BUILD A HARVEST FARM TABLE

WOODWORKER'S JOURNAL

America's leading woodworking authority™

Our Annual Holiday Gift Issue

December 2021

$7.99

7 33175 67742 4

ROCKLER® | CREATE WITH CONFIDENCE

GIFT IDEAS & PROJECT STARTERS FOR THE HOLIDAYS!

SEE 100'S OF GIFT MAKING IDEAS AT ROCKLER.COM/HANDMADE-GIFTS

20% OFF ONE ITEM

PLUS FREE SHIPPING ONLINE OVER $39

Promo Code 13D925 • Offer Ends: 12/24/21

Woodworker's Journal Subscribers enjoy Free Shipping on $39+ orders everyday!

* **20% OFF ONE ITEM:** Excludes sale items, power tools, gift cards, product bundles with gift cards or free products, Porter-Cable dovetail jigs, CNC machines, Leigh products, SawStop, Festool, Tormek, taxes, shipping charges, international orders and other promotions. Other exclusions may apply. **FREE SHIPPING:** $39+ Orders. Additional shipping charges will apply for select oversized items, express orders, international orders, and orders to Alaska, Hawaii, Guam, Puerto Rico, and the Virgin Islands. Rockler reserves the right to limit quantities, correct errors or omissions and modify or end this promotion at any time. Neither 20% off one item nor free shipping can be combined with any other offer or applied to previous orders. Not valid with Rockler's Professional Catalog and independent resellers. **OFFER ENDS: 12/24/21**

4 60225 55020 7

NEW! Coming Soon, Reserve Now Online!

Rockler Traditional Turning Tool Holder

Quick, convenient access to your turning tools! Distance between brackets can be varied for tools of any length. Rare-earth magnets securely hold the shanks. Line up as many as you need to fit your collection. Durable ABS. Mounting screws and anchors included. Not for use with carbide turning tools, which have stainless steel shanks.

67161 . . . . . **$19.99**

Rockler Traditional High-Speed Steel Ergonomic Turning Tool Set

Perfect for turners who prefer to sharpen their own tools. Top-quality S600 Austrian high-speed steel (equivalent to M2). Comfortably contoured ash handles encased in shock-absorbing rubber. Includes 1/2" parting tool, 3/8" spindle gouge, 3/4" spindle roughing gouge, 3/4" skew, 1/2" round nose scraper and a gift/storage box. Full-size 13" handles; 19¼" long overall.

67614 . . . . . **$299.99**

NEW! Coming Soon, Reserve Now Online!

Rockler 5" Glue Roller with Silicone Rest

The roller to reach for when gluing up wide boards and laminations. Tread depth promotes even film thickness, less wasted glue and less squeeze-out to cleanup. Roller detaches from the handle for easy rinsing, and dried glue peels right off! Silicone "roller rest" catches drips when not in use.

61645 . . . . . **$19.99**

Rockler Weather Station Components

It's easy to make your own weather station with our friction-fit weather dials. Just drill 2½" diameter holes in the material of your choice and push the dials into place. Brushed aluminum bezels with clear acrylic lenses. No batteries required. Indoor use only.

66808 *Thermometer* **$11.99**

65614 *Hygrometer* **$11.99**

67831 *Barometer* **$14.99**

63675 *Complete 3 Piece Set* . . . **$29.99**

NEW! Coming Soon, Reserve Now Online!

Rockler Deluxe Panel Clamp

Rigid, solid steel cauls sandwich your panel to keep it flat—4-way pressure eliminates buckling! Easily adjusts for panels up to 3" thick and 36" wide. Thick steel rails with a durable powder-coat. Choose from a single clamp or a pack of two.

67164 . . . . . **$99.99**

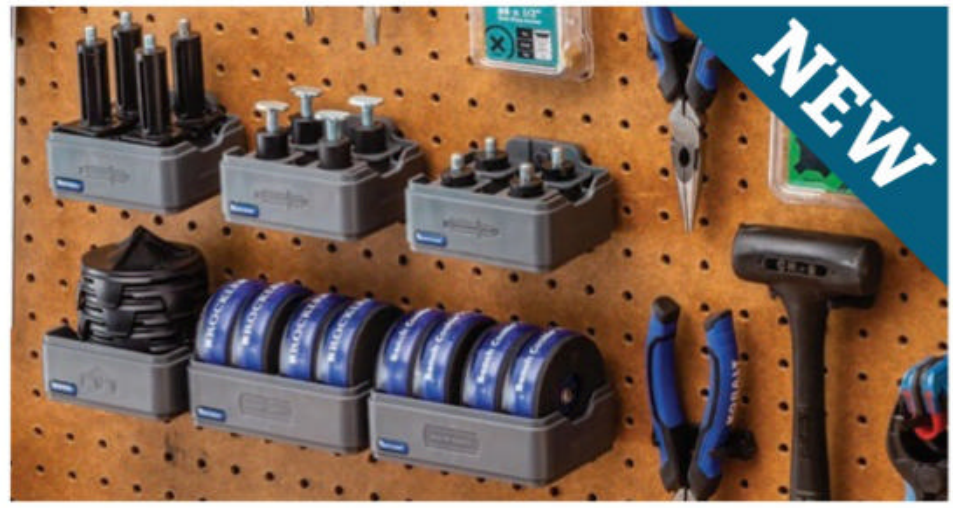
NEW Rockler Innovations!

