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Projects, Techniques, and Products magazine

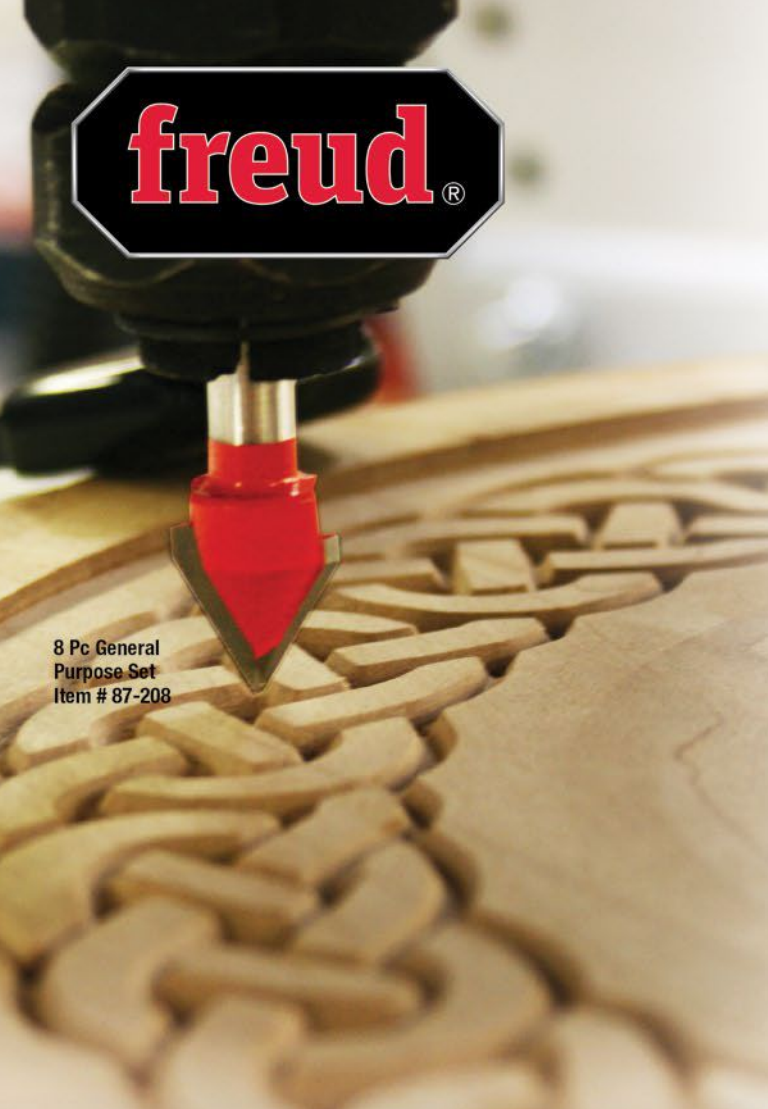
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A tale of two benches. Senior editor **Joe Hurst-Wajszczuk** pulled some strings to get extra help from *The American Woodshop's* host, **Scott Phillips**, for this issue's cover project (p. 36). With workshops located 500+ miles apart, the two relied on their cell phones (with good data plans) in lieu of face-to-face meetings. Joe and Scott enjoyed comparing benches and building notes at the cover shoot. This issue marks Joe's tenth year with the magazine, and the start of Scott's 25th show season.



Rob Spiece and **Larissa Huff** once apprenticed to Jeffrey Lohr at the Lohr Woodworking Studio (lohrwoodworkingstudio.com), tucked away in the countryside in Schwenksville, PA. Having assumed the business recently, they now design and make all the furniture themselves. See their advice for working with live-edge slabs (p. 30), and learn how to make a great router-based jig for flattening these large planks (p. 48).



Located some 30 miles south of Boston, the quaint coastal town of Scituate, Massachusetts, is an ideal spot for **Danielle Driscoll** to live and work. While raising two young boys and restoring a 1927 Dutch Colonial home with husband Luke, Danielle somehow manages to cultivate a varied career as an author, designer, and finishing expert. Check out her faux soapstone finish on p. 60. Visit FindingSilverPennies.com to see more of Danielle's work and learn about her ebook of finishing techniques, "On the tip of my paintbrush." ■

On the Web



We be grammin! We're on Instagram now. Check us out for new photos or videos every day. You'll find beautiful photos of finished furniture and jigs, and shots of woodworkers in action. We also have woodworking tips and detailed drawings. But we have the most fun with behind-the-scenes photos and videos.

As you can see in the outtake from our cover shoot at right, Scott is excited about these benches. Follow us [@woodcraft_magazine](https://www.instagram.com/woodcraft_magazine).



Turning fundamentals.

This issue's "Four of a Kind" article from David Heim delivers essential woodturning knowledge. To go along with that good foundation, we're offering up two stories that pack the same punch. Go to woodcraftmagazine.com, and click on onlineExtras to download these free PDFs. ■

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Where does *your* inspiration come from?

The articles in this issue have me thinking about where woodworkers get their inspiration. Our cover project is an interesting case in point. Joe Hurst-Wajszczuk's beautiful, live-edge bench was inspired by an equally impressive bench that Scott Phillips built in an episode of his well-known show, *The American Woodshop*. But Scott got his inspiration from examples of slab furniture he's admired, and from the local arborists and sawyers who have been adding to his slab supply over the years. The same goes for Larissa Huff and Rob Spiece, whose "Success with Slabs" story begins on p. 30.

Mother Nature provides plenty of inspiration for woodworkers, and it's not always in the form of wood grain. For example, Danielle Driscoll's faux finish for soapstone (p. 60) came about because she loves the mottled blue-black look of real soapstone. But she's also motivated by practical factors, like the price difference between a genuine soapstone tabletop and the convincing faux version she can create with paint and an inexpensive MDF panel.

Even a nifty hardware item can sometimes inspire a project. That's

what happened to me with the coffee table I built for this issue (p. 23). Discovering a spring-loaded mechanism that can instantly elevate a tabletop triggered a classic "I gotta try that" response. Integrating the hardware into my table design turned out to be easier than I had anticipated. The end result is a piece of furniture that's twice as useful as a conventional coffee table.

While artistic inspiration is responsible for the attractive form and wood grain we admire in a finished piece, woodworkers are often motivated by practical challenges. How else can you explain the well-designed jig that Rob Spiece built for flattening large slabs with a router (p. 48). Then there's Joe's innovative alternative to store-bought dowels. His "Get a Round Without a Lathe" story (p. 45) shows you how to produce shop-made dowels in any wood species you choose.

As magazine makers who also happen to be woodworkers, we're always looking for cool projects, great tools, useful workshop improvements, and techniques that save time, yield foolproof results, or (better yet) deliver both benefits. Our main mission is to present this news you

can use in the most helpful, attractive way, on our website and in every issue of your magazine. That's right: We want to inspire you to try new things, build new projects, and make woodworking more fun and satisfying. To that end, we've added an extra item to this issue's editorial mix. Check out our "Wood filler" on p. 72. If this woodworking tale inspires you to share a humorous or uplifting story, we'd love to hear from you. ■



Live-edge love affair. The slab bench featured on *The American Woodshop* with co-hosts Scott and Suzy Phillips inspired several of the stories in this issue.

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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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- Maximum cutting height: 12 1/8"
- Blade size: 13 1/2" long
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Vic Tesolin *thinks outside the box*



Canadian woodworker and author of *The Minimalist Woodworker*, Vic Tesolin, doesn't own a table saw, a jointer, or a router. And yes, he is still a woodworker. Vic's minimalist message: No matter your circumstances you can work wood. No excuses. I recently sat down with Vic to discuss his unique perspective. Read on for the highlights of our conversation.
—Chad McClung

WM: How did you get started in woodworking?

VT: When my daughter was born 17 years ago, I had an urge to make something for her. I found a design and adjusted the plans to fit what I needed. I then proceeded to make the ugliest side table you've ever seen. I wasn't allowed to throw it away because of the sentimentality around it. Today it serves as a great reminder of how I got started.

WM: Did you have a shop at the time?

VT: I had about 40 square feet of space underneath the basement stairs of my house. Of course, there were no machines in there. So I went to the local wood hobby club to break down the lumber and do any necessary

machining. Then I'd take it back home to finish it up with hand tools. That's when I realized that you can actually do minimalist woodworking.

WM: Is your minimalist approach philosophical?

VT: It's not philosophy so much as reality. If you can't run a table saw because you have a newborn baby in the bedroom upstairs, then do something else. It doesn't preclude you from woodworking, it just means you have to come at it from a different angle.

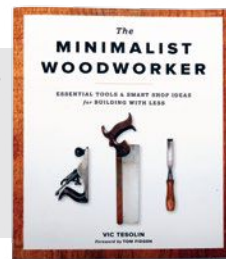
WM: Are you strictly a hand tool woodworker?

VT: I'm not one to blather on Druidically about hand tools. Do I think that a hand plane gives you a better surface than sanding? Yes. Do I think that a hand-planed surface is always the way to go? No. If you want to hitch up your wool underwear and do it all by hand, then by all means, go for it.

WM: What machines do you have?

VT: Now that I have space, I have a 14" bandsaw with a riser kit so that I can resaw material. I came to appreciate the bandsaw's versatility while studying at the Rosewood Studio, a woodworking school in Perth, Ontario. I use my jack plane on every piece of wood that comes through the shop. I get my one face and one edge, then I'll go to my thickness planer and continue processing from there. I haven't owned a jointer now for four years, and I don't miss it at all.

Read more about Vic's Spartan approach in *The Minimalist Woodworker* from Spring House Press.



WM: Can you talk about your day job?

VT: I hang my hat in the Veritas R&D department. I work with our designers and engineers to suss out tools and figure out...ya know...does it need a laser? Actually, a big part of my job is to stop the engineers from putting lasers on things.

Once we have a prototype of a new tool, they'll hand it to me and say, "What do you think?" I'll bring it into my shop and use it instead of another tool to see how it performs. That provides them with good feedback.

WM: What advice do you have for beginners?

VT: Somewhere along the line we got hyper-focused on accuracy. We try to make up for a lack of skill by buying hyper-accurate tools, like fences that you can dial in a half thou' at a time. Look at furniture done in antiquity. They managed to do this without dial indicators. I'm working on a bench right now for our mudroom. I took a stick and I held it up on the back of my wife's leg and marked where her knee bent. That's the height of the bench. I don't care how tall it is in numbers—it doesn't matter. It's freeing to understand that.

And don't be afraid to screw up. I worked with an older fellow at the wood hobby club. His line was, "If you screw up, you can always drill a hole in it and call it a birdhouse." ■

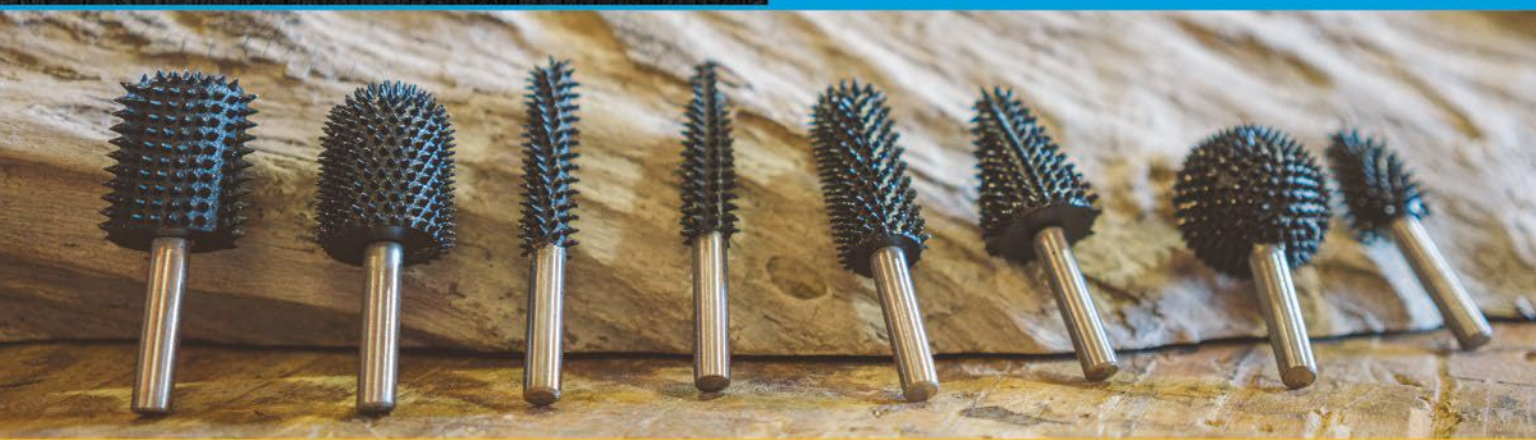


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Vic and I chatted for over an hour. Go online to see what else he had to say.

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What about wood movement?

Regarding last issue's (Aug/Sept, #78) Tall Bureau project, I have a question about wood movement. It seems that Mario's advice for attaching the web frames to the sides sets up a "cross-grain" situation that would result in failure sometime down the road.

I have built several reproductions of Shaker chests and can attest to the fact that the sides of this case will move in response to seasonal changes in humidity. Is there a way to avoid future failure?

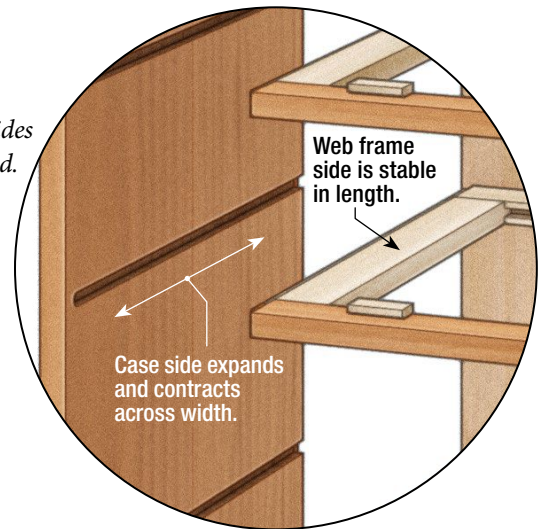
—Dave Wohlrab, via email

Bureau builder and author Mario Rodriguez replies:

You are correct. Cherry will move across its grain about $\frac{1}{16}$ – $\frac{1}{8}$ " for every 12" in width. When that movement is restricted, something will give; in this case the case sides might crack. Reviewing my notes, it seems that I neglected to place proper emphasis on this important detail.

When I assembled the 16"-deep chest, I applied glue to the front 10" of the case-side dados for the web frames and left the back section unglued. In my experience, that precaution is enough to accommodate any seasonal movement and avoid future problems.

Thanks for bringing up an important subject that many woodworkers overlook.



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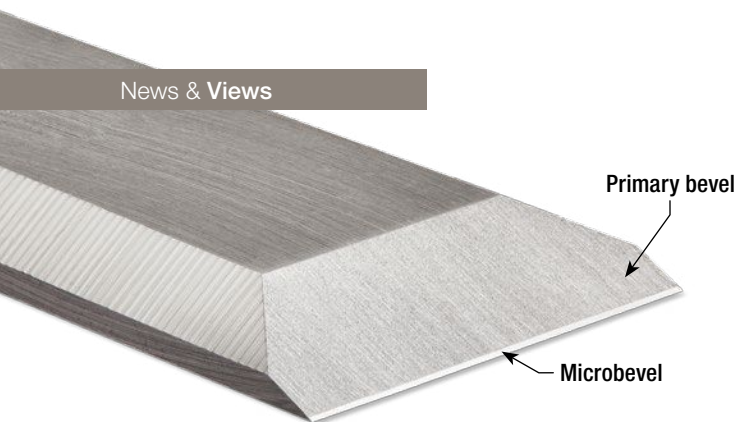
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Microbevel basics

I enjoyed last issue's "Cheapskate's Guide to Diamonds," but I have to ask, why does a microbevel make a difference?

—Donnie Marcum, via Instagram

Senior editor Joe Hurst-Wajszczuk responds:

A microbevel is more about process than the final result.

