegant cabinet

By Chad McClung

This contemporary cabinet will grace any room with a touch of elegance. Its plywood case construction combines with solid wood doors to make a worthy challenge for any ambitious woodworker. Biscuit joinery connects the case parts except for the applied side rails, which are simply glued in place. The door frames are built with loose tenon joints and are dressed up with a quirk & bead detail. But because mitering an integral profile on an otherwise squared joint is fussy work, I opted to create beaded strips separately, mitering them to fit inside the frame. And rather than constructing multiple-pane doors, I cut the muntin gridwork to overlay a single glass pane in each door.

To aid you in the build, check out our website, where you'll find a series of free articles that delve deeper into certain aspects of the project. They include tips for making and attaching great table tops, laminating legs from thin stock, creating loose tenon joinery, and hanging inset doors. You'll also find a plywood cutting guide and a parts list for this cabinet. Plus, our Buyer's Guide (p. 62) has the pricing and product information for the tools I used in the build.

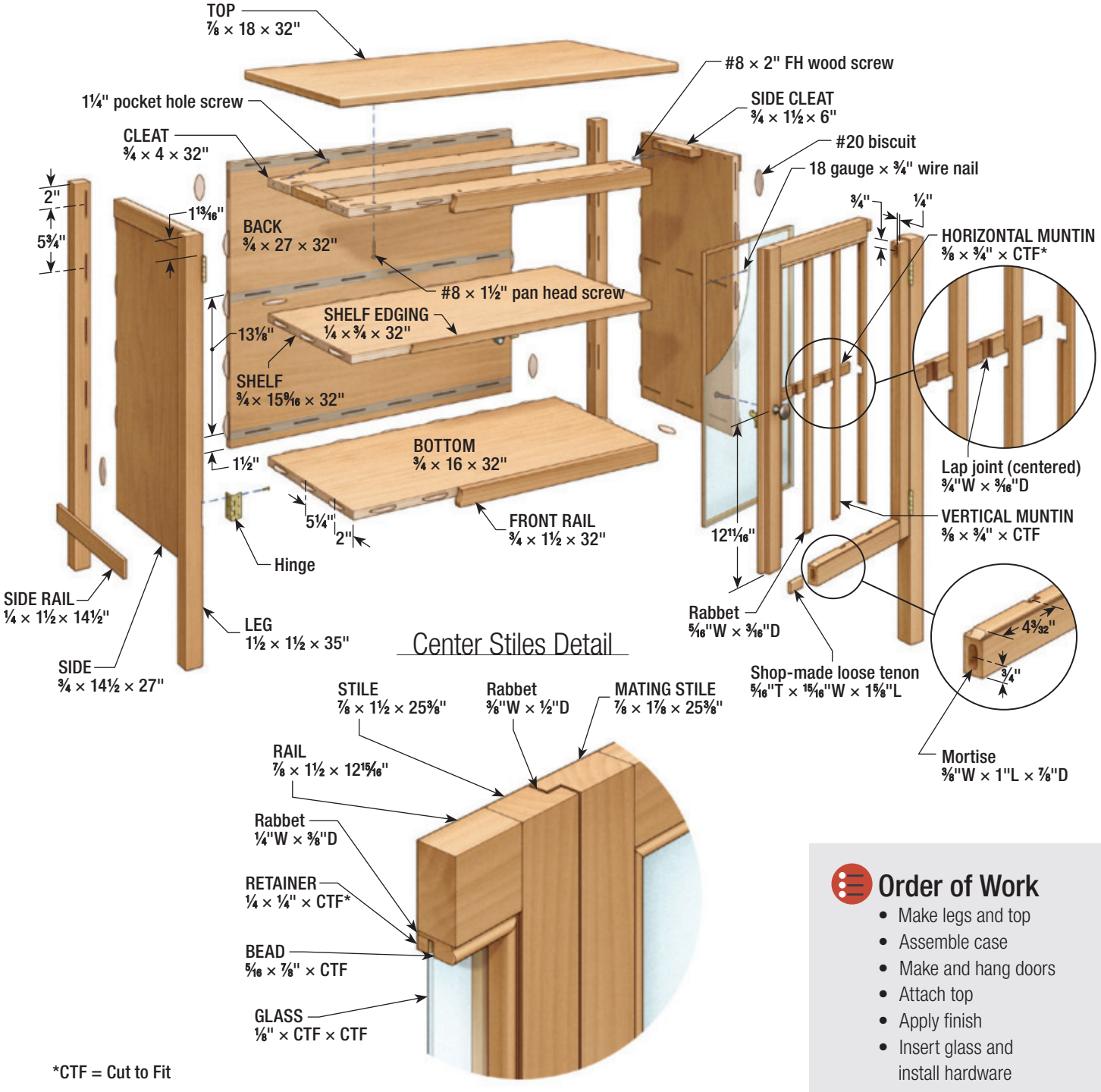
A simple case with skill-building doors

The core case consists of cherry plywood panels that connect via a combination of biscuit joints and pocket screws. Solid cherry rails and a strip of solid cherry edging hide the exposed plywood edges.

The cherry side rails are simply glued to the plywood sides.

The door frame is constructed using loose tenon joinery. The separate decorative bead is mitered to fit and then glued to the frame parts.

Notches in the bead strips accept the rabbeted ends of the muntins, which are half-lapped where they intersect to create the grid pattern. Rabbets in the door frames house the glass and its retaining strips.



*CTF = Cut to Fit

See Buyer's Guide for information on the catch, latch, knobs, and hinges.

Order of Work

- Make legs and top
- Assemble case
- Make and hang doors
- Attach top
- Apply finish
- Insert glass and install hardware

Opening photo: Doug Loyer; Project photos: Chad McClung; Illustrations: Christopher Mills

Make the case

Start by cutting the legs and front rails to size. Also edge-glue boards to make an oversized top (see onlineEXTRAS on facing page), which you'll cut to fit later. Then cut the plywood case parts to size and slot them for all the biscuits where shown in the drawing on page 33. The flat surface of your table saw makes a great reference for your biscuit jointer, and its fence serves as a handy backstop. Drill pocket holes in the cleats. Slot the rails for biscuits, offsetting the cuts to prevent potential misalignment (see p. 20). Mill the edging, making it a bit oversized in width. Then glue the edging to the shelf, the top front rail to the front cleat, and the lower front rail to the bottom piece. Trim the pieces flush after gluing. Glue the legs to the side panels to form side assemblies. Then attach the bottom, the shelf, and rear cleat to the back panel before gluing that assembly to the side assemblies.

Take the plunge. Mark the location of the bottom's upper face on each edge of the back panel. Clamp the bottom and back together face-to-face with the bottom's rear edge aligned to the marks. Then mark your biscuit locations on the edge of the bottom panel. With the biscuit joiner held horizontally, plunge the slots in the rear edge of the bottom. Then position the joiner vertically to cut the mating slots in the back panel, using the edge of the bottom as a fence.

Side assemblies. Apply glue to the edges of the sides and to the leg-to-side biscuit slots. (I used a specialty applicator.) Insert the biscuits, then join the parts, aligning the tops as needed with a few gentle mallet taps. Then clamp the legs in place.

Bottoms up. Start with the back resting inside-face-upward atop a couple of I-beam risers. Spread glue on the back edge of the rear cleat and in all its mating biscuit slots. Clamp the cleat squarely in place and aligned laterally. Repeat the process with the bottom and the shelf.

Trim flush. After gluing the rails to the top cleat and bottom panel, trim them flush. I used a low angle block plane to do most of the work, and then followed up with a sharp card scraper. Trim the edging flush with the shelf surfaces in the same way.

Case assembly. Spread glue along the ends of the bottom, shelf, back, and in all the biscuit slots. Then insert the biscuits and assemble the case, squeezing the joints tight with clamps. Run cauls along the center of each side to apply pressure to the center of the shelf.

OnlineEXTRAS

- Plywood cutting diagram
- Detailed parts list
- 10 Tips for Better Table Tops
- Laminating Table Legs from Thin Stock
- Joinery Class: Loose-Tenon Joinery
- Installing an Inset Door
- Bodybuilding with Wiping Varnish

Make the doors

Cut the door frame parts to size and mark the center lines for their mortises where shown in the drawing (p. 33). Rout them and then make the tenons to fit. (See the box on facing page.) For the bead strips, mill a length of stock ⅞" thick × 4" wide × 28" long. This will yield six lengths of bead stock—four for the stiles and two (to be crosscut in half) for the rails. To create the bead & quirk (the space between the bead and its frame part), chuck a 5/16" beading bit into your router table. Feed the stock on edge, then flip it end for end and rout the opposite edge too. Set your table saw fence for a 5/16" cut, and then rip the beaded section from each edge. Repeat until you have the necessary six pieces.