Bench Cookie® Plus Work Grippers Master Kit
This 28-piece kit has all the core functions of the Bench Cookie lineup: workholding, lifting and finishing. With eight Work Grippers, eight Finishing Cones, eight Risers XL and four Standard Risers, you'll be able to hold nearly any size workpiece, at whatever height is needed for sufficient clearance. Use in 3/4" dog holes or on any flat surface.

56071 . . . . . **$64.99**

Rockler Bench Cookie® Storage Rack Master Kit
Stores up to 8 Work Grippers, 8 Finishing Cones or Bridges and 12 Risers. Option to mount to wall or pegboard with included steel screws and proprietary pegboard screws. Durable ABS plastic.

67778 . . . . . **$24.99**



NEW! Cast one-of-a-kind coasters and turning blanks!

Rockler Silicone Coaster Casting Molds
Use casting resin mixed with the dyes of your choice. Flexible silicone releases easily once cured. Groove around coaster edge catches condensation. Finished coasters are 4" wide x 1/2" to 3/4" thick.

69734 *Round*. **$14.99**
67390 *Square* **$14.99**

Rockler Silicone Casting Mold, Pen Blanks
Tubes are perfectly centered in the mold and flexible silicone releases easily once cured. Includes 8 conical stoppers that adjust for fit tubes up to 7" long. Creates 3/4'' x 3/4'' blanks.

69213 . . . . . **$24.99**

Rockler Silicone Casting Mold, Handle Blank
Included stopper lets you adjust the length of the blank-saving resin! Flexible silicone for easy removal. Fill height of 1½" is clearly marked. Maximum blank size is 1½" x 1½" x 7"L.

69157 . . . . . **$19.99**

Resin Casting Molds
Mold all the custom resin blanks your heart desires. Joined with dovetail grooves for a leak-free fit. Low-friction UHMW plastic for easy release.

65112 *Bottle Stopper Blank Mold, 2" x 2" x 3"*. . . . **$29.99**
65626 *Pen Blank Mold, 1" x 1" x 6" (Oversized)* . . . **$25.99**
62066 *Handle Blank Mold, 1½'' x 1½'' x 6''* **$39.99**


65112


65626


62066

NEW! Coming Soon, Reserve Now Online!

Rockler 4-Piece Digital Measuring Kit
Unfailing precision and digital convenience for every aspect of your woodworking. Caliper and magnetic height gauge toggle between metric/imperial, and decimal/fraction. Attach the magnetic Level Box to your saw blade for precise angles. Angle Ruler measures and transfers angles to your saw. Zero all with the push of a button. Includes fitted storage case and batteries.

89409 . . . . . **$119.99**

WOODWORKER'S JOURNAL

CONTENTS

December 2021 VOLUME 45, NUMBER 6

PROJECTS

⚠WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.

RIKON

TWO-SPEED 13" Portable Planer

w/Helical Style Cutterhead

NEW

15 AMP MOTOR | HELICAL STYLE CUTTERHEAD | EASY BLADE ACCESS

EASY ACCESS TO CUTTERHEAD TO CHANGE INSERT BLADES

SIDE MOUNTED DEPTH SETTING GAUGE

DUST PORT OUTLET PROVIDES EASY CONNECTION TO DUST COLLECTOR HOSES

TWO-SPEED FEED RATE SWITCH LOCATED ON FRONT

Call today for more information **877-884-5167**
or visit **www.rikontools.com** for a dealer near you!

DEPARTMENTS

Page 18

Page 60

Page 62

Finding that Spark of Inspiration

CNC routing enthusiasts can get the free .tap program for this peg jumping game at* woodworkersjournal.com *under the "More on the Web" tab.

Building handmade gifts is one of the most satisfying woodworking experiences of my life. Whether the gift is fanciful or practical, complicated or easy, it makes little difference. I am exhilarated as I build, excited when I complete it and gratified as I see the gift opened and enjoyed. On the other hand, I have been making holiday presents for some 40 years now, and I have to confess that coming up with new and exciting gift ideas can be a bit daunting.

If that's true for you, I have a suggestion that could be very helpful. Rockler and *Woodworker's Journal* have teamed up to create a gift guide to inspire woodworking and spark ideas. Find it at *https://www.rockler.com/gift-guide* and light your fire for gift-building anew.

—Rob Johnstone

FROM OUR READERS

You Guessed It — Gifts!

SOMETHING FOR ALL, PLUS A CALL FOR VOTES

There's no need to sugarcoat it ... we are in the homestretch when it comes to making gifts for the holidays. It's my hope that in this issue you will find inspiration for your efforts as well as a couple of fun-to-build ideas to help you out. Our selection of projects covers a multitude of holidays. The "Modern Farmhouse Dining Table" (page 28) is clearly a winner for Thanksgiving, my gustatory favorite. Of course we have some Christmas-appropriate gifts, or build a modular "Menorah" (page 38) if you are a member of the 12 tribes or know someone who is. The "Simple Serving Tray" on page 42 can be made with minimal tools and skills in any small workspace.

Our "Beehive Honey Dipper" (page 44) spun off some very strange results. My staff had different ideas about what a honey dipper should look like. As a result, *Woodworker's Journal* presents you with the world's first "Honey Dipper Challenge." Chris, Jeff, Nick and yours truly have each designed a honey dipper and a holder. The only way to determine which version is superior is to have our readers vote. You can see our efforts on page 47, then please visit *woodworkersjournal.com/honey-dippers* to register your favorite design. We will randomly pull three email addresses from voters and award each person a woodworking prize. May the best design win! (That the other three staffers would have the hubris to consider their concepts more sophisticated than mine is evidence of their delusion. Kindly let them down easily.)