According to sharpening guru Ron Hock, "A sharp edge only exists where two planes (i.e., the back and the bevel of a plane iron or chisel) meet with zero radius." Achieving this goal does not require a microbevel. Traditionally, freehand sharpening is done by keeping the beveled surface of the chisel or plane iron in contact with a sharpening stone as it's moved across the abrasive. With practice, this method is easy enough to master; however, it's not a good technique to use with diamond abrasive film. For starters, riding the full bevel across the abrasive will shorten the film's service life. There's also a good chance that you could accidentally lift the blade or chisel and dig into the film. The microbevel and shop-made jig dodge both issues and ensure a shaving-sharp edge.

If you have a sharpening method that works, stick with it. But if you've been struggling with dull tools, give this technique a try.

Festool and SawStop come together. What's next?

In June, SawStop LLC announced its acquisition by TTS Tooltechnic Systems, based in Wendlingen, Germany. The TTS family of companies includes Festool and Tanos. SawStop's current management team will continue to operate the company out of its Oregon headquarters.

No doubt, the merger of these two woodworking superpowers will mean great things for woodworking. We can't wait to see how TTS incorporates SawStop's finger-saving technology in the next generation of power tools. ■



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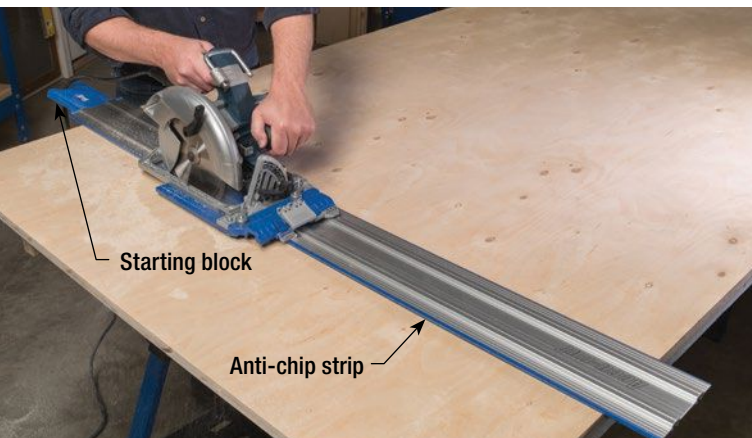
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Track saws for all

Kreg Accu-Cut Circular Saw Guide Track System

Track saws excel at breaking down sheet goods, but they can be pricey. Kreg's new tracksaw system aims to change that. The Accu-Cut kit comes with two 24"-long tracks that can be joined together to make cuts up to 48" long. You also get a plastic sled that rides on the track and



mounts to the shoe of most left- or right-hand direct drive circular saws. The shop-made saw guides I've used need to be clamped in place and don't always give me splinter-free cuts. But the Accu-Cut's anti-slip strips keep the track in place without clamps, and a replaceable anti-chip strip keeps the cut clean. The starting block is another nice feature, providing a platform from which to trigger your saw before entering the workpiece. Once you start cutting, a curved notch in the starting block helps manage the power cord. The system is quick and easy to use. Simply mark the beginning and end of your cut line, then align the blue strip to your marks, and cut. I test-cut several types and thicknesses of sheet goods, and the Accu-Cut delivered accurate, splinter-free cuts every time. I hope Kreg decides to make an extension pack so I can rip a full sheet at 96". But for now, anyone can have a track saw for only \$80.

Tester, Chad McClung

An advertisement for Norwood Sawmills. The top half shows a large log being cut by a sawmill with the brand name 'NORWOOD' visible. Overlaid on the image is the text 'GREAT SAWMILLS. SHOCKING VALUE.' in large, bold, white letters. In the bottom right corner is a cartoon illustration of a lumberjack with a beard, wearing a green plaid shirt and an orange hat, holding an axe. The bottom section of the ad is orange and contains a large white 'N' logo, contact information, and the Norwood Sawmills logo.

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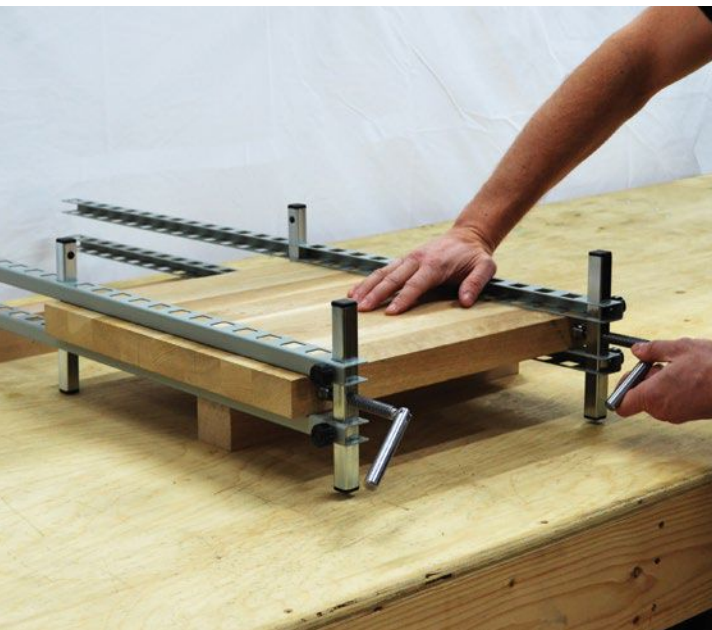
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Edge-gluing boards just got easier

Damstom 38" Panel Clamp

If your work often involves edge-gluing boards to create panels, you owe it to yourself to check out Damstom Panel Clamps. The innovative over-and-under design eliminates the frustrating problem of panels bowing under clamp pressure. Like most woodworkers, I've always alternated my bar clamps—one under, the next one over—when gluing up panels. The method works pretty well, but Damstom's doubled-up design goes even further by also keeping boards from sliding out of alignment under pressure. Setting up the clamps (see videos at damstom.com) takes a bit of getting used to. However, I found that, after just a few glue-ups, I quickly got my systems down. I tested the 38"-long versions (\$59.99), but other sizes are available. The only downside I can see is that the clamps can't be used for stock less than $\frac{3}{4}$ " thick. That said, I welcome these helpers to the shop. ■

Tester, Paul Anthony

For ordering and pricing information, see the Buyer's Guide on page 64.

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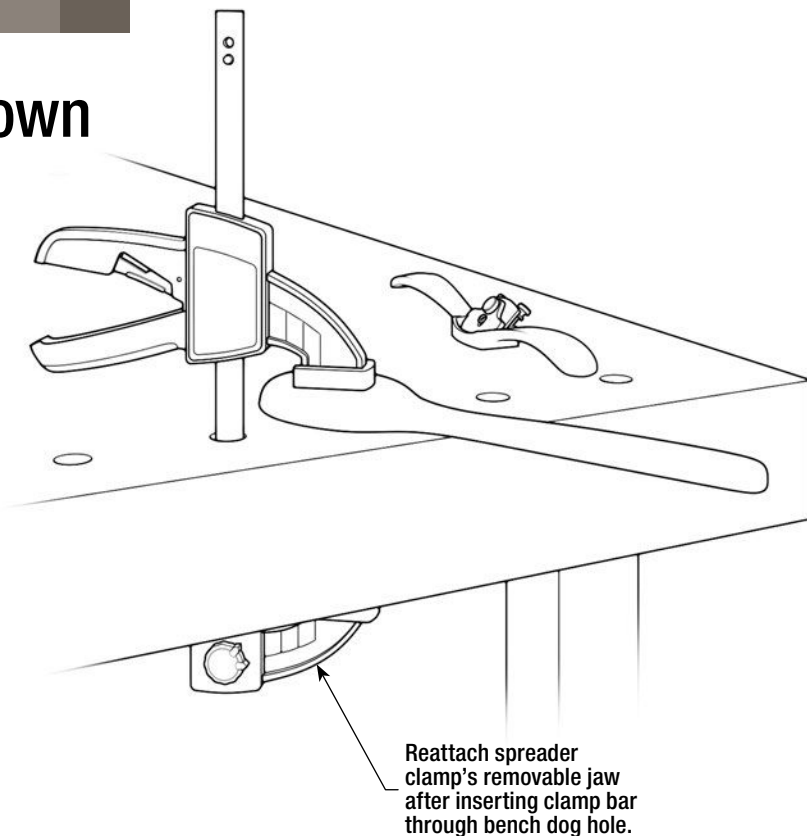
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TOP TIP

One-handed hold-down

I carve a lot of spoons. Most of the post-bandsaw shaping takes place with the work secured in my bench vise. However, sometimes I need more positioning flexibility. It turns out that a spreader bar clamp is just the thing. You can remove its reversible jaw in order to slip the bar through a standard $\frac{3}{4}$ "-dia. dog hole. Replacing the jaw in its normal orientation—but below the benchtop—then creates a very effective bench hold-down. It can be operated with one hand so I can quickly and easily reposition a workpiece as needed to finish shaping and smoothing it.

—Bob Poling,
Parkersburg, West Virginia



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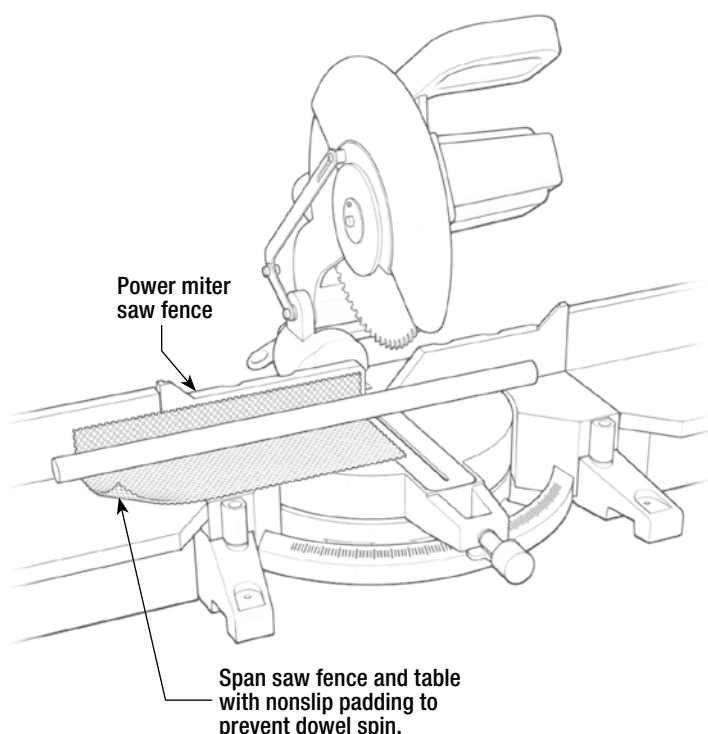
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No-spin dowel sawing

Most woodworkers know that crosscutting dowels on a miter saw can be dicey because the blade can grab the piece and spin it out of your hands. To prevent this, you can secure the piece in a sandpaper-lined wooden V-cradle, or temporarily affix self-adhesive sandpaper to your fence and table. However, I've found that the quickest approach is to simply press the dowel in place against a scrap of nonslip bench padding like that used for routing and sanding.

—Charles Mak, Calgary, Alberta



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Simple spindle spraying

When faced with spray-finishing a bunch of spindles, like those used for the bench on page 36, I find that it's well worth the time to set up a simple rack for hanging the parts. It's nothing more than a suspended 2 × 4 outfitted with cup hooks. I then install a screw eye into the end of each spindle to hang it from a cup hook. (No harm done since spindle ends are seldom exposed in a finished piece.) The setup allows me complete spraying access, and eliminates handling the pieces during the process.

—Joe Hurst, senior editor

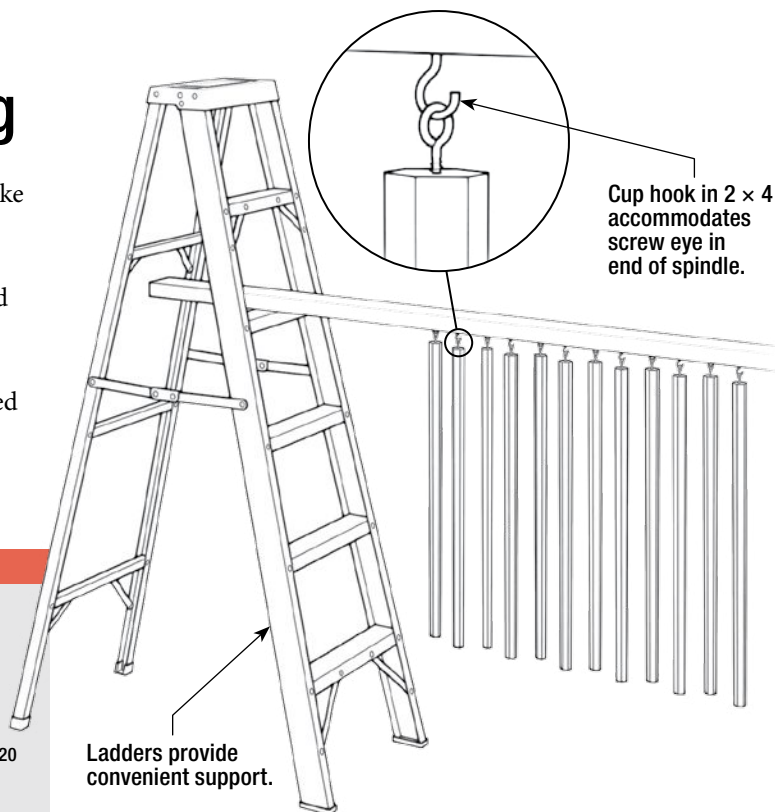
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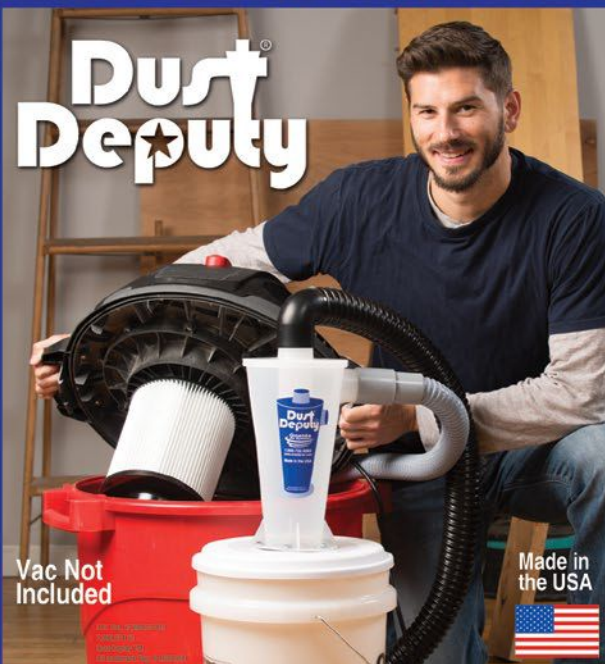
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Build a COFFEE TABLE... Just the Way You Like It

Personalize your project by selecting the design details that suit your size and style requirements.

By Tim Snyder



The coffee table needs a new name. Every home has at least one of these low tables, and they do so much more than provide a parking space for caffeinated beverages. The basic design of this coffee table leaves plenty of room for customization. It's easy to adjust the table's size, finish details, and other features to suit your needs (see sidebar at right).

A buddy of mine turned the legs for this table. You'll recognize them in the duplicate turning article that begins on p. 55. You can use the same profile or come up with your own. Another alternative is to order a set of legs from an online source like *TableLegs.com*.