With the door frames dry-clamped, miter the beaded strips to fit inside the openings. Mark the locations of the notches that will accept the muntins. Saw the notches in the beads, then glue them to the door frames as shown. Disassemble the door frames and saw the rabbets for the glass before gluing up the frames. Mill the muntins to ⅜" × ¾" × the inside frame dimensions plus ⅝". Cut their notches and half laps so they fit into the door frames. Now that your doors are together, measure carefully and order your glass.

Rout the mortises. Hold each door rail vertically in your bench vise and clamp the mortising jig to it with the jig's center line aligned with the mortise's center line. Plunge to full depth at both ends of the mortise, and then clean out the waste with successively deeper cuts. To rout the mortises in the stiles, cantilever the workpieces to the side of the vise as shown. See onlineEXTRAS for details on how to build this jig.

Notch the beads. Using a dado blade and miter gauge at the table saw, cut ¾"-wide × 9/16"-deep notches in the mitered-to-fit bead strips. This way, the notches will end up 3/16"-deep after the rabbets are sawn in the beads later.

Attach the profile. Glue and clamp the fit-and-notched bead strips around the inside of the dry-fit door frames. Spread glue judiciously to prevent gluing the stiles and rails together.

Making Loose Tenons

Make loose tenons from the same stock as your door parts. First mill a strip that's slightly narrower than the mortise length and long enough to yield all your tenons. I got the thickness close with my planer and then fine-tuned it using my #4 bench plane to create a snug fit that didn't require force. Then round over all four edges using a 3/16" roundover bit at the router table. Crosscut the tenons to length at the table saw using a miter gauge, with a stop block set against the fence forward of the blade to prevent kickback.

Rabbet the frame pieces. Disassemble the frames, and rabbet the backs of the applied bead on all the door frame parts. Use a dado blade partially buried in a sacrificial fence to saw rabbets 3/8" deep by 1/4" wide, which allows for 1/8"-thick glass and 1/4 × 1/4" retainers.

Muntin joinery. After rabbeting the ends of the muntins to fit into the bead notches, cut 3/4"-long × 3/16"-deep lap joints where the parts intersect.

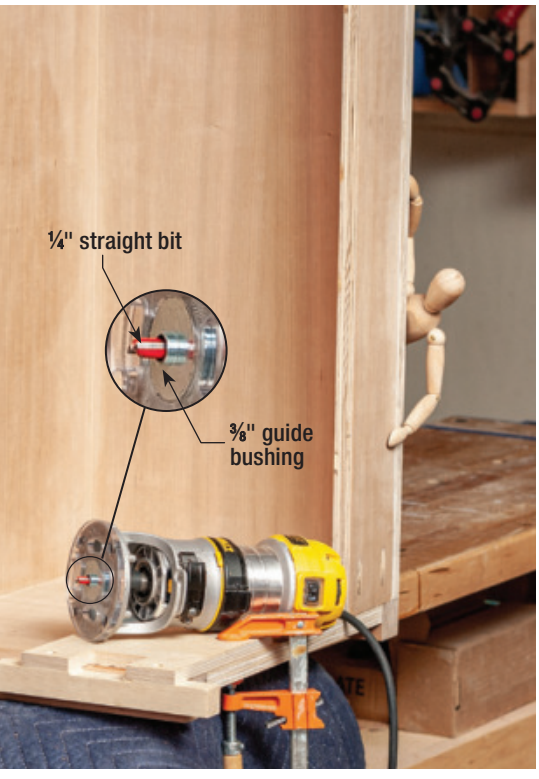
Hang the doors

With the case on its side, mark the hinge locations on the legs where shown in the drawing (p. 33). Build a simple mortising jig like the one shown. Rout the hinge mortises in the legs, and then attach the front cleat/rail assembly with the help of a spacer. Saw the rabbet in the center stile of each door, and then shim the doors in place and mark them for the hinge locations. Rout the hinge mortises on the doors, using the mortising jig as before. Hang the doors with one screw in each hinge leaf and mark for any necessary trimming. The goal is to create a consistent gap between the doors and case. Once the doors fit well, sand the muntins, and then glue them in place.

Rout the hinge mortises. Rout the mortises for the hinges with the help of a simple jig (inset). Make the cuts with a trim router equipped with a ⅜" guide bushing and a ¼" straight bit. Set the depth of cut to match the thickness of the hinge's leaf. Square the corners with a chisel.

Rail spacer. Make up a simple spacer to position the front cleat/rail assembly parallel to the bottom, insetting the rail 15/16" from the front of the leg. Drive the pocket screws in the first end, then position the spacer against the opposite leg to fasten that end.

Shim and transfer. Shim the doors in place with playing cards. Transfer the hinge locations from the case to the doors by resting a knife edge flat on the top of the hinge, and gently but firmly pressing the blade into the door to make a small mark. Note: Use good quality extruded hinges for this cabinet. If you use cheap hardware store hinges, you'll be sorry.



Finishing up

Finish-sand the sides, then make the side rails and glue them in place. Drill the knob holes. Make and attach the side cleats and drill all cleat holes where shown in the drawing (p. 33). Note that the holes in the side and front cleats are elongated to about ¼" to allow seasonal movement. To make these slots, drill a series of adjacent holes, then file out the waste between them. Trim the top to its final size and round over both faces of its ends and front using a 3/16" roundover bit. Then drill the pilot holes to attach it to the case. Cut the retainers to size and set them aside. Slightly chamfer the bottoms of the legs with a block plane to prevent damage if the case is dragged. Sand everything through 220 grit and apply a protective finish. I used a coat of Seal-A-Cell, followed by three coats of Arm-R-Seal from General Finishes. Place the glass in the doors, followed by the retaining strips. Predrill and install the strips with small nails. Attach the catch and latch where shown in the drawing. Rehang the doors, and install the knobs. Nicely done!

Drilling guide. A simple two-sided guide like this ensures that your knobs will be positioned in the same spot on each of the center stiles.

Mind the gap. After routing the mortises in the doors, hang them temporarily. Trim the left-hand door's center stile as needed to produce a consistent gap between both doors.

Pilot holes in the top. Before installing the doors, flip the case upside down onto the inverted top. Drill pilot holes through the cleat holes and slots, and attach the top with panhead screws after finishing.

Nail the retainers. Protect the glass with note pad cardboard as you drill 1/16" diameter clearance holes for the nails. Make the holes about ½" deep to leave a little solid wood for the ¾" nails to bite into without bending. Then tap the nails in, again using the cardboard shield. Seat them using a nail set. ■

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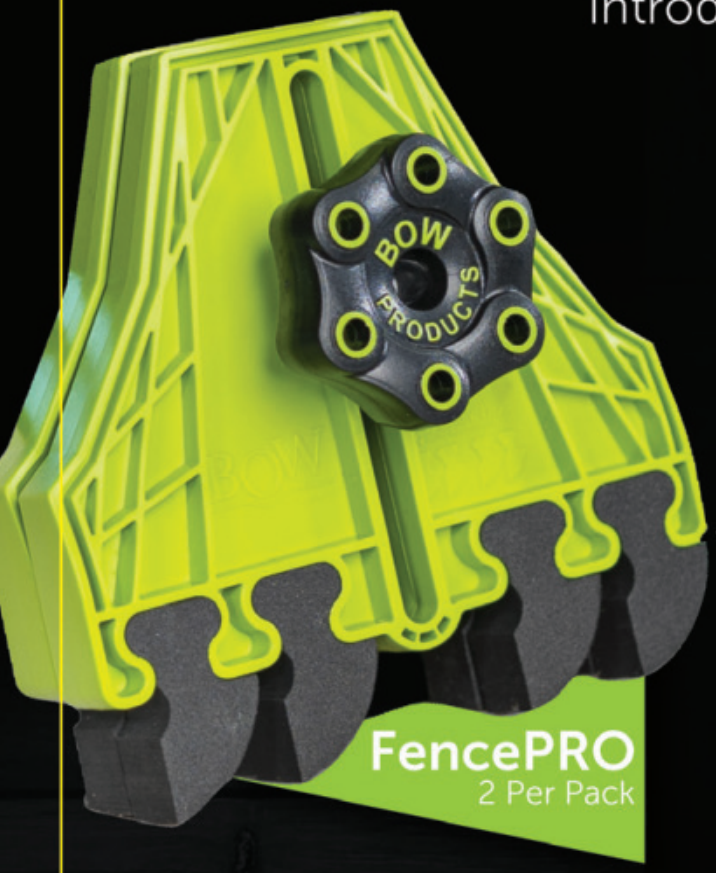