Before I sign off, please accept our best wishes to you and yours for the upcoming gift-giving season — whichever holidays you may be celebrating.

— Rob Johnstone

LETTERS

Why Such Skinny Pins?

When I look at many projects with dovetail joints these days, there seems to be a trend toward small, skinny pins. As an engineer, I think joints not only have to *be* strong, they must also *look* strong, since non-engineers judge strength by looks. So the question is: Why do we see, of late, really skinny pins? If I were making the joint, I would probably double the [thickness] of the pins.

Don Dziubakowski
Georgetown, Kentucky

Chris Marshall Responds:
Router jigs make dovetail joints accessible to any woodworker with a router and some patience. But one thing that limits all dovetail

Continues on page 10 ...

ROCKLER PRESS
THE VOICE OF THE WOODWORKING COMMUNITY

DECEMBER 2021
Volume 45, Number 6

ROB JOHNSTONE *Publisher*
ALYSSA TAUER *Associate Publisher*
CHRIS MARSHALL *Senior Editor*
JEFF JACOBSON *Senior Art Director*
DAN CARY *Senior Content Strategist*
COLLEEN CAREY *Video Production Assistant*
NICK BRADY *Project Builder*
MATTHEW HOCKING *Internet Production Coordinator*

Founder and Chairman
ANN ROCKLER JACKSON

Contributing Editor
ERNIE CONOVER

Advertising Sales
ROB JOHNSTONE *Advertising Sales*
rjohnstone@woodworkersjournal.com
(763) 478-8255

Editorial Inquiries
editor@woodworkersjournal.com

Subscription Problems/Inquiries
(800) 765-4119 or
www.woodworkersjournal.com
Write Woodworker's Journal, P.O. Box 6211,
Harlan, IA 51593-1711
email: *WWJcustserv@cdsfulfillment.com*. Include mailing label for renewals and address changes. For gift subscriptions, include your name and address and your gift recipient's.

Book Sales and Back Issues
Call: (800) 610-0883
www.woodworkersjournal.com

Other Questions or Problems
Call: (763) 478-8255
rjohnstone@woodworkersjournal.com

Safety First Learning how to operate power and hand tools is essential for developing safe woodworking practices. For purposes of clarity, necessary guards have been removed from equipment shown in our magazine. We in no way recommend using this equipment without safety guards and urge readers to strictly follow manufacturers' instructions and safety precautions.

Woodworker's Journal (ISSN: 0199-1892), is published in February, April, June, August, October and December by Rockler Press Inc., 4365 Willow Dr., Medina, MN 55340. Periodical postage paid at Medina, Minnesota and additional mailing offices. Postmaster: Send all address changes to Woodworker's Journal, P.O. Box 6211, Harlan, IA 51593-1711. Subscription Rates: One-year, $19.95 (U.S.); $28.95 U.S. funds (Canada and other countries). Single copy price, $7.99.
 Publications Mail Agreement Number 0861065. Canadian Publication Agreement #40009401.

jigs I know of is the width of the pins at their base. That's because we must use dovetail bits that restrict the shape of the pins to usually not less than 1/4" at their narrowest point. These wider pins stick out like a sore thumb to some folks as "router" joints.

Those who cut dovetails by hand, however, are not limited by pin width. They can saw their pins razor-thin. And many prefer that hand-cut appearance over the "cookie cutter" look of router-made options. Thin pins also suggest advanced skills. But as you rightly point out, the skinnier the pins are, and the farther they are spread apart, the weaker the joint will be. It becomes a risk of form over function.

Softening Kiln-dried Wood with Downy

After reading your "Steam Bending Guidelines" on page 47 of the August 2021 issue, I feel the need to offer advice about presoaking the wood in fabric softener. I suspect most of your readers do not have access to freshly cut or air-dried wood and are limited to kiln-dried wood from the big box stores. Through experimentation, I have learned that the secret to steam-bending kiln-dried wood is to soak the wood for seven days in water and Downy® fabric softener before steam-bending, plus using a steel-bending strap. Soaking for "several hours," as the article suggests, won't be enough for kiln-dried wood.

Dale Maley
Fairbury, Illinois

Continues on page 12 ...

READER PROJECTS

Toolbox Urn Honors Carpenter Father

My father recently passed away, and I wanted to honor him in a way that would recognize his carpentry talents. He and my mom built houses as a hobby and as a way to finance their retirement. I don't have his carpentry skills; I'm more of a woodworker and antiques restorer, but I got the love of wood from him. I made this urn for my dad using curly maple, Honduran mahogany and monkey pod with purpleheart accents. His favorite house-building hammer will sit on the top lid.

Jeff Hudson
Yuma, Arizona

Lathe Stand with Tool Storage

Here's a modified version of your June 2020 "Mobile Lathe Stand" project to fit my RIKON lathe. I built it mostly from red oak boards I cut from trees in our yard. Because it's solid red oak except for the top, which is a repurposed church pew, it is plenty heavy. I did not need to add sand to the bottom as the article suggested. Rather, I made the lower box into a toolbox with a hinged lid to store my lathe tools. The stand works really well, and having it mounted on casters is handy for moving it out of the way when I'm not using it. This project sure beats raising the lathe up on blocks to use it!

Mike Masar
via the Internet

FROM OUR READERS CONTINUED

Plywood Costs: An Importer's Perspective

Regarding your "High Lumber Costs" article [August 2021], I run a small importing business in San Ramon, California, and one of the main items I import is pine plywood. Until two years ago, I also imported birch, maple and beech plywood, but U.S. customs imposed a 192 percent anti-dumping tariff on Chinese hardwoods. Under the Trump administration, there was an additional tariff of 25 percent and the normal duty of 5.1 percent. As a result, these days there is very little hardwood plywood coming from China. When the anti-dumping tariff went into effect, the American Plywood Association increased their prices by 54 percent. They also admitted they could not supply the demand and put many customers on allocation, sometimes as much as a 50 percent reduction in

Continues on page 14 ...