Have it your way

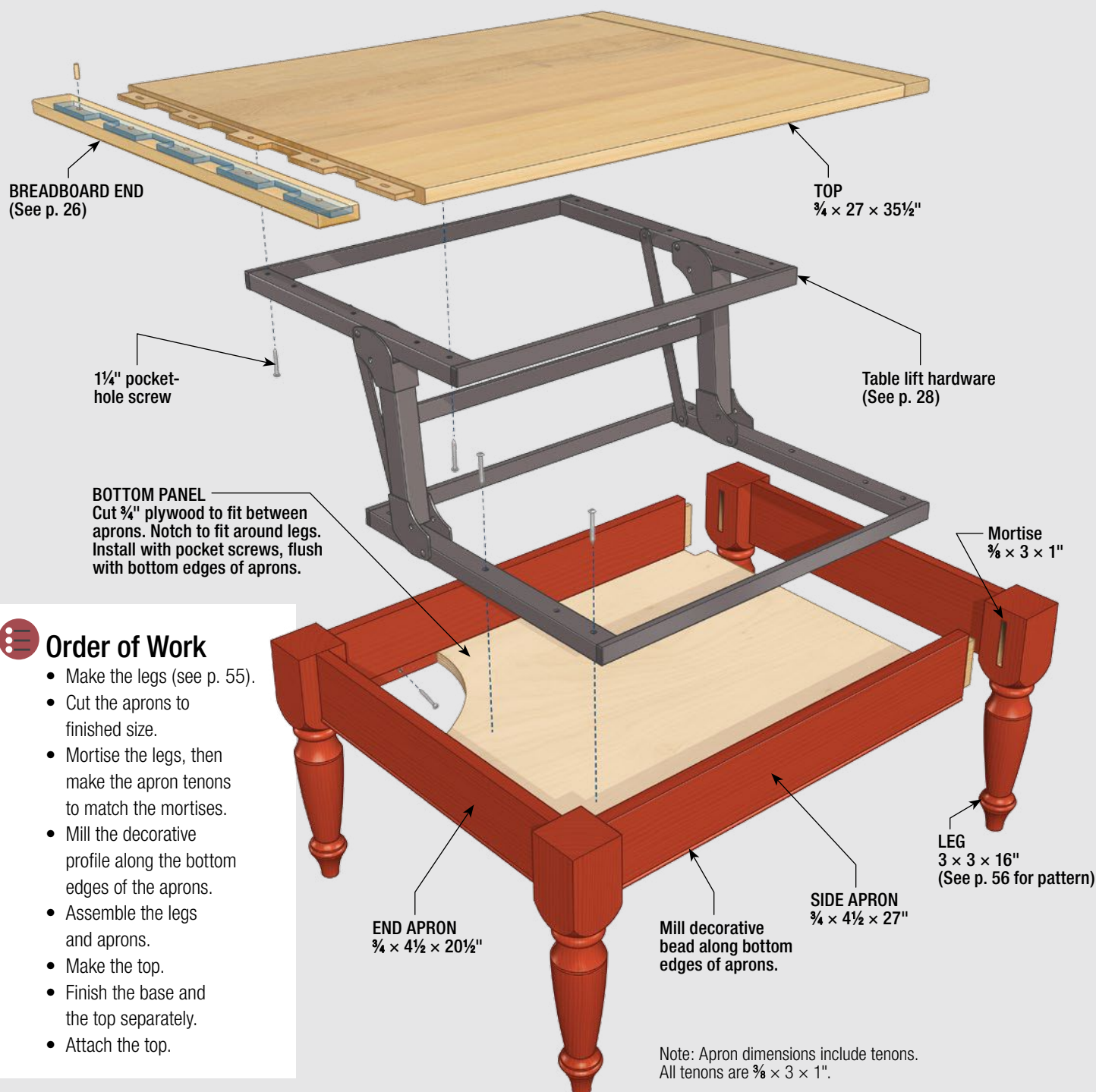
It's easy to customize your coffee table. Here are just a few options:

- **Table size.** Build a bigger table by lengthening the aprons.
- **Finish.** Use a different finish for the base, or a different wood for the top. See p. 60 to create a faux soapstone top (photo at right).
- **Dining table option.** Install spring-actuated hardware that enables you to elevate the table top. See p. 28 for installation details.



Turned legs, deep aprons, sturdy joinery, and a stable top

Coffee tables are typically about 16" high, but the footprint can vary. The dimensions of this table represent the smallest size that can accommodate the top-raising hardware shown on p. 28. This simple design has no lower shelf or stretchers to stiffen the table frame, so structural integrity needs to come from strong leg-to-apron joints. A solid wood top will be more resistant to warping if it has breadboard ends, as featured here. Many fine tables of all sizes have this traditional detail. NOTE: If you don't want to use the top-raising hardware, the plywood inner panel isn't necessary, and you can attach the top to the base with steel Z-clips or Figure 8 fasteners (see onlineEXTRAS).



Mortise the legs, make the tenons, detail the aprons, then glue everything together

The turned legs I'm using have a short, square top section that will look best with aprons centered on the leg profile. I rout the mortises first, then cut the tenons to fit. The mortising jig I use to hold the legs is especially useful in this project. I also rely on it to rout the breadboard ends (p. 26) and to clamp each apron as I rout a decorative bead along its bottom edge. The jig's vertical face has horizontal and vertical channels routed with a 14° dovetail bit. Special clamps slide in the channels to hold workpieces of different sizes (see Buyer's Guide, p. 64).



Rout mortises using an edge guide and an upcut bit.

I made my mortising jig to use Micro Jig clamps that fit in dovetail grooves (see Buyer's Guide, p. 64). But any setup that holds the leg in similar fashion will work. Use a $\frac{3}{8}$ "-dia. upcut spiral bit in the router, and adjust the edge guide to center the mortise on the leg. Rout each 1"-deep mortise by making a series of $\frac{1}{4}$ "-deep cuts.

Make tenons on the router table. A shop-made miter guide enables me to rout clean-cheeked tenons quickly with a $\frac{3}{4}$ " straight bit. Use a stopblock as shown to maintain uniform tenon length. Each cheek cut requires two passes. I cut each tenon to its finished width with a dozuki saw.



Pick your profile. The bottom edges of aprons deserve some decorative treatment. Here I'm milling a bead, but you might prefer a cove or other profile. Instead of doing this shaping work on my router table, I'm clamping each apron piece in my long mortising jig and using a bearing-guided beading bit.

Keep it square. An upside-down glue-up on a flat work board allows me to focus on keeping the assembly square as I clamp the base together.



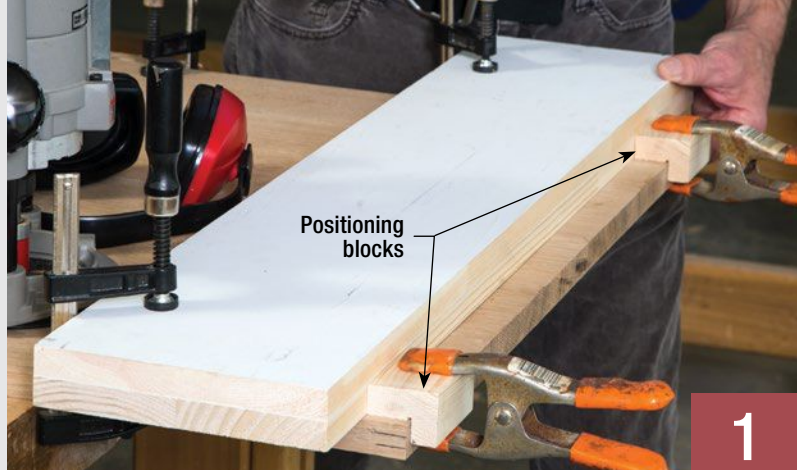
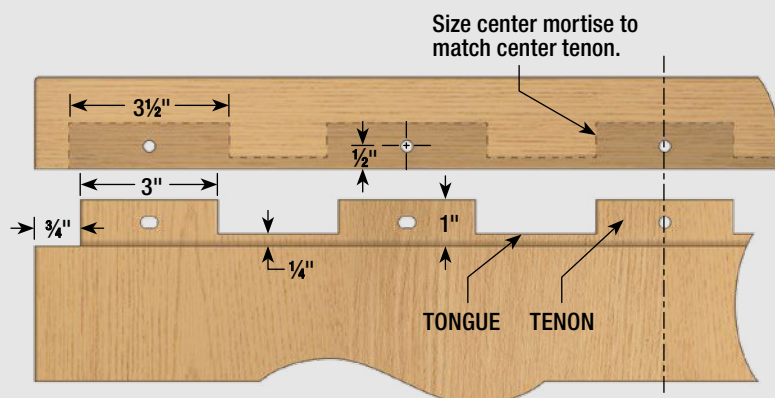
Make the top attractive and stable with breadboard ends

Any wide wood panel can benefit from breadboard ends—not just for stability, but for appearance, too. Although there are variations, most breadboard ends join the main wood panel by means of a continuous short tongue interrupted by deeper tenons (see drawing, below). Dowels or square wood pegs extend through the tenons to keep the end in place. By elongating the outer peg holes and mortises, the wood panel can go through its normal cycle of expanding and contracting while still remaining solidly connected to the end piece. Drawboring the pegs as explained in steps 7, 8, and 9 is an effective way to pull the ends fast against the panel and keep the connection tight over time.

Layout and assembly details

- Lay out the center and outermost tenons first, then locate remaining tenons between them.
- Cut the center mortise in breadboard end to match the center tenon's dimensions. Cut other mortises $\frac{3}{8}$ " to $\frac{1}{2}$ " longer to allow for wood movement.
- Elongate all dowel holes in tenons as shown, except for the hole in the center tenon.
- To assemble the joint, glue the center tenon in its mortise. For all remaining tenons, apply glue to dowel only so that tenons can move in their mortises.

Breadboard End Detail



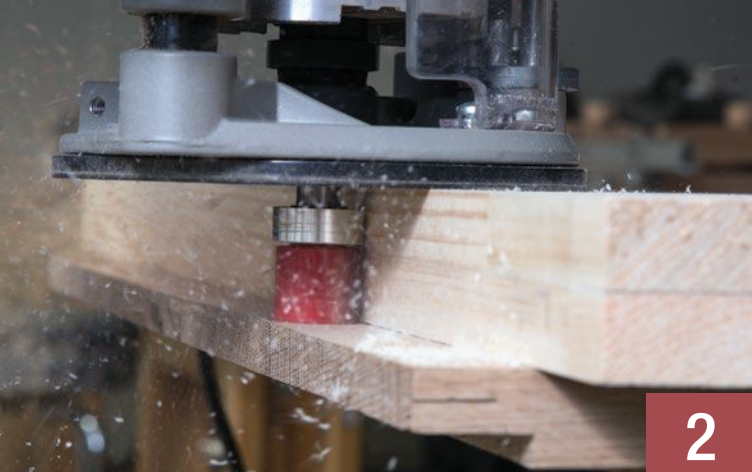
Set up a straightedge. The bearing-guided bit I use to rout the tenon needs a straightedge guide. After square-cutting the panel ends, I use a pair of L-shaped positioning blocks to ensure identical shoulder cuts on both sides of the joint.



Lay out the mortises. Cut the breadboard end to final width but leave it several inches oversize in length. Hold it centered against the tenons to lay out your mortises.

Mark tenons with a brad-point bit. Refit the end on the panel and clamp the joint tight if necessary. Then insert your brad-point bit in each dowel hole, and tap lightly with a hammer to mark a center point on each tenon.





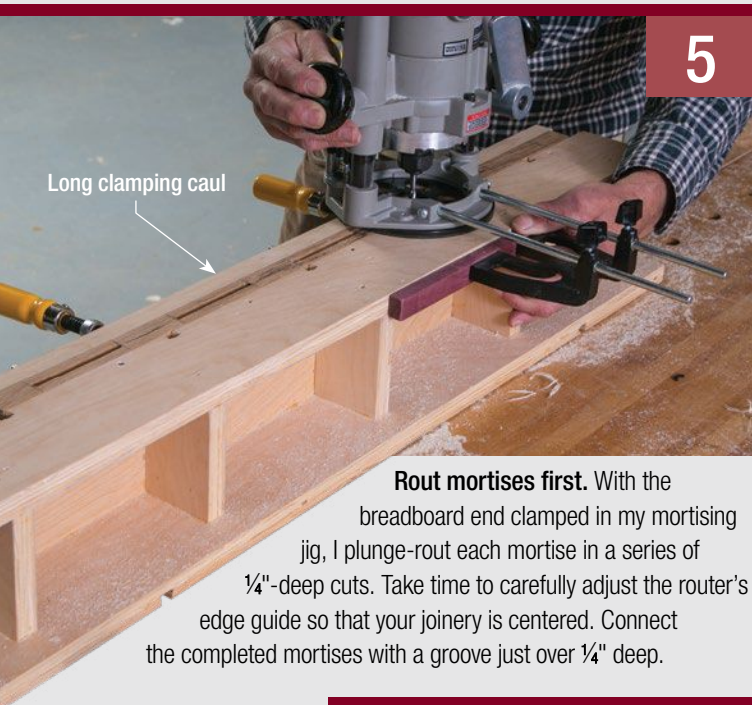
2

Create one big tenon. Each tenon cheek requires two passes with the bit. I make the shoulder cut first, then shift the straightedge slightly closer to the end to remove the remaining waste.



3

Make smaller tenons, with tongues in between. To create the joint's tenon-and-tongue arrangement, I cut out waste pieces with a multitool. A jigsaw or coping saw will also do the job.



5

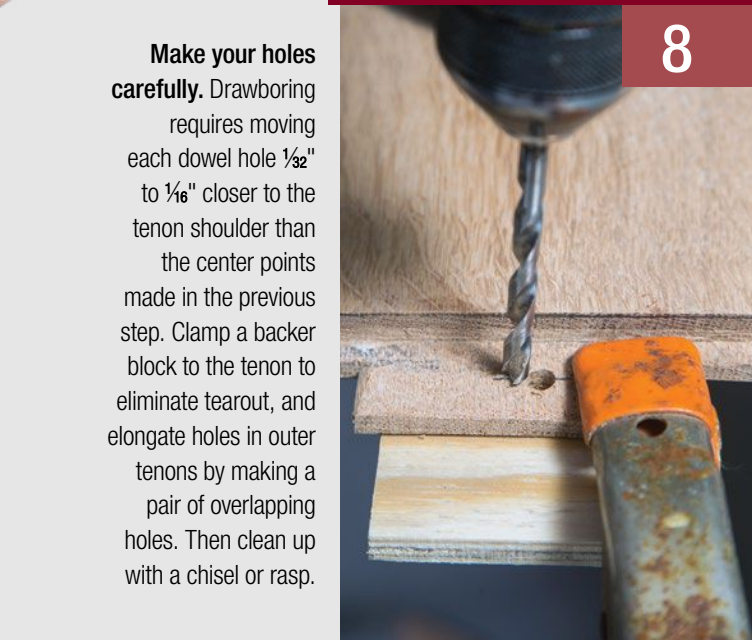
Long clamping caul

Rout mortises first. With the breadboard end clamped in my mortising jig, I plunge-rout each mortise in a series of $\frac{1}{4}$ "-deep cuts. Take time to carefully adjust the router's edge guide so that your joinery is centered. Connect the completed mortises with a groove just over $\frac{1}{4}$ " deep.



6

Find centers for dowel holes. After marking the centerline of each tenon on the panel edge, fit the breadboard end in place on the panel and mark where to drill through the end. Mark hole centers $\frac{1}{2}$ " from the edge of the breadboard end. Remove the end from the panel and drill through the end at each dowel location, using a $\frac{1}{4}$ "-dia. brad-point bit.



8

Make your holes carefully. Drawboring requires moving each dowel hole $\frac{1}{32}$ " to $\frac{1}{16}$ " closer to the tenon shoulder than the center points made in the previous step. Clamp a backer block to the tenon to eliminate tearout, and elongate holes in outer tenons by making a pair of overlapping holes. Then clean up with a chisel or rasp.



9

Sand slight chamfer on both edges before assembling.

Install the ends. Install each breadboard end after sanding small chamfers as indicated in the photo. Cut dowel pegs about $1\frac{1}{2}$ " long and whittle slight points on pegs to help them engage in drawbored tenon holes. Glue the center tenon in its mortise, but allow the remaining tenons to "float" by gluing dowels only. Trim the dowels flush, and you're ready to sand and finish.