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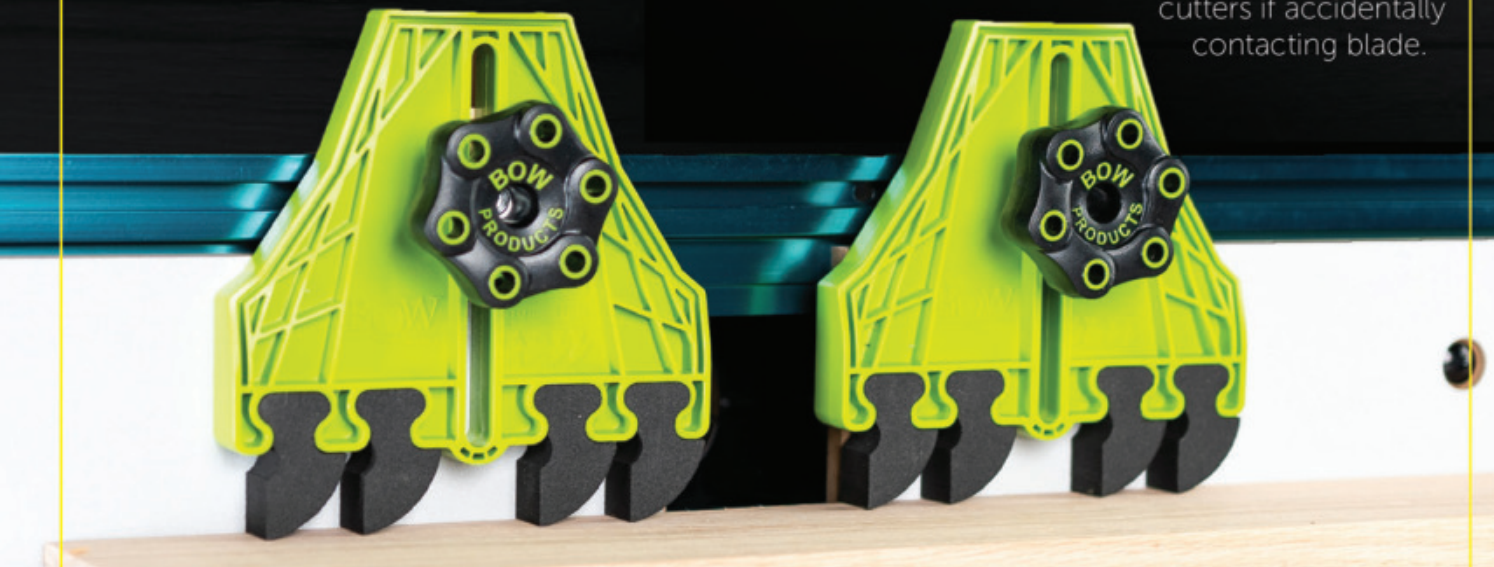

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Ridiculously 53 SIMPLE SHOP TIPS

"Second-nature" tricks from the pros

By WM Staff

The typical woodworker's hunger for shop tips seems insatiable. We're always looking for clever ways to do better work, increase efficiency, save money, and just plain make things easier. Over the years, our "Tips and Tricks" column has presented hundreds of slick solutions involving everything from layout, joinery, and jigging to furniture fixes, and finishing, usually fleshed out with explanations and supporting drawings.

But sometimes, very worthy tricks are just too ridiculously simple for the Tricks column. But simple doesn't mean silly. These are the sorts of things that have become almost second-nature to seasoned woodworkers. They're maneuvers and approaches that we don't even think about anymore as they have become incorporated into daily work routines. In an effort to share some of these, we have amassed a bunch of tips from staff members and contributors, including Paul Anthony, Craig Bentzley, Ken Burton, Larissa Huff, and Rob Spiece. If you want to move through your day as a better, more efficient woodworker, you might want to post this list on your shop wall until they become second-nature to you too.

Instant soft-faced mallet. Need to knock something apart or tap something together and don't have a soft-faced hammer or mallet? Outfit the head of your hammer with an inexpensive rubber tip made for chair legs. *—CB*

Compare and contrast. When sighting down a board for warp, view a light board against a dark background and vise-versa. *—PA*

Don't break that blister. When fighting your way into stiff blister packaging, try not to bust it up too badly. The plastic makes a good disposable tray for glue or epoxy. *—KB*

Let it sit for a bit. Leave a tool set-up as-is until you're certain you're done with it, lest you have to return to it when you discover that you forgot to make one of the cuts. *—PA*

Keep it clean. Constantly refresh glue clean-up water to prevent wiping diluted glue into wood pores, where it will impede finish. *—PA*

Mini-scraper. Use a burnisher to turn the edge on a common single-edged razor blade to create a small scraper for leveling dried finish drips and getting into tight spots. *—CB*

Avoid stain pain. Wet glue squeezeout contacting black iron pipe clamps can stain workpieces. To prevent it, cut a roll of wax paper into 2" lengths and place the strips of paper between the pipes and the work. Tape will hold the strips to the pipes resting on the bench. *—LH*

Clean up spills with sawdust. Accidentally spill something? Open up that dust collector and throw some sawdust on it! After about 15 minutes, the sawdust will absorb most of the spill. *—RS*

Clean delete. When erasing pencil layout lines, use a white polymer eraser (available at office supply stores). It won't smear like a typical rubber eraser. *—KB*

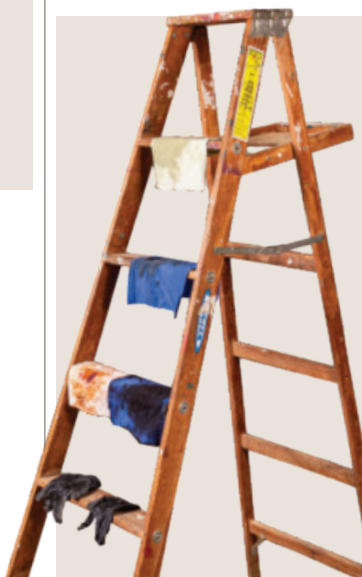
Don't be depressed. After edge-gluing panels, give them at least a day or two to dry thoroughly before flattening them. Otherwise, any areas slightly swollen with moisture may shrink as they finish drying, creating glue-line depressions. *—PA*

Keep a cool hand. In use, a card scraper can generate enough heat to hurt. Try attaching an advertising sheet magnet that's cut to an appropriate size. It will serve as a heat sink to prevent burning your fingers. *—CB*

Forget the finger. An ink brayer—available at art supply stores—is a great glue applicator. It works much better than a finger when it comes to spreading glue evenly, efficiently, and economically. *—KB*

Health and safety matters. Locate anti-fatigue mats on the floor at your bench and commonly used machines. Your back and legs will thank you for it. As an added benefit, mats pay for themselves the next time you drop your favorite chisel or a freshly sanded workpiece. *—LH*

Good shop hygiene. Save those old toothbrushes for cleaning up excess glue. They reach into small reveals and other tight spaces where squeeze-out can be hard to access. Old toothbrushes are also great for brushing sawblade teeth after applying a cleaning solution. *—RS*



Combustion prevention. Drape flattened solvent-finish rags over ladder steps to allow air circulation as they dry. If left crumpled up, heat-releasing drying agents trapped in air pockets can lead to spontaneous combustion. Those warning labels are no joke. *—LH*

Easy offset. To mark a consistent offset from a template, trace the outline using a washer as a spacer. This also works well during cabinet installations when scribing face frames to match out-of-flat walls. *—KB*

Release hot-melt glue. To remove hot glue from small jigs or workpieces, put them in the freezer. Once frozen, the glue will pop off cleanly. *—RS*

Knife stop. For pinpoint accuracy when knifing a cut line, poke the tip of the blade into your layout mark, and then slide your try square against the knife edge before knifing the cut line. *—PA*

Yoga mats for sanding pads. Is someone in your home upgrading their old yoga mat? Put it to work as a sanding pad. The non-slip surface will grab both your workpiece and your bench for tasks such as routing edge profiles. It will also protect your workpieces from dents and dings. *—RS*

