

WOODCRAFT[®]

Projects, Techniques, and Products

magazine

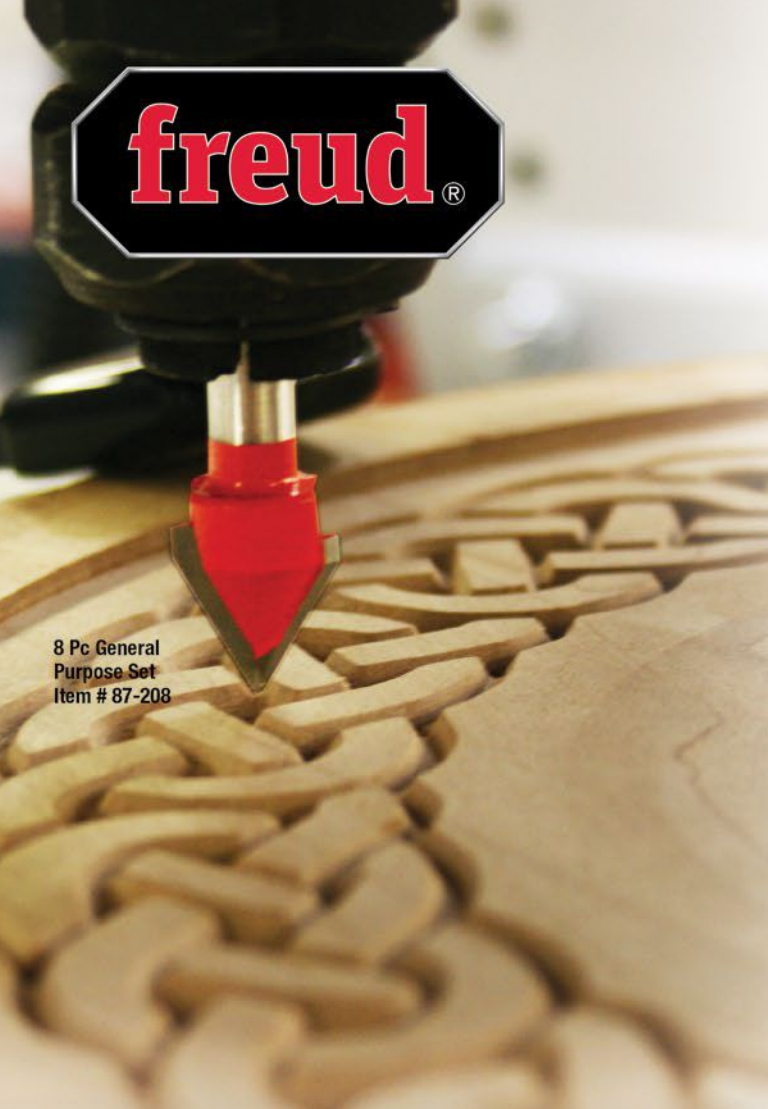
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Compact but capable, this bench has a base built from framing lumber, an excellent (and affordable) tail vise, and a sturdy knock-down design.

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Building this beautiful table proves you can create maximum value with minimal tools—a router, circular saw, cordless drill, and pocket-hole jig.

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Who would have guessed that diamond abrasives could be so affordable? Warning: This article could put your waterstones out of business.

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Here's one turning project that will help you complete many others.



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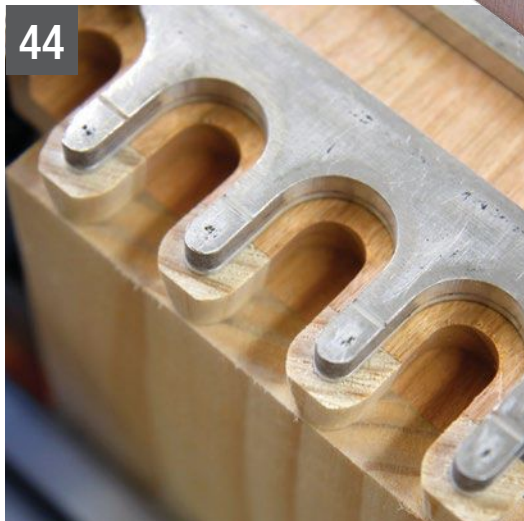
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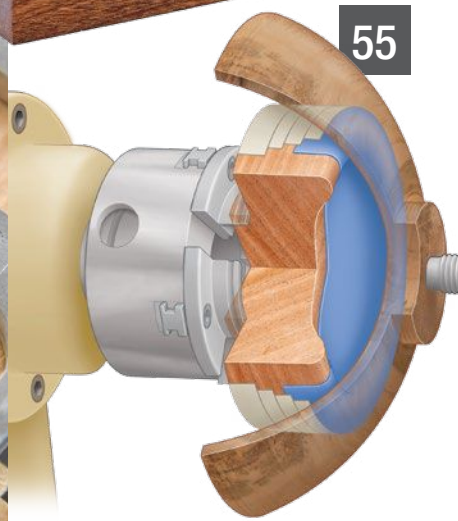
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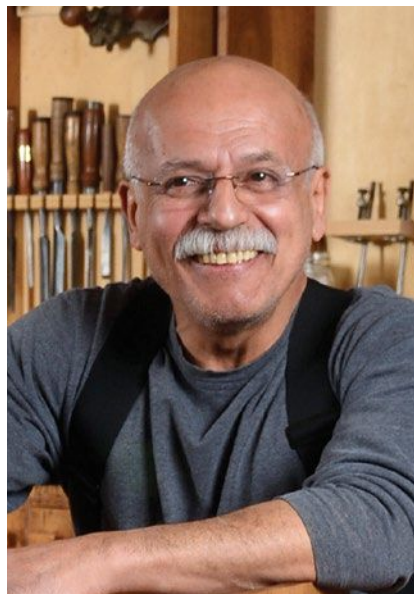
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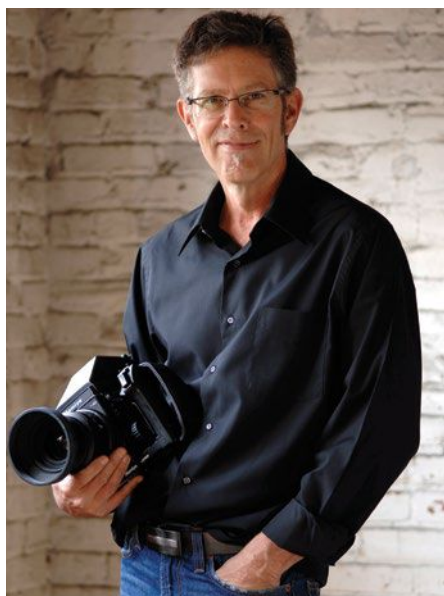
Contributors



Apprenticing under master chairmaker Curtis Buchanan put **Elia Bizzarri** on the path he follows today, using traditional tools to rive, hew, shave, and turn beautiful Windsor chairs. He also teaches classes at his workshop in central North Carolina and at other schools in the region. Check out the knockdown Chairmaker's Workbench (p. 22) and his website: handtoolwoodworking.com.



A masterful furniture designer/builder for over 35 years, **Mario Rodriguez** has authored countless magazine articles and several books. A former instructor at The Philadelphia Furniture Workshop, he now maintains a personal work space in a local co-op shop and enjoys his new life as itinerant teacher and lecturer. Check out his Tall Bureau on page 36.



Photographer **John Hamel** gets around. In addition to snapping stellar photos in numerous woodshops (see page 55), he has traveled to 46 states and 6 countries to photograph icons such as Paul Newman, Dave Barry, and Arlo Guthrie, as well as Olympic medalists Dan O'Brien, Eric Heiden, and Bonnie Blair. His award-winning work has appeared in over 300 books and 700 magazines and is included in the permanent collection of The International Center of Photography in New York.



Michael Kehs has come a long way as a woodworker since his youth spent building birdhouses with his father in their home woodshop. The award-winning artist has been carving since 1980 and turning wood since 1986. These days, he lives in upper Bucks County, Pennsylvania, where he also writes for *Woodcraft Magazine*, *American Woodturner*, and the British magazine *Woodturning*. See his story on making a universal jam chuck on page 55 of this issue.



An accomplished woodworker from Lubeck, West Virginia, **Bill Sands** is a regular contributor to *Woodcraft Magazine*, having built several projects. See his dining table on page 48. In addition, he teaches woodworking classes at the Parkersburg Woodcraft store. ■

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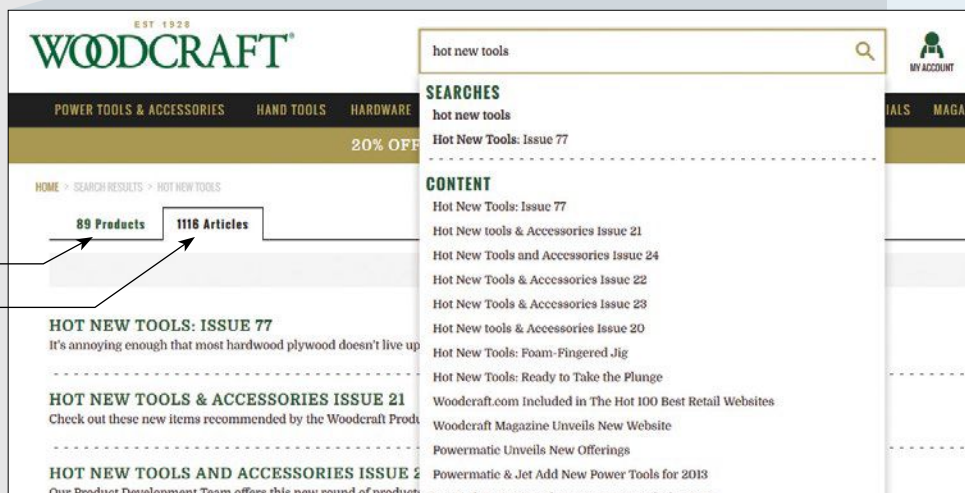
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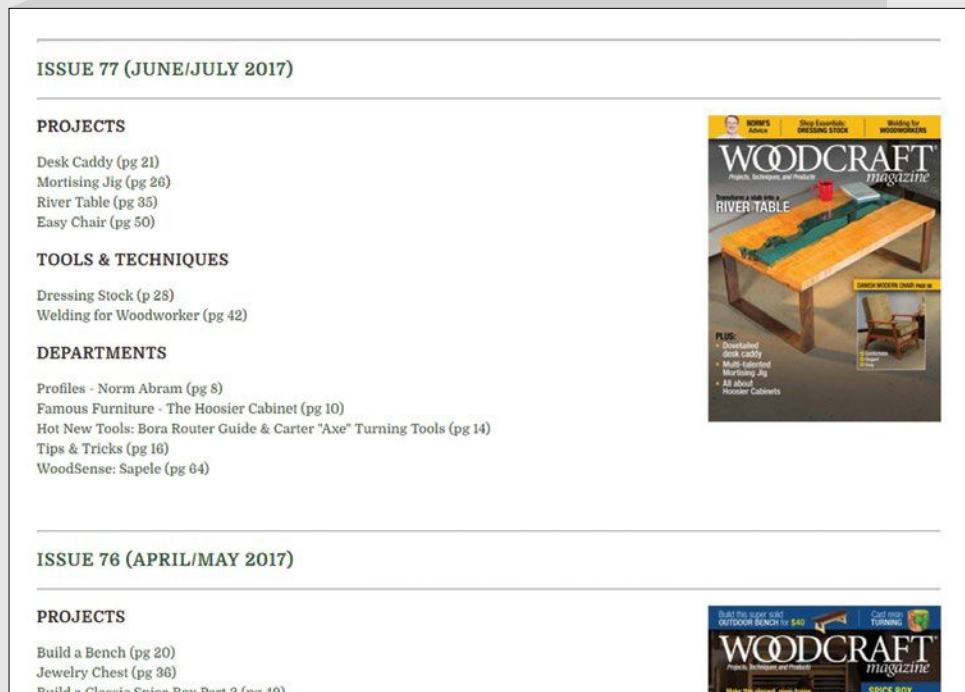
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Articles

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Here's a good reason to raise the bar on your woodworking skills. This desk caddy holds everyday essentials.

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Designed to work with any guide, this nifty jig handles all angles.

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Build your own version of this unique piece of furniture. The square edges on the outside and the middle path highlighted with a groove.

pg. 50 Easy Chair

But you can't build just one. This chair creates grace and comfort.

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Dressing Stock

FREE ARTICLE

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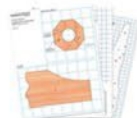
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JULY 2017

Did your scrap pile. Try out some dadoing
le you build an attractive organizer that

plunge router equipped with an edge
s edge and end mortises of all sizes and

this slab furniture project, which puts
le and live edges on a meandering
with tinted glass.

! This classic Danish Modern design
from a collection of angled parts.

QUES

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go more smoothly? Try this expert advice on transforming roughsawn boards into well-selected workpieces that are straight, square, and milled

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Good, fast, and cheap!?

In my short and stressful stints as a remodeling contractor, I've often utilized the standard explanation of trade-offs that every homeowner needs to accept before work can begin. "Good, fast, and cheap. You can have two of these, but not three."

There's plenty of common sense behind this classic contractor's admonition. And of course, it applies to woodworking as well. Doing quality work takes extra skill, care, and time. Rushing through a project, building with sub-par materials, and using low-quality tools are common enemies of excellent results.

When you understand the "good, fast, cheap" equation, it's easy to

appreciate the rare occasions when you actually achieve all three goals, as we've been able to do in this issue. Take Bill Sands' Dynamite Dining Table, for example. We challenged this veteran woodworker to design and build an affordable dining table that a beginning woodworker could build in a weekend and be proud to show off in any dining room. Then we upped the ante by limiting power tools to a circular saw, portable drill and router. Bingo. Bill delivered on the trifecta challenge; check out his table on p. 48.

Another good, fast, and cheap achievement we've got going in this issue is Joe Hurst's Cheapskate's Guide to Diamonds—a low-cost sharpening approach you'll definitely want to try (p. 28).

Finally, we've got Elia Bizzarri's workbench to consider (p. 22). With a base made from inexpensive framing lumber, a ready-made top, and some affordable vise hardware, you've got an excellent workbench that can easily be built over a couple of days.

Don't worry—we know there are plenty of projects you want to build that take longer than a weekend and require more expensive materials. If I had to choose a project to build in this issue, it would be Mario Rodriguez's

tall bureau, which definitely fails the fast and cheap tests. If you're going to build with premium hardwood, it's worth it to have a design like this—a well-made case piece that offers beauty and utility, with a small enough footprint to fit in any bedroom.

No matter what your next project may be, I hope you can take advantage of the ideas and expert advice we strive to pack into every issue. Work safe, enjoy the journey, and let us know how we can keep getting better. ■



Top-notch table. Mail-order legs and pocket screw joinery make for speedy construction.



Weekend workbench. Make the leg vise from inexpensive hardware and the base from framing lumber.

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SANDING SIMPLIFIED.

David Picciuto

*on inspiration
and being happy*



A photographer found it too expensive to have his work framed and decided to make the frames himself. After buying a few tools and watching how-to videos, he found his calling. “I want to do woodworking videos and blogs, like these people do,” decided David Picciuto. Here are the highlights from my chat with the host of *Make Something* (formerly, *The Drunken Woodworker*), co-host of the podcast *Making It*, and author of two woodworking project books.

—Chad McClung

WC: How did *Make Something* get its start?

DP: I changed the name of the show to *Make Something* because it became my career. The whole *Drunken Woodworker* thing was a joke. Sixty percent of the reason for the name change came from an embarrassing moment when a 14-year-old kid introduced me to his dad as the “Drunken Woodworker.” The other forty percent was that I wanted to remove ‘woodworker’ from the

title. I didn’t want to limit myself. I’m making titanium wedding rings. I’m doing leatherwork. I plan to get more into metalworking and electronics. I identify more with the maker crowd.

WC: How do you survive your busy schedule?

DP: When I was a teenager, my sister made fun of me for being lazy. That stuck with me, and I guess I’m trying to make up for that now. A few years ago, a switch flipped in my brain, and I

wanted to create all the time. I’m excited by what I get to do every day. I still can’t believe that when I wake up, I don’t have to go work for somebody else; I get to do this. I’m always in search of having fun and trying to find things that make me happy. I don’t make as much money now, but I’m happier and stress-free.

WC: What tool gets the most use in your shop?

DP: My computer. I start with a sketch on paper and then build a 3-D model on the computer. SketchUp and Fusion 360 are both free for students and non-professionals.

WC: Where do you find your inspiration?

DP: My wife and I love antiques. I snap photos of things that I like to use for inspiration later. I’m drawn to old stereo consoles from the fifties and sixties.

WC: Who has impacted your work the most?

DP: Charles and Ray Eames are a huge influence on what I do. They were creative and good problem solvers. When this husband-and-wife team made a bunch of plywood furniture in the fifties, they had to learn how to

form plywood in different shapes and then have it mass-produced. They had a great sense of design.

WC: Do you have tips for beginners?

DP: Don’t buy all the tools just yet. Decide what you want to build, and then buy the tools necessary to make that project. If your first project is a birdhouse, maybe all you need is a circular saw and a drill. Buy those tools and build that project. Your next project will require another tool. Buy it, and then build that project, and so on. That way you’re not spending too much money on tools that you may never use. Also, it’s important to calibrate your tools, so that you get square cuts and flat boards. Your projects will go together much easier down the line. And proper planning puts you on the path to success. But my best advice is, find what makes you happy. ■

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Visit MakeSomething.TV for cool project videos. Tune into the podcast at MakingItPodcast.com. And check out David’s two books, *The New Bandsaw Box Book* and *Make Your Own Cutting Boards*.



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Searching for Water

I can't tell you how much I enjoy your magazine. Each issue seems to have something that makes me say, "I want to make that." My biggest complaint is I can't keep up with the projects, but I will do my best to catch up, so you need not slow down.

Inspired by Brendan Whitehead's "River Table," I am now building a river-style top for a patio bar. I found two live-edged spalted maple slabs, and I am planning to separate them with a glass waterway. My problem is I have not been able to find a source for the tinted glass used in the story. Could Brendan share more info about the glass to help me in my search?

—Harry Tennis, San Antonio, Texas

River Table builder and author Brendan Whitehead replies:

I'm delighted to hear that people across the country are building this project, but I'm sorry that they're having a hard time sourcing the glass. The glass supplier that I use in Denver was the first place I called. I guess I lucked out.

Part of the confusion may be due to the nature of the product. The glass isn't "tinted" with an applied film, but is through-colored. This type of glass is



often used in commercial buildings for aesthetics and as a UV blocker. Smaller, local glass shops may not be familiar with this commercial product.

Referencing the products by the names mentioned in the article should help, since they are the product-specific brand names established by the manufacturer. (You can also try Googling "Azuria glass" for additional info.) I hope this info helps builders with their search.

Based on the letters we've received, odds are good that you're not alone in your search. Your local Woodcraft store might be able to help you find a source. If you find a local supplier on your way, please share it with your store.

—Editors

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Pony clamps ride again

In May 2016, Adjustable Clamp Company, the century-old manufacturer of Jorgensen® adjustable handscrew clamps and Pony® brands of clamps and clamping fixtures, announced the suspension of business operations.