SURVEY

WE ASKED OUR SURVEY GROUP ABOUT ROUTERS THIS TIME

Routers are "jack-of-all-trades" tools, capable of so many operations. Most woodworkers own at least one. Here's what survey folks say about theirs.

How many handheld routers do you own?

1 to 2	32.14%
3 to 4	48.87%
5 to 6	13.81%
7 or more	5.18%

About how old are your routers?

Three years or less	4.39%
4 to 7 years	44.61%
8 to 10 years	30.76%
11 years or older	20.24%

Do you own a battery-powered router?

Yes	9.02%
No	90.98%

Which styles of bases are on the router or routers you own?

Fixed base	40.31%
Plunge base	31.7%
Fixed/plunge base combo	27.89%

What sorts of woodworking tasks do you use your router or routers for?

Profiling edges	29.19%
Template routing	18.8%
Milling joinery	10.12%
Making rail-and-stile doors	13.57%
Jointing board edges	11.87%
Other	2.62%

What brand of handheld router do you think represents the best value, in terms of quality and price?

Black + Decker	1.36%
Bosch	15.6%
Craftsman	6.11%
DeWALT	14.25%
Festool	3.12%
Makita	3.66%
Metabo HPT/Hitachi	2.44%
Milwaukee	2.58%
MLCS	0.54%
Porter-Cable	35.3%
RIDGID	3.26%
Ryobi	3.53%
Triton	2.99%
Other	5.29%

There's more online at
woodworkersjournal.com

www.woodworkersjournal.com
MORE ON THE WEB

Check online for more content covering the articles below:

Woodturning (page 22): *Learn how to drill leg and stretcher holes for stools (video)*

Pouring Resin Coasters (page 34): *Learn how to create epoxy coasters using Rockler's silicone molds (video)*

Menorah/Holiday Tea Light Candleholder (page 38): *Download this project's full-size patterns (PDF)*

Simple Serving Tray (page 42): *See our publisher build this project with hand tools (video)*

Beehive Honey Dipper (page 44): *Laugh along as we try to out-turn one another in a "Honey Dipper Challenge" (video)*

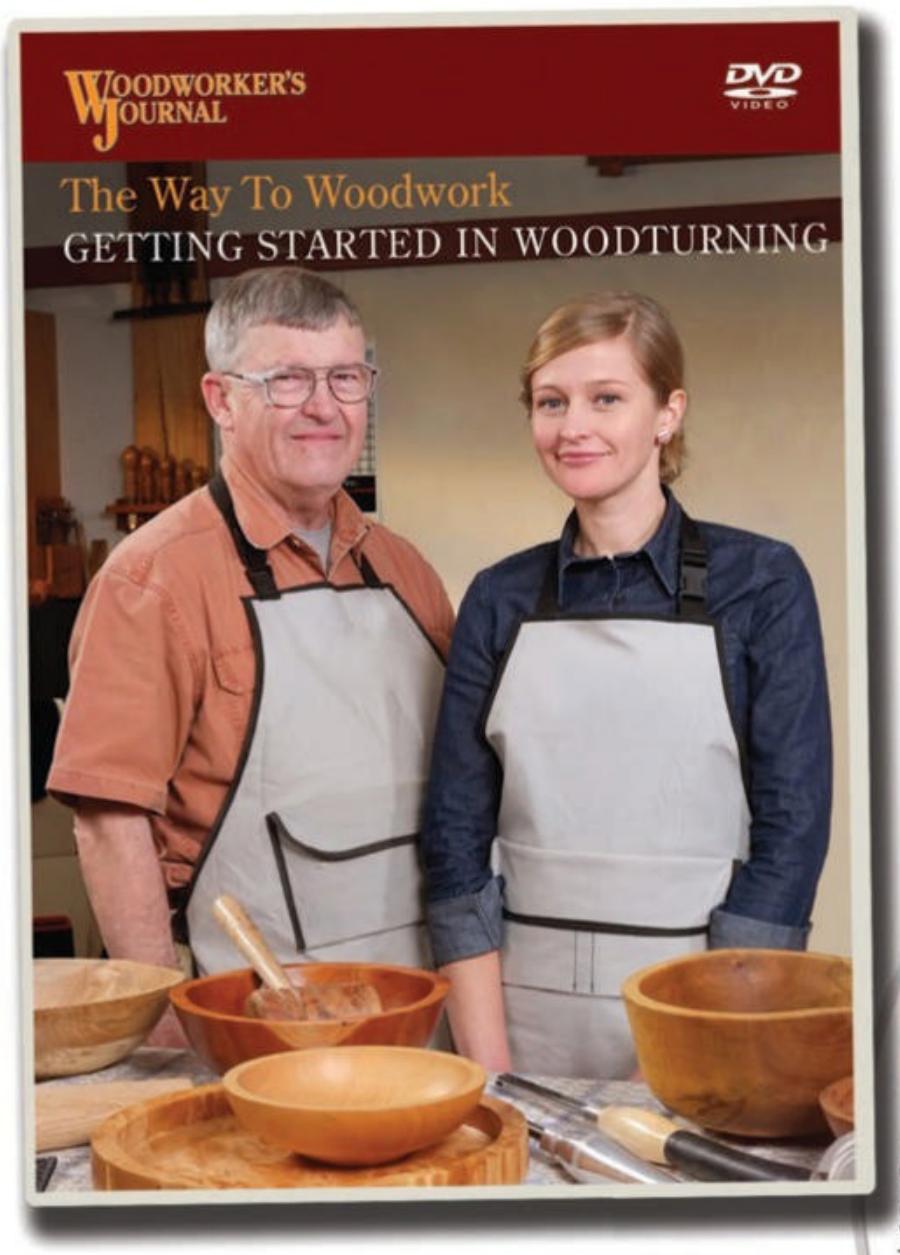
Getting Started (page 50): *Watch an overview of veneering basics (video)*