Slippery surfaces. Wipe cast-iron machine surfaces with paste wax to make your workpieces glide with ease. Waxing plane soles and router bases will also reduce drag and ease wear and tear on your body. *—RS*

A tab for grabs. Anytime you need to temporarily apply masking tape, cellophane tape, or electrical tape, "tab" one end first by folding the last 1" or so of one end back on itself. This gives you something to quickly grab to remove the tape. *—PA*

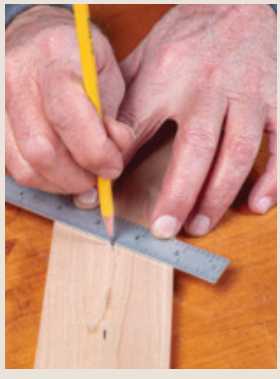
Custom sanding sticks. To make sanding sticks for detail sanding, use spray adhesive to glue ¼" thick plywood sticks to a full-sized sheet of sandpaper. Then knife them apart and glue another grit to the opposing side. *—RS*

Call for extras. Whenever purchasing screws, bolts, and other hardware, buy at least a few more than you need in case of loss or manufacturing defects. Plus, it's always good to have a wide variety of fasteners in store. *—PA*

Let there be lotsa light. Dim shop lighting will strain your eyes, create shadows, and invite mistakes or injury. Overhead fixtures should cast broad ambient light for general machine work, while adjustable task-lighting fixtures are key to precise work at benches. Small magnetic lights easily attach to lathes, bandsaws, and mortisers. *—LH*

Get up oily. Wipe down your tools with WD-40 after honing them with waterstones. This is especially important with planes because moisture can get trapped between adjoining metal surfaces. *—KB*

Prevent profanity. Sweep the floor around a bench before working on anything with small parts that might get lost in detritus if they roll off the bench. *—PA*



Angling for center. Fractions get you down? To divide a piece in two, simply angle your ruler to two major increments, and mark the halfway point. The same principle applies when dividing a board into multiple pieces of consistent width. *—RS*

Photos: Staff

Hold that screw. Temporarily magnetize a screwdriver by attaching a couple of ¼" dia. rare-earth magnets to the tool shaft. *—PA*

Burn an inch for accuracy. For best accuracy when measuring with a tape rule, don't bring the hook into play. Instead, align the 1" increment with the starting location, and then subtract an inch from the reading on the tape rule. *—PA*

Secure the gate. Instead of using the thumbscrews on metal dust collector gates, place a few rare-earth magnets on the metal gate housing to hold the gate in place. It makes for much quicker operation. *—PA*

Fresh biscuits. To keep biscuits from swelling due to ambient moisture, store them in peanut butter jars or other screw top containers. For good measure, throw in a desiccant pack. *—KB*

Stale biscuits. If ambient moisture has swollen a biscuit too much to fit in its slot, you can often squash it back to size in a vise with metal jaws. *—KB*

Save your sander dust. The fine dust from your random orbit sander can color epoxy for spot repairs. Keep commonly used species on hand in a jar. *—RS*

Positive pressure. PSA-backed sandpaper wrapped around dowels or other shaped backers works great for sanding moldings and other curved surfaces. The pressure-sensitive adhesive also allows folding the paper tightly over the edge of a credit card to sand into tight spaces. *—CB*

Magnetic tell. Use a magnet to determine whether a screw or other hardware is brass-plated (magnetic), or solid brass, stainless steel, or aluminum (non-magnetic). *—PA*

Locked tight with make-up. Need to keep a machine screw or other hardware from loosening due to vibration in use? Brush on a bit of fingernail polish, which will keep it tight while still allowing disassembly if necessary. *—PA*

Easy offsets. Note the widths of various rulers, squares, and straightedges. They are often manufactured to precise sizes such as ½, ¾, 1, 1½, and 2", which makes for quick, easy layouts of common offsets. *—PA*

A tacky uplift. Nail dome-headed upholstery tacks into a board to create a stand-off platform for finishing. The tack heads minimize contact with the surface without scarring, and allow airflow under the workpiece. *—RS*

Stretch out. Use a small roll of stretch wrap (available at office supply stores) for bundling organized lumber and project parts. *—PA*

Table saw tell. After making a table saw cut that's just slightly off of 90°, immediately reset the blade square again or else place a reminder of some sort next to it. It's too easy to overlook a slightly tilted blade when you return to make a 90° next time. Oops! *—PA*

Glue storage. For longest shelf life and best performance, keep liquid glues in temperature-controlled storage. Freezing degrades proteins, compromising adhesion. Ideal working temperatures—listed on the container—typically range from 50°F – 75°F. *—LH*

Organizer quick ref. Tape or hot-glue a sample fastener of other item to the front of its storage bin for quick reference. And when plucking items from a particular bin, leave it temporarily open for quick return to it for more of the same item if necessary. *—KB*

Getting glue-ready. In preparing for complicated glue-ups, you need every efficiency, so make sure your glue bottle is nearly full for quick dispensing. Either that, or drill a hole in a thick block to create a holder for an inverted glue bottle. *—PA*

Getting loose with alcohol. To loosen double-faced tape's grip to remove a template, simply drizzle denatured alcohol into the gap between the template and workpiece. A pipette does a nice job as an applicator. *—PA*

Tools at hand. Use rare-earth magnets on machines to keep wrenches, small squares, and other machine-adjustment tools close at hand. *—PA*

Find the grind. When grinding a chisel or plane iron, it's easy to lose track of your landing spot among the various facets you've created along the way. When that happens, just swipe the bevel face with a wide-tip marker. Now when you touch the wheel again, the fresh grind will be apparent. *—PA*

Hear ye, see ye! Invest in hearing and eye protection that's *comfortable*, so you're more inclined to wear it. In addition to a good fit, make sure the gear is rated for a woodshop environment. Don't stint on protecting the only eyes and ears you have. *—LH*

A square that ain't is useless. To check the accuracy of a combo square, register its beam (or *stock*) against the straight edge of a piece of scrap, strike a line, and then flip the square over (against the same edge), and compare the lines. *—LH*

Extra helping. Mill plenty of extra material every time you make parts. Having same-thickness material is key for easy setup throughout the process and inevitable repairs. Extra parts are also great to receive any planer snipe by feeding them first and last. *—LH*

Spare me. Keep a set of spare drill bits on hand (especially those under 3⁄16") so that a broken bit doesn't interrupt your work. Put the broken one in your wallet to remind you to replace it the next time you go to town. *—KB*

See-through clamping pads. Acrylic that's at least ¼" thick makes for great clamping pads. The material is flat, non-stick, and transparent, making it particularly useful for viewing patchwork. Sheet cutoffs are often available from glass shops at reasonable prices. *—CB*

Miter gauge quick-slip. Rather than trying to insert the washer end of a miter gauge bar in from the front of the table saw's T-slot, drop the bar in the slot with the washer cantilevered at the rear, and pull the miter gauge toward you. *—PA*

Chalk it up. Use white chalk to lay out rough-sized parts on roughsawn lumber. It shows up well and wipes away easily as you change your mind about the layout. *—LH* ■

Finishing-supply CABINETS

Adjustable shelves, custom cubbies, and add-on door racks maximize your storage capacity

By Brad Rodriguez

When it comes to workshop storage, I find that one of the biggest challenges is corralling finishing supplies. It seems that with every project, I accumulate yet more cans, cups, bottles, and brushes. I needed a better system to organize this stuff. Using a combination of full- and half-depth adjustable shelves, custom cubbies, and a variety of door racks, I designed these two specialty cabinets to wrangle my unwieldy collection of finishing goodies. One cabinet is outfitted to store the finishes themselves (as well as various adhesives), while the other cabinet holds mixing containers, applicators, and other related supplies. A place for everything and everything in its place makes my shop time more efficient and enjoyable.