Elevate your table's versatility with spring-loaded hardware

Coffee tables are usually too low for comfortable eating or working. You can overcome this limitation with some specialized hardware (see Buyer's Guide, p. 64). This spring-actuated mechanism makes it easy to swing the tabletop up about 8" higher. The mechanism contains a pair of lower mounting bars (for fastening to the table base) and a pair of upper mounting bars (for fastening to the underside of the top). A clearance space of 3¾" is required (between the top of the table frame and the lower mounting surface). The hardware isn't difficult to install, but instead of mounting it on cleats, as shown in the photos at right and below, it's smarter to install a ¾"-thick plywood panel between the stretchers, as shown in the drawing on p. 24. The weight of the plywood acts as a counterbalance when the table swings up and out. (I pocket-screwed a plywood panel between my cleats to add extra weight.)

Center the hardware. Holes in the upper and lower mounting bars make it easy to screw the mechanism to the table base and the top. Start by screwing the lower bars to cleats or to a bottom panel, so that the upper bars are centered in the base opening.



Center the top. Position the base upside-down on the tabletop, and center the base on the top. Hold it in place while marking the position of upper mounting bars. Fasten the upper bars to the underside of the table by driving screws at hole locations.





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Success with SLABS

*Bring out the beauty
in live-edge lumber.*

By Rob Spiece and Larissa Huff

As woodworkers, we're often in awe of our material. It's not unusual for us to marvel at the color and figure in wood, and even at the swirling patterns of grain that wind their way around knots and other defects. We here at Lohr Woodworking Studio work a lot with *live-edge* slabs precisely so that we can showcase wood's naturally occurring beauty and blemishes alike, giving "flaws" their share of the limelight.

Live-edge woodworking derives its name from the technique of stripping bark from slabs without altering the natural shape of the underlying edge. As an extension of this philosophy of honoring a tree's intrinsic beauty, live-edge pioneers like George Nakashima also incorporated splits, checks, and knots into their work. We continue that tradition today, letting the uninhibited slab of wood speak for itself, and allowing it to guide the design we create for the structure that supports it.

Due to the rising popularity of the craft, more slabs than ever are available, and live-edge furniture design options are endless. Here, we'll show you how to bring out the best in slabs as a way of entering the craft. Then, if you're willing to explore new possibilities and to teach your brain to see opportunity instead of defects, you'll enter the realm of truly one-of-a-kind projects.



Order of Work

- Surface and smooth the slab.
- Remove the bark and clean up the edge.
- Stabilize splits and patch defects.
- Fill voids if desired.



"Dutchman" patch

Live edge

Check



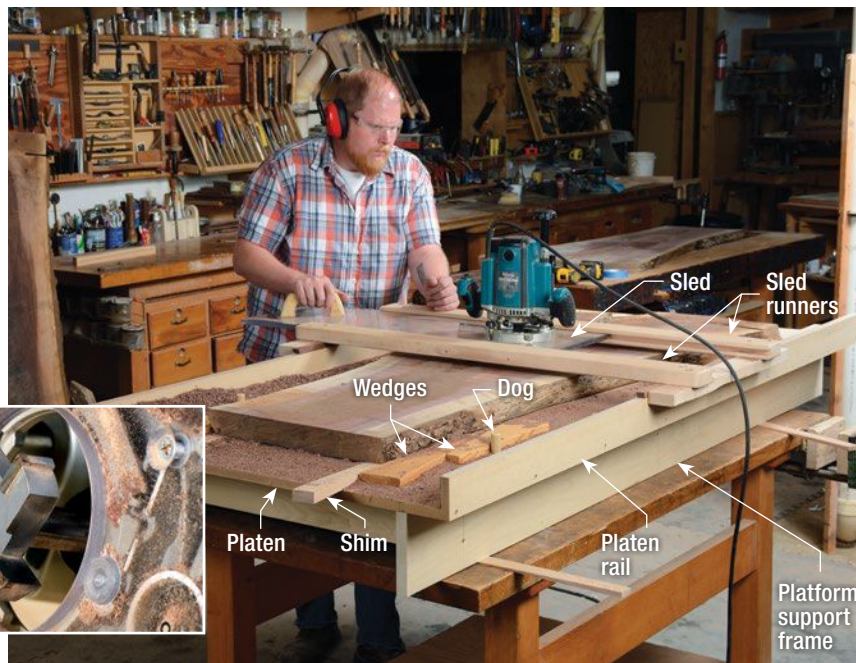
Finding the right slab

Many mills (and some Woodcraft stores) carry slabs. Also, try checking an online supplier. (See page 64 for sources.) We cut many of our own slabs with a portable chain saw mill, but realize that it's no small undertaking to slab your own lumber.

The thickness of a candidate slab is important, especially if the edge is to be the focus. For tabletops, look for something 1½" to 2½" thick. Thinner pieces are fine for shelving and small projects. As for shape, be aware that designing a base for a wildly dramatic slab can be challenging, as it usually doesn't pair well with typical leg-and-apron construction. Instead, consider spindle legs, steel bases, and trestle configurations, mocking them up first using cardboard and scrap wood.

Inquire if a slab has been kiln-dried. Many are simply air-dried because they don't fit well into small kilns. Look for a milling date as a drying-stage reference. As a general rule, any hardwood should air-dry at least one year for each inch of thickness, but use a moisture meter for an accurate assessment.

Slab-happy. Part of the fun of working with slabs is that each one—even if part of a flitch—is distinct, and inspires its own particular treatment.



Flattening: A good job for a jig

Flattening a large slab presents an unusual challenge, even for woodworkers who have a large planer or thickness sander, because one face of a slab still needs to be flattened before feeding it through one of these machines. You can hand-plane a slab, or try using a portable belt sander, but both approaches are very labor-intensive, and you can't be too fussy about the results. Many shops, like ours, flatten slabs using a router sled. (See page 48.)

Build a big jig. A router outfitted with a wide-diameter bit (see inset) and mounted on a runner-guided sled assembly provides a great way to flatten a slab. The slab is shimmed and wedged in place. The router runs across the slab in a sled assembly that also slides along rails to facilitate a series of overlapping passes. See p. 48 for details on building and using this slab-flattening jig.

Peel and preen the live edge to highlight its beauty

Debarking the slab is important not only to expose the edge and evict any live or dead bugs, but to remove residual bark that might otherwise eventually fall away, soiling someone's carpet. The type and tenacity of the bark determines the tool used to remove it, whether it be a drawknife, screwdriver, or gouge. After debarking the edge, remove any residual detritus or fibers using a wire wheel. Then finish up the edge using sandpaper to soften any sharp or rough spots and to ease the edge where it meets the slab surfaces.



Aim for a close shave. For relatively smooth edges, start with a drawknife. The goal here is to remove what comes away easily without cutting away solid wood. Try to leave the paper-thin layer of dark color that covers the sapwood, while smoothing out the surface enough to make it nice to the touch. You'll follow up with a wire wheel and sandpaper later.



Pry with a driver. For burred edges or large bulges, try a mallet and standard screwdriver. The blunt tip won't mar the slab edge if you're careful. Work the driver into a fissure, and use a combination of tapping and prying to release the bark.



Coax tough stuff with a gouge. When dealing with tenacious bark, use a small carving gouge to lever off or cut away smaller sections at a time.



Scrub with a wire wheel. A debarked edge may retain bits of bark as well as loose fibers. (We call 'em "furries," [see inset]). These are best eroded with a wire wheel in a drill driven in reverse to keep the chuck from loosening its grip.





Tape and trace. Use double-faced tape to attach the key at its inlay location, labeling the piece and the slab surface for reorientation later. Then carefully trace around the key with a marking knife.



Route it out. Outfit a plunge router with a $\frac{5}{16}$ "-diameter upcut spiral bit, and rout out the bulk of the waste to a final depth $\frac{1}{8}$ to $\frac{1}{4}$ " less than your key's thickness. Rout in a clockwise direction, making a succession of shallow ($\frac{3}{8}$ " or less) passes. Stay $\frac{1}{16}$ " away from your knife lines until you reach final depth. Then nibble back to your knife line just until you see the fibers break away from it. For a butterfly, you can use a chisel and mallet to pare back to the knife lines.

Keep splits in check with decorative reinforcements

End-checks and other splits are common characteristics in slab furniture, and shouldn't necessarily be cut away as "defects." All the same, they do need to be reinforced to prevent further movement. The traditional approach is to span a check by inlaying a "key," often shaped like a butterfly. Here at Lohr Woodworking Studio, we use bone-shaped keys instead for a custom touch. Whatever shape you choose, orient the grain lengthwise, and make the piece wider at its ends than at the center for mechanical strength. Bandsaw the key from stock that's about $\frac{2}{3}$ the thickness of the slab, and use a sanding drum to smooth the edge of a bone, or a chisel to clean up the edges of a butterfly. Then install the key as shown.



Tap it home. After lightly chamfering the underside of the key for easier insertion, brush epoxy on the wings of the recess and key. Then tap it in until it bottoms out. Afterward, plane or sand the key flush with the slab surface.

Dealing with defects: Fix with Dutchmen or epoxy

Learning to love flaws doesn't mean you shouldn't be discerning about those that clearly cross the line into defect territory. For example, you'll want to patch sections where growth layers are peeling up (often induced by windshake in the living tree). Loose or broken knots should usually be "replaced" with a patch or filled with epoxy. As for voids, either leave them be or fill them with epoxy.

Installing a patch, or *Dutchman*, is identical to installing a key, except that the patch typically doesn't need to be very deep. The key to success is selecting Dutchman material that matches the grain patterns and color of the area surrounding the defect. Instead of square patches, we typically create curved, organic shapes that better mimic grain flow. When replacing a knot, favor a patch that matches the tone and color of the original. When using epoxy, follow the procedures shown here. (Note that 5-minute epoxy can be used for small voids and keys, but you'll want to use a slow-set variety for larger voids.)

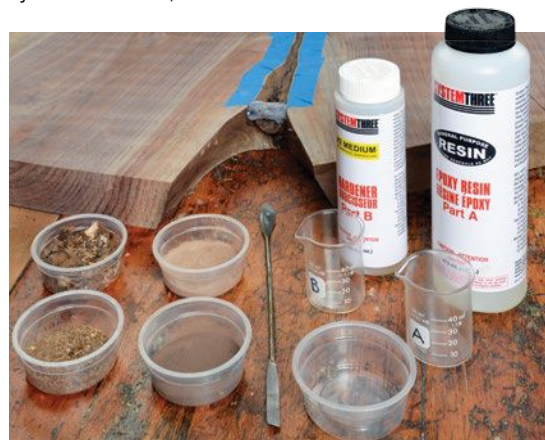
Finish up with oil and varnish

We've found that the best approach to beautifying and protecting slabs is to first slather the entire piece with boiled linseed oil to "pop" the color and figure. After wiping off the excess, let the oil dry for 5 days before applying the first of about 5 coats of a satin-sheen wiping varnish to both sides. (Avoid a gloss sheen because it's too difficult to rub out edges afterward to subdue the shine.) Where necessary, use an artist's brush to get the finish into unfilled checks and other splits. Scuff-sand the flat surfaces between coats, and rub out the final coat using steel wool lubricated with mineral spirits to eliminate dust nibs and create a consistent luster.

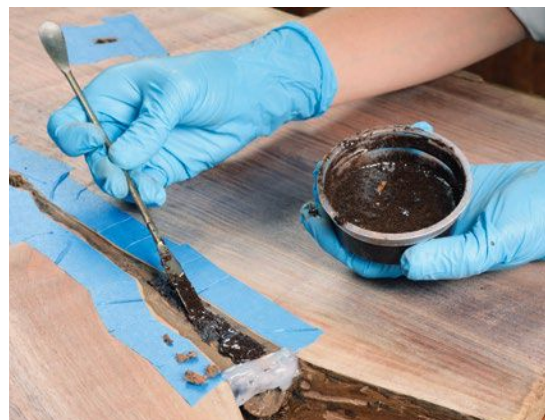


Dam it. In preparation for filling an open-ended void with epoxy, use hot-melt glue to create a dam. Use masking tape to protect the wood pores in the surrounding area from epoxy contamination, which will resist finish.

Gather your ingredients. For an inconspicuous patch, you need to add wood to your epoxy: bark crumbles, bits of broken knots, and sanding dust that's darker than the slab wood. Blend wood fillers with water first to test your color, then adjust as necessary. It's OK to add dust from different woods. Record your recipe in case you need to mix more later.



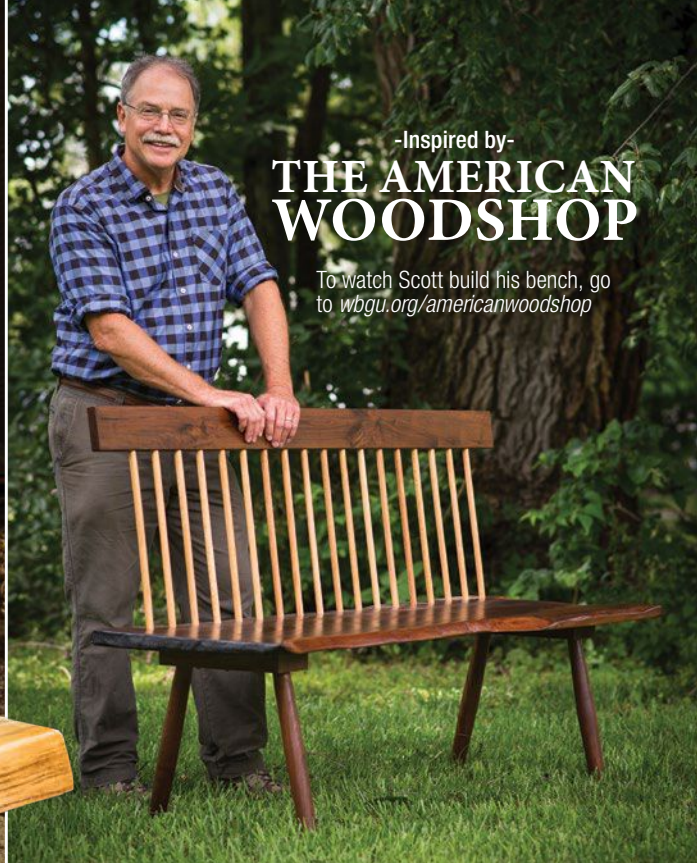
Fill the pool. Set aside appropriately sized "crumble" filler, and make up your epoxy mix, adding enough dust to color the epoxy completely with no translucency. Then firmly press the schmutz into the void. (Note that small knots and voids don't typically require crumble filler.)



Dunk the crumbles. Press bark crumbles into the wet epoxy mix. After sanding, this treatment will mimic the color and texture of a natural bark inclusion instead of just looking like epoxy filler.







-Inspired by-
**THE AMERICAN
WOODSHOP**

To watch Scott build his bench, go
to wbgu.org/americanwoodshop

Build a Custom **LIVE-EDGE BENCH**

Chairmaking “cheats” take care of the tricky stuff. Find a slab and make yourself a seat.

By Joe Hurst-Wajszczuk

There's always something new on *The American Woodshop*, and Season 24 was no exception. In the season's first episode, Scott and Suzy built a Nakashima-inspired live-edge bench, using a walnut slab reclaimed from an old barn and a few store-bought dowels...in 26 minutes and 40 seconds. Having watched woodworking and DIY shows since I could reach the dial on

my TV, I knew that this project would take longer to build in real-life. Still, I was intrigued by the way Scott crafted a handsome project from a handful of humble ingredients.

Inspired by Scott's enthusiasm and the project's apparent simplicity, I decided to try my hand at making a bench of my own. Of course, just as no two live-edge slabs are ever alike, the same can

be said about two woodworkers. I used Scott's methods as a starting point, but I discovered that I needed to employ a few tricks of my own to suit my slab, skills, and tool assortment.

As you read through this project, you can follow my techniques, borrow a few tricks from Scott, or devise your own methods. However you cut it, you'll wind up with a gorgeous bench.