What's in Store (page 62): *Featured tools in action (videos)*

WOODWORKER'S JOURNAL *presents*

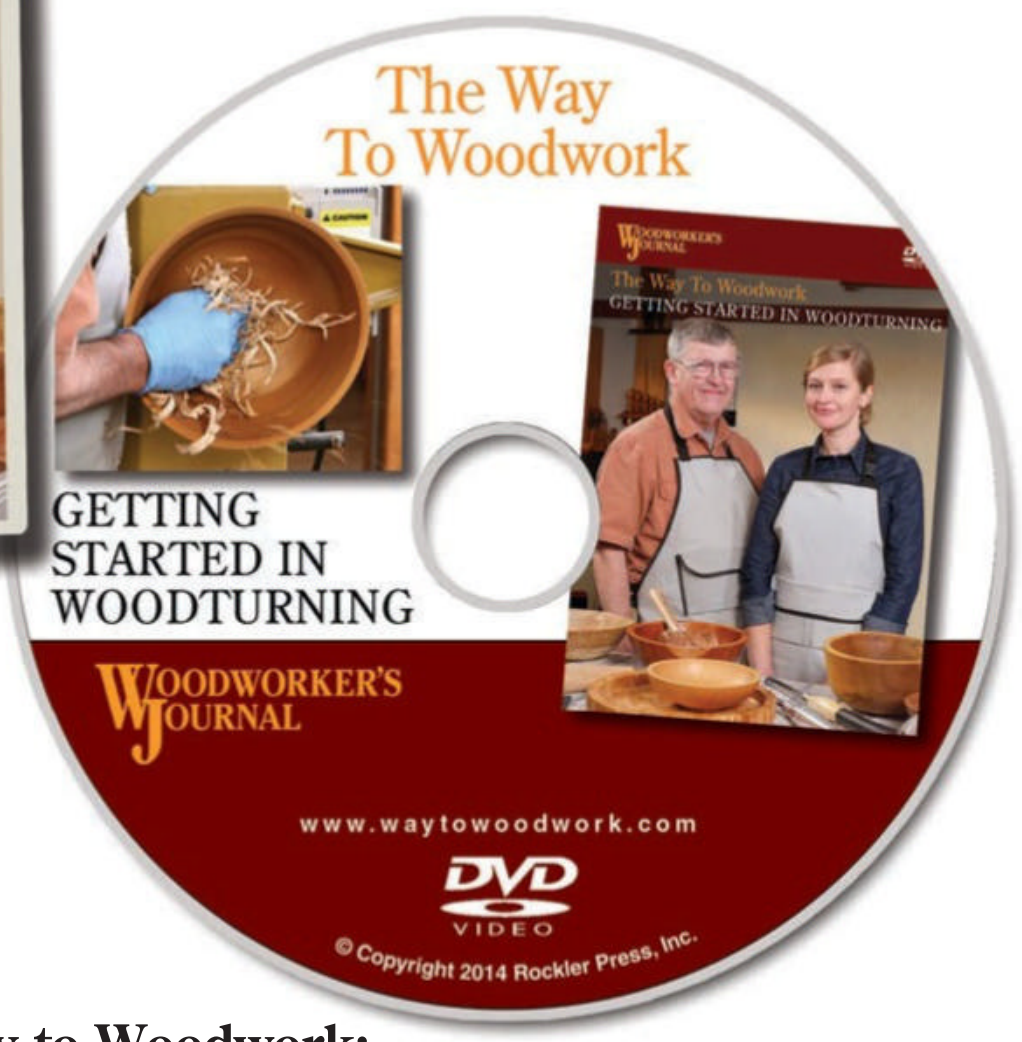
The Way To Woodwork:

Getting Started in Woodturning

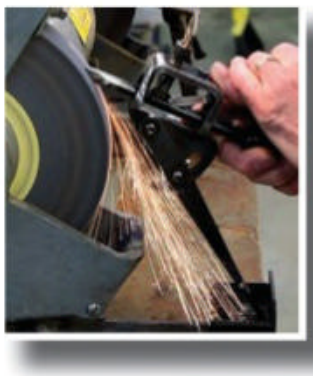


Woodturning is growing in popularity as people discover how inexpensive and easy it is to get started in this practical, fun and creative craft. This full-length DVD teaches everything you'll need to know to start woodturning safely and with more than enough knowledge to have fun right from the start.

And to make this DVD even more useful, we've added a bonus sharpening section to get you sharpening those curved tools perfectly!



BONUS SHARPENING SECTION!



Order Yours TODAY!

The Way to Woodwork:
Getting Started in Woodturning DVD-Video
Item #57753 ..... $29.99

CALL 800-610-0883 (mention code WJ2162) or order online at www.woodworkersjournal.com/wj2162

Sponsors include ...

THE GOLD STANDARD POWERMATIC SINCE 1921

ROCKLER® WOODWORKING AND HARDWARE

EASY WOOD TOOLS MADE IN AMERICA

What's This?