The cabinet construction is straightforward, with glue and screws holding the parts together. As shown, a couple of inexpensive commercial jigs simplify the drilling of the shelf pin holes and hinge mortises. The shelves and door racks shown are sized for standard finish containers, but you can customize dimensions to suit whatever items you like.

onlineEXTRAS

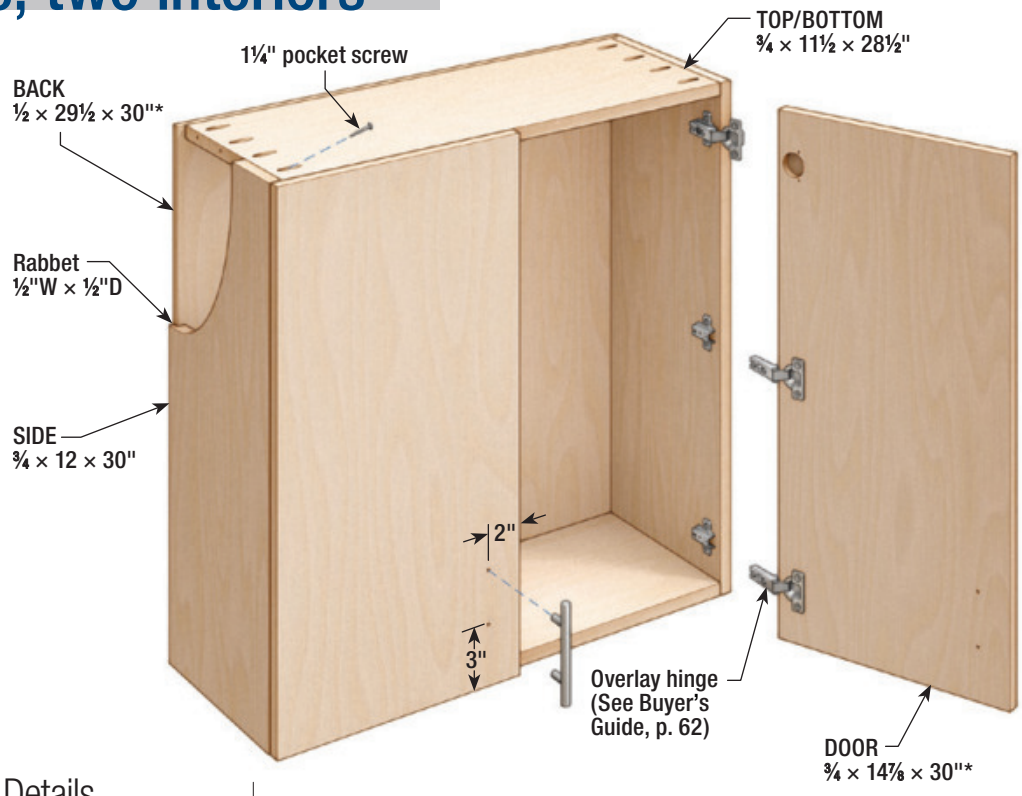
Watch Brad build these cabinets, and get the full cut list at *fixthisbuildthat.com/wallcabinets*.

Order of Work

- Cut case parts
- Assemble case with interior of choice
- Make shelves and/or cubbies
- Apply finish
- Hang doors
- Build and attach door racks
- Install cabinets, and load 'em up

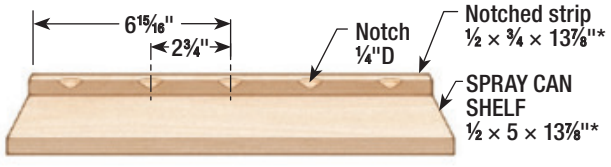
Same outside, two interiors

These Baltic birch plywood cabinets are simple to build and easy to customize. The sides, top, and bottom are identical for both cabinets, and assembled using pocket-hole joinery. The backs are fit into rabbets along the rear edges of the side pieces. The finishes cabinet features adjustable, half-depth shelves on the right side that hold pints and quarts. On the left, shallow shelves with notched lips hold spray cans. The supplies cabinet is outfitted with shelves and dividers to store finishing accoutrements—gloves, masks, mixing cups, rags, brushes, etc.

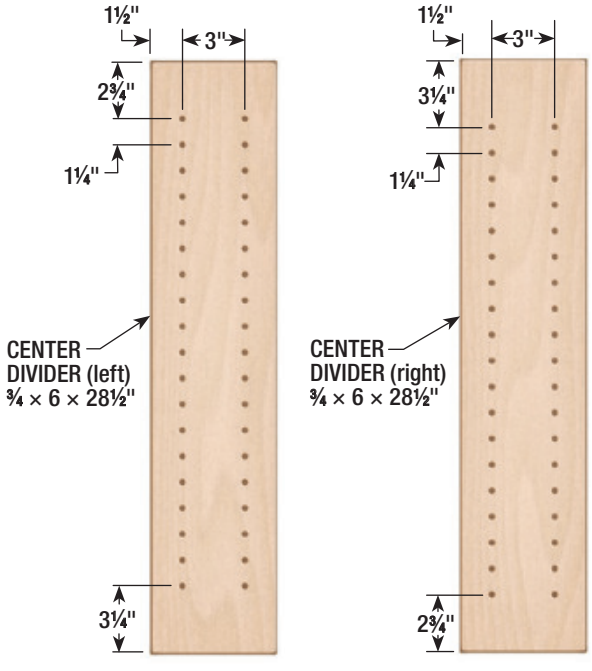


Finishes Cabinet Details

Spray Can Shelf

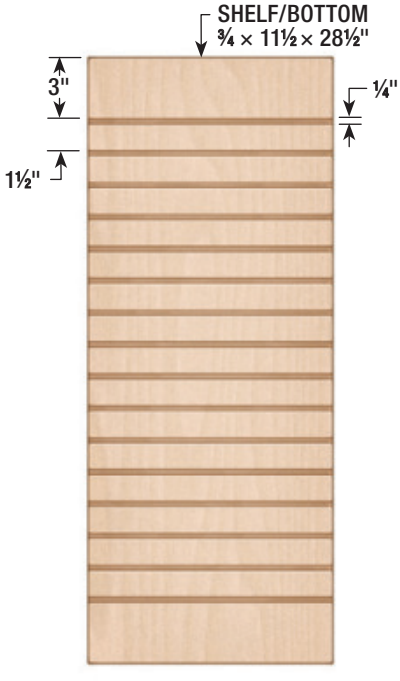


Center Dividers

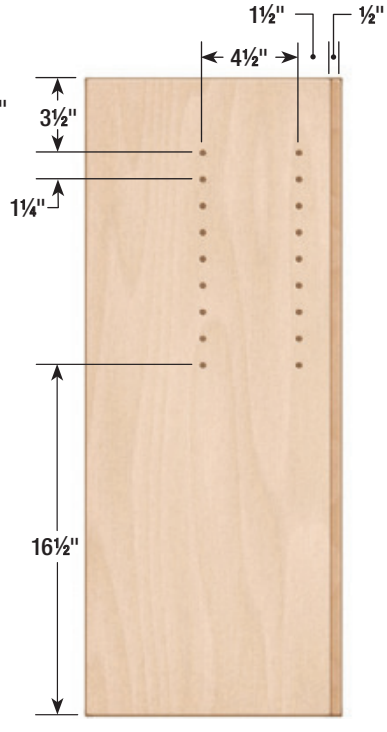


Supply Cabinet Details

Shelf/Bottom



Side



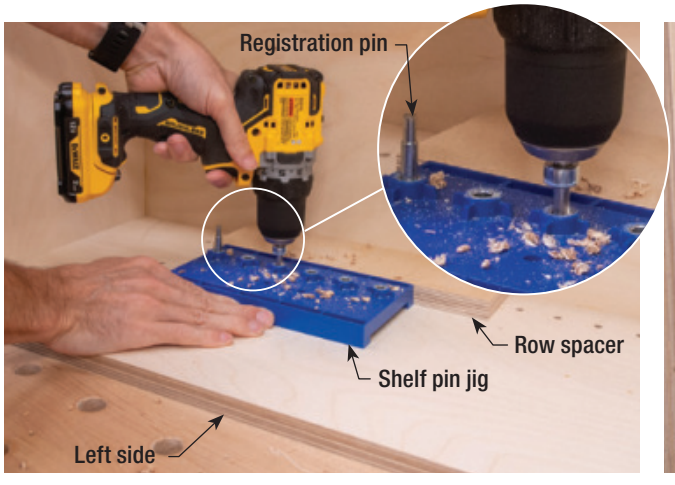
*Ideal dimension provided, but cut to fit.