Start with the slab

Scott designed his bench around a walnut plank and a few beams salvaged from an old barn. Unfortunately, I didn't have access to Scott's secret stash, so I purchased a walnut slab from my local hardwood dealer. I paid more than Scott did, but my slab was kiln-dried, so I didn't need to worry about moisture content or powder post beetles. For the legs and spindles, I opted for ash instead

of red oak. The two woods look similar to each other, but ash is less expensive, and a little easier to work.

Since the slab dictates the size and shape of your bench, your project will be uniquely your own. Scott's bench measures 21 × 64"; my bench version is slightly smaller. You can adjust the dimensions of the crest rail, and the spindle count, to suit the size of your seat.



Order of Work

- Prepare the slab seat.
- Make the back rest.
- Make the legs and spindles.
- Drill the seat and crest rail.
- Install the legs and the spindles.
- Trim the legs, and apply a finish.

— Prepare the slab seat

All live-edge lumber requires the same basic prep, but each slab needs special treatment. (For detailed prep and advice for fixing defects, read “Success with Slabs,” on page 30.)

Scott took the traditional approach, starting with a drawknife to slice off the sapwood. He then flattened the face, first using a scrub plane to hog off the high spots, followed by a jack and a block plane, and finally sandpaper.

To save time and sweat, I paid a little extra to have the slab skip-planed at the lumberyard. The planer shaved off the high spots, enabling me to finish the flattening process with a belt-sander. After filling the knots with slow-set epoxy, I sanded the slab through 220 grit.

I prefer featuring a board’s inner (heartwood) face, but in this case, I decided to orient the sapwood up in order to take advantage of the slab’s naturally rounded edge.



Right on track. How do you make a square end cut in a board with no straight edges? My solution is to snap a chalk line down the center of the slab, and square off that line. A track saw makes quick work of the cuts.



Mind the gap. My jointer plane was a handy tool for sighting high spots. I did most of my flattening with a belt sander.



Quick mop-up. A sanding mop follows the curves while polishing the live edge. You’ll need to use both hands to control the spinning mop.



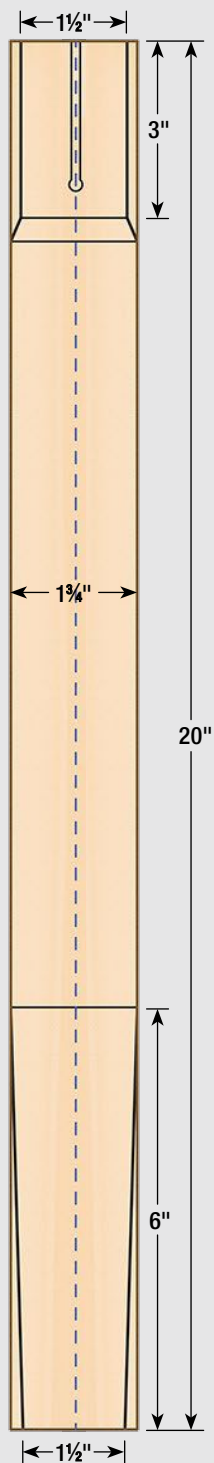
Finish first. It’s easier to spray a few coats of finish on the seat and crest rail before drilling and attaching the spindles. Future layout lines will wipe off the boards with a damp rag.



SCOTT SAYS

When using air-dried wood, “wait one year per inch” is a good rule of thumb, but thicker slabs often require twice as long to dry out. When in doubt, use a moisture meter.

Leg Pattern



● Making the legs

After bandsawing the leg blanks to size, Scott turned the legs for his bench by eye, in less time than it takes to read this paragraph. Lacking Scott's turning talents, I relied on carbide-tipped turning tools and a template.

Lucky for me, round legs aren't rocket science. Starting with 2×2 " square blanks, I ripped off the corners at the table saw. I then mounted each blank on the lathe, turned them to $1\frac{3}{4}$ " dia., and then used the plywood pattern to mark out the tenon and taper. Before removing each leg from the lathe, I applied two coats of Enduro-Var, sanding between coats, and making sure to keep the finish off the tenon. (Note: If you don't own a lathe, or if your bed isn't long enough, there's another way to skin this cat. Check out "Get a Round Without a Lathe" on page 45.)



Make a template.

After establishing a $1\frac{3}{4}$ "-dia. cylinder, position your leg template alongside each blank, and mark the locations of the ends, shoulder, and taper. Use calipers or a plywood gauge to check your progress as you turn.

Taking a quick turn. Carter's new carbide-tipped tools transform anyone into a competent turner. Use the square-tipped tool for square shoulders.



SCOTT SAYS

If your slab's on the thin side, try attaching the legs to cleats, then screwing the cleats to the underside of the seat. I've used this technique many times over the years and never encountered joint failure.

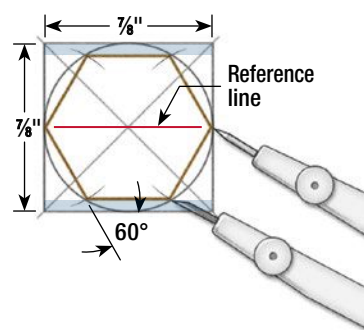


— Making the spindles

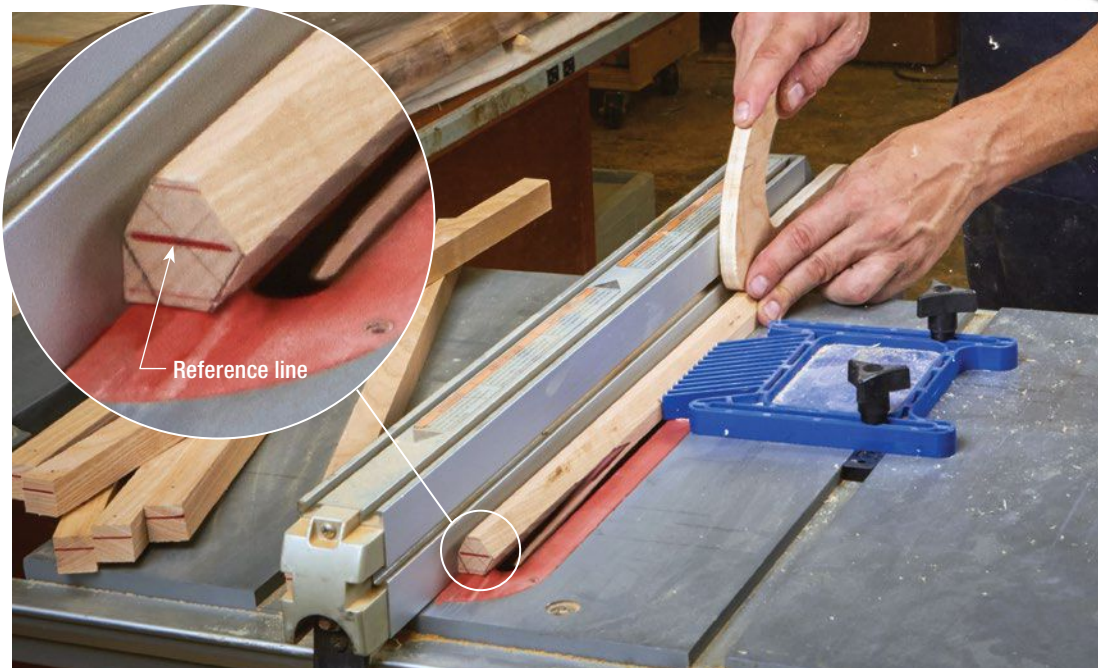
I wanted the spindles to match the legs, but didn't want to spend hours at the lathe, so I decided to rely on my table saw instead. The six-sided "pencil post" spindles add an interesting angular element to the soft-edged slab. To make the spindles, rip a stack of $\frac{7}{8}$ " square blanks, then lay out a hexagon on one end as shown (see Hexagonal Spindle Layout, right). You'll use this "master spindle" to set your saw, and to check your planing progress. To fit into the holes in the seat, I used my router table and a $\frac{1}{2}$ " core-box bit to rout the ends to create $\frac{5}{8}$ "-dia. tenons.

Hexagonal Spindle Layout

1. Find the blank's center point and establish a circle.
2. Without changing the compass, set its point on the ends to find the corners. Connect the corners to make the hexagon.
3. Draw a reference line, then rip the side faces.
4. Plane away excess material from top and bottom faces.



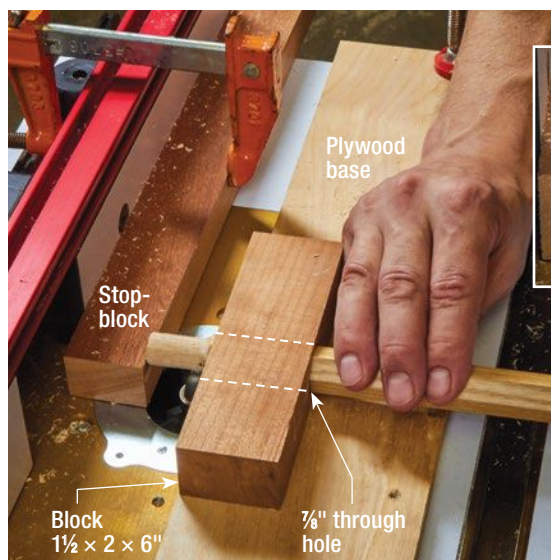
Time to go digital. General's Digital T-bevel has added a new level of accuracy to my benchtop saw. Leave the protractor blade loose, and adjust the bevel angle until the display reaches 60°.



Pencil-post spindles. After setting the blade and fence, practice the ripping sequence on the master spindle, and then finish the rest. As you rip and flip the hexagonal spindles, make sure that the reference lines remain horizontal.



Shave away the saw marks. A notched board finishes the spindles in pairs. Finish the spindles before routing the tenons.



Router-turned tenons. The jig consists of a base and a block. To make a tenon, attach the jig to your router table, then adjust the bit height and stopblock. Insert the spindle into the block, and spin.

—Drilling holes for spindles

Leg holes offer a little leeway, but in order to fit the spindles in the seat and the crest rail, the spacing and angles need to be spot on. Scott drilled these holes freehand, but I opted to use a Milescraft portable drill press (see Buyer's Guide, on p. 64). For the price, the jig is a bargain, but it requires a few minor modifications. First, I removed the stop and spring (to increase the drilling depth) and installed a plywood base, complete with crosshairs. (To locate the centerpoint, drill a small hole before installing a Forstner). Drilling perpendicular holes in the crest rail was a cinch. To set the angles needed for spindles and legs, I set a digital protractor on a post and shimmed the base as needed.

Since live-edge boards don't offer a straight reference edge, laying out the holes for the spindles and legs can be challenging. Take a cue from the grain, and lay out your holes with a wax pencil. If need be, wipe off your lines and start over.



Add a cleat for straight spindle holes. To keep the guide on track when drilling spindle holes in the crest rail, I made a longer plywood base for the drilling jig and added a cleat.



Straight line solution. After laying out the spindle line along the sapwood, I clamped a straight strip of plywood to register the jig. If the holes veer too close to the edge, use a cutoff from the bench to support the jig.

Drill the legs from the top down. Use the spindle line to lay out the leg lines. The scrap wood strip keeps the jig from twisting when the bit touches the wood. You'll need to remove the drill from the jig to finish the hole.



SCOTT SAYS

If you don't have a drilling guide, you can drill the holes by eye. Set a bevel gauge alongside the hole, and keep the bit parallel with the gauge's blade as you bore into the seat.

Assembly

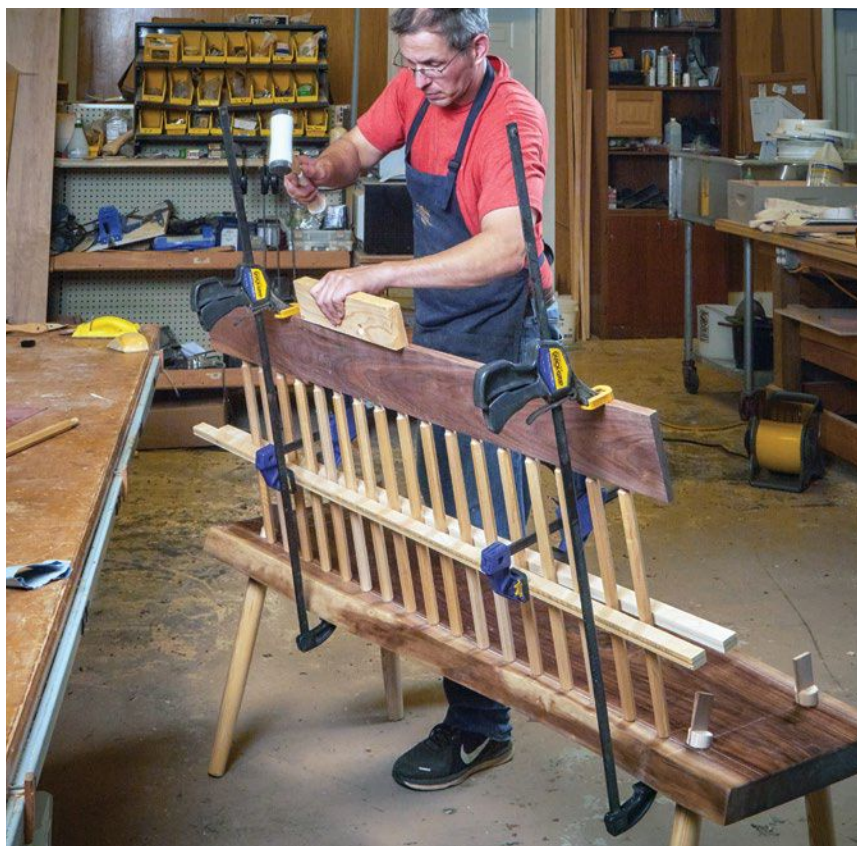
Fitting the spindles into the seat and rail can be nerve-wracking. If one spindle doesn't slip in, it will block the rest from fitting. And if you're too slow, the glue can swell the tenons and seize the rail in mid-assembly. I found that chamfering the spindles and holes in the crest rail facilitated the fitting process. I also used liquid hide glue, instead of PVA, for more assembly time. Most importantly, check the tenons right before assembly.

Immediately after driving the spindles into the crest rail, clamp the spindles between strips to keep them in proper alignment, and then tip the rail in place. Once the last tenon finds its mortise, clamp the rail to the seat, and then set the rail with a mallet and leather-padded tapping block.

All that's left now are a few final touches. After cutting the top ends of the legs flush, I applied two lights coats of finish. Finally, I set the bench on my assembly table, inserted wedges beneath the legs to correct any wobble, then marked and trimmed the legs for a solid stance.



Set the spindles. Brush glue on the bottom tenon and then immediately set it into the seat. As you tap, turn the spindle so that a flat side faces the front of the bench. Drive the spindles until the tenon's shoulder touches the back edge of its hole.



Gentle (and not-so gentle) persuasion.

After fitting the spindles into the crest rail, use a mallet to pound the rail in place. The long clamps keep the rail from popping off when tapping the far ends of the rail.



Stop the wobble. Set the bench on a level surface, shim the short legs, and then mark the legs and trim with a saw.

SCOTT SAYS

Watch out for humid weather. Tenons that fit snugly yesterday may be too tight the following morning. I sanded the top tenons more than the bottom tenons to be certain that the rail wouldn't stick.



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GET A ROUND WITHOUT A LATHE

*Sick of settling for store-bought stock?
Break out a bit, and rout what you need!*

By Joe Hurst-Wajszczuk



Dowels and spindles in any species.
With a roundover bit and some easily made extensions for your router table, you can transform square stock into rounds.

Turners have a leg up when it comes to furnituremaking. Without an easy means of creating round parts, lathe-less woodworkers are stuck searching for ways to squeeze square pegs (e.g. leg or spindle stock) into round holes. Fortunately, there's a simple solution. Using your router table and a few bits, you can mill perfectly round stock for spindles, legs, and more.