In a break from our usual format, reader Wayne Vaughan, who supplied this "mystery" tool to us, actually knows what it is. The item has a wire handle on top, two hooks midway down and a spring-loaded clip on the bottom. Can you identify it and guess Wayne's answer correctly?

Email your answers to *stumpers@woodworkersjournal.com* or write to "Stumpers," Woodworker's Journal, 4365 Willow Drive, Medina, MN 55340.

STUMPERS

Fiery Possibilities

Or a toothy truth?

Chris Ericson's garage sale mystery tool, unveiled in our August issue, might have a purpose far afield from patching inner tubes with fire — however exciting those prospects and that procedure might be!

While Chris Ericson's small cast-iron mystery tool from our August issue (pictured at right) has had him stumped, several of you have thrown your hats in the ring to help solve this riddle. Two likely possibilities have sifted to the top of the mail bag, based on your general consensuses.

After **Sim Galazka** took on the task of researching "C D MFG CO" cast into the tool, "I now believe it's a die casting used in metalworking," he contends. **Douglas Harris** agrees with the "press" aspect of Sim's theory anyway, but in his opinion, it's a book press instead.

Ron Madsen of St. George, Utah, has a different hunch. "It has the overall appearance of what I used to use to compress my brake pistons back into the caliper holder so that new brake pads could then be installed."

Others of you are more convinced that the rubber meets the road in a different place regarding the nature of this tool. "It's used with vulcanizing patches to repair automotive rubber inner tubes," speculates **Robert Scott. Jim Thompson** agrees and explains how the patching works: "The area around the hole would be roughed up and placed under the foot (of the clamp), and a vulcanizing patch would be clamped over the area. The vulcanizing patch had a flammable pad which, when set aflame, would heat the patch to the tube, sealing the hole. After it cooled, the pad was lifted from the tube, leaving the rubber patch."

"When the rubber patch was lit on fire and melted in place, it got very hot," adds **Bruce Ekhoff** of Peoria, Illinois. No stretch of the imagination there, Bruce!

"When I was a mechanic in the Army," says **Dennis Stephens** of Huntsville, Alabama, we used similar clamps to hold 'hot patches' on inner tubes for the big trucks ... I haven't seen one of these since 1962!"

Lighting inner tube patches on fire, especially on military vehicles, gives this mystery tool points for its daring-do, that's for sure! But not all of our *Stumpers* guessers are quite convinced that tire repair is this particular tool's forte. A few of you believe that its purpose has a calmer, quieter nature. In fact, it might have helped bring more confident smiles and easier chewing to many a half-century or so ago.

"The item shown appears to be a manual dental press," says **Paul Dino**. "The press was used in dental labs to compress flasks to make duplicate dental molds and models."

Paul isn't alone in this theory. "It's a press, not a clamp," clarifies **Peter R.** "In the dental business, it ... squeezed out excess denture material before the curing process could begin."

"Back in the day," adds **Randall Glenn** of Elma, Washington, "elbow grease was used instead of hydraulic pressure to ensure a dental mold's material was adequately inserted or injected into the mold's *cavity* (if you'll forgive the pun)."

"The vise is missing the bottom plate," says **Mark Kedzierski, DDS**. "It comes into use when denture acrylic is added to opposing flask halves — one containing a model of the patient's gums and the other the denture teeth in correct orientation. The vise is used to squeeze the two halves together and then placed in a frame to process in a hot water bath to cure the acrylic. Having been a dentist for more than 40 years gave me a (guessing) advantage here."

orders … The prices of plywood from China have not increased to me for over three years. The cost increases to my customers are entirely due to freight cost and tariffs. I have no other option but to increase my prices. These increases are affecting many industries, not only lumber, and they're bound to add to inflation.

Peter Travis
San Ramon, California

Dicey Template Routing?

On page 25 of your August issue ["Cloud Lift Chair"], the craftsman is using a top bearing bit inverted in the router table. That exposes the ends of carbide cutting flutes above the workpiece. This is something to be very mindful of for an experienced woodworker, let alone a home hobbyist. And it raises the potential for a very serious gotcha! A bottom-bearing bit would flip the whole project over with the template on the top and the carbide cutting flutes below, where they're not as exposed to hands. I truly enjoy your magazine and wish to offer this opinion as friendly advice!

Tim Auger
Richmond Hill, Georgia

A reader raises concern about this template-routing technique and the bit's exposure above the workpiece. It appeared in the "Cloud Lift Chair" project, August 2021. But done with care, this technique is both effective and safe.

WJ Responds:
Thanks, Tim. As the article pointed out, the 2" thickness of the leg blank, combined with the template's thickness, exceeds the capacity of even very long flush-trim bits with bearings mounted on the tip (see top photo). That's why we opted to remove the bearing closest to the tip of the double-bearing Rockler bit shown at right and use it as a pattern bit instead. In that configuration, this tall template-routing cut could be carried out in two passes with the template located on the bottom. The first pass enabled the bottom bearing to roll along the template's edge. Raising the bit for the second pass, the bearing rolled against the routed workpiece instead. It's a technique that requires careful workholding but is nevertheless very effective.

TRIVIA

How Big Should Bowls Be?

Most beginning turners aspire to turn gargantuan bowls. In reality, 6" to 14" is the range of useful bowl diameters in everyday use. Beyond 14" a bowl dominates the table and, filled with oranges, much of the fruit will rot before you can get around to eating it. Really large bowls tend to be art, and the average home can display one at best.