Photos: Brad Rodriguez; Illustrations: Christopher Mills

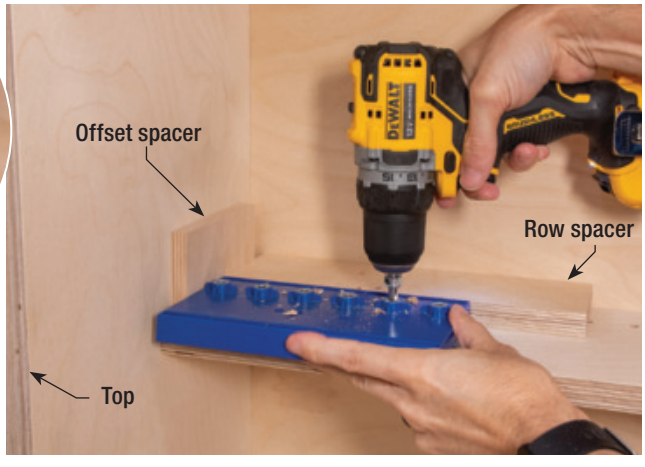
Finishes cabinet

Cut the case parts to size. Drill four pocket holes into each end of the top and bottom pieces, and saw ½ × ½" rabbets in the rear edges of the side pieces. Assemble using 1¼" pocket screws and glue. Cut the center divider and the back to fit the case. Install the center divider and attach the back into its rabbets with glue and 18-gauge, 1" brad nails. Drill shelf pin holes in the sides and center divider, and cut the adjustable shelves to fit (about 5" × 13⅞"). For the spray can shelves, add a strip to the front edge with routed notches to keep the cans from rolling.

Assemble and divide. Fit the center divider in the cabinet flush with the rear edges of the top and bottom. Hold it in place with a long clamp and check it for square. Drill ⅛"-dia. pilot holes through the top and bottom into each end of the divider. Countersink the pilot holes, and attach the divider using 2" woodworking screws.



Drill shelf pin holes. With the cabinet resting on its left side, use a shelf pin jig to space the holes, locating a row along the rear edge of the left side. Then use a 3"-wide spacer between the jig and back to drill the second row as shown. Flip the cabinet and repeat the process to drill the opposing holes in the center divider.



Double space. To drill the holes for the shelf pins in the right bay, use the same jig-then-spacer process, but add a second spacer at the top to offset the holes from those in the left bay.

Rout the notches. Cut a 4"-wide piece of ½" plywood the same length as your shelves. Chuck a 45° chamfer bit into a palm router, and set the cutting depth to ¼". Plunge into the edge as shown to make notches where indicated in the drawing on p. 47. Rip that edge free and attach it to the front of the spray can shelf using glue and brad nails. Repeat for all spray can shelves.

Finishing supplies cabinet

Cut the case sides and top to size. For the bottom and middle shelf, start with a piece 28½ × 23½". Saw the slots for the dividers in the lower cubbies and then rip the piece in half to yield a mating bottom and middle shelf. Drill the pocket holes and assemble the case with the shelf 12" above the bottom. Add shelf pin holes to the upper portion of the cabinet using a shelf pin jig as demonstrated on the facing page. Cut the shelf (about ¾" × 11½" × 28½) and dividers (about ¼" × 11½" × 12½") to fit, and install the back before moving to the doors.

Mating slots. Set up your dado stack to make a slot ¼" deep and wide enough to snugly fit your divider material (inset). Referring to the drawing on p. 47, set your table saw fence to cut the slot nearest the end of the workpiece. Then rotate the workpiece 180 degrees and repeat from the opposite edge. Continue in the same manner, adjusting the fence and working toward the center.

Rip to create a pair. Once the slots are cut, rip the piece into two 11½"- wide lengths to yield a mating bottom and middle shelf.

A middling glue-up. After gluing and screwing the top and bottom to a side, use 12" spacers to locate the middle shelf, and attach it as shown. Then upend the assembly and attach the parts to the opposite side in the same manner.

Hang the doors & finish up

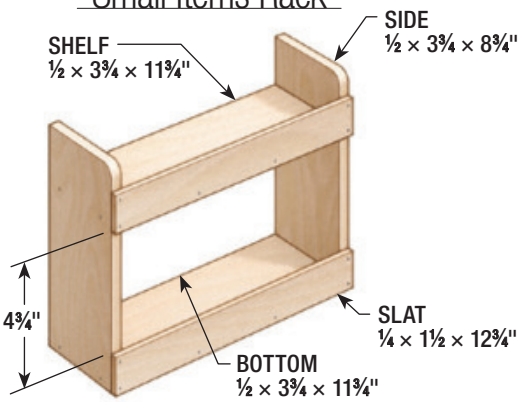
Now make the doors. I like to cut a pair of doors from the same sheet of plywood to display continuous grain across both. Referring to the drawing on page 47, lay out the hinge locations on both doors and the case interior. Three hinges per door will hold the extra weight of loaded door racks. Drill the hinge mortises, then the pilot holes for the mounting brackets inside the case per the manufacturer's instructions. For a finish, I brushed on a few coats of Minwax Polycrylic. Between coats, I used a small section of folded craft paper to smooth the surface. When the paper picks up white dust, the finish is ready for another coat. Finally, install the cabinets, hang the doors, and attach the handles.

Drilling for hinges. Drill the round mortises for the hinge cups on the doors using a drilling jig for concealed hinges.

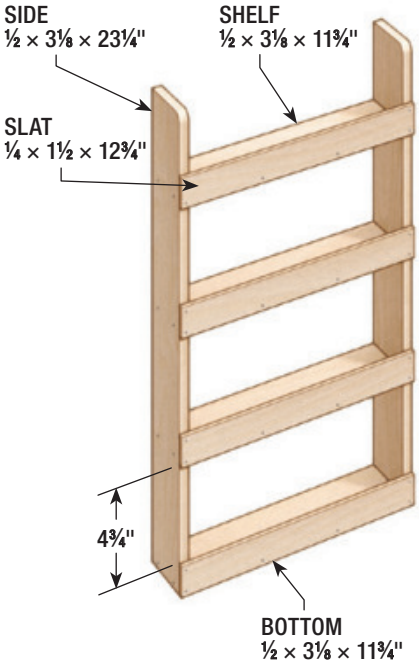
Door racks

The racks are made from ½" plywood. For a refined look, lay out a curve on the top corners of the sides using a small section of 1½"-diameter PVC pipe. For efficiency, tape a pair of sides together before bandsawing the curve. Then sand to the layout line using a disk/belt sander. The remaining pieces are cut to size and then assembled using glue and 18-gauge brads. Attach to the doors using 1" corner braces. *Note: These racks won't fit on the lower portion of the supplies cabinet.* ■

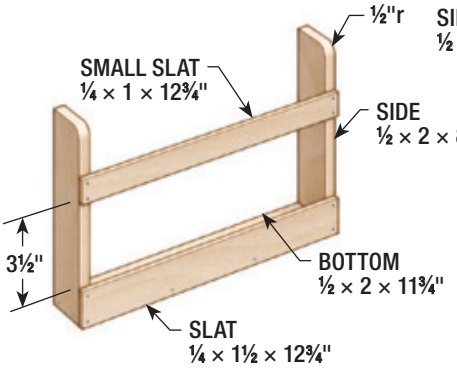
Small Items Rack



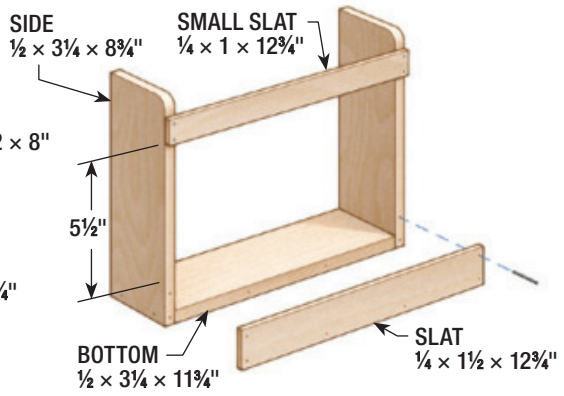
Pint Cans Rack



Caulk Rack



Disposable Glove Rack



Brad Rodriguez is a hobbyist woodworker who quit his corporate job to become an online content creator. His mission to educate, inspire, and entertain others with his projects has grown large followings across Instagram, Facebook, and his website *FixThisBuildThat.com*. He's also gained over 1 million subscribers on his YouTube channel, with custom shop storage projects, DIY home renovations, and unique builds.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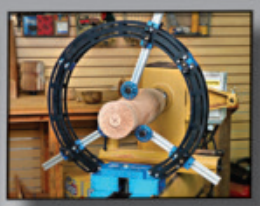

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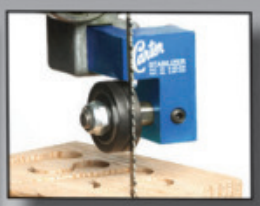

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CYPRESS

A durable Southern Belle

Sinker

By Ken Burton

What does cypress have in common with bourbon, barbeque, and the blues? They're all products with southern roots. Cypress (sometimes called bald cypress) lumber is well known throughout the southern U.S. where the trees are prolific, but less so the farther north and west you go. Cypress trees *(Taxodium distichum)* are conifers, which makes cypress lumber a softwood. However, the trees are also deciduous in that their needles turn brown and drop in the fall.