Aside from chair and bench making, shop-made dowels and spindles are useful for all sorts of projects. Using available stock not only saves time and money otherwise spent

on store-bought dowels, it also enables you to make spindles from matching stock, or select a species that isn't commercially available. And by selecting straight grain stock, routed dowels are often straighter and truer than those that have been sitting on a shelf.

Now for the fine print: Bear in mind that routing dowels is a specifically paired arrangement. A $\frac{3}{8}$ "-radius bit will only create a $\frac{3}{4}$ "-dia. dowel. Also note that this technique works best for dowels $\frac{3}{8}$ "-dia. and up. Smaller stock has a tendency to vibrate, resulting in an uneven cut.

From square to round in 4 steps

The keys to routing straight, round spindles are careful stock preparation and a perfectly set up router table. Investing a few extra minutes here will eliminate a lot of annoying sanding later.

Start with your stock. I recommend ripping the strips so that the grain runs from end to end, as if the strips were split from the log. With most boards, this means sacrificing some material, but straight-grained spindles are much less likely to snap than those with grain runout. The milled strips can be a little fat, but they must be square in section.

After setting the bit and fence, make a test cut on the end of a scrap piece. Since setting the bit height is tricky, expect to do some fine-tuning. If you end up with a flat spot, raise the bit; if you wind up with a small shoulder, you've gone too far.

With the bit and fence set, you're ready to rout your blanks. In order to keep the ends square, you'll need to start by pivoting the blank into the bit, as shown. After routing four corners, trim off the ends to create a custom dowel.



STEP 2: Set the Bit & Fence



Set the bit. Position a piece of scrap wood against the outer tip of the bit. Turning the bit by hand, lower it until it no longer scratches against the end grain.



Set the fence. Using a straightedge, adjust the split fence so that the bearing is perfectly tangent to both halves.

STEP 4: Ready to Rout



Round off the first corner. Set the trailing end of the blank against the fence, and pivot the front end into the spinning bit. (Leave the leading 2" of your blank square.) Feed the stock across the bit, stopping 2" from the back end.



the Stock



Square up your stock.

Digital calipers are my go-to tool for sneaking up on the desired diameter. It's better to err on the plus side; you can't sand down an undersized dowel. Cut the strips about 4" longer than needed. The ends are kept square to keep the strip from rolling.

STEP 3: Make a Test Cut



Test your setup. Rout the end of a scrap strip. If the test cut results in flat spots, check the fence and bit. If there's a ridge in your dowel, check the bit height.

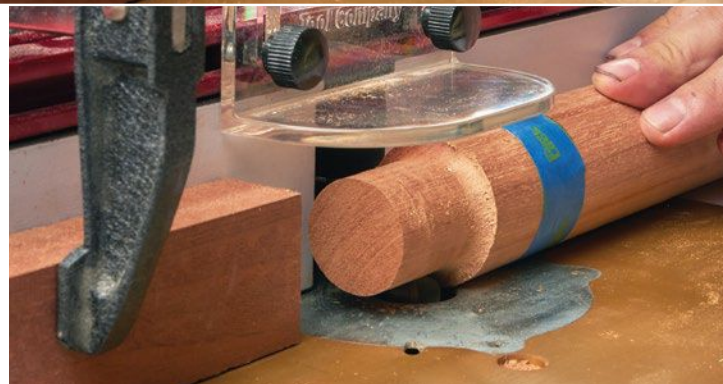
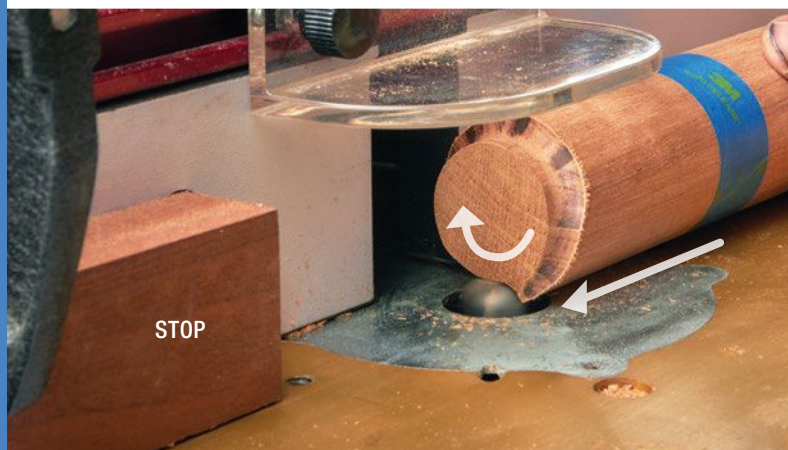


Now rotate and repeat. Rotate the workpiece 90°, and rout the adjacent side. Repeat the process on the remaining two edges, and you're done.

Tackle tenons too

This router table turning trick is good for more than just knocking off corners. Once you've rounded your stock, you can employ the same setup to create round, snug-fitting tenons.

First, replace the roundover bit with a straight or core-box bit. Next, set the bit height, and then clamp a stop to the fence to establish the tenon length. To rout the tenon, simultaneously slide the stock into the bit and rotate the piece clockwise, until you reach your stop. (TIP: For super smooth tenons, take your time.)



Slide and spin. A stop block ensures consistent tenons. To help tame tearout, try wrapping a strip of tape around the workpiece at the shoulder.

Finish without flats

On a good day, "router-turned" spindles require little more than a light sanding, but mistakes happen. Radiused scrapers are great for removing bit-induced burns and tearout and for slimming a dowel to fit a mortise without creating flat spots. A concave spokeshave is handy for fine-tuning larger-diameter spindles, and adding tool marks that hide the fact that I relied on a bit.



Super SLAB-MILLING JIG

Pair your router with this sliding jig to flatten the widest, waviest planks.

By Rob Spiece

Here at Lohr Woodworking Studio, we work with a lot of large slabs. One of the biggest challenges with this kind of work is flattening the slabs. We have a great router jig that does the trick beautifully. It's essentially a platform outfitted with rails that support and guide a router back and forth over the slab, while a wide-diameter bit does the milling. We actually have several variations of this jig, having refined the design over time while making new versions to suit different sized work. I've even made a few of these as one-offs for special projects. I'll share with you here the latest and greatest version, which is an appropriate size for most medium to large slabs.

How it works. With a slab shimmed and wedged in place on the jig's platen, and the router outfitted with a wide-diameter bit, the tool runs across the slab in a sled assembly that also slides sideways along rails to facilitate a series of overlapping passes.



Sled essentials. To make the router sled, you'll need a sheet of ½"-thick polycarbonate (Lexan), a large, variable-speed router, and a wide-diameter bit. (The "spoilboard surfacing" bit shown works exceptionally well for the job.) UHMW tape used on the platen rails ensures smooth sliding action.



onlineEXTRA

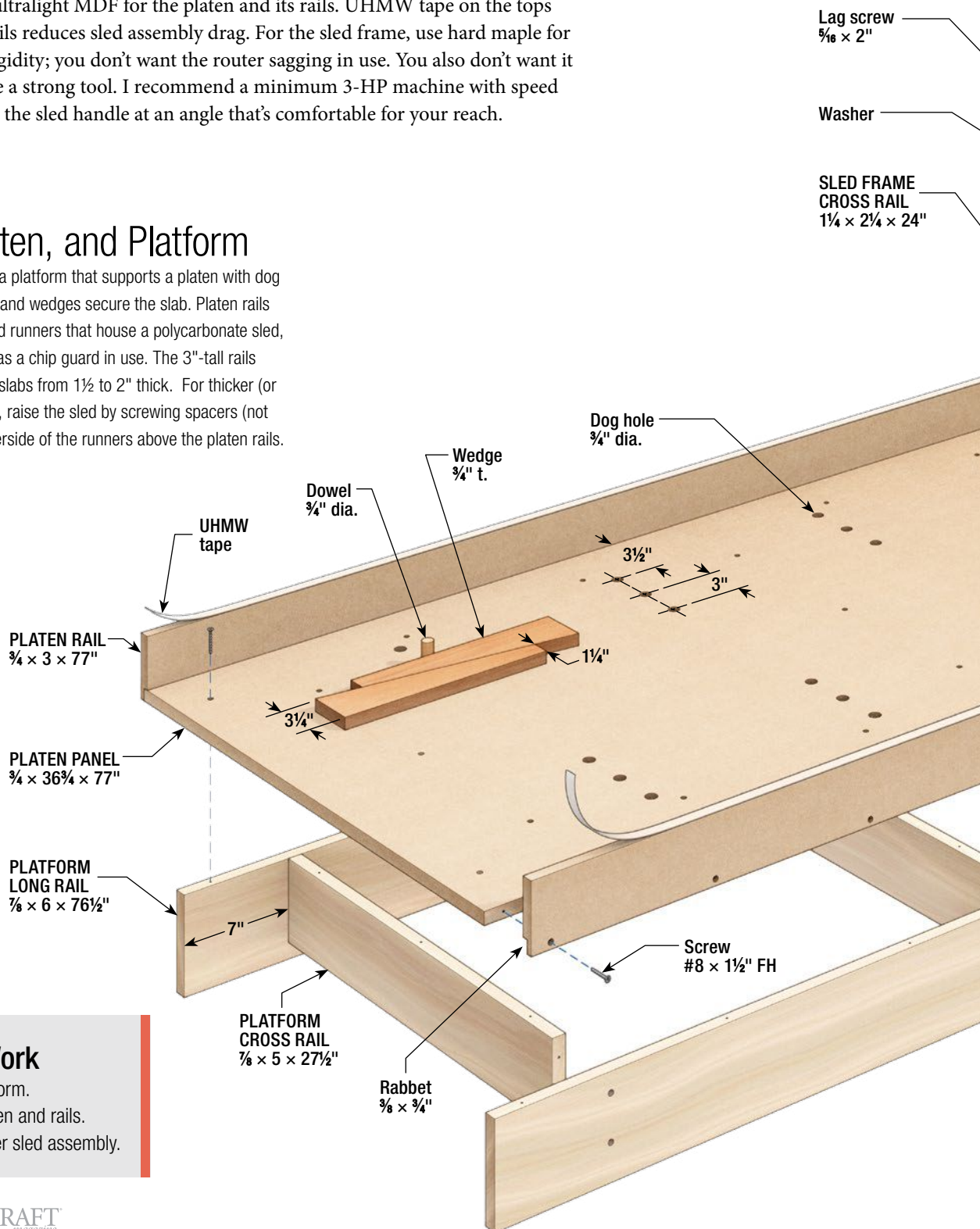
Go to woodcraftmagazine.com to watch a video of the jig in action.

Easy to build, but accuracy counts

Making the jig isn't complicated, but it's important to successful operation that the platen is flat, and that its rails are straight and parallel. The platen rails are rabbeted on their bottom edges to ensure consistent height and positive contact with the platen. (Use lots of glue on the thirsty MDF.) The platform cross rails are narrower than the long rails to reduce the number of contact points that may need to be shimmed to remove any twist during setup. For stability and light weight, I used poplar for the platform, and ultralight MDF for the platen and its rails. UHMW tape on the tops of the platen rails reduces sled assembly drag. For the sled frame, use hard maple for strength and rigidity; you don't want the router sagging in use. You also don't want it laboring, so use a strong tool. I recommend a minimum 3-HP machine with speed control. Mount the sled handle at an angle that's comfortable for your reach.

Sled, Platen, and Platform

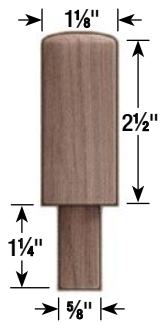
The jig consists of a platform that supports a platen with dog holes. Dowel dogs and wedges secure the slab. Platen rails support slotted sled runners that house a polycarbonate sled, which also serves as a chip guard in use. The 3"-tall rails will accommodate slabs from 1½ to 2" thick. For thicker (or very twisted) slabs, raise the sled by screwing spacers (not shown) to the underside of the runners above the platen rails.



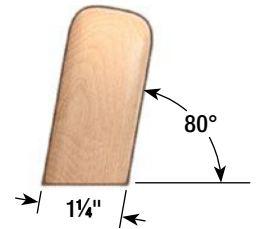
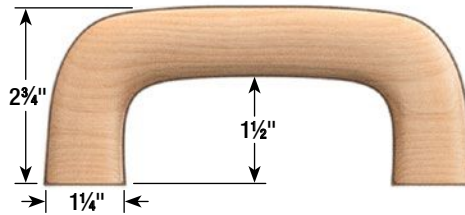
Order of Work

- Build the platform.
- Make the platen and rails.
- Build the router sled assembly.

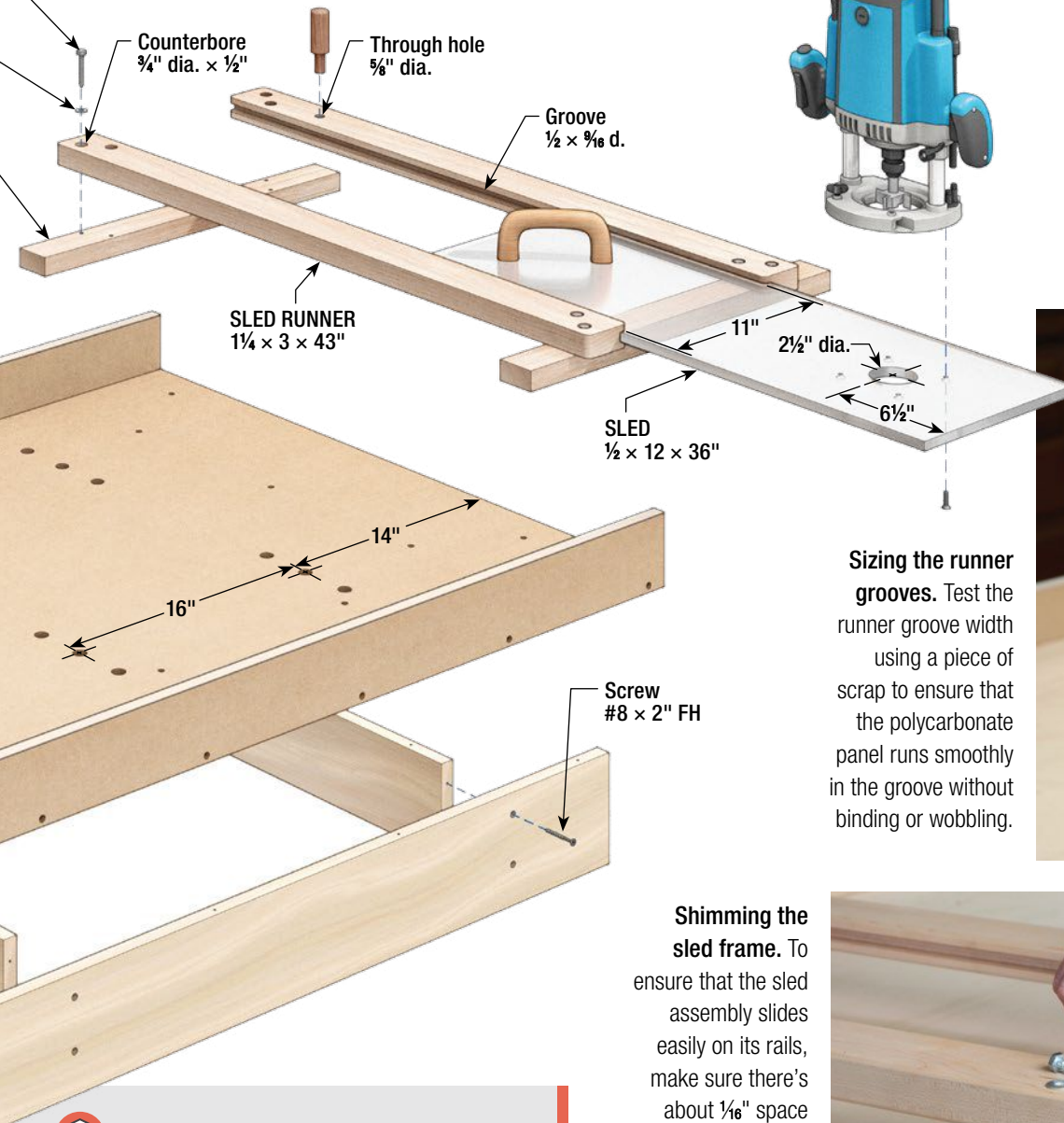
Sled Frame Handle Detail



Sled Handle Detail



Attach handle to sled with 1 1/4" screws.