Ernie Conover
The Lathe Book
The Taunton Press; ISBN: 1641550116

TRICKS OF THE TRADE

Thrifty Caddies, Slick Flush-trimming Mod

Forget Less with Scratch Pad on Your Tape

Do you ever forget a tape measurement you just took? Here's a trick I've been using for more than 50 years to avoid that problem. Attach a piece of white vinyl or plastic laminate to the side of your tape measure with hot glue or silicone caulk to create a scratch pad that goes wherever your tape does. Pencil notes rub off easily for the next measurement.

Larry Stephenson
Rockford, Ohio

Coffee Can Lid Caddies

Whenever we empty a coffee can, the plastic lids go straight to my shop where they have myriad uses. I've used them to mix epoxy, serve as "coasters" for drippy stains and finishes, isolate small parts during a tricky assembly and dozens of other tasks. They're especially good at corralling screws and other hardware that tend to roll off my workbench; I just dump the number of fasteners I need for a project into a lid so they're right at hand. As a bonus, the lids are stackable, making it easy to carry or store several at a time.

A.J. Hamler
Drums, Pennsylvania

Blown Away: No-rip Glove Removal

When I'm done using latex or nitrile gloves but want to reuse them, I simply pull the wrist portion down far enough so a gap appears at the base of my thumb. I press my mouth against this opening and blow. That inflates the glove so it simply "floats" off my hand without having to turn the glove inside out or risk tearing it by pulling it off, finger by finger.

Al Fletcher
Mahtomedi, Minnesota

Brad Point Bullseye

As I've aged, it's become more difficult to see fine layout lines, but that doesn't keep me from woodworking! For instance, here's how I hit the pencil line crosshairs when drilling a hole: I use a scratch awl to create a starter hole that's just large enough to insert the spur of my brad point bit. That way, I can find the center point by feel, and I know that the hole I'm drilling will be precisely centered.

Ernest Taliaferro
Tallahassee, Florida

PICK OF THE TRICKS

Oscillating Tool Flush-trim Saw Blade

Here's how to turn your oscillating tool into a super fast, clean-cutting flush-trim saw. Mount a new 3/4" or wider woodcutting saw blade in the tool. Run the saw blade against a sharpening stone at low speed to grind away the "set" (tooth protrusions) on the blade's bottom face. It will take a few minutes of grinding to remove all of the tooth set. Once the set is gone, this blade will still flush-cut dowels quickly but won't mar the surrounding wood surface.

Bruce Kieffer
Edina, Minnesota

In addition to our standard payment (below), Bruce Kieffer of Edina, Minnesota, will also receive a Milwaukee M12™ Compact Spot Blower for being selected as the "Pick of the Tricks" winner. We pay a one-time sum of $150 for each trick used. To join in the fun, send us your original, unpublished trick. Please include a photo or drawing if necessary. For your chance to win, submit your Tricks to Woodworker's Journal, Dept. T/T, P.O. Box 261, Medina, MN 55340. Or send us an email: tricks@woodworkersjournal.com

SHOP TALK

Cut from the Same Cloth

By Huy Huynh

Industrious influences fuel this rocket scientist's passion for woodworking.

Follow Huy Huynh on Instagram @alabamawoodworker

When my family immigrated to the United States from Vietnam in 1985, we were sponsored by the Lezons, a Polish-Italian family that tended to our needs as my mother searched for employment.

My mother was a successful embroiderer in Saigon (now Ho Chi Minh City). It just so happened that John Lezon, the father of our sponsor family, was a sewing machine repairman that serviced several local dry cleaners. Those connections enabled my mother to establish a small business as a tailor for many of these dry cleaners using an old Singer sewing machine that the Lezons gave her.

Since my mother was single and working to support my sisters and me, the Lezon family cared for us for the majority of my adolescence. I would often watch John repair old cast-iron industrial sewing machines and give them a new life. Through the years, my mother always labored away at her craft, making clothing repairs at her sewing bench. These two things greatly influenced my career choices and ultimately my passion for woodworking.

Engineer by Day, Woodworker by Night

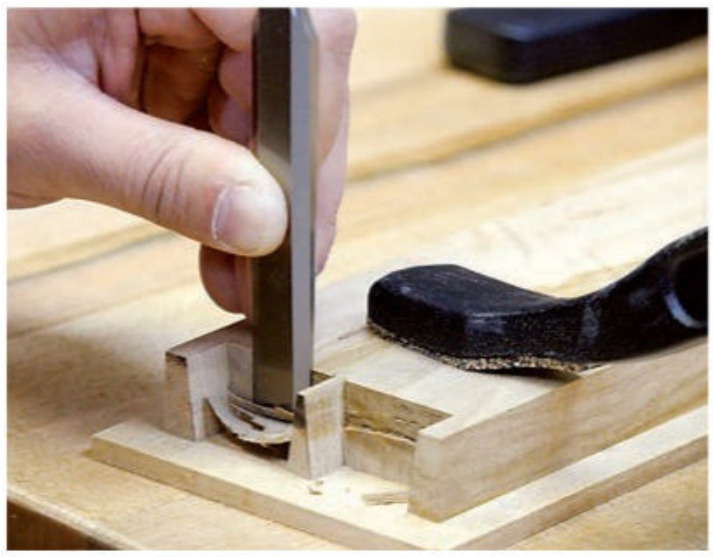
I went off to college to pursue a degree in mechanical engineering. I then attended graduate school in Huntsville, Alabama, and received my master's degree in aerospace engineering. I found a job locally doing infrared analysis on rocket engines. But while I greatly enjoy my job as an engineer, it lacks the "hands-on" experience that I was used to seeing throughout my childhood. So I started collecting old sewing machines and learning how to repair them as a hobby. I sold some machines, kept some of them and then started to learn how to make patterns and sew some of my own garments.