Where the wood comes from

Bald cypress trees grow throughout the southeastern United States and into the Midwest as far north as southern Illinois, and along the eastern seaboard as far north as Delaware. They typically grow in wetlands, but are not uncommon in forested areas. Cousin to the California Redwood, cypress is among the longest living North American trees, and the largest growing east of the Mississippi. At maturity, a cypress can top 150' tall and 15' in diameter. Sadly, few of these old growth giants remain standing. Most were cut for timber in the late 1800s and early 1900s.

The trees are not designated as endangered on either the CITES list or the IUCN Red List, and the supply of both select and #2 cypress is ample. Rarer are two other "grades" of cypress: *pecky* and *sinker*. Pecky cypress is wood that has been attacked by a fungus that leaves behind small holes and discoloration, although the wood is generally sound. Sinker cypress comes from long-submerged, old-growth logs salvaged from swamps and rivers. Some companies also reclaim old-growth timbers from demolished buildings. You may also come across cypress *knees*. These are "bumps" that project up from the roots of bald cypress trees, particularly in swampy areas. The exact biological function of these growths isn't fully understood, but you can find knees sold for carving blanks. (Note that cutting cypress knees on public land is illegal in many areas.)

The main characters. When you buy kiln-dried cypress, you have two basic choices: *select* or *common*. Select boards (top) are nearly knot-free and typically straight-grained. Common, or #2, cypress (bottom) may contain knots and other minor defects.

History in woodworking

Cypress wood has long enjoyed a solid reputation for being strong, durable, and friendly to work. The immensity of the old-growth trees made them well-worth harvesting. Some stands could yield as much as 100,000 board feet per acre. Impressive, especially compared to today's average yield of about one tenth that amount. It has been used extensively for construction throughout the south as well as for boatbuilding, docks, and outdoor projects. Indoors, the pale, reddish-yellow wood makes beautiful trim, cabinetry, and paneling that darkens with time to a rich honey tan.

Availability

Being a softwood, kiln-dried cypress is available in standard construction lumber sizes: 1×4s, 1×6s, 1×8s, etc. along with 2× stock. Appearance may vary regionally. For instance, lumber from gulf coast swamps tends to be somewhat redder that that from other areas. You can also find heavy timbers, though they are usually sold green. The trick is finding a place to

TEXTURE	TOXICITY	ROT/INSECT RESISTANCE	STABILITY	HARDNESS	DENSITY
MEDIUM-COARSE	MEDIUM	MEDIUM-HIGH	HIGH	MEDIUM	36 LBS./CU. FT.

The supporting cast. "Exotic" cypress is available as *sinker* (left), salvaged from century-old sunken logs, and *pecky* (center), which was attacked by fungus. Rarer still is *ancient* buried cypress (right), reclaimed from trees that grew in the distant past.

purchase it. If you live in the south, this isn't a problem. Some of the big box stores even list cypress on their websites (although my inquiry at such a place in eastern Pennsylvania just drew a blank look). The few places online that specialize in cypress generally cater to builders purchasing hundreds, if not thousands, of board feet at a time. That said, there are a few dealers that cater to small-scale users. Pricing starts at about $5-7 per board foot.

Working and finishing

Cypress is comparable to both cedar and redwood in its weather resistance, but it is slightly harder and stronger. It works well with both hand and power tools, but is somewhat splintery. Because of this, take care to back up cuts, particularly when cross-cutting. Cypress sands quickly, though it does tend to load up abrasives. Freshly cut surfaces have a slightly greasy feel to them, but this does not interfere with paint or finish. Cypress glues with normal adhesives and holds fasteners well. While not downright toxic, cypress is noted as a sensitizer, so appropriate dust control and protection is warranted.

Cypress Uses

- Outdoor projects
- Interior paneling
- Flooring
- Decking
- Boat building
- Docks
- Cabinetry
- Trim

Something old, something new…

The story of cypress became even more interesting to me after I connected with Jimmy Krantz of Krantz Recovered Woods in Austin TX. In discussing the cypress industry, he mentioned that he had reclaimed some ancient trees from a Louisiana swamp. In addition to milling and drying the lumber, Krantz had it carbon dated, finding that his discoveries ranged from 1,500 to 2,700 years old. After that conversation, I found myself in possession of a piece of log BC004-A. It came from a tree that grew from about AD 300 to AD 550 making it approximately 1,700 years old.

While contemplating the ancient wood, I made this small wall shelf from some boards of select, new-growth cypress. About the only "problem" I encountered was when rounding over the fronts of the shelves on the router table. The profiles were a little on the rough side right off the bit, but cypress sands so readily it didn't take much to put things right. By the time I had rubbed wiping varnish on this new wood, I had a design in mind that I hoped would do justice to the ancient stuff.

As you can see, I turned a small lidded vessel. I wasn't sure what to expect as my gouge began finding the shape, but the wood was really no different to work than the small sinker cypress plate I had turned earlier. Both cut cleanly and the aroma was surprisingly pleasant given the wood's swampy origins. The colors proved to be outstanding and I am fascinated by how tight the growth rings are, being less than 1/64" in some cases. In all, it made for a great day in the shop.

What a difference a century or four makes. the pale yellow of the new-growth cypress wall shelf makes a striking contrast with the mellow olive/tan of the sinker cypress plate and ancient cypress vessel. ■

Ancient Cypress

For more about ancient buried cypress, as well as other reclaimed lumber, visit the products and prices section of *www.krantzrecoveredwoods.com.*

Photos: Ken Burton

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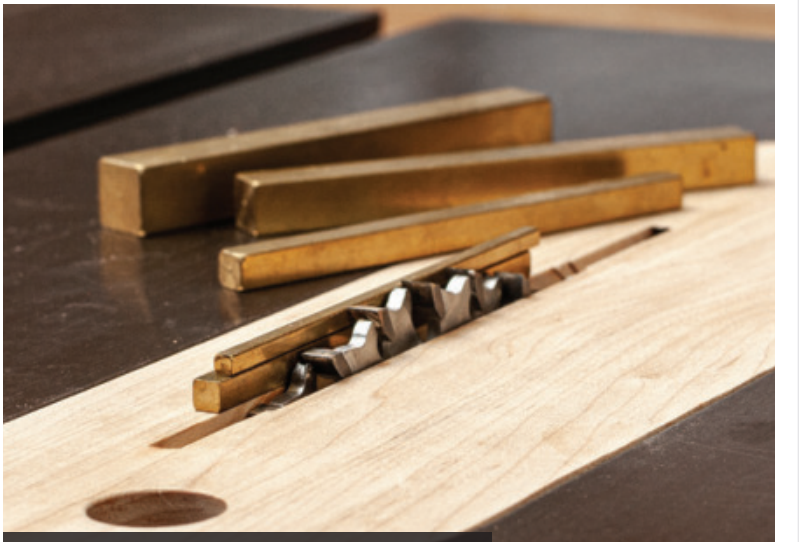
Best bars for fast, accurate tool setup

Before I bought these brass bars from Whiteside, tool setups were slow and tedious. Now, I use them to quickly set my handheld router for accurate plunge cuts. At the router table, I can position the bit as well as locate the fence. I'm also a fan of using these gauges to set my blade height at the table saw. After sawing a test rabbet, dado, or groove, I drop in the appropriate bar to gauge the depth or width. The brass is easy on bits and blades, and I'm always finding new uses for them. The pack includes five precisely machined 4"-long bars perfectly squared to ⅛", 3⁄16", ¼", ⅜", and ½". Of course, you can also combine them to create additional dimensions; for example stacking the ⅛" and the 3⁄16" to get 5⁄16". All together, you can measure 1 7⁄16". Add a set to your shop for only twenty bucks.
—Chad McClung



Whiteside 5-Piece Brass Set-up Gauges
#836311, $19.99

Prices subject to change without notice.

Photo: Chad McClung

Nuggets of fool's gold

Q: *What is the best way to make a small fortune at woodworking?*

A: Start with a large fortune.