Company reps have recently announced that Jorgensen and Pony are back in the saddle, albeit under new ownership. The assets have been purchased by China-based GreatStar International, a leading hand tool manufacturer. GreatStar's other brands include Goldblatt®, Sheffield®, Everbrite®, Miller Falls®, and Safety Pro®.

Although Adjustable Clamp's founding family is no longer affiliated with the company, some former employees have been hired to continue the tradition. Company representatives have promised to honor warranties on previously purchased products.

GreatStar's new line of Jorgensen and Pony products will be available in August. Check out the product catalog at ponytools.com.



Important information for magazine subscribers

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When it comes to finishing, woodworkers split into two camps: those who regularly reach for their spray gun, and those who haven't yet pulled the trigger. HOMERIGHT'S Finish Max offers something for both sides. For beginners, this \$70 HVLP sprayer is easy to operate (fill the cup, plug it in, and spray) and a cinch to clean, making it the perfect gateway into the world of spray finishing. For experienced finishers, this compact and affordable sprayer can serve as a handy back up for smaller finishing jobs.

At first glance, the Finish Max resembles an airless sprayer, but looks are indeed deceiving. Although it lacks hoses, pumps, or air compressors, this self-contained HVLP system successfully handled a gauntlet of finishes, including chalk paint (slightly thinned and gauged, using the included drip cup). After spraying waterborne poly on several projects that had been waiting for finish, I may not go back to using a brush.

The air cap rotates to positive stops for horizontal, vertical and conical patterns, a feature common on more expensive sprayers. Overspray is easy to reduce by adjusting the fluid control knob. For best results, just make sure to keep the tip clean. I needed to wipe dried paint from the sprayer's tip every 5-10 minutes to maintain the spray pattern. Near the end of the test, the cup reservoir began to pop loose from the gun's plastic threads, making it difficult to obtain a leak-free seal. You could take advantage of the manufacturer's 2-year warranty, but I was able to fix the problem simply by wrapping the cup's threads with plumber's teflon tape.

To be fair, this gun is not as powerful or as versatile as pricier sprayers. The small fan pattern and coverage rate are about what you'd expect from a great aerosol spray can. While this makes it difficult to lay on too much paint (a mistake that causes drips), the HOMERIGHT isn't well suited for large projects, like a kitchen cabinets or a shed. Also, the needle can't be changed out to suit thicker paints or replaced when it wears out. But by the time this gun is ready to retire, it will have earned its keep.

Tester: Joe Hurst-Wajszczuk





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- Approx. shipping weight: 122 lbs.

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G1029Z2P **ONLY \$355⁰⁰**

6" JOINTER WITH KNOCK-DOWN STAND

- Motor: 1 HP, 110V/220V, prewired to 110V, single-phase, 14A/7A
- Table size: 6 1/2" x 47 1/2"
- Number of knives: 3
- Cutterhead speed: 5000 RPM
- Cutterhead diameter: 2 1/2"
- Maximum depth of cut: 1/4"
- Maximum rabbeting depth: 1/2"
- Cuts per minute: 15,000
- Fence size: 29 1/2" long x 4" high
- Approx. shipping weight: 252 lbs.

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14" ULTIMATE BANDSAW

- Motor: 1 HP, 110V/220V, single-phase, 11A/5.5A
- Precision-ground cast-iron table size: 14" sq.
- Table tilt: 15° L, 45° R
- 4" dust port
- Cutting capacity/throat: 13 1/2"
- Max. cutting height: 6"
- Blade speeds: 1500 and 3200 FPM
- Approximate shipping weight: 199 lbs



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G0555 **ONLY \$575⁰⁰**

12 1/2" BENCHTOP PLANER WITH BUILT-IN DUST COLLECTION

- Motor: 2 HP, 120V, single-phase, 15A
- Max. cutting width: 12 1/2"
- Max. cutting height: 4 1/2"
- Max. cutting depth: 1/8"
- Feed rate: 26 FPM
- Cutterhead knives: 2, reversible HSS
- Knife size: 12 1/2" x 1/2" x 1/8"
- Cutterhead speed: 8750 RPM
- Number of cuts per inch: 60
- Approx. shipping weight: 72 lbs.



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G0790 **ONLY \$299⁹⁵**

SLIDING TABLE ROUTER TABLE

- Main table surface: 31" x 10"
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- Overall size: 40" L x 30" W x 42" H
- Approx. shipping weight: 132 lbs.



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10" HYBRID TABLE SAW WITH RIVING KNIFE & IMPROVED FENCE

- Motor: 2 HP, 120V/240V, prewired 120V, single-phase
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- Precision-ground cast iron table with wings measures: 40 1/2" W x 27" D
- Floor-to-table height: 35 1/2"
- Arbor: 3/4"
- Arbor speed: 3450 RPM
- Max. depth of cut: @ 90° 3 1/4", 45° 2 1/4"
- Rip capacity: 31" R, 16 3/4" L
- Overall size: 64" W x 40 1/4" D x 35 1/2" H
- Footprint: 21" L x 19 1/2" W
- Approx. shipping weight: 371 lbs.



\$109 shipping

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17" HEAVY-DUTY BANDSAW 30TH ANNIVERSARY EDITION

- Motor: 2 HP, 110V/220V, single-phase, 20A/10A, prewired 220V, TEFC
- Precision-ground cast iron table size: 17" x 17"
- Table tilt: 10° left, 45° right
- Floor-to-table height: 37 1/2"
- Cutting capacity/throat: 16 1/4" left
- Maximum cutting height: 12 1/8"
- Blade size: 13 1/2" long
- Blade speeds: 1700 and 3500 FPM
- Overall size: 32" W x 73" H x 32" D
- Footprint: 27" L x 17 1/4" W
- Approx. shipping weight: 342 lbs.

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Carter Products pulls a F.A.S.T. one on bandsaw users

Carter F.A.S.T. (Fence Alignment System Tool)

It's not often that a manufacturer invents a slick solution to a long-standing woodworking problem. So hats off to Carter Products for alleviating some serious resawing aggravation! The challenge with resawing has always been setting your fence dead parallel to the cutting path of the blade. This can be tricky because the blade itself may not be perfectly parallel to the edge of the saw table due to the crown of the wheels or table misalignment. And any deviation of fence parallelism from the cutting path can cause blade wander, miscuts, and perhaps a bit of profanity.

Finally, we have a fix: Fence Alignment System Tool (F.A.S.T.) bars. These 6"-long aluminum bars magnetically



attach to the side of your blade, providing a 6"-long representation of the cutting path. This means that all you have to do is carefully fix your fence in place against the attached F.A.S.T. bar, remove the bar, and you're ready to resaw! (Important: Use a sharp blade, as a dull one may wander regardless of good fence alignment.)

The set includes 5 precisely machined bars in thicknesses of $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{8}$ ", and $\frac{1}{2}$ ", with a slot in each bar to accommodate the tooth set. Setting your fence against the bar alone will yield a slice of wood that's the thickness of the bar minus the tooth offset. Keeping in mind that you

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almost always want to clean up the sawn face afterward, you'll normally want to cut a bit fat. Toward that end, I use double-faced tape to attach plastic laminate shims to the ends of whichever bar matches my desired final thickness.

Bottom line: If you struggle with your resawing setup, invest in these li'l babies. Yeah, they're a bit pricey, but what's your sanity worth? Plus, you can use these as set-up blocks for precisely gauging router bit projection and table saw blade height. ■

Tester: Paul Anthony

For ordering and pricing information, see the Buyer's Guide on page 60.

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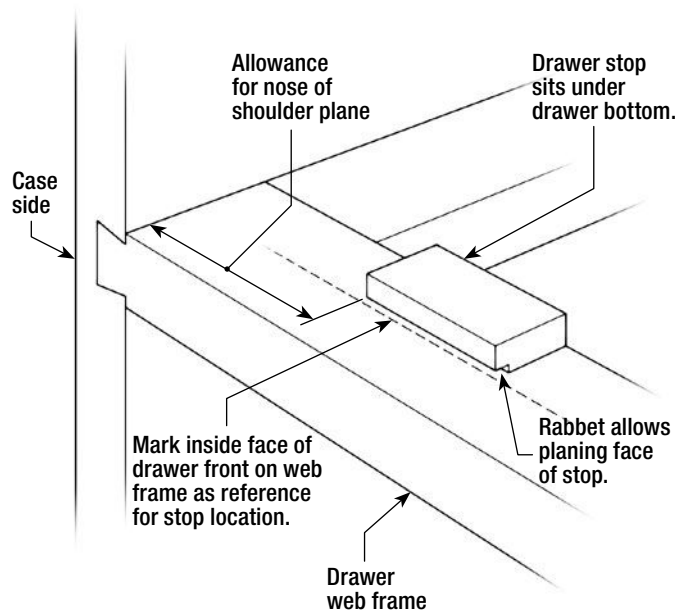
TOP TIP

Adjustable drawer stop

A traditional method for creating drawer stops for inset drawers is to glue two small blocks of wood—one on each side—to the front rail of the drawer's supporting web frame. The tricky part is aligning the stops perfectly so that the drawer front face sits precisely flush with the cabinet face. A typical approach is to first measure back from the front edge of the rail on the web frame, and scribe a line at the location of the rear face of the drawer front. Wipe glue on the stops, set them a bit forward of your line, and then carefully install the drawer, aligning it perfectly with the case front. Make sure to remove the drawer before the glue sets to prevent any squeeze-out from locking it in place.

Unfortunately, the blocks can slip out of alignment during installation. My failsafe trick? I cut a small rabbet in my stop material, and install each stopblock with the rabbeted face forward, as shown. Then, if the drawer front sits a bit proud of the case after the glue sets, a swipe or two with a shoulder plane across the stop is all it takes to cleanly line things up. Alternatively, I can glue on a sliver of veneer to pack out a recessed stop, planing it perfect afterward if necessary.

—Mario Rodriguez, Philadelphia, Pennsylvania



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Guitar by Roberto Ramos
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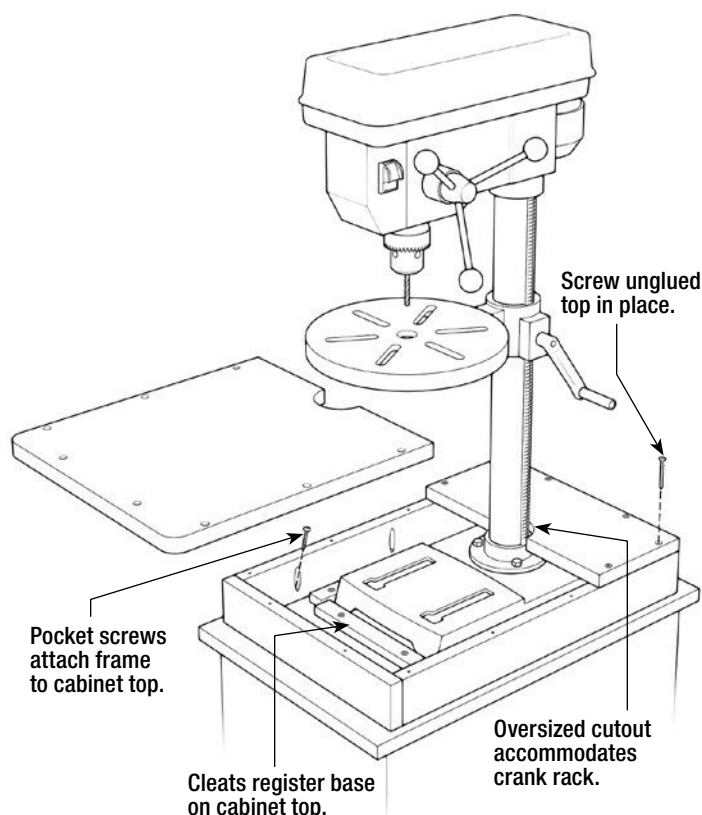
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Tools To Bring Your Vision To Reality

Drill press base platform

I prefer a benchtop drill press because of the storage capacity and mobility a wheeled cabinet beneath it provides. However, it annoys me that the area under the machine tends to be such an unusable mess, especially when every bit of staging space in my small shop is precious. The awkwardly shaped machine base doesn't serve well as a platform, and just attracts shop detritus. My solution was to outfit the cabinet top with a platform that covers the machine base and provides a useful surface. To create it, I simply screwed together a frame of the appropriate height around the edges of the cabinet, and then topped the frame with twin panels, scribing and sawing out a cutaway to accommodate the machine post. Do not glue the parts in place, as you'll want to remove them someday. (p.s.: The platform makes a great hiding place. Sh-h-h-h.)

—Anthony Fisher, Sebastopol, California



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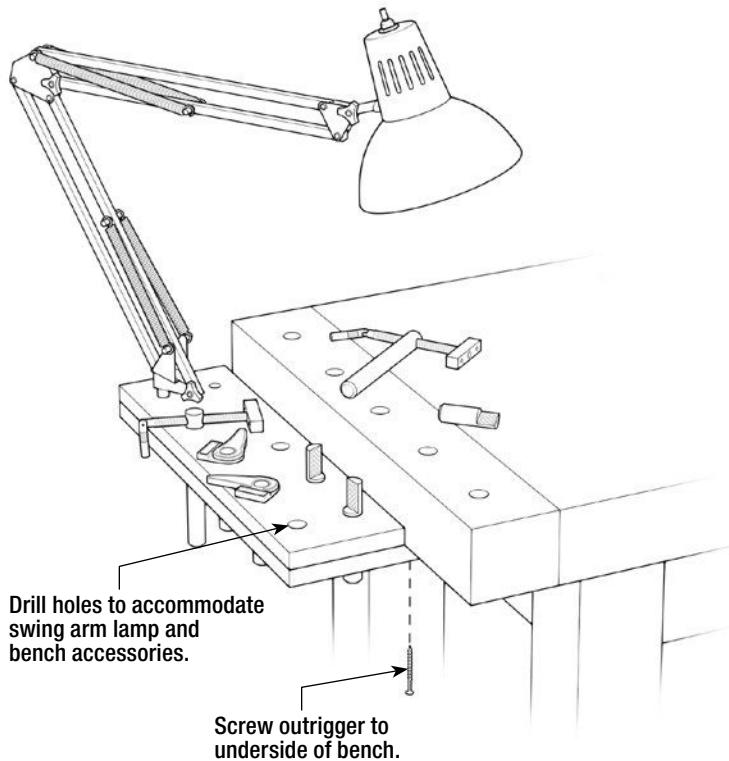
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Workbench outrigger

In order to mount a swing arm lamp at my bench without drilling holes in my benchtop, I decided to attach an outrigger made up of two pieces of $\frac{3}{4}$ " scrap plywood glued together. Extending the lower piece by a couple of inches allowed screwing the unit to the underside of my bench, while the 5 × 18" cantilevered section offers various light-mounting locations. As a bonus, I quickly realized that the outrigger can also house my various bench dogs, bench clamps, and hold-downs in suitably sized holes. Because the outrigger sits below the bench surface, the accessories are within easy reach without interfering with work underway on the benchtop. They also don't end up buried in shavings and sawdust, as do items in the bench's tool till. Of course, the design is ripe for modifications such as adding a rare-earth magnet, or slots for chisels and squares. ■

—Joe Hurst, senior editor



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drillmaster

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1/4" TRIM ROUTER

ITEM 61626/62659

44914 shown

Customer Rating

~~\$199~~

SAVE \$79

~~\$29.99~~ Compare \$99

22016663

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2 HP. 5 MICRON INDUSTRIAL DUST COLLECTOR

- 70 gallon capacity

Customer Rating

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ITEM 61790/97869 shown

22017024

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SUPER COUPON

SAVE 57%



12 VOLT, 10/2/50 AMP BATTERY CHARGER/ENGINE STARTER

Customer Rating

~~\$299~~

~~\$49.99~~ Compare \$69.99

ITEM 60581/60653 shown

22022924

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SUPER COUPON

Customer Rating

SAVE 71%

27 LED PORTABLE WORKLIGHT/FLASHLIGHT

ITEM 67227 shown

63877/69567/60586

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~~\$299~~

~~\$3.99~~ Compare \$10.64

Batteries included.

22027669

LIMIT 7 - Coupon valid through 11/27/17



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Customer Rating

SAVE 49%

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ITEM 69446/60710

61979 shown

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HARDY

SUPER COUPON

MECHANIC'S GLOVES

SIZE

ITEM

MED 62434/62426

LG 62433/62428

X-LG 62432/62429

Item 62429 shown

YOUR CHOICE

Customer Rating

~~\$5.99~~

~~\$16.12~~ Compare \$16.12

22041103

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PITTSBURGH

SUPER COUPON

DRIVE

ITEM

1/4" 2696/61277/63881

3/8" 807/61276/63880

1/2" 62431/239/63882

Item 239 shown

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PORTLAND

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- 1.3 GPM

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ITEM 63255/63254 shown

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SUPER COUPON

WIRELESS SECURITY ALERT SYSTEM

Customer Rating

SAVE 68%

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ITEM 69590/61910/62447/93068 shown

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Customer Rating

~~\$149.99~~

ITEM 69091/61454

61693/62803

63635/67847 shown

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LIMIT 5 - Coupon valid through 11/27/17



CENTRAL MACHINERY

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4" x 36" BELT DISC SANDER

Customer Rating

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SUPER COUPON

32 PIECE SCREWDRIVER SET

Customer Rating

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~~\$7.99~~ Compare \$13.67

ITEM 61259/90764 shown

22068289

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SUPER COUPON

RAPID PUMP® 3 TON LOW PROFILE HEAVY DUTY STEEL FLOOR JACK

Customer Rating

~~\$1999~~

~~\$199~~ Compare \$149.98

ITEM 61282 shown

61253/62326

22072087

LIMIT 5 - Coupon valid through 11/27/17



WARRIOR

SUPER COUPON

29 PIECE TITANIUM DRILL BIT SET

Customer Rating

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Chairmaker's WORKBENCH

Compact but capable, this knockdown design can be built with basic tools, framing lumber, and a ready-made top

By Elia Bizzarri

Stores flat,
assembles easy



When I'm not making Windsor chairs, I sometimes teach the craft at different woodworking schools. My students need benches that are compact and rugged, with versatile clamping capability. Easy disassembly is important, too, making it possible to keep benches stored out of the way.

The compact workbench shown here has proven its worth to students and in my own workshop. The leg vise on this bench is easy to build and nearly indestructible. Just as important, its throat capacity is far

greater than what's available on more expensive commercial vises. That extra capacity is really helpful when clamping a large chair seat.