Sizing the runner grooves. Test the runner groove width using a piece of scrap to ensure that the polycarbonate panel runs smoothly in the groove without binding or wobbling.



Shimming the sled frame. To ensure that the sled assembly slides easily on its rails, make sure there's about 1/16" space between the sled frame cross rails and the platen rails. A few business card shims should do the trick.



Materials

- PLATFORM RAILS: Poplar
- PLATEN & RAILS: Ultralight MDF
- SLED FRAME RAILS & RUNNERS: Hard maple
- SLED: Lexan (polycarbonate)

Success depends on a stable slab and steady feed

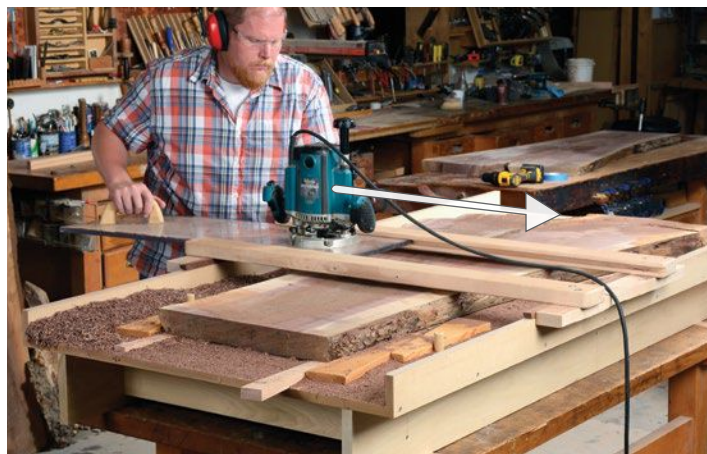
For cutting efficiency and maximum stock thickness, shim and wedge the slab on the platen as shown. Then, after mounting the sled assembly on the platen rails, adjust the bit projection, and you're ready to rout. After traversing all the high spots, readjust the bit and repeat, taking a series of subsequently deeper passes until the entire face is flattened. Then flip the slab over, and mill the other side in the same fashion.



Shim and wedge for stability. After determining which face of the slab offers the fewest contact points to the platen, insert shims under the high spots, aiming for an approximately equal amount of support at each spot. (Marked increments help determine the balance.) Then insert wedges between the slab edges and appropriately placed dogs to secure the work.



Set the bit to nibble. With the router over the highest spot on the slab, adjust the bit projection to cut no more than about $\frac{1}{16}$ ". Then take a test cut to make sure the tool doesn't strain in use.



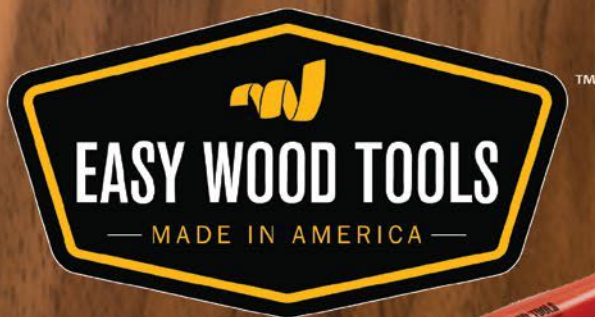
Forward pass. Begin each pass with the spinning bit hovering off the slab. Then slowly push the sled forward at a consistent rate until the bit has completely traversed the width of the slab.



Full retraction. Without moving the sled assembly sideways, pull the router back toward you until it's again hovering off the leading edge of the slab.



Slide to the side and go again. Slide the sled assembly over to slightly overlap the previous pass, and then make the next forward pass.



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FOUR of a Kind

Turn a set of identical legs with these tips and tricks.

By David Heim

At the poker table, four of a kind is about the best hand you can have. At the lathe, four of a kind—four identical pieces, that is—represents about the best work you can do. Fortunately, woodturning ain't poker, so you don't have to depend on Lady Luck for great results. Woodturners who are in the business of making duplicate parts may invest in a lathe duplicator. But you don't need this expensive accessory to make identical legs or spindles. Turning a set of legs for a coffee table (see p. 23) is a good opportunity to put a few duplicate turning tricks to work, as you'll see just ahead.

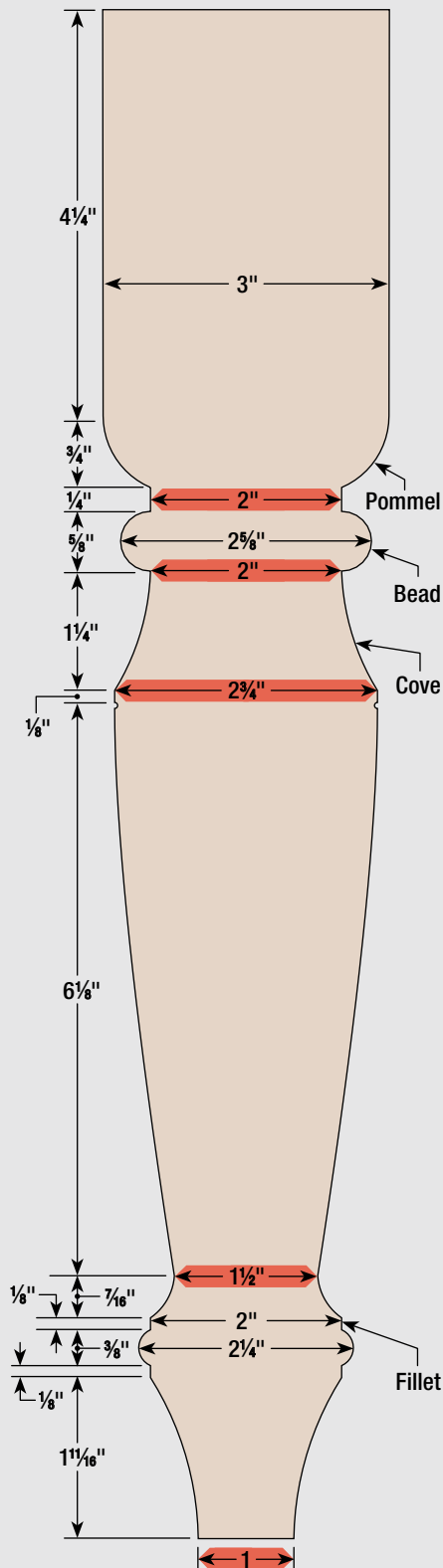
Check out David Heim's new book *Woodturning Patterns* from Springhouse Press.



onlineEXTRA

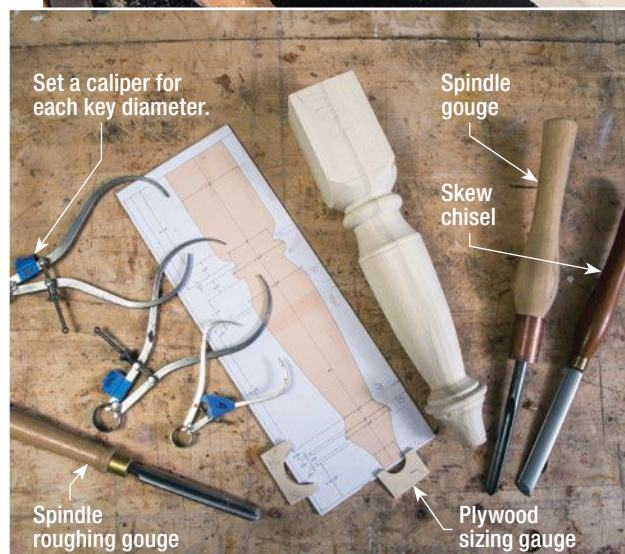
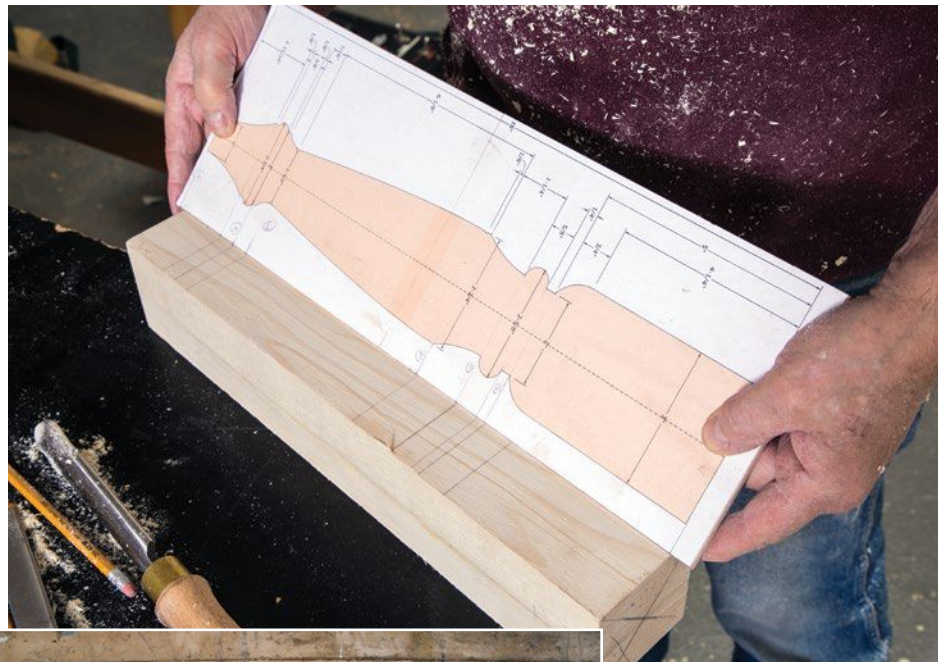
One good turn deserves another! Click on the onlineEXTRAS tab at our website for free articles on how to get started in turning, and how to sharpen turning tools.

Leg Profile



Make a plan and get ready to turn

Begin by drawing a full-sized pattern for your duplicate parts. It can be an original design or one you adapt from a book illustration or an Internet image. Pencil and paper will work; or use a computer program like Adobe Illustrator or the free 3D program called SketchUp Make (available at sketchup.com). Add key dimensions to the drawing—diameters for beads and coves, plus measurements along the length. Make a full-sized print, and glue it to a thin piece of plywood. This makes the woodturning equivalent of a story stick; some turners also call this pattern a preacher. When your pattern is complete, your plan for turning the piece will start to come together, as shown here. Make your turning blanks from clear, straight-grained stock. The coffee table legs I'm making here are meant to be painted, so I glued up the blanks from thinner stock. For stain-grain duplicates, your first choice should be solid, riftsawn lumber. Riftsawn wood puts the growth rings at about a 45° angle to the sides of your blank, ensuring straight grain all around.



Begin with the end in mind. Mark up your full-sized pattern with key dimensions and diameters, then set your calipers to the larger diameters. For smaller diameters, I make sizing gauges by drilling holes in plywood with Forstner bits and then cutting the circles in half. Before mounting a blank in the lathe, transfer the key diameters to all four sides of your blank, so that they will be visible as you begin to turn.

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Check out our website for a full-sized pattern.

Illustration: David Heim

Start at the top

It's best to mount the largest part of your piece—in this case, the top of the leg—in the headstock. I start each leg the same way—by turning the pommel, where the leg transitions from square to round. I think this is the trickiest part of the turning, so I like to get it out of the way first. Once this task is complete, I follow the sequence shown here to complete each leg.



Skew first. It's easy to catch your tool on the corners of the blank, so make your first cuts lightly and carefully. Start by using a sharp skew chisel to make this curved bevel cut from one direction, then the other. Cut carefully, rolling the skew to create a gentle curve (inset photo).



Part to key diameters. Next, use a parting tool in conjunction with the calipers to cut the blank down to size at key diameters on either side of the top bead. Hold the calipers in the groove as you push toward the center with the parting tool. Stop cutting the instant the calipers slip over the wood.



Rough-shape the leg, then complete the top bead. At this stage, I've roughed out the leg's shape with a spindle roughing gouge. Here, I'm using a spindle gouge to complete the top bead. This allows me to focus on the lower sections of the leg.

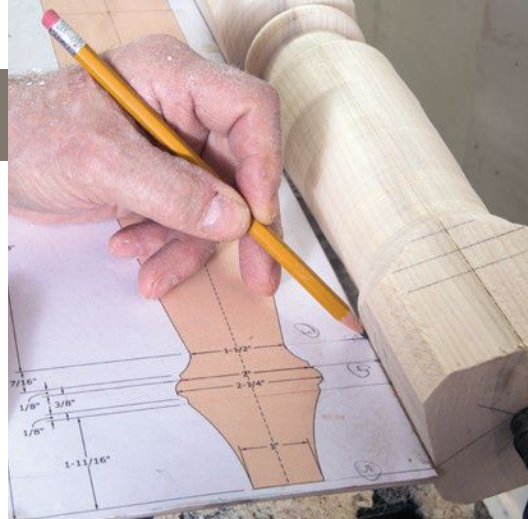


Safety Alert

- Always wear a face shield or safety glasses when turning.
- When sizing the blank, hold the calipers correctly—keep your finger out of the ring at the top. That way, you won't get hurt if the calipers catch and twist against the wood.

Now finish the job

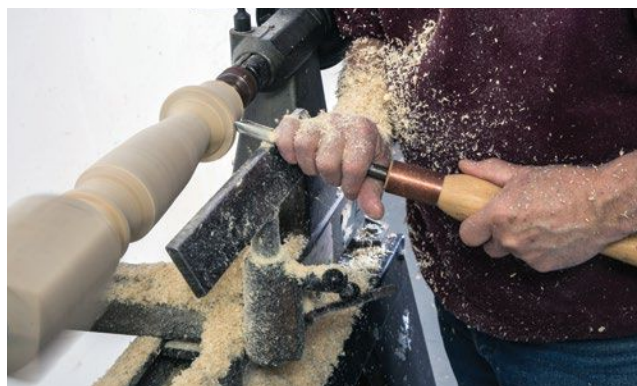
Always try to turn “downhill”—go from large diameter to small so the wood always supports the tool’s bevel. Since these legs are fairly beefy, I can work from the headstock toward the tailstock. But you’ll want to reverse this order if you’re turning very thin legs or balusters. This will minimize the wood’s tendency to flex as you turn. As you check your work against the pattern, pay particular attention to the distances between key diameters. The eye can detect small variations in length but is less discerning with differences in width. When you get close to the final shape, switch to sandpaper to avoid removing too much wood. Don’t be too aggressive with the abrasive, though. You want corners and edges to stay crisp and sharp.



Check the pattern. Stop frequently to make sure you’re staying close to the key dimensions on your pattern.



Gauge your work. With the lathe spinning and a parting tool taking small shavings, you can hold a half-round gauge in place to turn an exact diameter.



Shape the bottom cove. Begin at one end with the flute pointing to the left or right. Roll the tool as you cut to center, so that the flute points upward. Avoid going past center, which can cause a catch.



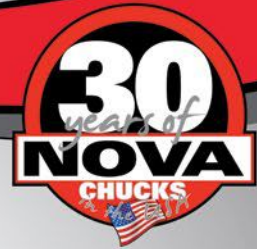
Roll the bottom bead. Begin a bead at the center, with the flute pointing up. Turn down toward the base, rolling the tool over to the side while simultaneously lifting the handle. As you work, check your bead’s shape against a shop-made gauge (inset photo).



Looking good so far!



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Rock Out with a SOAPSTONE FINISH

Add to your faux finishing skills with a technique that transforms wood into stone.

By Danielle Driscoll



It only looks expensive. Tabletops and countertops are great candidates for a faux soapstone finish. To build the coffee table shown at right, see p. 23.