Q: *I'd like to achieve a nice, uniform color when staining cherry. Isn't there some way to keep the wood from blotching?*

A: Sure, use paint.

Q: *My wife gave me an ultimatum: Spend less time in the shop or she'll leave me. What should I do?*

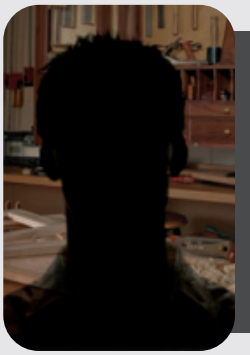
A: Be sure to get a forwarding address.

Q: *My dog chewed one of the legs of my dining table. What do you recommend to fix this?*

A: Saw off the other three legs to match and call it a coffee table.

Q: *I've heard it said that the older you get, the less you have to sand your projects. Is this because your skills improve?*

A: No, it's because your eyes get worse.



Stanley "Jack" Plain
is a woodworker with nearly 13 3/16 decades of woodworking experience under his tool belt (which he inherited from his maternal grandfather, Crossly "Rip" Sawyer). He is renowned for his warped sense of humor and his ability to straighten out twisted lumber with his steely gaze.

Q: *What's the best tool to deal with mistakes made as a beginning woodworker?*

A: A coping saw.

Q: *I measured once, cut twice, and it's still too short. Now what?*

A: Darned if we know, the folks from *Fine Woodworking* borrowed our board stretcher and haven't returned it yet.

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Buyer's Guide

Tool Reviews (p. 14)

1. Oneida Air Systems Dust Deputy Bagger System.....#173892, **$149.99**
2. SKIL 14A Plunge and Fixed Base Router.....#174809, **$139.99**

Digital Woodworking (p. 22)

1. Highpoint Figure "8" Fasteners .....#159303,**$4.49**

Great Innovations In Woodworking (p. 26)

1. SawStop, various models available at *woodcraft.com*
2. Bessey 24" K Body REVOlution Fixed Jaw Parallel Clamp.....#164037, **$55.99**
3. Kreg Jig K4 Pocket-Hole System .....#149264, **$79.99**
4. Armor Auto-Jig Pocket Hole System .....#175760, **$139.99**
5. Adjust-a-bench, various kits available at *adjustabench.com*
6. Festool Domino Joiner DF 500Q with T-LOC .....#574332, **$980.00**
7. Festool Domino Cutter & Tenon Assortment Systainer w/T-LOC .....#498899, **$345.00**
8. Bosch ROS20VSC 5" VS Random Orbit Sander .....#857753, **$69.00**
9. Teknatool SuperNova2 Chuck .....#145898, **$189.99**
10. Teknatool Nova Cole Jaw Set .....#15M83, **$86.99**
11. Oneway Strong Hold Chuck .....*www.oneway.ca*, #2137, **$286.95**
12. RIKON 8" Benchtop Jointer wuth Insert Cutterhead .....#172628, **$599.99**
13. Easy Wood Tools Full-Size Easy Finisher .....#149927, **$129.99**
14. Next Wave SHARK SD100 CNC Machine .....#172181, **$1199.99**
15. SketchUp, various version available at *sketchup.com*
16. Oneida Air Systems Deluxe Dust Deputy With 5-Gallon Drum Kit .....#149951, **$99.99**

Accent Cabinet (p. 32)

1. Whiteside Edge Beading Bit, ¼" BD, 9/16" CL, ½" SH.....#814384, **$34.99**
2. Freud Roundover Bit, 3/16" R, ¼" SH.....#828707, **$31.47**
3. Freud Upcut Spiral Router Bit, ⅜" D, 1¼" CL, ½" SH.....#828779, **$53.97**
4. Vertex Cabinet Hinge Polished Brass, 2 × 1½", Pair (2 needed).....#16R59, **$25.99**
5. WoodRiver 10-piece Router Bushing Set w/Case.....#144625, **$48.99**
6. Hardware Resource Madison Knob, 1 3/16" Dia, Brushed Antique Brass, (2 Needed).....#857984, **$3.99**
7. Hafele Adjustable Ball Catch.....#27H39, **$3.75**
8. WoodRiver Glue Bottle Applicator Set .....#143566, **$15.75**
9. General Finishes Satin Seal-A-Cell Varnish Solvent Based, qt, ...#85S09, **$19.99**
10. General Finishes Satin Arm-R-Seal Varnish Solvent Based, qt, ...#85F08, **$19.99**
11. 1" Zinc-Plated Corner Brace (20-pack).....*homedepot.com* ,#610949, **$8.07**

Finishing-supply Cabinets (p. 46)

1. Kreg Automaxx 90-Degree Corner Clamp .....#163755, **$44.99**
2. Kreg Spacing Shelf Pin Jig With ¼" Drill Bit .....#153680, **$34.99**
3. Kreg Concealed Hinge Drilling Jig.....#162007, **$29.99**
4. Freud Chamfer Router Bit, 45°, ⅞" CL, ½ SH .....#828728, **$38.97**
5. Hafele Shelf Support Pin, Bracket Style w/Hole, Nickel, ¼", 25 pack .....#27I15, **$5.49**
6. Hafele 110° Full Overlay Hinge Pair (3 pair needed for each cabinet) .....#152962, **$5.49**
7. Hardware Resources Naples Pull, 3" C/C, Polished Chrome (2 needed for each cabinet).....#859960, **$5.99**
8. Minwax Water-Based Polycrylic Protective Finish, qt. .....*amazon.com*, **$17.96**

Woodsense (p. 52)

1. Ancient Cypress.....*krantzrecoveredwoods.com*, **varies**

Great Gear (p. 60)

1. Whiteside 5-Piece Brass Set-up Gauges .....#836311, **$19.99**

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ADJUSTA-GRIT

Adjusta-Grit Finally Goes Digital

For immediate release

KALAMAZOO, MI – April 1, 2021 ---- Starting in July 2021, Adjusta-Grit® sanding paper, blocks, and discs will be available with digital controls. Additionally, Adjusta-Grit sanding belts will be available with digital controls by September 2021. The company will gradually retire the remaining inventory of mechanically adjustable sanding products.

Since 1999, Adjusta-Grit, developed and manufactured by Streamly Abrasives in Dismal Falls, MI, has been supplying the woodworking community with sandpaper, sanding blocks, sanding discs, and sanding belts that feature mechanically adjustable grits. The key mechanism was a small, lightweight dial connected to the edge of each abrasive product, which changed the grit in less than four seconds along calibrated increments. The adjustment initially ranged from 60 grit through 220 grit, saving woodworkers significant time and expense. Then in 2004, Adjusta-Grit upped the ante, producing all of their products with a range of 40 through 600 grit, allowing additional savings and flexibility.

Now all Adjusta-Grit products will be not only digitally controlled by any Bluetooth-paired device but will also change grits along a continuum rather than in discrete increments. This allows fine-tuning of the scratch pattern and saves wear and tear on the product, as the dial mechanisms tended to clog up after two hours of use. According to independent field tests, the new Adjusta-Grit Digital sanding products can last as long as six hours before needing to be replaced. Plus, no dial or any other mechanism protrudes from the product.

The new, patented digital grit-adjustment technology was developed by undergraduate industrial technology students at Kalamazoo College, under the guidance of Professor Pelle Antoine and Streamly Abrasives founders Manny and Phil Shavitz. You can see Adjusta-Grit Digital specifications and schematics at Professor Antoine's website: www.kalamazoo.edu/tech/antoine/adjustagrit.

"We may be a little late to the digital revolution, but we're here and we're, uh, still clever," said Manny Shavitz at the Kalamazoo College press conference.

Streamly Abrasives, Ltd., has been manufacturing and supplying sanding and scraping products since 1949. Cofounders Manny and Phil Shavitz sold the company in 2019 to Splat Capital, a Connecticut hedge fund. The Shavitz brothers recently formed a Klezmer band, the Globalist Conspirators, which is currently touring the USA and the Middle East. Their music is available from jTunes.

— Dave Freedman

Photo: Doug Loyer

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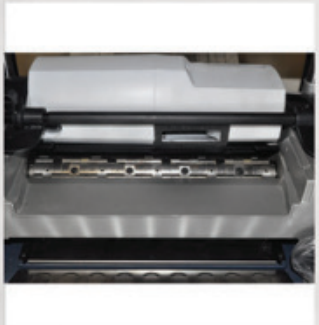

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