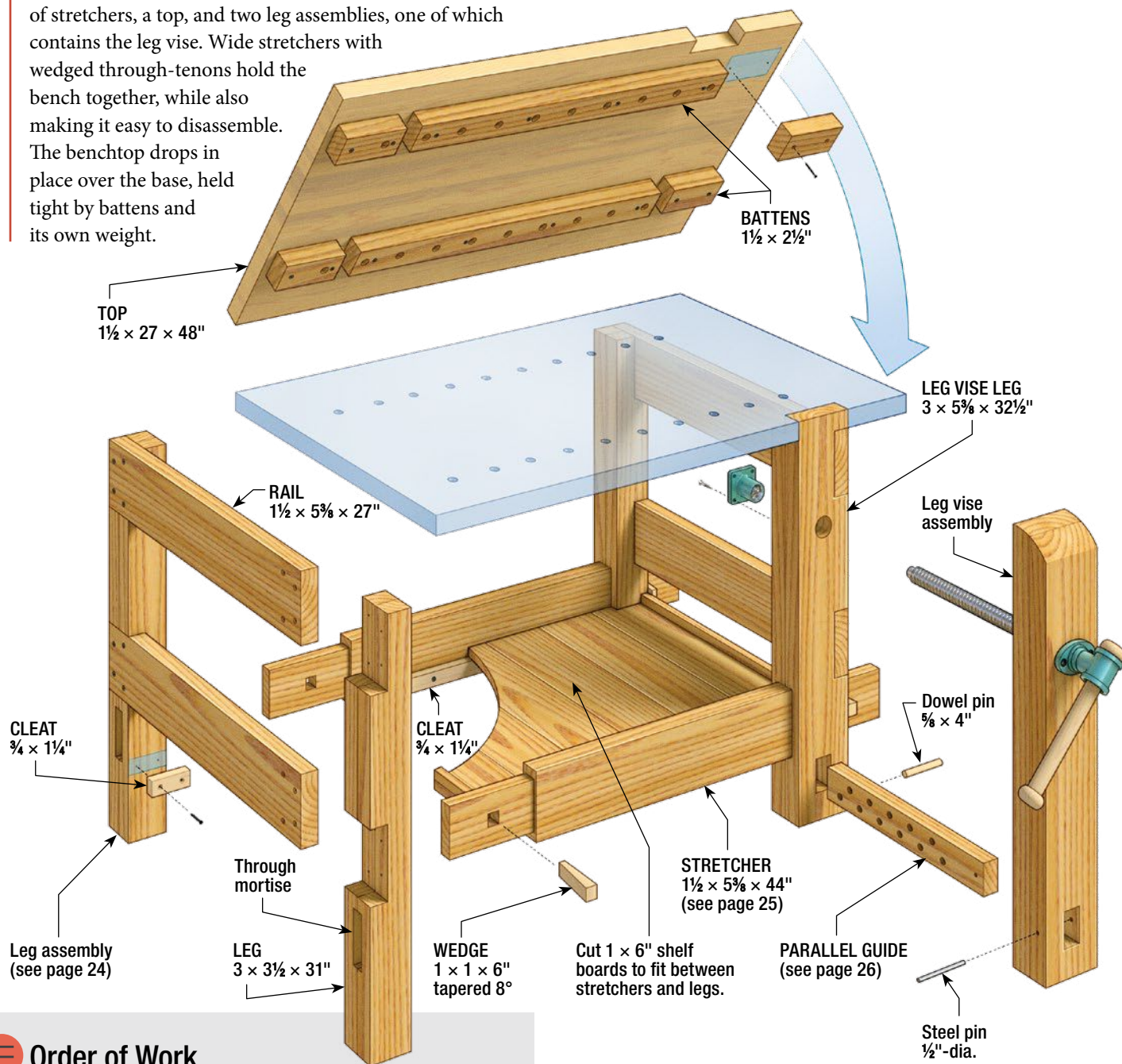
The bench also has appeal if you're a minimalist woodworker like me. No fancy tools, complicated jigs or costly materials are required to build this project. I made the bench shown here from 2 × 12 framing lumber, a \$40 vise screw and a premade birch top (see Buyer's Guide, p. 60). You can complete most of the work with a circular saw, chisels, an electric drill, and a square.



The workbench is easy to take apart and reassemble. Start by inserting the through tenons in their mortises and wedging the joints tight. Then fit the top on the base, and set the shelf boards on their cleats.

Leg assemblies, held together by stretchers with wedged through tenons

The completed workbench has just 5 major parts: a pair of stretchers, a top, and two leg assemblies, one of which contains the leg vise. Wide stretchers with wedged through-tenons hold the bench together, while also making it easy to disassemble. The benchtop drops in place over the base, held tight by battens and its own weight.



Order of Work

- Make the legs and put together the leg assemblies.
- Make the stretchers and wedges.
- Make the vise.
- Assemble the base and cut the top to size.
- Install cleats on stretchers, then cut shelf boards to size.
- Fasten battens to underside of top.

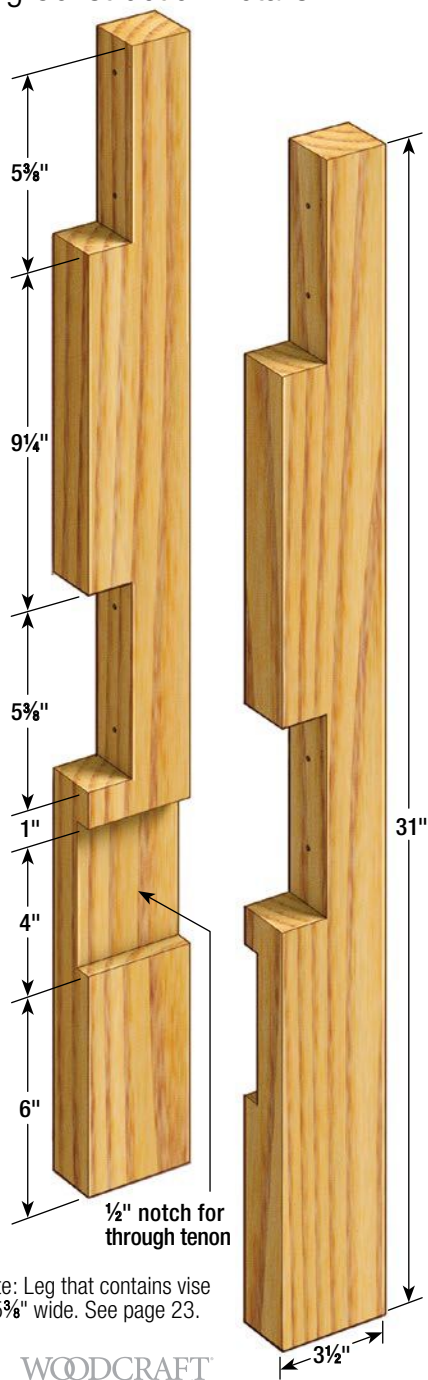
See page 26 for vise construction details.

Overall dimensions: $48"W \times 27"D \times 32\frac{1}{2}"H$

Begin with legs & rails...

Each leg is made up of two 2× boards. It's best to let each leg half run long by 1" or so, then cut the legs to finished length after assembly. I create matching notches for the through mortise, then screw leg halves together and cut the assembled leg to finished length. Next, I cut rail notches on the bandsaw. The leg that contains the vise is wider and longer than the other legs, but otherwise similar.

Leg Construction Details



Cut notches to make mortises. Before flattening each leg notch with a chisel and plane as shown above, I use my circular saw to cut closely spaced kerfs inside the mortise layout. Break out the waste, and you're ready to flatten.



Join leg halves together.

Insert a tenon-sized scrap board in the mortise to keep both leg halves aligned, then screw the halves together with 2 1/2" deck screws.



Bandsaw the notches.

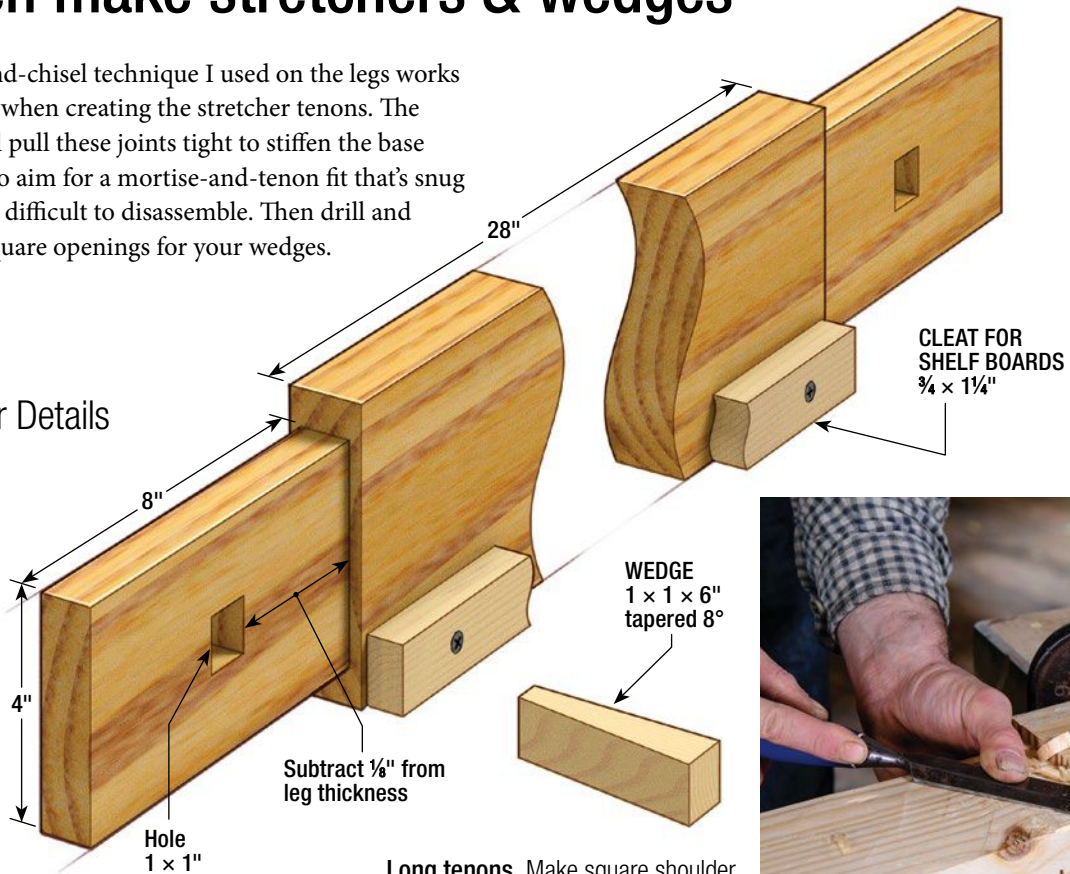
If you don't have a bandsaw, use the kerf-and-chisel technique as described above. The important thing is to make the notch sides square so that your leg assemblies will be square.



...then make stretchers & wedges

The kerf-and-chisel technique I used on the legs works just as well when creating the stretcher tenons. The wedges will pull these joints tight to stiffen the base assembly, so aim for a mortise-and-tenon fit that's snug but not too difficult to disassemble. Then drill and chisel 1"-square openings for your wedges.

Stretcher Details



Note: Tenon for vise leg is 10" long.

Long tenons. Make square shoulder cuts first, then kerf and chisel. Remember that the tenon that extends through the vise leg needs to be 2" longer than the other tenons.



Join rails and legs. Screw each leg assembly together, checking for square as you go.

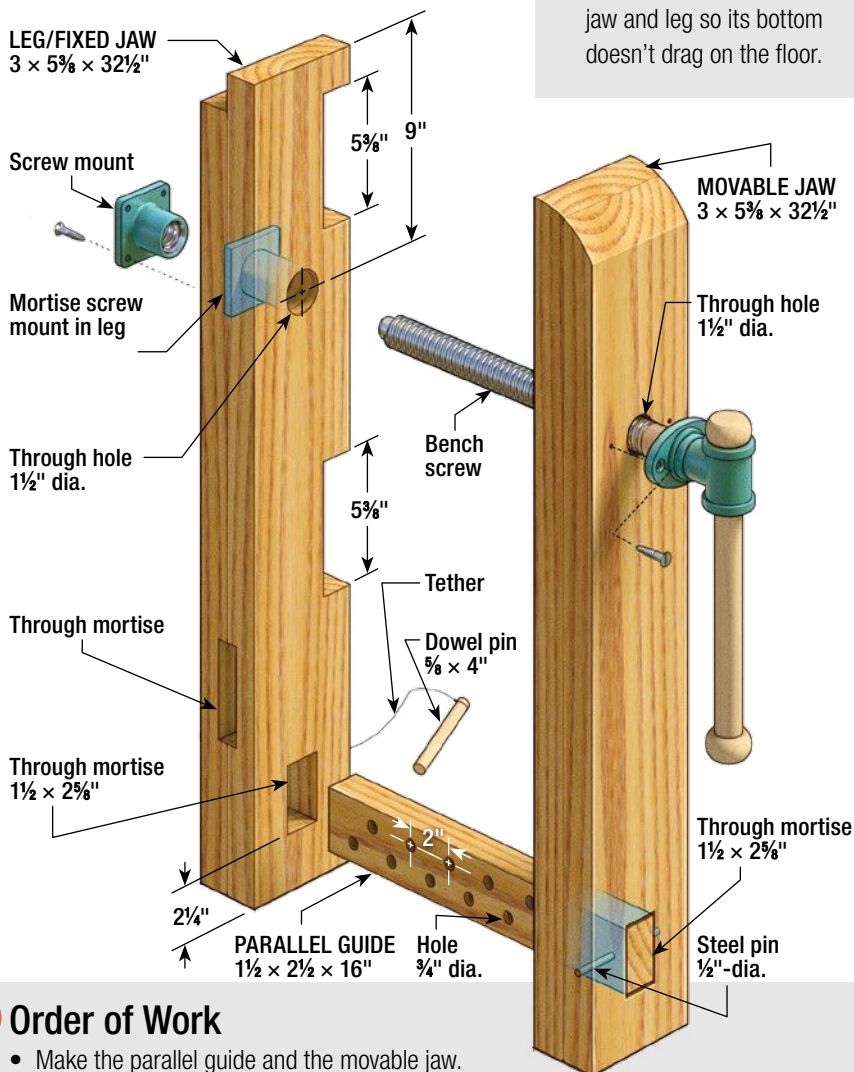


Square holes for wedges. Lay out the hole 1/8" closer to the tenon shoulder than the thickness of the leg. Then drill inside your layout lines and chisel the opening square.

Get the vise together

A leg vise is especially useful for chairmaking and any other operations that demand deep jaws and large clamping capacity. It's also surprisingly affordable, because you're making most of the parts. The leg that accommodates the vise serves as a fixed jaw that extends level with the top of the workbench; it also contains a through mortise for the parallel guide and a through hole for the bench screw mount.

Vise Construction Details



Order of Work

- Make the parallel guide and the movable jaw.
- Complete the through mortises, and install the parallel guide in the movable jaw.
- Clamp the movable jaw to the fixed jaw, and drill a 1 1/2"-dia. hole through both parts for the vise screw.
- Complete the mortise for the screw mount, then install it in the fixed jaw.
- Screw the bench screw to the moveable jaw.
- Make the dowel pin, then attach it to the fixed jaw with a string tether.

Keys to smooth vise operation

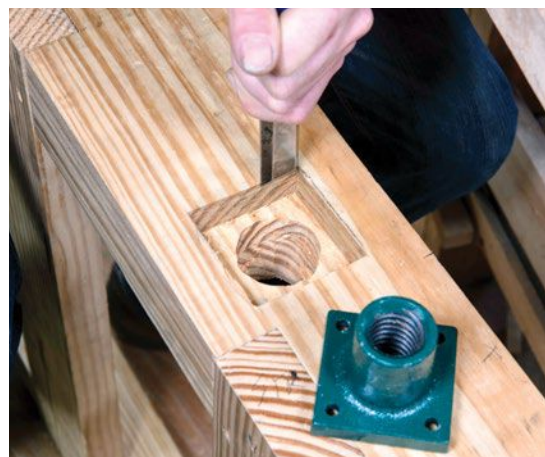
- Make sure the through holes in both jaws (for vise screw and parallel guide) are aligned.
- Check the fit of the parallel guide. It should be able to pivot slightly in the movable jaw and slide freely through the fixed jaw.
- Cut the movable jaw shorter than the fixed jaw so its bottom doesn't drag on the floor.



Pin the parallel guide. Make sure the guide can slide freely in both mortises, then pin it to the movable jaw with a 1/2"-dia. steel rod. Alternatively, you can use a lag screw.



Bore for the bench screw. Clamp the movable and fixed jaws together, with edges aligned and parallel guide in place. Then bore the vise screw hole.



Chisel the screw mount mortise. The bottom of the recess needs to be flat and parallel with the face of the movable jaw.

Add battens to the benchtop, and cleats to the stretchers

The benchtop needs some work in order to fit on its base. Your first task is to make a rectangular cutout for the fixed jaw of the vise, which should extend flush with the top surface. Once this is done, flip the benchtop upside-down, position the assembled base on the underside of the top, and set about installing battens as shown in the photo at right. The battens not only hold the top in place; they also provide added thickness for two rows of $\frac{3}{4}$ "-dia. dog holes.



Attach cleats for shelf boards. Cut cleats from 1× stock to fit along the bottom edge of each stretcher and across the legs. Install them with 1½" screws.



Add battens for deep dog holes. Two parallel rows of dog holes in the benchtop should extend through the battens fastened to the underside of the top. Locate the rear batten against the inner faces edges of the legs. Butt the short battens against the top rails, as shown above.

Make the bench even better with padding, pins, and wedges

A few final touches will make the bench more useful. The same rubber padding used on the vise can be glued to the bottom of each leg for a more secure stance on the floor.



Vise padding. Glue leather or rubber to vise jaws to increase holding power and protect workpieces. Padding cut from rubber flooring (shown above) or polyurethane sheet material can be attached with silicone caulk.



Pegs, pins, and wedges. Hardwood pins and an 8° wedge work great for holding parts on the benchtop. I also make special pegs drilled to accept the stem of a swing-arm lamp.

CHEAPSKATE'S Guide to DIAMONDS

*Diamonds make a big difference.
See how sharp you can get for less than \$40.*

By Joe Hurst-Wajszczuk



Shop-made
Honing Guide,
\$3

11 x 14" Window Glass,
\$3.50

Diamond Lapping Film,
\$24.50

Mineral Oil,
\$0.50

Sharpie Marker,
\$3.00



onlineEXTRA

Watch how to obtain shaving sharp edges
in less than 2 minutes. And see a neat
storage solution for your sharpening station.

Most of us already know that chisels and planes don't come sharp right out of the package. And even if they did, they don't stay that way for long. For new woodworkers, this lesson comes with another pricey punch: seriously sharp tools require serious money.

It's been 30 years since I took the plunge and bought my first set of waterstones (photo, right), but I can still feel the sticker shock. And the investment put other important tools on hold.

Today, there's another way to get super-sharp edge tools without breaking the bank. With some scrapwood and a handful of hardware, you can build the sharpening system shown here for around \$40.

Sharpening with sandpaper isn't new, but most sandpapers aren't designed to stand up against super-hard steels. Eventually, woodworkers tire of switching in fresh sheets and step up to a longer-lasting system. Diamonds make all the difference. With a little help from these precisely graded honing films, you can produce an edge that matches what my 8000-grit waterstones produce...for a lot less money. Honing film is a little pricey, but by focusing your sharpening attention on the very tip of the tool, the abrasive can last a long time.

If you're looking for a cheap, fast way to get a scary sharp edge, read on. I've devised a simple sharpening system that includes a honing jig and setting guide that you can make. Whether you're just starting out or you need a backup station, get ready to experience super sharp for super cheap.

Get the same great edge, but for a lot less.