Six years ago, I stumbled on a passion for painting furniture. It started with old furniture, then I began working on custom pieces that my husband made for our home. For tabletops and countertops, I love mimicking the natural world with paint, and this faux soapstone finish has become one of

my favorites. A metamorphic rock composed primarily of talc, soapstone has long been used for all kinds of tabletops, countertops and other work surfaces. I've noticed that soapstone can warm up a space immediately, and its unique blend of black and blue adds earthiness. Since it presents a neutral tone, a soapstone top

can be suitable for just about any decor. But real soapstone is expensive and very heavy, so it's a great material to imitate. The finishing technique I'll show you here will enable you to turn wood into soapstone, creating beautiful tabletops and countertops for a fraction of what you'd pay for the real thing.

■ Prep and prime, then begin with a base coat

MDF (medium-density fiberboard) is a great material to use for a tabletop that will get a faux finish, but it's important to prepare it correctly. After cutting a panel to size, I round all sharp corners with sandpaper and apply two coats of all-purpose

primer. Make sure to coat both sides and edges. Your base coat comes next. I prefer to use chalk-style paint because it dries to a smooth, flat finish. Natural soapstone doesn't have a shiny surface, so it's best to avoid paints that leave a glossy finish.



Stone-making materials. Who needs a genuine soapstone tabletop, when you can create your own version with paint, varnish and a few basic supplies? (See Buyer's Guide, p. 64)

Black over white. Cover the primed panel with an equally smooth and thorough application of flat black paint. I use a roller with a medium nap to coat both sides of my panel. Then I do the edges with a foam brush.



■ When the wash coat goes on, the fun begins

The goal here is to imitate the random blue swirls and spots that Mother Nature puts into the basic black background of real soapstone. On a panel this size, I start by applying a 3-4"-wide wash coat of slightly watered-down blue paint. As soon as the

glaze is on, I manipulate it with paper towels and by light spritzes of water from a spray bottle. Work quickly; it's important to apply the next strip of glaze before the previous application starts to dry. Re-wet the glaze if you want to modify your faux effects.



Thin it first. Add a little tap water to your light blue, chalk-style paint and stir thoroughly. Diluting the paint creates a lighter-bodied wash that improves the workability of the paint for the next steps.



Blue over black. Use a foam brush to apply a wash coat between 3-4" wide across the width of your panel. The paint dries quickly, so it's important to work in small areas at a time. Immediately spritz the light blue wash with water.



Spray to spread the blue. A spray bottle full of water will help you create swirls and patterns to mimic the look of the metamorphic rock. Combine spritzing with more blotting as necessary to eliminate application lines and maintain a natural appearance.

Work your way across the panel. Once an area is done, move to the next section. Step back to examine your work and make sure that no application lines remain. To remove lines or rework an area, spritz with water, add more glaze, and repeat your blotting process.



Blot and dab for texture. Blot wet areas with a paper towel. Keep turning the towel, so you're always blotting with dry (or nearly dry) paper. Aim to create a random pattern, allowing black to shine through more in some areas than in others. Don't blot away all the blue!



Keys to success

- Make sure to prime and base-coat the MDF panel on both sides and all edges.
- When applying glaze, work in sections. Don't try to coat and treat the entire surface all at once.
- Keep plenty of paper towels on hand.
- As you work from one glazed section to another, take care to eliminate any lines between sections.
- Remember that the blue glaze will lighten as it dries.
- Protect the faux finish with 3 coats of flat varnish. Sand between coats with 220-grit sandpaper.



Work the edges. For the faux finish to be believable, you'll need to treat the edges of your panel to the same technique used on the top. Apply the blue wash, then hold the paper towel under the edge to catch drips as you spritz the edge with your spray bottle. Finish up by blotting with the towel.

Protect with a flat topcoat. Once dry, your faux finish needs several coats of clear finish. I apply several light coats of General Finishes HP clear finish to seal and protect the surface. A final GF Flat Out Flat coat dries to a matte finish that simulates the look of real soapstone.



Buyer's Guide

Hot New Tools (p. 14)

1. Kreg Accu-Cut Circular Saw Guide Track System#163360, **\$79.99**
2. Damstom 38-inch Panel Clamp#162565, **\$59.99**

Build a Coffee table...Just the Way You Like It (p. 23)

1. Micro Jig Matchfit Dovetail Clamp Pair.....#161950, **\$39.95**
2. Freud Upcut Spiral Router Bit $\frac{3}{8}$ " D, $1\frac{1}{8}$ " CL, $\frac{3}{8}$ " SH.....#844584, **\$39.97**
3. Whiteside Upcut Spiral Router Bit $\frac{1}{4}$ " D, 1" CL, $\frac{1}{4}$ " SH.....#03K33, **\$18.44**
4. Selby Table Top-raising Hardware.....#853106, **\$229.99**
5. General Finishes Tuscan Red Milk Paint, Pint.....#148937, **\$17.99**

Success with Slabs (p. 30)

1. Slabs are available at heamehardwoods.com & westpennhardwoods.com
2. System Three Epoxy Kit, $1\frac{1}{2}$ " Pint#128605, **\$36.50**
3. Spectape Double-faced Tape, 1" x 36 Yds.#15D25, **\$25.99**

Build a Custom Live-Edge Bench (p. 36)

1. $3\frac{1}{8}$ " x 2" Flap Wheel Sanderleevalley.com, #68Z26.01, **\$37.50**
2. HOMERIGHT Finish Max HVLP Sprayer.....#162465, **\$69.99**
3. Carter AXE Round Carbide Turning Tool.....#162509, **\$99.99**
4. Carter AXE Square Carbide Turning Tool.....#162508, **\$99.99**
5. General Tools Digital Sliding T-Bevel.....#153766, **\$38.99**
6. Milescraft AccuDrillMate 1318 Drill Guide.....#161999, **\$34.99**
7. Wixey WR300 Type 2 Digital Angle Gauge#159488, **\$29.99**
8. Fisch Wave Cutter Forstner Bit, $\frac{5}{8}$ " Dia#423733, **\$19.99**

9. Bormax Forstner Bit, $1\frac{1}{2}$ "#140010, **\$47.29**
10. Titebond Liquid Hide Glue, 8 oz.#153818, **\$7.99**
11. General Finishes Enduro-Var, Flat, Quart#852118, **\$32.99**

Get A Round Without a Lathe (p. 45)

1. Freud Quadra-Cut Roundover Router Bit, $\frac{7}{8}$ " R, $\frac{1}{2}$ " SH#834262, **\$100.97**
2. CMT Roundover Router Bit, $\frac{5}{16}$ " R, $\frac{1}{4}$ " SH#822326, **\$30.99**
3. Whiteside Roundover Router Bit, $\frac{3}{16}$ " R, $\frac{1}{2}$ " SH#818128, **\$23.16**
4. Wixey Dual Display Fractional Digital Caliper#147829, **\$41.99**
5. Lynx Concave Cabinet Scraper Set, 2 pc.....#150104, **\$15.99**
6. Veritas Concave Spokeshaveleevalley.com, #05P33.11, **\$114.00**

Super Slab-Milling Jig (p. 48)

1. Whiteside CNC Spoilboard Surfacing Router Bit, $\frac{1}{2}$ " SH.....#868312, **\$63.72**
2. Slick Strips (self-adhesive UHMW tape), $\frac{1}{2}$ " T x $\frac{3}{4}$ " W x 10.5' L#16L64, **\$8.50**
3. Polycarbonate (Lexan) is available at tapplastics.com and interstateplastics.com.

Four of a Kind (p. 55)

1. Gröz Outside Caliper, 8"#141595, **\$29.99**

Rock Out with a Soapstone Finish (p. 60)

1. All-purpose primer, available at paint stores and home centers
2. General Finishes Chalk Style Paint, Black Pepper, Quart www.walmart.com, **\$22.00**
3. General Finishes Chalk Style Paint, Summertime, Quart..... www.walmart.com, **\$31.00**
4. General Finishes HP Polyurethane Top Coat, Flat, Quart.....#850181, **\$27.50**
5. General Finishes Flat Out Flat WB Topcoat, Pint.....#161276, **\$16.50**

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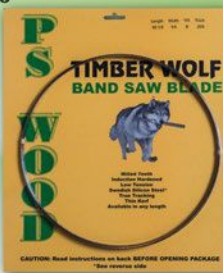
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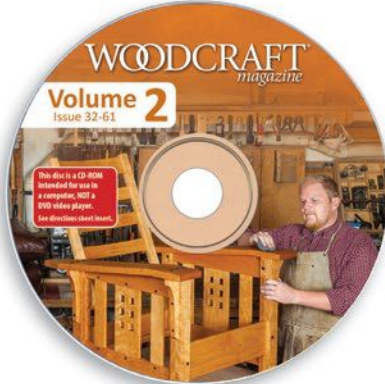
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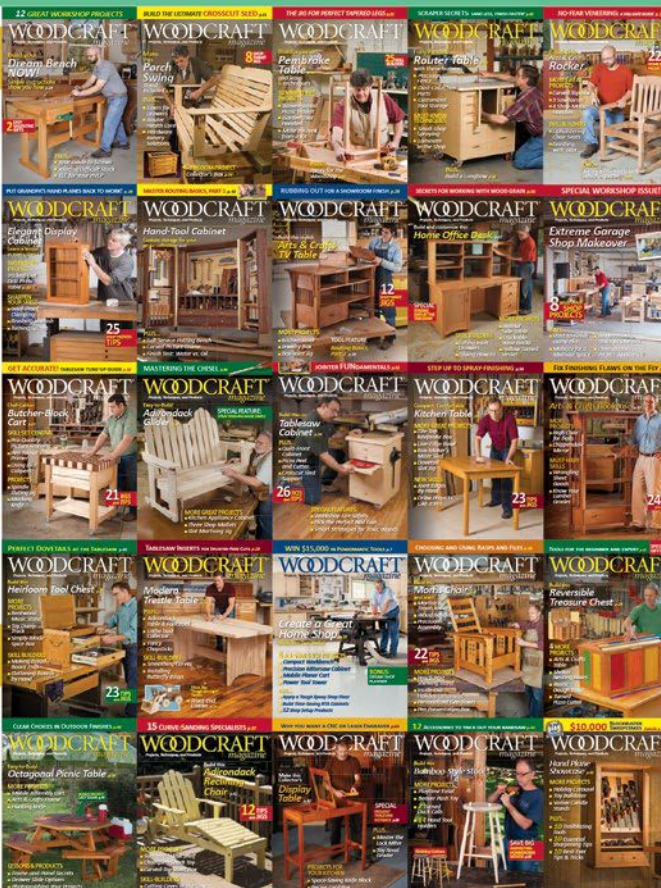
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Resawing blade recommendation

Q Because I don't own a bandsaw, I rely on my contractor's table saw for resawing. I'm not happy with the results of my current blade. Any recommendations?

A Resawing on my contractor's saw always gave me trouble until I tried two blades from Forrest. Their Woodworker II 20-tooth, thin-kerf ripping blade is the best ripping blade I've ever used. Deep gullets, combined with an ATB/raker tooth configuration, provide excellent cut quality with surprisingly low feed pressure. If you have a lot of ripping to do, this blade is a great choice.

If you're looking for an all-purpose blade that can also make clean rips through thick hardwood, I recommend Forrest's Ultra Thin Kerf, 40-tooth Woodworker II. The thin-kerf blade can help get the most from an underpowered table saw. It also squeezes a little more out of your stock, as its kerf is only .080" thick (just over $\frac{5}{64}$ "), not much wider than a typical bandsaw blade kerf.

—Tim Snyder, chief editor



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CHECK US OUT ONLINE!

Build your own version of this old furniture project, which puts square edges on the outside and flat edges on a mounting middle path highlighted with round glass.

pg. 50 Easy Chair

But you can't build just one! This classic Danish Modern design creates grace and comfort from a collection of angled parts.

TOOLS & TECHNIQUES

pg. 28 Dressing Stock

Want your next project to go more smoothly? Try this expert advice on transforming roughness boards into well-selected workpieces that are straight, square, and suited to finished finishes.

pg. 42 Welding for Woodworkers

Get a smart start at combining wood and steel to create your own unique designs.

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Government regulations for painting wooden toys

Q Our woodworking club makes wooden toy cars and other items to be given away to underprivileged children at Christmas. Are there any government regulations concerning the painting of these items before they are given away?

—David M. Reid, *Woodworkers of Whittier*

A Great question, David. I posed it to Patty Davis, Acting Communications Director at the Consumer Products Safety Commission, who had the following to say on the matter.

—Paul Anthony, senior editor

"Children's products must not contain a concentration of lead greater than 0.009 percent (90 parts per million) in paint or any similar surface coatings. Producers of painted toys for children are required to have a detailed Children's Product Certificate showing when and where the paint was tested for compliance with the federal lead in paint requirement, although there's no need to file a copy with the government. You should be able to obtain such a certificate from the paint manufacturer. For further information, visit cpsc.gov/Business-Manufacturing/Business-Education/Lead/Lead-in-Paint." ■

—Patty Davis, Communications Director at the Consumer Products Safety Commission

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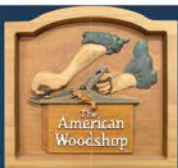
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A REAL BODY OF WOODWORK

By Paul Anthony

“Dad, I don’t wanna sound like a wimp, but that thing makes me nervous when I’m trying to sleep.” My son, a swaggering teenager at the time, and a fanatic for horror movies like *Nightmare on Elm Street* and *Halloween*—was not generally one to admit to nervousness. He was pointing to a corner of the room where, hanging from the ceiling was a carved wooden marionette I had recently completed. The design of the joints on this string puppet cause it to move in an eerily lifelike fashion that some find unnerving. And this particular little fellow—with his pointed ears, jaundiced eyes, and impish grin—seems to emanate particular menace. In fact, he has had his character insensitively assailed on a number of occasions. Anyway, summoning up my best condescending-parent voice, I assured my son there was nothing to worry about as long as the puppet was hanging in mid-air. “He can’t get off his strings,” I explained.

“Real funny, Dad,” he said, and headed off, probably to play yet another monster-inspired prank on his hapless little sister.

For a long time, marionettes were the most refined and lifelike characters in the realm of puppetry. These days, the apex of the craft is represented by the digitally enhanced creatures seen in recent *Lord of the Rings* and *Planet of the Apes* films. I don’t think anybody would sleep with one of those in the house. They’re probably a bit pricey anyway. However, a good marionette can be made by any patient and determined woodworker.

When I was creating marionettes some years ago, I often spent as much

time on one as I spend on some pieces of furniture. Many of the same challenges are there: executing appropriate joints, carving, sanding, and finishing. It’s one of those projects that can be as involved as you like. I’ve seen cleverly engineered string puppets that can juggle balls and perform acrobatics. I’ve even watched one transform itself from a doddering old lady into a snarling dog in an instant (for people who like to play with their cats.)

There are few woodworking projects that involve the spectator as much as a marionette. Just hanging around, it can be appreciated in the same way as a finely crafted table: admired for the design of its carving and for the technical execution of its joints. But tables—at least those with sound joints—don’t walk around. When you operate a puppet, you engage the viewer’s imagination, bringing out their own wonders and fears. I don’t worry about a rambunctious toddler grabbing or smacking a puppet as though it was the family cat. Instead, they generally regard it with suspicion before either crying or approaching it cautiously. Often, they become fast friends and insist on goodbye kisses.

I have to admit that, when making marionettes, my imagination got the best of me sometimes. When a little guy was laying on my bench, his body parts strung together and flopping about like a corpse as I turned him over, I couldn’t help but feel a bit like Doctor Frankenstein. When his pupils were finally painted, it was as though he



had snapped his eyes open to regard his maker for the first time. A little weird, granted, but nothing to worry about, as I never heard “Are you my mother?”

Anyway, Geppetto might be pleased to know that his vocation has continued down through the generations. Myself, I’m just pleased to have contributed a few characters to run amok in the imaginations of a few kids.

By the way, I did take the marionette down that night for my son. As he lay there snoring, I carefully placed it (in his sister’s honor) so that his first sight in the morning would be that of a once-too-often insulted puppet crawling across the nightstand toward his head. ■

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