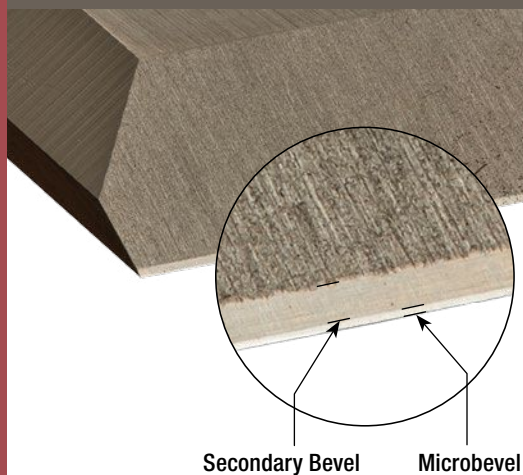
Waterstone



Coarse/Extra Coarse Diamond Stone (for flattening), \$145



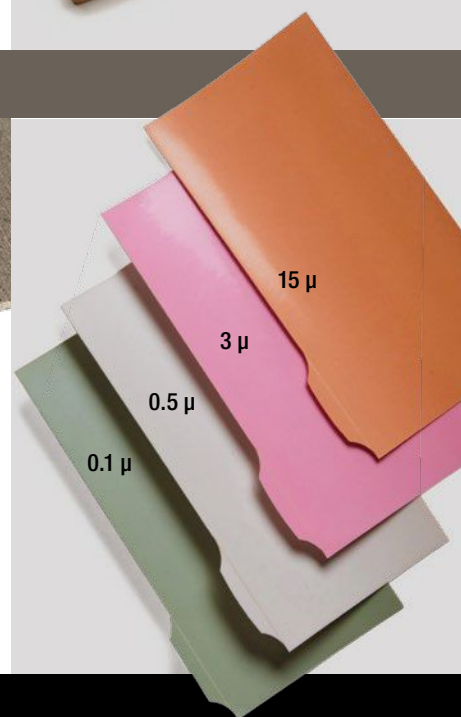
Diamond Lapping Film



Secondary Bevel

Microbevel

For additional product info, see the Buyer's Guide on p. 60.



How sharp is sharp?

I can't think of anything in woodworking that matches the feeling that comes from pairing a good plane with a truly sharp blade. Producing even, see-through curls is a neat trick, but when the shavings settle, focus your attention on the workpiece. There you'll see the real reward: a glassy-smooth surface that's impossible to achieve by sanding.

Well-sharpened edges translate to cleaner cuts (even in end grain), more control, and greater accuracy.



Start with a sharpening work station...

Easy and inexpensive to make, my sharpening workstation provides a foolproof way to maintain the bevel during the sharpening process. A consistent bevel (as opposed to a rounded one) means that each abrasive grit can do its job on the razor-sharp edge you're aiming to create. This saves time and sandpaper. It takes plenty of practice to maintain a bevel when sharpening freehand. My jig solves this problem.

In addition to the jig, you'll need a flat substrate to support your abrasives. A granite surface plate (shown

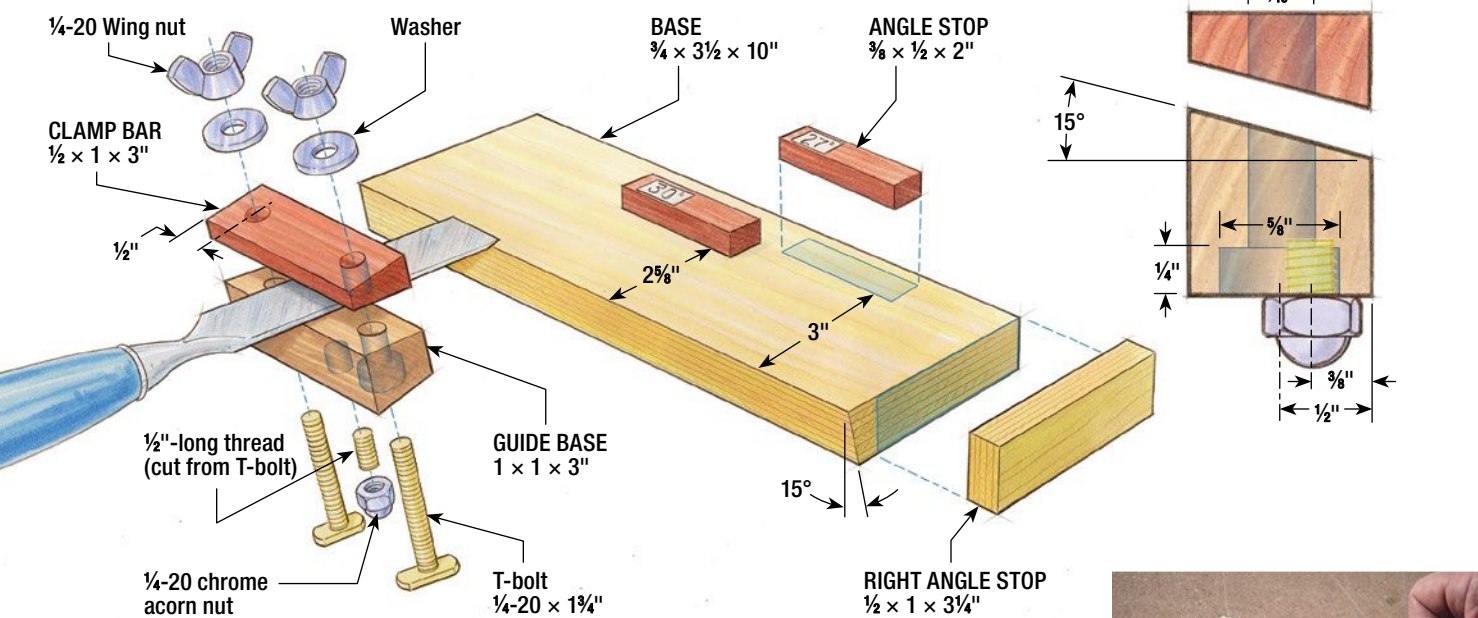
at right) offers a solid foundation, but to cut costs, you can glue a piece of window glass to a base made from $\frac{3}{4}$ "-thick MDF. (I used Titebond's Quick & Thick.)

Be extra careful when attaching the self-adhesive film to the glass. To avoid making bubbles that can catch an edge and tear the paper, apply a few drops of a soap and water solution to the glass and gently lay on the self-stick film. The water will give you time to work out any bubbles. When the film dries, you're good to go.

Honing Guide

Setting Jig

Honing Guide Side View



Order of Work

- Rip a 15° bevel on the edges of your Honing Guide stock and along the front edge of the Setting Jig's base.
- Reset to 90° and rip strips to make the Clamp Bar and Guide. Cut the strips to length.
- Tape the strips together and drill the bolt holes.
- Remove the tape and install the hardware.
- Make the Setting Jig.



Set your angle. First, center the blade or plane iron in the Honing Guide, and lightly tighten the wing nuts. Next, register the guide's base against the Setting Jig, slide the blade so that it touches the stop, and then cinch the nuts. Use the side stop to make sure the blade is square to the guide.

...then make your edge tools scary sharp!

The sharpening process takes longer to read about than perform. (To see this jig in action, check out the video at woodcraftmagazine.com)

Before you begin, darken the tip of your chisel or plane blade with a permanent ink marker. Doing this makes it easier to check your progress. Next, apply a drop or two of oil onto each abrasive. The oil helps float away metal particles so that the abrasive can keep cutting. Now, follow the steps shown below.

When it's time to touch up an edge, you have a few choices. For the first few rounds, you can reclamp the blade or iron into the guide and use the 15-micron film to establish a fresh secondary bevel. (Keep honing until you feel a burr.) Then insert the spacer and create a microbevel.

Eventually, the secondary bevel will widen. This will slow down the honing process and wear out your honing film. For those reasons, I recommend reestablishing the primary bevel when it exceeds $\frac{1}{8}$ ". For options, turn the page.



Slide from side to side. Starting with the 15-micron film, give the chisel a few test passes to check the secondary bevel, and then continue sharpening (10-12 passes) until you detect a wire edge on the tool's back face. When you can feel this burr, it's time to move to the next step.

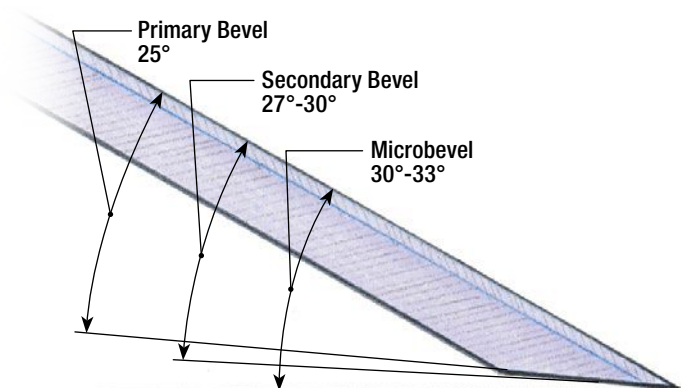


Give it a lift. Shift to the 3-micron film, set your spacer under the guide and create a microbevel. (A $\frac{1}{8}$ "-thick piece of aluminum angle increases the angle by about 3° .) Give the edge about 6-10 strokes on the remaining abrasives.



Wipe off the wire. To remove the burr, rest the back face of the tool flat against the finest grit, and slide it back and forth a few times until it breaks free. That's it.

A microbevel makes all the difference



3 ways to get back to the bevel

After repeated honings, or in the event of a nicked edge, you'll need a way to reestablish a primary bevel. Sandpaper gets the job done, but using paper-based abrasives to remove a lot of metal is time-consuming and will quickly eat up a stack of sandpaper. Here are a few options to fit your personal preference and wallet.

220-grit Waterstone: \$30.00



A 220-grit waterstone is the least expensive way to reestablish a bevel, but you'll also need something to maintain the soft stone. To flatten the stone, rub it against a coarse diamond stone or 150-grit drywall sanding screen.

✓ PROS

- Coarse stone cuts quickly and leaves a uniform scratch pattern.
- A solid entry-level waterstone.

✗ CONS

- Soft stone requires periodic flattening.

Diamond Stone: \$60.00



Diamond plates like this cost more than entry-level waterstones, but they are a smart investment because they stay flat and last for years. Diamond abrasives work more effectively on super-hard steels than softer stones.

✓ PROS

- Steel plate remains flat.
- Coarse grit cuts quickly.
- Can be used to flatten waterstones.

✗ CONS

- Expensive.

Grinder and Tool Rest: \$180.00



A low-speed bench grinder outfitted with aluminum oxide wheels, is the priciest, but the most versatile solution. As your woodworking interests expand, you'll use this machine for all sorts of grinding and polishing chores. This powered wheel is the quickest way to prep, restore, or reshape plane irons, chisels, and gouges. Turning tools may not need additional honing. To make the most of your grinder, buy or build a tool rest.

✓ PROS

- Fast.
- Excellent all-purpose sharpening machine (chisels, planes, lathe tools, and more.)

✗ CONS

- Risk of overheating the tools and destroying the temper.
- Grinding station takes up space.

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Straight Talk on Straight Bits

Here's how to make the best choice for righteous routing

By Joe Hurst-Wajszczuk

Straight router bits aren't as simple as you might think. Sure, some straight bits are more versatile than others. But the sampling shown here identifies important differences—in appearance, function, and cut quality. Whether you order your bits online or head to your favorite woodworking store to stock up, this information will help you get the best performance and value for your money.

Take a broad bite

With a downward-shearing cut and a wide cutting radius, a **planer bit** (aka “dado” bit) excels at routing shallow dadoes and leveling large surfaces like live-edged slabs. For woodworkers with large routers, planer bits are available up to 2" dia. Make sure to dial down your router's speed to suit these big bits.

CMT, 1½ D × ⅝" CL, \$31.99

Crisp at the top

Look for a **downcut, spiral-fluted straight bit** when your plunge-cut mortise or cavity needs to be free of surface tearout. This downward cutting action is great for inlay and banding work. But make sure to take shallow passes, and clean the cavity between passes to remove packed-in sawdust. Narrow-diameter bits are brittle, so use a larger bit whenever possible.

Whiteside, ⅜ D × ½" CL, \$18.44

Whiteside, ¼ D × 1" CL, \$18.44

Masterful mortising

Just the ticket for plunge-routing mortises: **upcut, spiral-fluted bits** in different diameters. Designed to pull chips up and out of the cut, the cutting action creates a fuzzy top edge that can be easily cleaned up with a light sanding. Choose solid carbide over high-speed steel for greater durability, especially when routing hard woods.

Whiteside, ½ D × 1½" CL, \$50.12



Best of both worlds

A **compression bit** has spiral flutes designed for pushing chips down and pulling them up. With upcutting action on the bottom of the bit, and downcutting action on the top, the bit is ideal for edge routing double-sided sheet goods with delicate veneers. Compression bits are most often paired with CNC machines, although they can be used with handheld and table-mounted routers.

Freud, ½ D × 1½" CL, \$84.47



Workshop workhorse

Available in a wide variety of cutting diameters, a ½"-dia. shank, **two-flute, carbide-tipped straight bit** is the closest thing to a "standard" straight bit. Better versions feature a chip-limiting design to promote safer, smoother routing. The non-stick coating reduces friction, resin adhesion, and rust. Don't put a dull bit out to pasture; in most cases, it can be resharpened for a few bucks. **Freud, ½" D × 1½", \$21.97**

Sheet good solution

These straight bits are sized to match the actual thickness of the most commonly used nominal plywood sizes, ensuring snug-fitting grooves and dados. The 3-bit set shown here is a smart choice for cabinetmaking. Keep the trio together so that you don't accidentally confuse them with standard-sized straight bits.

Whiteside, 3-piece Undersized Plywood Dado Set, \$49.16

½" or ¼" shanks?

A larger ½"-dia. shank dampens vibration and helps make smoother cuts, but bigger bits won't fit routers with ¼"-collets. For compact routers and laminate trimmers, it's helpful to have ¼"-shank bits in your arsenal.

Whiteside, ½" D × 1" CL, \$16.07

Get more bang from your bits

With a few jigs and inexpensive accessories, straight bits can become the most versatile cutters in your collection. Save money, and maybe an extra trip to the store, by trying these tips.

- **Rabbeting.** Instead of using a more expensive, bearing-guided rabbeting bit, get the job done just by using a straight bit in your table-mounted router, or attaching an edge guide to your handheld router.
- **Cut circles and arcs.** Attach a trammel to your router's base, drive a pivot pin into the workpiece at the desired radius, and you're ready to rout. Unlike bandsawn or jigsaw-cut curves, a trammel-guided router creates clean, bump-free curves, saving time and stock.
- **Follow a pattern.** Attach a bushing to your baseplate, and your bit will follow patterns like a bloodhound. Unlike pricier bearing-guided bits, a bushing always remains in contact with the pattern, regardless of the cut depth. Also, bushings can't seize or damage the pattern.
- **Joint edges.** For perfect, glue-joint ready edges, clamp a reliable straightedge to your work (make a light cut for best results) and rout the edge.
- **Drill holes.** Equipping a plunge router with an upcut spiral bit transforms the pair into a portable drill press. With the right guide and bits you can drill dead-on shelf pin holes in cabinets, and even dog holes in a workbench.

Build a Terrific TALL BUREAU

This svelte drawer case is a great exercise in classic dresser construction

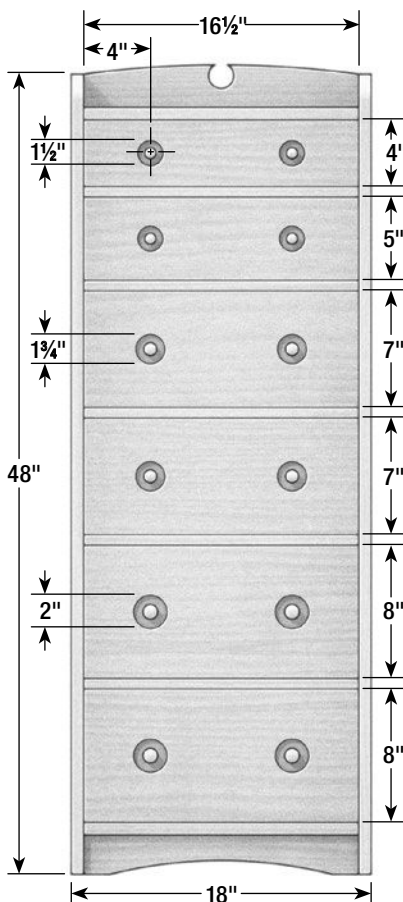
By Mario Rodriguez



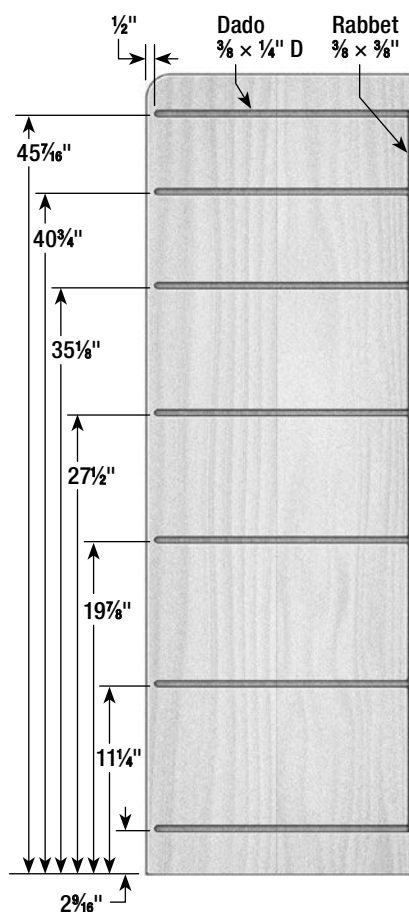
Here is a compact dresser that provides plenty of storage while not taking up a lot of space. Its small footprint and six graduated drawers make it perfect for a guest room or college dorm. It's a fun build and provides a woodworker with an excellent opportunity to make and fit inset drawers. In addition, the piece is a great exercise in classic dresser construction, with its drawer divider web frames fit into dados in the case sides, and the drawers fit directly into their openings without commercial slides.

All of the exposed parts are solid cherry, with cherry-edged poplar used for the case bottom. I used poplar for the interior web frame members and plywood for the case back. The drawers are separated and supported by simple web frames that are joined with stub tenons in classic fashion. As for drawer construction, the cherry drawer fronts connect to the pine sides with machine-cut, half-blind dovetails. Consider adjusting the height of your drawers to suit your dovetail jig, as I explain in "Mastering Machine-Made Dovetails," on p. 44. This might also mean adjusting the dados for web frames that establish drawer openings.

Front Elevation



Side Dado and Rabbet Layout



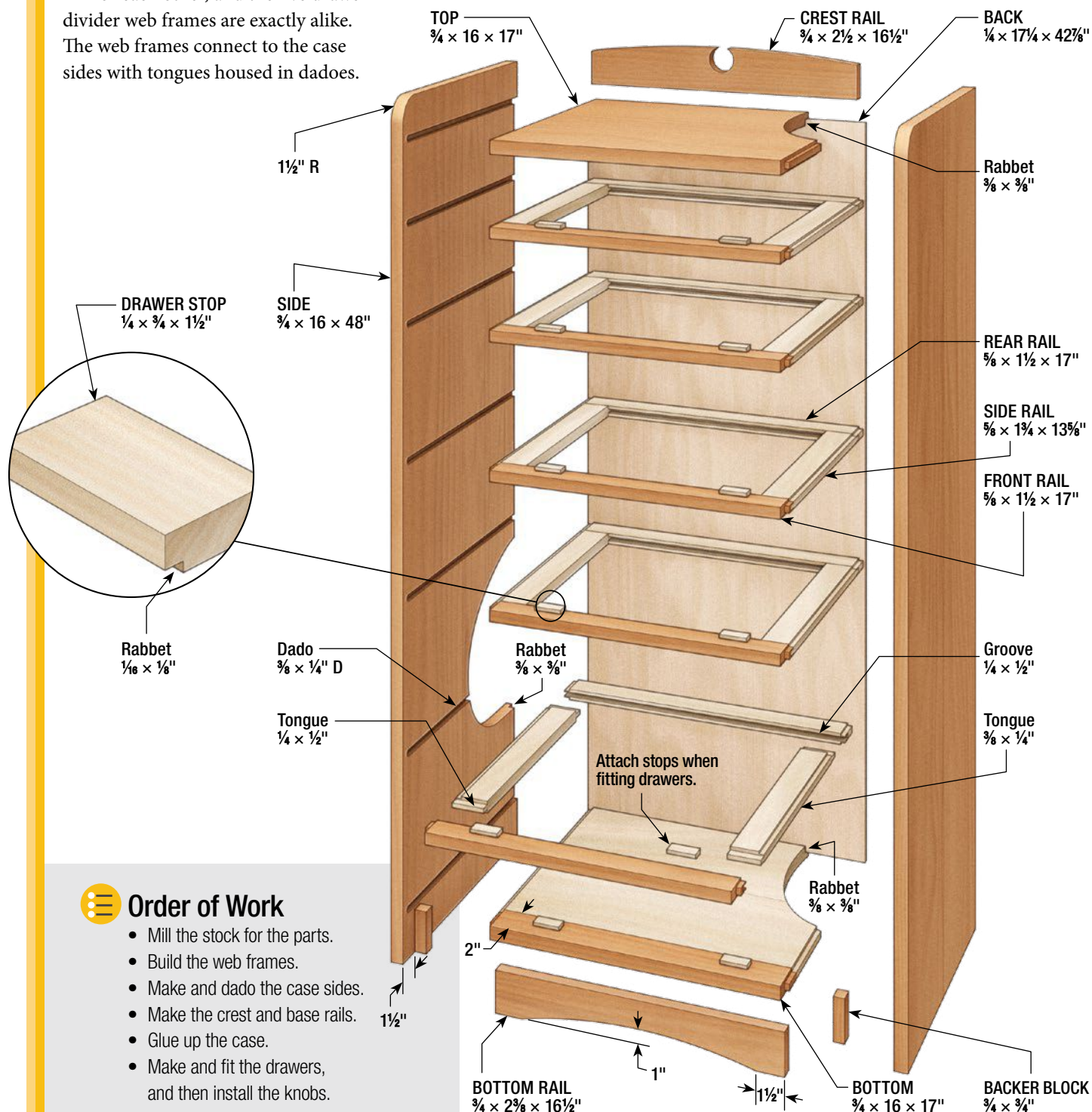
onlineEXTRAS

- Using cut lists
- Dressing stock
- Fitting inset drawers

Symmetrical sides, joined by web frames

Despite appearances, this piece is actually efficient to make because of its many identical parts. The two sides mirror each other, and the five drawer-divider web frames are exactly alike. The web frames connect to the case sides with tongues housed in dados.

Crest Rail: Half-Sized Half Pattern



Order of Work

- Mill the stock for the parts.
- Build the web frames.
- Make and dado the case sides.
- Make the crest and base rails.
- Glue up the case.
- Make and fit the drawers, and then install the knobs.

Flat parts for a good start

Since there is a significant amount of solid wood in this piece, mill all the material to rough size, and then sticker it for about a week to let any latent warp express itself. (See “Dressing Stock” at Online Extras.) Then mill the web frame rails to final size, and edge-glue boards to make slightly oversized panels for the case sides, top, and bottom. Don’t forget to edge the poplar case bottom with cherry at the front.



Stacked and stickered. Stack the rough-milled parts with wooden stickers between them to allow air circulation. Let the pieces sit for about a week to “relax” before milling to final sizes.

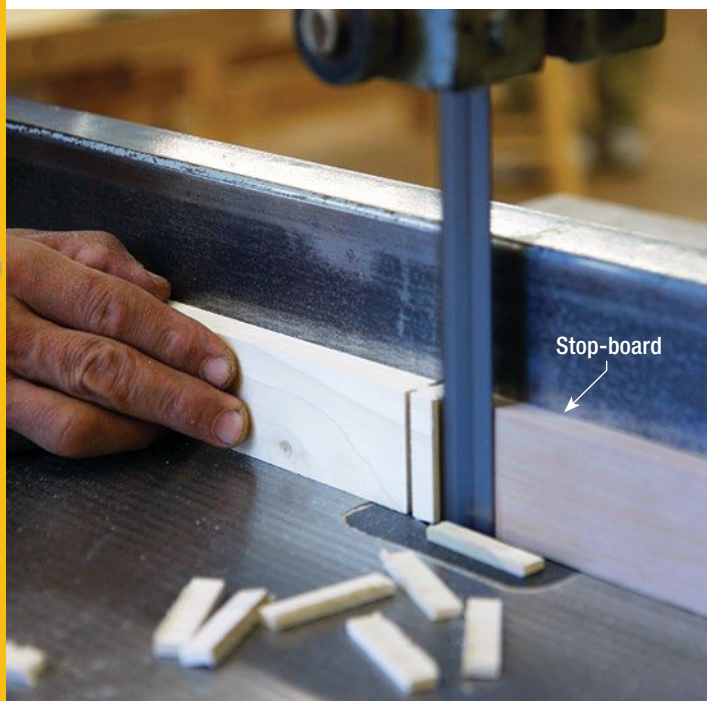
Web frames constitute the core

The case is essentially built from the center outward, beginning with the web frames. Start by milling the rails to the dimensions shown in the drawing on page 37. Then plow a groove down the center of each front and rear rail. Next, cut the side rail tenons as shown, and glue up the frames. Finally, saw the assembled frames to precise size on the table saw to ensure they’re all exactly the same size. At the same time, saw the case top and bottom to final size. Finally, sand all of the web frames flat to ensure good drawer operation.



Shoulders first.

Using the miter gauge to feed the work, and the rip fence as a stop, saw the tenon shoulders on both ends of the side rails.



Cheeks next. I use the bandsaw to cut the cheeks. A thin stop-board clamped to the rip fence restricts the travel of the work to cut just the cheek.



Web frame glue-up. For proper drawer operation, make sure that the glued-up frames are square and flat under clamp pressure.

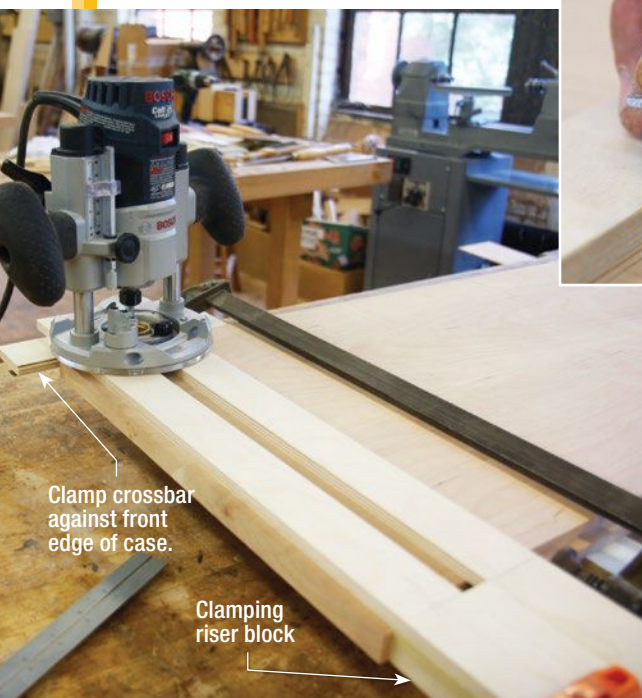
Horizontals ready to go.

When finished, the web frames will all have a cherry front rail, the case bottom will be edged with cherry at the front, and the case top will be solid cherry.



Make and dado the case sides

Cut the side panels to final size, and then lay out the dados to accept the web frames. For the drawers to fit and work properly, the web frame dados must be perfectly square to the cabinet front, with each pair of dados at exactly the same opposing locations on the case sides. To ensure this, I made a jig to guide a router that is fitted with a template guide and a $\frac{3}{8}$ " straight bit. Using a 1"-diameter template guide allows enough extra space around the bit to easily eject the dust and debris that might otherwise accumulate and impede smooth router operation. After laying out the dados, you can cut the rabbet for the case back, and then rout the dados.



Clamp crossbar against front edge of case.

Clamping riser block



Dado guide setup. The slot in this router jig is exactly wide enough to accommodate a 1"-O.D. template guide. A short crossbar at one end allows clamping the jig to the front edge of the case side. Also make sure to secure the overhanging opposite end, using a clamping riser block as shown. I began the dado work at the top of the case sides.



Precise placement with a spacer. To ensure that matching dados align perfectly on both sides of the case, use a carefully squared plywood panel as a spacer when setting up on both the right and left case sides. Use a different-size spacer to align each pair of dados.

Cut the tongues and you're ready to dry-fit

At this point, the major case parts are built, and you're almost ready to dry-assemble them. But first, cut the tongues on the ends of the web frames and on the case top and bottom panels. I did this on the table saw using a dado head, cutting the tongues a bit fat, and then adjusting their thickness with a shoulder plane to create a snug fit in the case dados. Also, cut back the leading end of each tongue as shown. Then dry-assemble the case top and bottom and web frames to make sure everything fits well.





Sacrificial rip fence

Saw the tongues. Use the table saw to cut the tongues on the side edges of the web frames and the case top and bottom. Use the rip fence to register the length of the tongue, and set the cutter height to establish the thickness.



Cut-back tongues. Cut the leading end of each tongue back to allow the front edge of each web frame and panel to sit flush with the front edge of each case side.



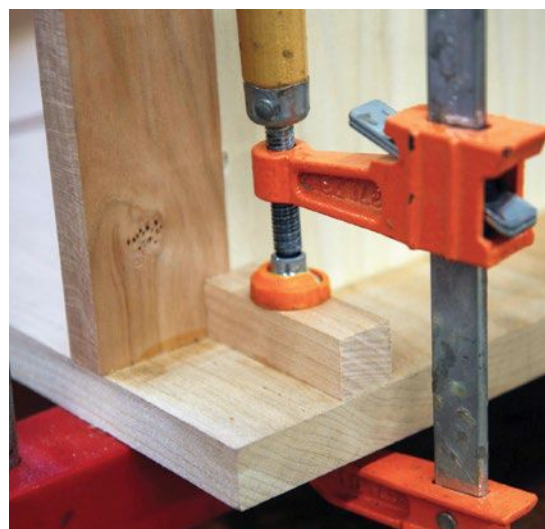
Dry-assemble the case. After dry-clamping the case sides to the top and bottom panels, slip the web frames into their dados to make sure everything pulls up tight and that the front edges of all the parts align.

Make and fit the crest and base rails, and glue up the case

With the case still dry-clamped together, make and fit the crest and base rails, leaving them a bit oversized in length at first. Shape the crest rail as shown in the detail on page 37. The base rail has a simple arch that you can lay out with a spring stick and then cut on the bandsaw. After sawing both rails to shape, crosscut them for a snug fit between the sides. Then attach the backer strips for the base rail as shown, and glue up the case.



Laying out the crest rail. After drawing out the crest rail shape, lay out a 1½"-dia. hole at the center, tangent to the top of the rail curve. I interrupted the hole by cutting through it on the bandsaw while sawing the gentle curves. Then I sanded both cuts smooth on an edge sander.



Glue on the base backers. While the case is still dry-clamped, glue on a couple of ¾"-square backer strips to fasten the base rail.



Glue up the case. When everything fits well, you're ready to glue up the case. But first, rehearse your assembly and clamping procedures, gathering up all clamping cauls, and positioning supports to allow clamp access underneath the case. First glue the case sides to the top and bottom panels and web frames. Then glue the crest piece to the back edge of the top and the base piece to the backers.

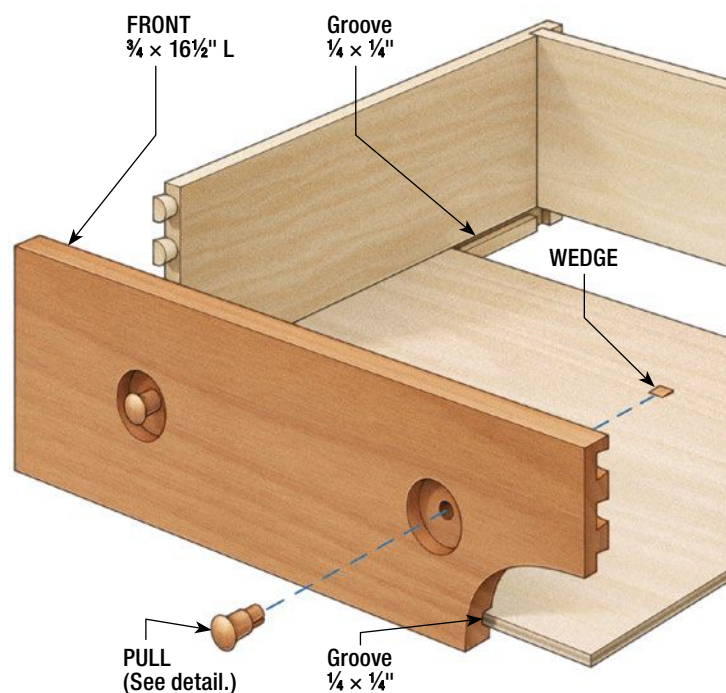
Distinctive drawers: dovetail construction & integral pulls

Mark the width of each pair of drawer sides directly from their opening, and cut the fronts for a tight fit also. To make sure the parts were the same length, I used a table saw sled with a stopblock. After assembling and fitting the drawers, drill the $\frac{3}{8}$ "-deep recesses to the diameters shown in the drawing on page 36. For clean holes, I used Bormax bits on the drill press. For the center through hole, I used a $\frac{3}{8}$ " brad-point bit. Turn the pulls to the profiles shown. (Like the round recesses, the pulls are also graduated in diameter.) Make the $\frac{3}{8}$ "-dia. tenons long enough to extend slightly past the inside drawer face.

With the construction done, all that's left is to fit the drawers, install the pulls, and apply a finish. First, plane the sides of the drawer boxes until they slide into place smoothly. If a drawer front sits slightly cocked in the case, plane it until it's flush with the case front. Once the drawer fronts line up, glue rabbeted drawer stops onto the front drawer web rail, just behind the drawer fronts. (See page 18.) Using a handsaw, cut a kerf into the tenon on each pull, and glue it into its hole, inserting a wedge in the kerf from the inside of the drawer. Make sure the knob shoulder is well seated against the drawer face. After allowing the glue to set, cut the protruding tenon flush, and sand the inside drawer face.

Mass-produced drawers

All 6 drawers are identical in construction and size except for height. The cherry drawer fronts join to the pine sides with machine-cut, half-blind dovetails (see page 44). The backs are dadoed into the sides. The drawer bottoms are $\frac{1}{4}$ " plywood.



Consistent crosscuts. I use a crosscut sled set up with a stopblock to crosscut all drawer parts to exact lengths.

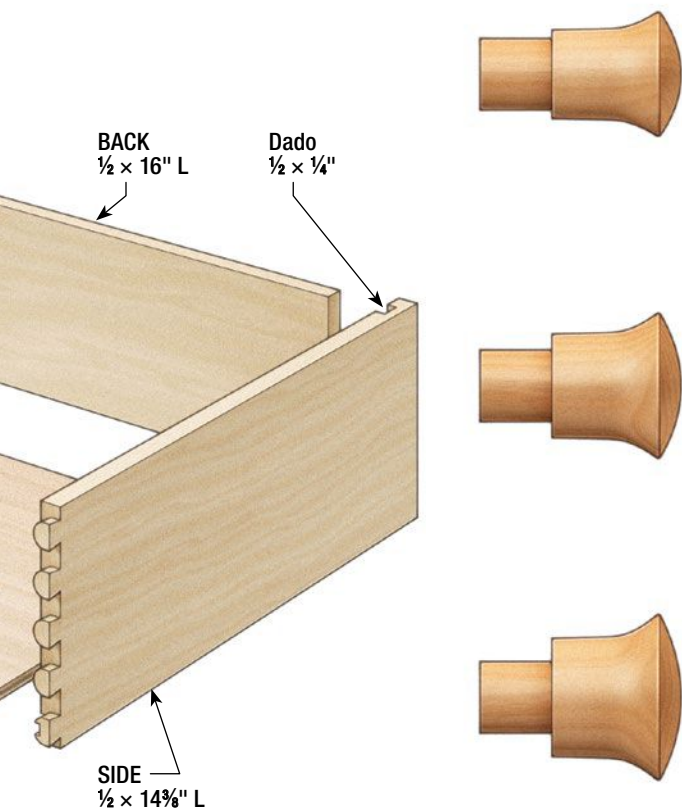


Dadoes for drawer backs. Use a dado head at the table saw to cut the dadoes in the drawer sides to accept the drawer backs.



Snug and square. With well-fit joints, there's no need to use clamps to glue up the drawer boxes. However, do make sure that they are dead-square while sitting on a flat surface to dry.

Full-Sized Pull Profiles



Pretty pulls. I used a collet chuck on the lathe to support each pull blank for shaping, which provides access for sanding the top afterward.



Plane-perfect fit. For a snug fit in its opening, plane each drawer's sides just enough for the drawer to slide easily without wobbling. To avoid tearout, plane inward from the front and rear of the drawer. You'll also need to remove a bit from the top and bottom edges of the drawers.

Final fit and finish yields a beautiful bureau

After everything is assembled, finish-sand the entire dresser. I began with 100 grit, moving through 220 grit, while completely washing down the surfaces with denatured alcohol between grits. This ensures removal of any residual particles that could cause fine swirling scratches. It also highlights any flaws I might have missed in the early stages that will prove glaring later. Finally, apply your favorite finish. I wiped on several coats of varnish, then applied a coat of wax.



Waxing elegant. Topping several coats of varnish with a final coat of wax imparts a lovely sheen to the bureau. Cherry will look even better with each passing year.

Mastering MACHINE-MADE DOVETAILS

Put these tips to work, and you'll have no trouble building strong, beautiful drawers with speed, accuracy, and efficiency.

By Mario Rodriguez

I pride myself on my hand-cut dovetails. Clean, tight, and elegantly spaced, they provide a handsome touch for my most demanding work. However, when I build kitchen cabinets, vanities, or storage units, I turn to my compact, portable, and easy-to-use Porter-Cable dovetail jig. Although this jig can execute finger joints, sliding dovetails, and even through-dovetails (when equipped with suitable templates), I use it exclusively to join drawer parts with half-blind dovetails. (See page 36.) Using the jig is faster and more convenient than hand-cutting dovetails and, for all practical purposes, the joints are just as strong. The disadvantage with this jig is that neither

the angle nor the spacing of the tails can be changed, so the resulting joint looks somewhat monotonous. All the same, this limitation is easy to accept, given the practical advantages.

Here, I'll share some tips on how to use the jig to build a standard drawer with a $\frac{3}{4}$ "-thick front, $\frac{1}{2}$ "-thick sides, a $\frac{1}{2}$ "-thick back, and a $\frac{1}{4}$ "-thick bottom. Note that I usually dovetail the front to the sides, but use a simple dado joint to connect the sides to the back. Initially cutting the drawer sides a bit long means that if I'm unhappy with the dovetail fit, I can take another shot at the joint before cutting the drawer sides to final length.



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For further information on using a half-blind dovetail jig, see "Router Dovetailed Drawers Done Right."

Before making sawdust, set yourself up for success

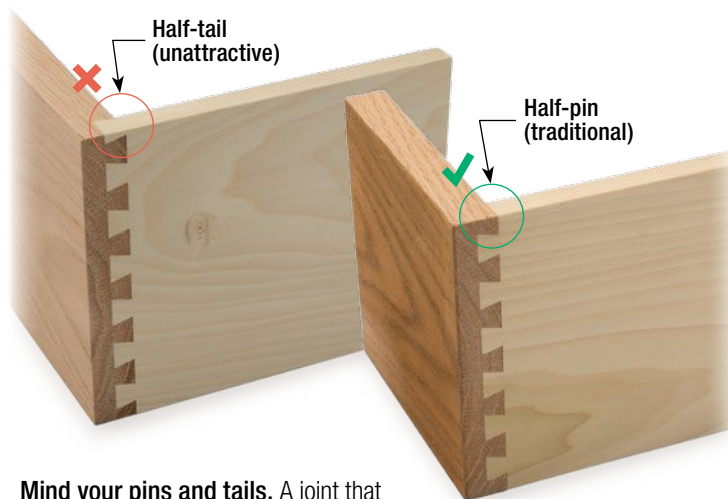
Problems with machine-made dovetails can often be traced back to poor prep work. If you pay attention to the details described here, you're much more likely to get your drawers right the first time. As for material, I typically use the same species of wood for drawer fronts that predominates in the host project. I usually make drawer sides from clear pine or poplar. For the bottom, hardwood plywood usually serves just fine.

Prep tips

- Size drawers for attractive tail layout (see below).
- Make extra parts for trial setups. Also, let sides run an inch or so long, which allows a retry before cutting sides to final length.
- Plane stock to uniform thickness.
- Carefully square the parts.
- Mark the inside faces of parts for orientation.
- Mount the jig on a board for clamping or screwing to your workbench.
- Use a sharp router bit.

Size drawers for attractive joints

A properly made dovetail joint should terminate at each end with a half-pin, not a half-tail. With a fixed-spacing dovetail jig like mine, this necessitates designing your drawer heights to suit the jig template. It's a great help to keep a full-length sample corner on hand for reference.



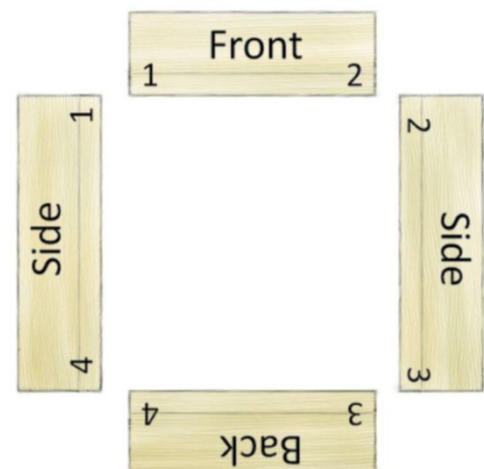
Mind your pins and tails. A joint that terminates with a half-tail (particularly at the top of the drawer) looks odd. Whenever possible, size your drawers to start and end with a half-pin. If that's impossible, locate the half-tails at the bottom.



Drawer height gauge. A full-width sample board made from your jig provides a handy reference for determining drawer heights with joints that begin and end with a half-pin.

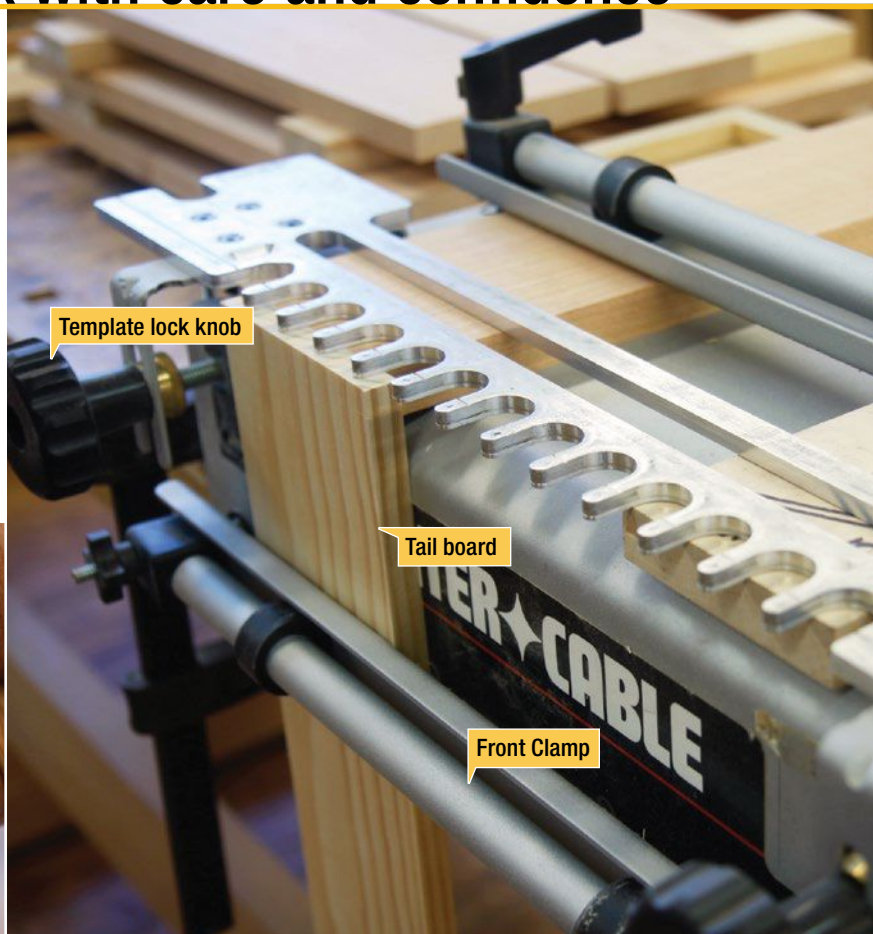
Drawer Layout

Mark the inside faces of parts to indicate matching corners and bottom grooves.



Ready, set, rout: work with care and confidence

This ingeniously designed jig cuts the mating pin board and tail board at the same time, using an aluminum template to guide a bushing mounted on your router subbase. Porter-Cable provides everything you need, including the bushing, the template, and a ½"-dia. 7° dovetail bit. The tool manual explains setup and use of the jig. Read it carefully and incorporate the tips here for great results. Don't let the operation rattle you; just firmly and carefully guide the router along the template fingers without applying undue force. Make sure to cut trial joints to fine-tune the jig setup before cutting into your project stock.

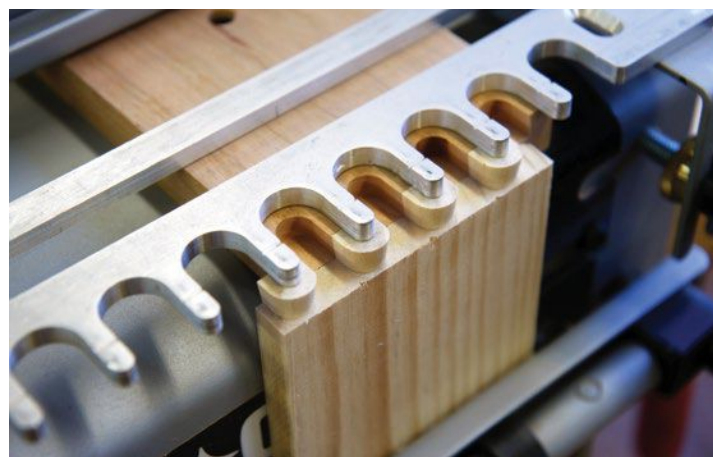


Get a grip. For accurate cuts, it's important that the workpieces don't slip during the routing operation, so make sure to adjust the clamps for maximum pressure on your stock.

Jig setup. To prepare the jig for use, abut the inverted pin board against the tail board underneath one end of the template, with a support board under the other end to keep the template level. The top clamp holds down the pin board and support board, while the front clamp secures the tail board firmly in place against the jig. For symmetrical drawer joinery, half of your drawer joints will be made on the left-hand side of the jig, and half on the right.



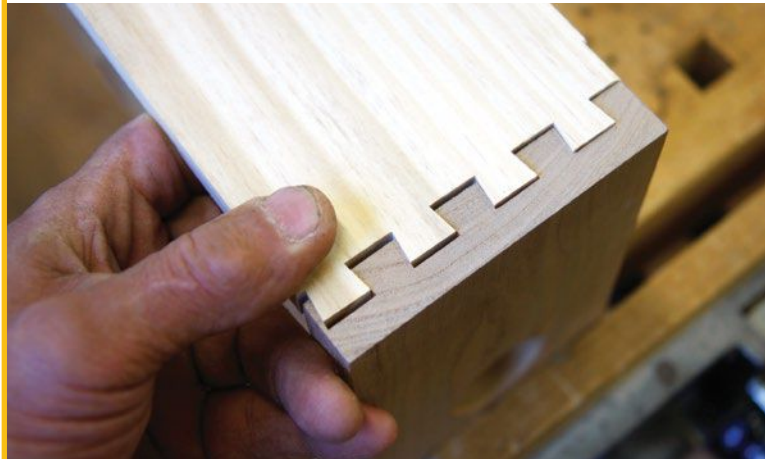
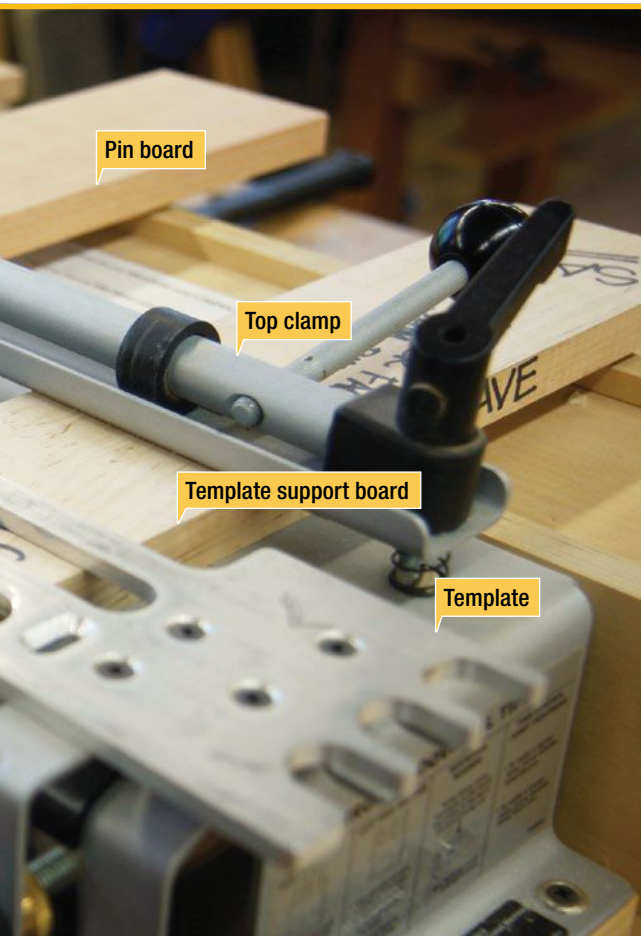
Safe engagement. To prevent template damage, make sure to engage the router bushing fully in its starting template slot before hitting the switch. After completing the cut, let the bit stop completely before retracting it from the template.



Trial cut. Having cut trial boards with your preliminary jig set-up, it's time to remove the pieces and connect them to check the joint fit.

A fine fit is worth the fuss

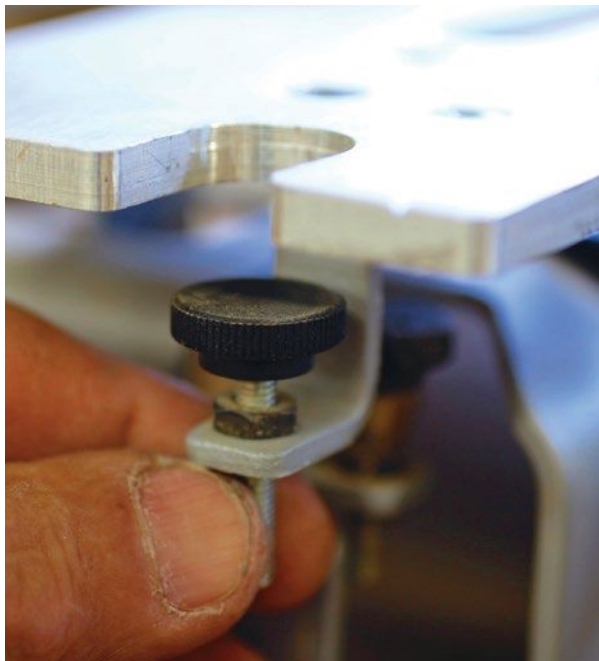
Don't be surprised or frustrated if your first few cuts don't make the grade. Take your time, and get it right. If the end of the drawer front is offset from the drawer side, adjust the template fore or aft until the parts line up. If the joint is too loose or too tight, adjust the bit projection.



Too loose. To fix a sloppy joint fit like this, lower the bit, and then take another trial cut. Remember that tiny adjustments make a big difference.



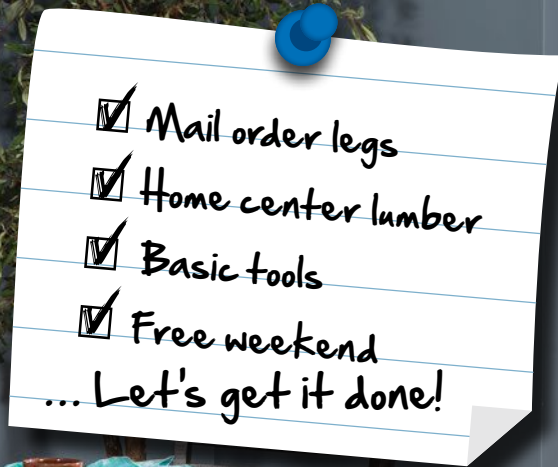
Too tight. If fitting the joint requires forcing it and breaking the tails, raise the bit to loosen the joint the appropriate amount.



Bit projection gauge. A knurled knob at the end of the template sits below a notch that's designed to accept the bushing. The knob serves as an adjustable gauge for increasing or decreasing the bit projection to correct the fit of the joint.



Just right. A well-fit dovetail joint exhibits no gaps, and requires only light tapping to drive it together. The parts also align nicely at the end of the drawer front.



Dynamite DINING TABLE Done Easy

By Bill Sands

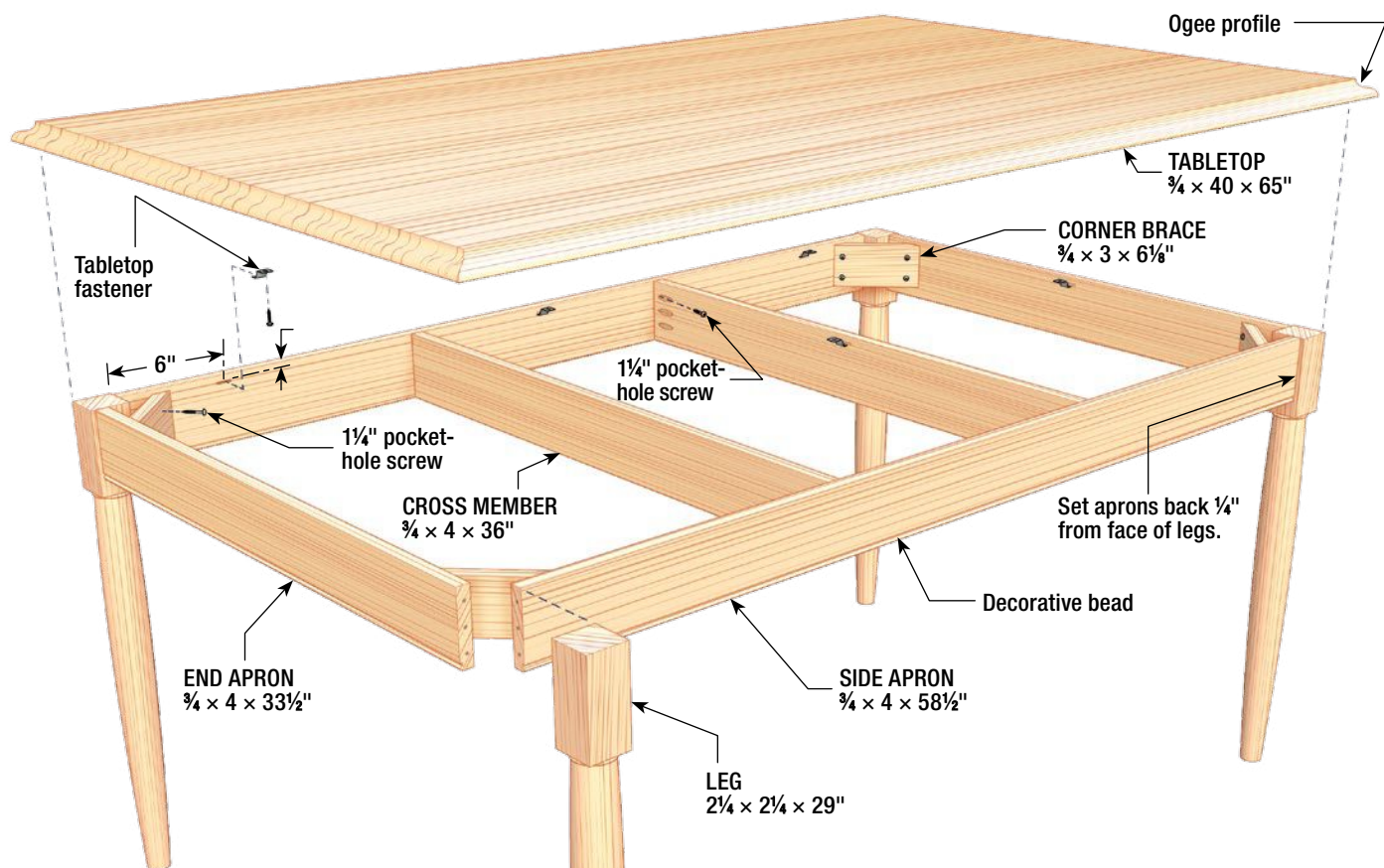
I've built many projects using traditional joinery, but sometimes it makes sense to forego mortise-and-tenon techniques in favor of more expedient methods that get you to your destination faster, and with fewer tools. With this table, the destination was clear: a nice-looking dining room centerpiece that could be made in a weekend by a woodworker who doesn't have a fully equipped workshop. If you've got the basic tools featured here, you can build a beautiful table that would cost hundreds of dollars in a furniture store. Not bad for a weekend of work.

To get started, I chose dimensioned lumber from the local home center and bought premade legs from an online retailer. You can choose your legs and have them shipped directly to you, saving time and energy on your project. You'll find legs that are square, tapered, or turned in modern or traditional styles in a wide mix of wood species. I found red oak dining legs that perfectly fit the simple Shaker table design I had in mind. With everything in hand, I got to work.

Simple joinery, strong construction, ready-made legs, and routed details

Pocket-hole joinery keeps construction simple. Braces reinforce the corners, and a pair of cross members stiffens the table's base to prevent the top from warping over time. Joining five or six narrower boards with

pocket holes will speed up the top's assembly and get you closer to a flat top with less fuss. Steel tabletop fasteners secure the top to the aprons, keeping the connection solid while allowing for seasonal movement.



Order of Work

- Buy your legs.
- Select the boards to make the aprons, top, and other parts.
- Get a straight, square edge on each board.
- Cut the aprons to finished size.
- Make the top, and then cut it to finished size.
- Rout the edge profile on the top, then sand and finish.
- Rout slots for the tabletop fasteners in the aprons and cross members, then rout the bead profile on the aprons.
- Sand the legs and aprons, assemble the base, then finish.
- Attach the base to the top.



A small toolbox for a big project. You can build this table with only four power tools: circular saw, router, palm sander, and a drill. You'll also need a Kreg jig, some clamps, and a few common router bits. And last, but not least, a free weekend.



The above photo and the legs used in this project are courtesy TableLegs.com. They helped us select legs that would elevate our project.

Buy legs online for a fast and fun way to launch your project

Having premade legs jumpstarts your table project. And shopping for legs online can be fun, because there are so many sizes, styles, and wood species available. Take your time and have fun evaluating your options. Online suppliers offer standard lengths that correspond with common heights, but it's always good to double-check to make sure that you'll end up with the right legs for your project. Some sources sell apron and leg sets for easy assembly. They can even cut the mortises, making ready-to-assemble joints. Just another way to get your table done quickly.

Good results depend on straight, square edges

It's smart to make a straightedge guide that can be used with your circular saw and router. If you don't have a jointer or table saw to cut straight, square edges, a straightedge guide will get the job done. Even in a fully equipped shop, long boards and full-size sheets of plywood can be too unwieldy to muscle through a machine. The guide I'm using in the photo below was made from 1/4"-thick hardboard and a 2x4 I straightened on my jointer then ripped to size on the table saw. Alternatively, you can have

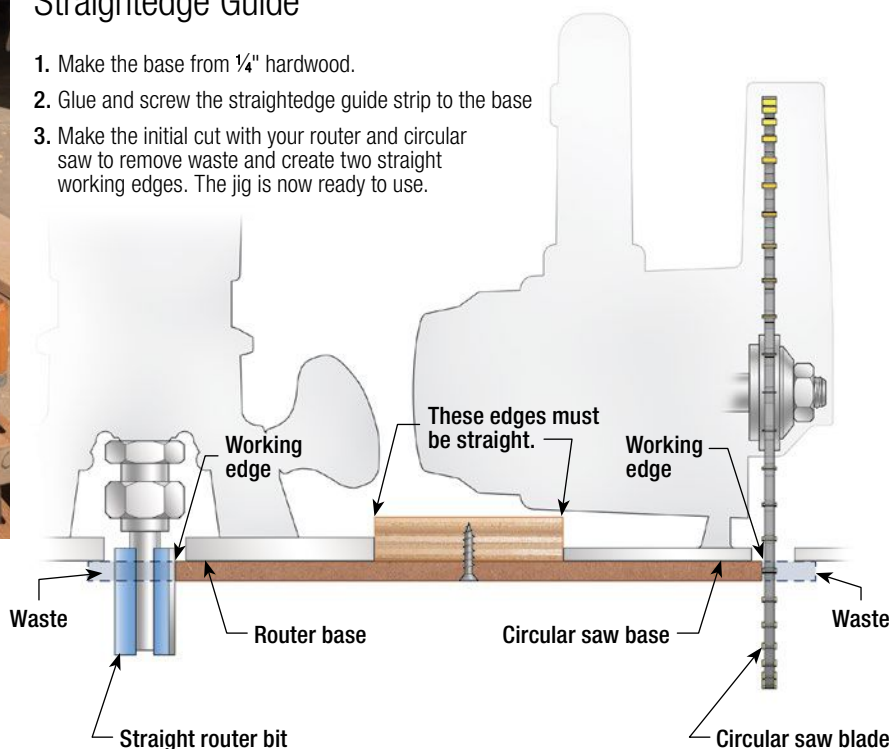
the home center or a friend (with a table saw) rip a narrow guide strip from a larger piece of hardwood plywood. As shown in the drawing, secure this guide strip to the jig's hardboard base so that by guiding the edge of your circular saw and router against opposite edges, you'll cut a straight line along the hardboard that exactly defines the future cuts you'll make. Once you make one of these guides, you'll want to make others, like a short version with a right-angled cleat underneath for crosscutting.



Joint without a jointer. The opposite edge of your jig is for jointing, and it works on the same principle as the circular saw side. Your router's base rides on the base and against the fence of the jig as the bit cuts your stock.

Straightedge Guide

1. Make the base from 1/4" hardwood.
2. Glue and screw the straightedge guide strip to the base
3. Make the initial cut with your router and circular saw to remove waste and create two straight working edges. The jig is now ready to use.



Flat top formula: join one board at a time, using pocket screws, joinery, and glue

Pocket-hole joinery allows you to glue and screw the top together one board at a time. In addition to pipe clamps to pull the joint together, you'll need a long-arm locking clamp or two to align the edges as you drive home the

screws. Once the screws are in, you can release the clamps and

move to the next board. When the glue dries, crosscut the top to length. Now you can add the decorative ogee profile. The ends are prone to break out, so rout them first. When you follow up on the edges, the ends will be cleaned up. Finally, give all surfaces a final sanding, and apply your finish. I used Behlen Rockhard Waterborne. Unlike oil-based, water-based finishes dry quickly enough for me to apply three coats in a weekend.



Take a test. It's important to properly set the depth-stop of your pocket-hole jig to avoid driving a screw through the adjoining board. Make a couple of test joints before drilling the real thing.



One board at a time. Drill the pocket holes 6" to 8" apart in the top pieces on one edge of each board, except one. Don't drill pocket holes through the outside edge of the last board in your glue-up. Once your holes are drilled, the glue-up is fast and easy. Start by attaching two boards together with glue and screws. Then attach those two boards to another, and so on until you reach your table's width. Use the pipe clamps, not the screws, to fix gaps, before driving the screws. Remove the clamp and repeat with the next board to complete the top.

Guide your saw. You already used the saw guide to rip your stock to width. Here, you'll use it to square the ends of your table, crosscutting it to length.



Pocket holes, slots, and beads for the aprons

Your legs and top are done; the aprons are the last major pieces of the project. First, rip your aprons to width and crosscut them to length. Now mark and drill your pocket holes in the ends of the aprons for attaching the legs. To attach the top to the base, I used z-clip tabletop fasteners. Cut slots to fit the z-clips about $\frac{3}{8}$ " down from the top edge of the aprons. Three slots across the length of the side aprons and one in the center of the end aprons are all you need. Next, rout the decorative bead along the outside bottom edge of the aprons. Cut your cross members to size after the legs and aprons are together. Finally, drill pocket holes in their ends, and then cut one slot in their centers for the top fasteners.

The routing procedures are sometimes done on a router table. But if you don't have one, see the photos at right for a safe setup to rout the slots and beads with a handheld router.



Drill the pocket holes. Each end of all four aprons and both cross members get a trio of pocket holes. The jig system allows you to set the depth of hole and spacing between the holes. It will also hold your workpiece steady as you drill.



Rout the slots. Group your apron boards together as shown. Use the top edges of the grouped boards as a solid platform for the base of your router. This keeps the router from tipping into the workpiece mid cut. Once the cutters hit wood, the router will want to travel down the face of the workpiece. Turn on the router and maintain control as you steadily move in for the cut.

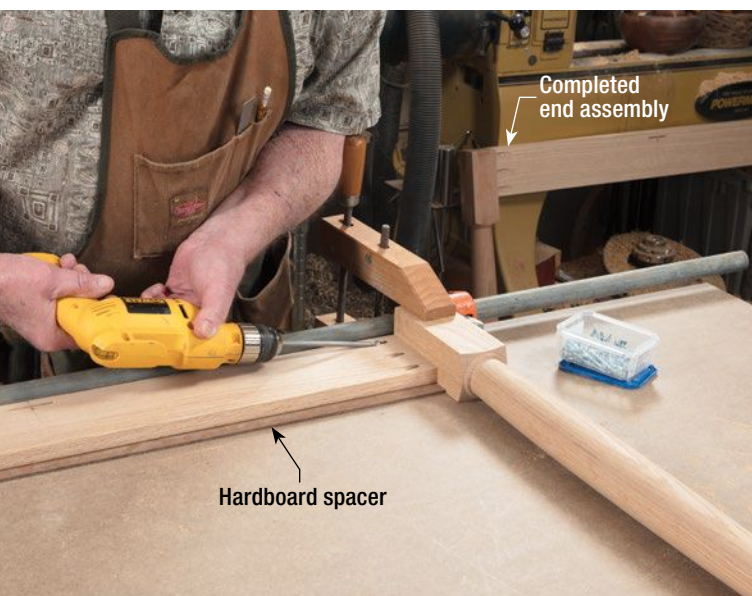


Bead the aprons. Add a classic edge treatment to your aprons with a beading bit. Arrange the aprons like you did when you cut the slots, this time routing the outside bottom edge.

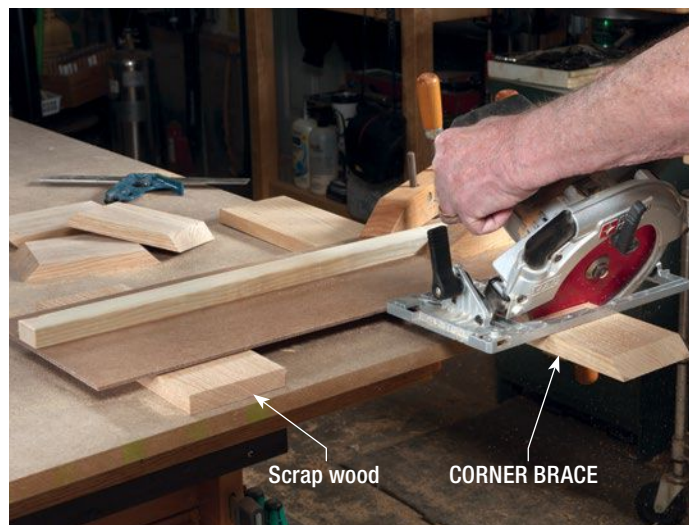
The project comes together: assemble the base, and then attach the top

It may not seem that way, but we're in the home stretch. All the project parts are cut to final size, and it won't take long to put everything together. You can start by sanding the legs and aprons through 220-grit. Assemble the legs and end aprons, and then attach the sides. Watch for glue squeeze-out here, it will be more difficult to remove in the

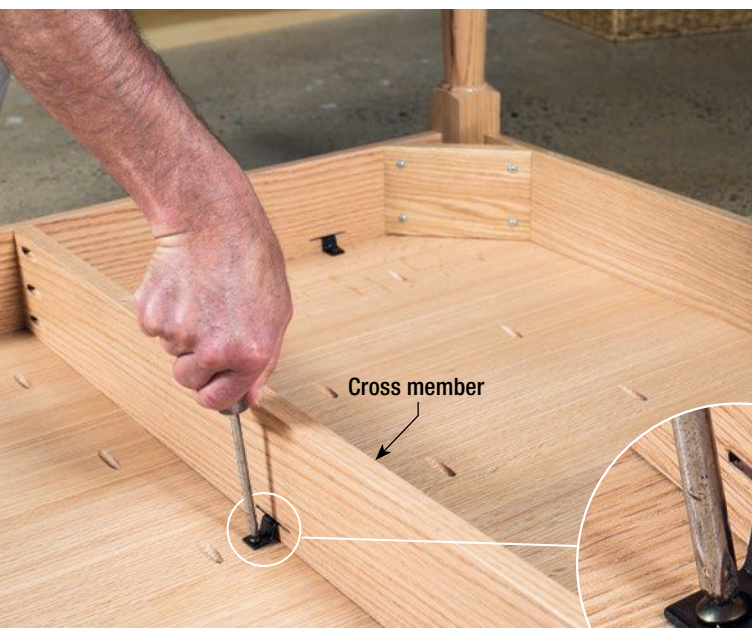
tight corners. Place your cross member pieces from side apron to side apron, and mark your cuts. Measure and cut the corner braces the same way. Drive pocket-hole screws straight through the corner braces into the aprons. Apply the finish, and screw the base to the top with tabletop fasteners. Flip your table on its legs, and show it off.



Assemble one end first. Bring together the base by first attaching two legs to an end apron, and then repeat for the opposite end. Now, join both ends with the side aprons. Add visual interest to your table by setting the aprons back on the leg. To do this, set a scrap piece of $\frac{1}{4}$ " hardboard under the apron before attaching the legs.



Cut the corner brackets. Tilt the blade of your circular saw to 45°, and make a pair of angled cuts to create each bracket. Here I'm guiding the base of my saw against the edge of a short straightedge guide equipped with a cleat on its underside for aligning square cuts. Your brackets don't have to be exactly the same size. Install them with glue and screws.



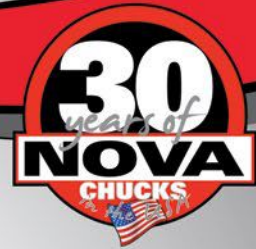
Attach the top. It's time to crown your project. With the table upside down, center the base on the top. Feed one end of the steel fasteners into the slots and mark your screw hole location. Remove the fasteners and drill the holes. Use blue painter's tape on your drill bit so you don't drill too deep or, worse, through the top. Now, reinsert the fastener, and drive the screws. Use a screwdriver as shown to prevent over tightening or damaging the table.



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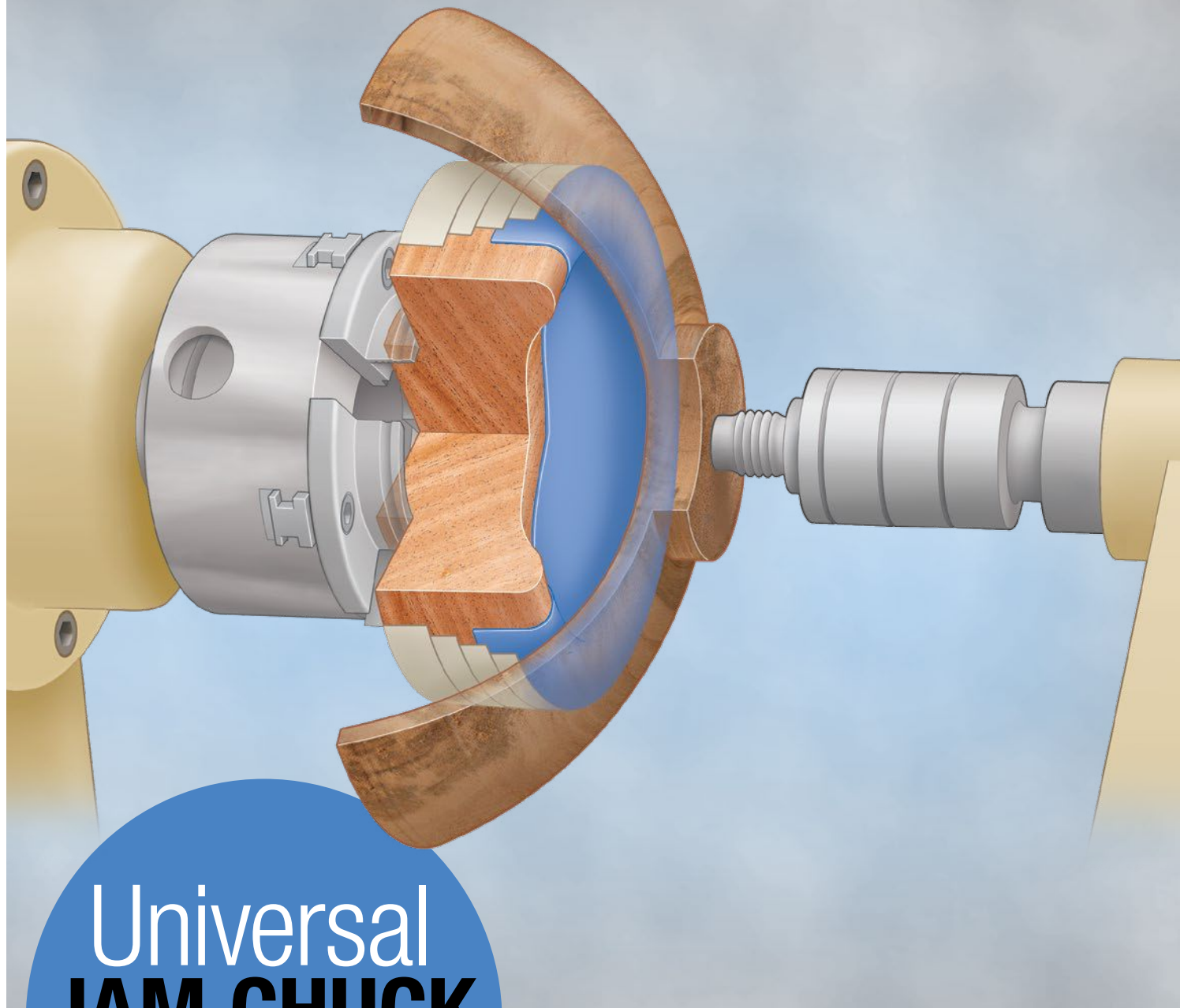
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Universal JAM CHUCK

This shop-made lathe accessory makes fast work of finishing up bowls, plates, and vessels.

By Michael Kehs

As any turner of bowls, plates, and vessels knows, you need a non-marring way to reverse-chuck your nearly completed work to remove any tenon, waste block, or excess material

that was used to mount the piece by its bottom. Commercially available jumbo jaws and vacuum chucks will often do the job, but tend to be expensive, and may not fit your existing 4-jaw chuck. This is where shop-made jam chucks come to the rescue. Often made as a one-off single-purpose unit, a jam chuck mounts in the lathe headstock and provides a friction-fit cavity or surface that the turning can “jam” against. The tailstock is usually brought into play at the same time to press the work against the jam chuck.

Of all the jam chucks I’ve used, there’s one type I reach for the most. Resembling a sort of doughnut-shaped bowl, this multi-use marvel is the closest thing I’ve ever seen to a “universal” jam chuck. Faced with neoprene rubber, its rounded rim will tuck inside larger bowls to grip them. The chuck’s concave center can be used to nestle the rounded top of a small vessel, or to cradle a sphere. It can even be used to drive plates and other flat pieces, using the crest of the chuck’s rim as the bearing surface. In short, this is one lathe workhorse you’re gonna love.

Scrap wood and rubber sheeting are all it takes

A universal chuck like this is easy to make. Good thing, because you'll want to make a variety of sizes over time to suit larger and smaller workpieces. I suggest starting with a 6"-dia. chuck, which is good for general work. After familiarizing yourself with the chuck's use, you'll have a good sense of how to size additional versions to suit different sized work.

1. Drill a blank

Begin with a kiln-dried blank of poplar or other stable wood at least 2½" thick. (MDF or particleboard will also work, but will beat up your tools.) Rough out a 6¼"-dia. circle on a bandsaw, and drill a hole for a screw center.



2. Turn a mounting tenon

True the perimeter to 6", flatten the face, and turn a 2½"-dia. tenon that's long enough for good grip in your 4-jaw chuck without bottoming out.



Sourcing Neoprene

Neoprene is available online at seattlefabrics.com. Get nylon-backed 3mm or 4mm thickness. Or, you might purchase used wet suit material from a rafting company. Don't use mouse pads, which are too slick on one side.

4. Apply the neoprene

Cut an 8"-dia. disk of neoprene, and spray contact adhesive onto it and the chuck. For the best bond, let both surfaces set up tack, and then lay the inverted chuck on the disk, as shown here.



5. Press into place

Turn the unit over and firmly press the neoprene disk into the adhesive.



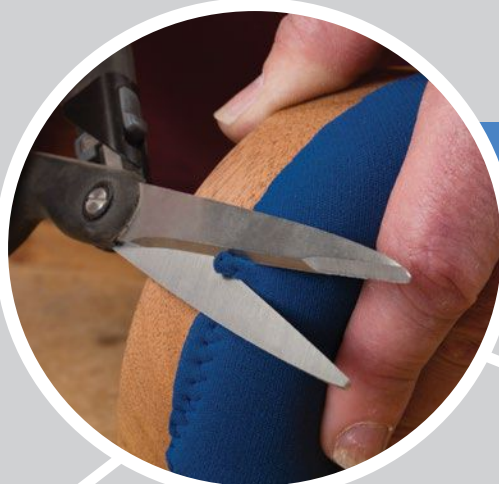
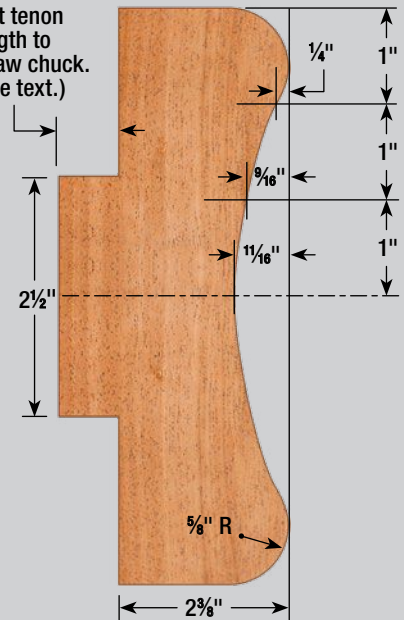


3. Shape the face

Invert the blank and mount the tenon in a 4-jaw chuck. Start to round over the outer edge while concurrently hollowing out the center. As you approach final depth, finesse the shape by smoothing and rounding the raised edges as shown in the profile drawing below.

Jam Chuck Profile

Suit tenon length to 4-jaw chuck. (See text.)



6. Trim the excess

If the neoprene bunches up anywhere at its edge, nip off the excess.



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Go to woodcraftmagazine.com for a full-sized negative pattern.

7. Tape the edges

Finally, wrap masking tape fully around the perimeter of the chuck, applying it in a clockwise fashion facing the front of the chuck. Note that sometimes the neoprene facing will spring up out of the concavity. No matter; it'll still work fine when pressed back down by the workpiece.



Put your chuck to work on bowls, vessels, and plates

A great use for this jam chuck is re-truing and finishing up rough-turned bowls that have been set aside to dry for 6 months or so, warping in the process. As for vessels, the concavity in the chuck's face provides a nestling space for wide, squat, hollow vessels, as well as bowls with extreme inward-turning lips. This jam chuck is also great when turning the mounting tenon on plates or other flat work that's too thin for initial mounting with a screw chuck.

Rough-turned bowls

Begin by pressing the warped bowl against the chuck with the tail center located in the original tenon divot. Rotate the bowl by hand and, using the tool rest as a reference, center the bowl between its two widest points, as shown. Secure the setup with the tail center, and turn the tenon and outside of the bowl concentric. Next, invert the bowl, mounting the tenon in your 4-jaw chuck, and re-turn the bowl's interior. Finally, invert it once more, and finish off the bottom as desired, turning the tenon to a small enough diameter that it can be easily chiseled off once dismantled from the lathe.



Wide, hollow vessels

The beauty of this chuck design is that it's largely self-centering. All the same, check for any bounce when laying the shaft of a turning tool on the edge of a rotating vessel. Then turn away the tenon to complete the piece.

Plates or other flat projects

Pressing the blank against the chuck with the tail center, turn the mounting tenon and underside of the plate as shown. Then mount the tenon in a 4-jaw chuck, and turn the plate's upper face. Invert one last time, and finish off the bottom.



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Buyer's Guide

Hot New Tools (p. 14)

1. HOMERIGHT Finish Max HVLP Sprayer.....#162465, **\$69.99**
2. Carter Products F.A.S.T. Fence Alignment System Tool.....#868100, **\$49.99**

Chairmaker's Workbench (p. 22)

1. Tail-Vise Screw.....LeeValley.com, 70G01.52, **\$39.00**
2. Bally Block Birch Workbench Top 1½ x 27 x 60".....#161270, **\$169.99**

Cheapskate's Guide to Diamonds (p. 28)

1. PSA Diamond Lapping Film.....LeeValley.com, 54K96.30, **\$24.50**
2. Norton Waterstone, 220-grit,.....#822459, **\$29.99**
3. DMT Dia-Sharp, 3 x 8" Bench Stone, Coarse.....#147303, **\$60.25**
4. Rikon 8" Slow-Speed Grinder.....#158512, **\$139.99**
5. Veritas Grinder Tool Rest.....#153365, **\$57.99**

Straight Talk on Straight Bits (p. 34)

1. Whiteside Straight Cut Double Flute Bit, ¼" SH, ½" D, 1" CL.....#24A10, **\$16.07**
2. Whiteside #470 3-piece Undersized Plywood Dado Bit Set, ½" SH.....#150756, **\$49.16**
3. Freud 12-122 Bit, ½" SH, ½" D, 1½" CL.....#828671, **\$21.97**

4. Whiteside Spiral Upcut Bit, RU5150, ½" SH, ½" D, 1½" CL.....#03K35, **\$50.12**
5. Whiteside Spiral Downcut Bit, RD1600, ¼" SH, ½" D, ½" CL.....#09I17, **\$18.44**
6. Whiteside Spiral Downcut Bit, RD2100, ¼" SH, ¼" D, 1" CL.....#812126, **\$18.44**
7. CMT Dado and Planer Bit, 852.504.11, ½" SH, 1½" D, ¾" CL.....#822349, **\$31.99**
8. Freud Double Compression Bit, 77-209, ½" SH, ½" D, 1½" CL.....#840955, **\$84.47**

Dynamite Dining Table Done Easy (p. 48)

1. Large White Oak Shaker Dining Legs (4 needed).....TableLegs.com, 202KL-OA, **\$26.95**
2. Freud Flush Trim Router Bit, ¼" SH, ½" D, 1" CL.....#808736, **\$26.47**
3. WoodRiver Biscuit Joining Router Bit Set, ½" SH.....#147995, **\$41.99**
4. Whiteside Edge Beading Router Bit, ½" SH, ¼" BD, ¾" CL.....#814384, **\$32.15**
5. Freud Roman Ogee Router Bit, ½" SH, 1¾" D.....#834284, **\$44.97**
6. HIGHPOINT Table Top Fasteners (8-piece w/screws).....#159301, **\$2.99**
7. Kreg #7 x 1¼" Fine Pocket Hole Screws, 100 pc.....#142250, **\$4.69**
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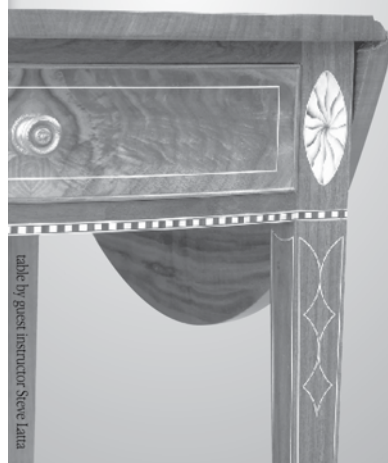
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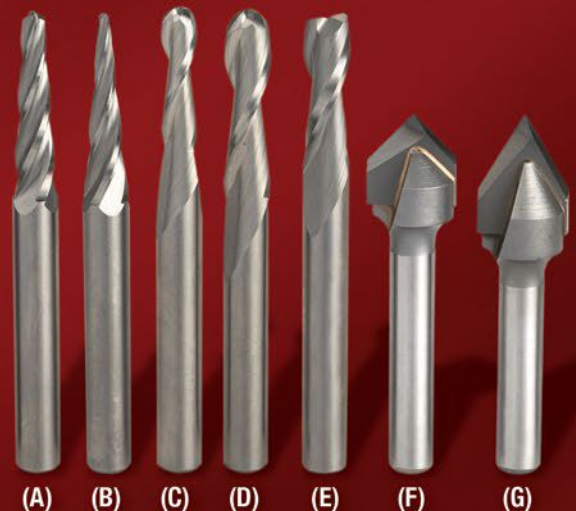
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Spotlight on TAMARIND

Add spice to your next project with this spalted wood

By Joe Hurst-Wajszczuk

Until recently, not much was known about tamarind (*Tamarindus indica*) outside of its home turf. Despite the value of its lumber and fruit, this species warrants little or no mention in most woodworking books. Due in part to growing interest in sustainable, responsibly-sourced lumber (as well as adventurous appetites), this tree is beginning to enjoy a wider worldwide audience.

Unlike most woods, tamarind's appeal is not based on its harder, darker heartwood, but on its less durable sapwood that's an attractive meal for fungi and insects. When the timing's right, Mother Nature's attack on the creamy outer layer induces *spalting*, an early stage of decay that creates dark-colored veins, transforming even the smallest blank into a unique work of art.

This stripey wood has its share of challenges, but understanding how to select

and use the best material will reward you with spectacular results. Read on to discover how to make the most of this rare lumber.

Where the wood comes from

This modest-sized tree (averaging 80' tall and 30" in diameter) originated in Africa, but today thrives in tropical regions across the globe, including Southeast Asia, China, Mexico, and southern Florida. In frost-free climates, tamarinds are commonly planted as ornamentals, and sometimes cultivated as miniature bonsai trees.

History in woodworking

The fruit of the tree has been used for centuries for both cooking and cleaning. (The tartaric acid in its pulp is an effective polish for copper and brass.) Although the lumber doesn't have a

lengthy resume, it has been used locally for items ranging from furniture to farm implements. Large branches and trunks are sometimes simply crosscut through and used as chopping blocks, partially because these end-grain slabs cause less damage to cutting tools than do flat-sawn boards.

How to select the best stock

Tamarind's deep-red heartwood is very durable, but it's only found in the oldest and largest trees, and is difficult to work. Because of that, it doesn't enjoy the same utility as the less durable, but readily available sapwood. Much of this wood comes from found logs, branches, and small trunks cut and left to rot on the forest floor. Because the spalting process

A not-so secret ingredient

A large tamarind tree can produce nearly 400 pounds of fruit annually. The sticky pulp of the pod-like fruit is a staple in Middle Eastern, Mediterranean, and Asian cooking. Used fresh or dried, it plays a potent role in all sorts of savory stews, soups, and condiments, and is enjoyed as a tangy, sugar-coated candy. In addition, the pulp serves as a traditional medicine and meat tenderizer. In fact, it may be in your own fridge, since the extract is an ingredient in Worcestershire sauce.



Tamarind Quick Take

DENSITY	53 lbs./cu. ft.
HARDNESS	Hard
STABILITY	Average
ROT/INSECT RESISTANCE	Heartwood- High Sapwood- Low
TEXTURE	Fine to moderate
TOXICITY	Moderate
USES	Small turnings and carvings, inlay, chopping blocks, furniture, flooring, boatwork

Spalting

Too Much

Just Right

Not Enough



Decay done right. Not every blank will produce a bowl like this. Take your time and select your spalted stock carefully.

is far from scientific, it's important to handpick each board or blank to make sure that you're getting the desired effect. (See photo, above.)

At approximately \$23/bd. ft., tamarind's cost is on par with many top-shelf exotics. As a result, its use is often limited to small projects like bottle stoppers, pens, and bowls. If you care to taste-test this wood, smaller turning blanks start at \$5. For additional flair, you can purchase through-dyed blanks for a few dollars more. Resin-stabilized blanks, like the samples shown bottom right, eliminate the risk of failure associated with working partially decayed wood. Although the process makes the wood ideal for knife scales and pens, stabilization doubles the material's cost, and is limited to smaller-scale stock.

Working tamarind in the shop

Because of its density and interlocked grain, tamarind's heartwood is notoriously difficult to work. However, the softer sapwood is somewhat friendlier. Although it has a moderate blunting effect on steel-edged tools, it succumbs easily to carbide. But use only clean, sharp cutters to prevent tearout and scorching, and take quick, light passes when machining the wood. As for gluing, you shouldn't have any problems.

Tamarind turns well with sharp tools, but is subject to the same challenges as any spalted wood. That is, you can expect to encounter soft, punky sections, so keep your tools razor-sharp to minimize tearout. You can stabilize punky areas with two-part epoxy or cyanoacrylate (CA) glue, and then rehone your tools and finish up with a light touch.

The wood itself is not reported to cause allergic reactions, but the spalting might warrant precautions. For healthy adults, fungal spores are about as harmful as wood dust, so a dust mask and dust collection typically offer adequate protection. However, people with immune system disorders should not work with any spalted wood.

Finishing

Tamarind's diffuse-porous grain structure and soft fungal streaking make it an excellent candidate for dyeing and resin stabilization. However, those same characteristics cause the wood to absorb finish like a sponge before establishing a consistent surface film. Pre-treating the softest spots with shellac or CA glue can help. Tamarind accepts all finishes well, but to best preserve the contrast between the creamy white sapwood and dark fungal streaks, use lacquer or a water-based product.

Stabilized blanks are a different story. The resin impregnation process seals the cells of the wood, causing these blanks to behave more like plastic. So, as with an acrylic turning blank, sand up to your finest grit, and then power-buff the finish to a fine luster. ■



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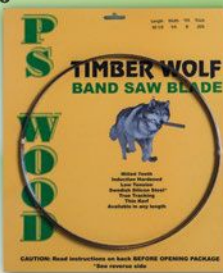
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PROJECTS

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pg. 50 Easy Chair

Bet 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



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Cordless nailer options

Q *I'm planning to buy a cordless finish nailer, but I'm not sure whether to go with a model that uses a gas cartridge, or one that's simply battery powered.*

A Battery-powered nailers cost less—a lot less, in some cases. There are other advantages too. For example, the 20V battery used to power Porter-Cable's 18-gauge brad nailer (shown here) can also be used with other Porter-Cable cordless tools. And you don't have a second fuel source to worry about. Finally, there's no unpleasant combustion odor to deal with.

There are a few advantages to gas-type cordless nailers, like the Grex model shown here. Because this type of nailer is more compact than battery-only models, it has the maneuverability to get into tight spots that a bulky battery-only model can't reach. Along with the

compact size you get lighter weight and more comfortable balance. So if you're using your nailer for an extended period of time, you'll have less fatigue and arm strain.

In use, both of the nailers shown here performed well, and have important features like depth/power adjustment, and a useful range of brad lengths (up to 2"). Grex claims that they've reduced combustion odor and improved the longevity of gas cartridges. I found both of these claims to be true, but I haven't tested comparable models from other manufacturers.

—Tim Snyder, chief editor



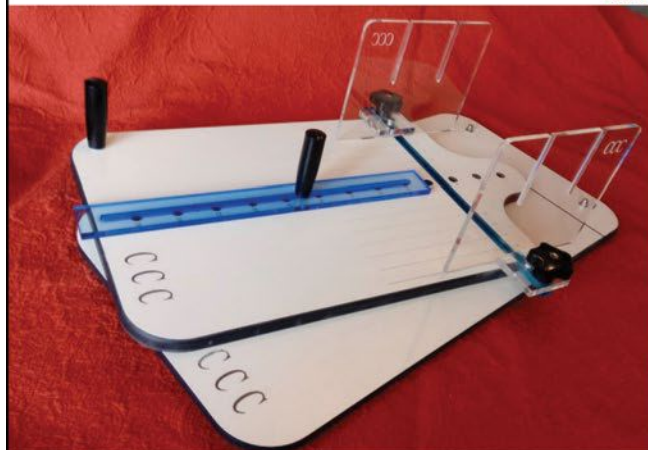
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Smarter sanding

Q *Is there a proper way to sand wood to prepare it for a finish? At what grit should I stop?*

A The goal of sanding is to create a surface that is free of defects and smooth to the touch. There are different ways to get the job done, but for the sake of efficiency, I rely most on my random-orbit sander.

Choosing the right grit to start with depends on the condition of the wood. If you operate like I do, the last machine to touch the wood is usually a planer. In this case, I typically start with 80 grit, step up to 120, and stop at 180. Conventional wisdom advises against skipping grits, but as long as each new grit is removing the defects left by the previous one, I don't think it's necessary to sand more. Sanding technique is important. At each step, I sand in two directions: across the grain (remember it's a random-orbit sander!) and with the grain. I find this method allows me to keep the sander moving at a pretty good speed (heat is the enemy of sandpaper) but still establish a uniform scratch pattern. On flat surfaces, such as drawer fronts and case sides, I'll finish up by hand-sanding in the direction of the grain with final/finest grit.

Your choice of finish and desired sheen also affects the final grit. When using a penetrating finish, I'll sand through 400 grit and then rub down the piece with 0000 steel wool. When using a film-building finish, you can continue sanding the fully-cured finish with even finer grits to achieve a higher polish. ■

—Chris Hedges, contributing editor

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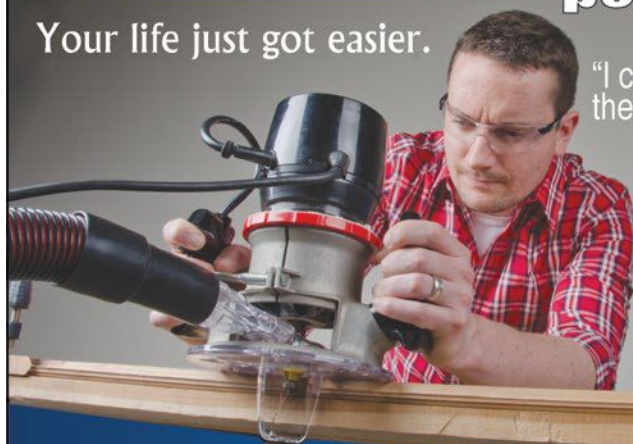
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