In 2013, I married my wife. We bought a foreclosed fixer-upper home. With a "can-do" attitude, my new hobby quickly became creating a modern functional home for my wife and I. In doing so, I acquired some basic used carpentry tools such as a circular saw, jigsaw, handheld router, table saw, drill and impact driver. I also started watching *The New Yankee Workshop* and became fascinated and obsessed with building furniture.

Instagram Chronicler

At this time, Instagram (IG) was becoming a popular social media platform for woodworkers to share their work. I jumped on the platform as a way to share my experience in building a fully-functional garage woodshop. Rather than just showing the finished "beauty shot" of the project I was working on, I attempted to chronicle my builds and explain my processes and methodology to my followers. I figured only the most detail-oriented people would enjoy what I was producing. However, I was stunned by how captivated my audience was by the content I was producing. My audience also included potential clients that wanted me to produce commissioned furniture pieces.

Most of my builds these days are furniture, such as the "Modern Farmhouse Dining Table" that appears on page 28. I'm currently fascinated with building chairs. The majority of my work continues to be for my family and friends with the occasional commissioned build. I try to keep the content I produce for my IG channel entertaining for my audience, but ultimately my goal is to continue to entertain my own passion for woodworking.



Denver Store Celebrates Grand Opening

By Chris Marshall

Major lumber expansion nearly doubles store size and provides one-stop shopping convenience.

If you live in the greater Denver area but haven't visited your local Rockler store lately, you might not be aware that the store has almost doubled its footprint in 2021. To mark that expansion, it celebrated a grand opening with festive events and demos held each Saturday in September.

Denver's expansion showcases Rockler's intention to offer more lumber in its network of nearly 40 stores nationwide. This, plus hardware, tools, accessories, finishing supplies and more, as well as expert advice, makes a trip to a Rockler retail store a one-stop shop for all those important project needs.

Lumber Aplenty

"We were able to take over an adjacent space and have almost doubled in size to approximately 11,000 square feet," says Rich Johnson, Denver's store manager of 35 years. "And our lumber department has quadrupled in size!"

Filling that new space is a broader assortment and greater volume of domestic and exotic hardwoods in 4/4 and other thicknesses, plus one-of-a-kind slabs, natural-edge stock and turning blanks. The store's approximately 15,000 board feet of lumber is surfaced on two, three or four sides, depending on the product.

Denver and other Rockler stores sell the majority of in-store lumber by the board foot, and staff can crosscut most boards to specific lengths, so customers pay for only the amount of lumber they actually need.

Community Ties

The Denver store was poised for growth, thanks to a long history of important ties to the local woodworking community. A unique 2,700-sq.-ft meeting area and shop space in the basement of the original store is shared by four guilds and woodworking clubs that use it regularly.

In recent years, Rockler has expanded or relocated many of its other stores to better serve its customers. It also has opened new locations in Olathe, Kansas, and Austin, Texas. These efforts affirm the company's commitment to the importance of physical stores and how access to products and in-store advice benefits woodworkers in those communities.

"Our grand opening was a huge success," Johnson says. "It was a great way to celebrate with the people who got us here — our wonderful customers!"

Minnesota State Fair Student Scholarship

Many years ago, Nordy Rockler began offering scholarships to a student winner at the Minnesota State Fair's annual woodworking competition. This year, Zachary Lindstrom from Chisago Lakes High School received $400 from Rockler Woodworking and Hardware. His shop teacher, Scott Leffler, says "Zach is a great kid and a good woodworker." Congratulations Zach and Scott!

Gift Project

WOODTURNING

Build a Four-legged Windsor Stool

By Ernie Conover

Combine both faceplate- and spindle-turning techniques with a little time at the drill press to create this practical heirloom.

With the holidays approaching, I thought a Windsor stool might be a fun gift project to make. The round seat is an easy faceplate turning job, and the legs are a simplified double-bobbin style that is much easier to turn than the classic baluster leg of typical Windsor chairs.

I made my stool from ash, but other good options are maple, red or white oak or hickory. All the workpieces in the *Material List* on page 24 start with 8/4 stock planed to 1⅞" thick. The seat is 14" in diameter. Finding an 8/4 plank that wide isn't easy, so I edge-glued a seat blank from three 5"-wide boards. If you do likewise, arrange the three boards for a pleasing overall grain pattern.

Drilling the Leg Sockets

We'll drill the seat for the four leg sockets first, because the tenons can be sized to a tight "slide fit" with these socket holes when turning the legs. A drawback to this approach is that these spinning sockets can cause injury if you don't keep your fingers well clear during turning.

To prepare for drilling, cut your seat blank to 14⅛" square, then draw diagonal lines from corner to corner on a planed face to find the

Find the center point of the seat blank's bottom face with two diagonal lines, then use a compass to draw three circles at the center point to mark the seat's outer rim, leg socket locations and your faceplate's diameter.

center point. This will become the seat's bottom face. Now set your compass to a 5$\frac{3}{16}$" radius and draw a circle at the center point. Where this circle crosses the four diagonals marks the leg socket locations. Reset the compass to 7" and draw the seat's outer circumference. Finally, draw a centered circle that matches the diameter of the faceplate you plan to use for turning the seat blank.

Head to your band saw and cut the seat blank round. Then extend the four diagonal layout lines onto the edges of the blank with a square. Punch each leg socket's center point with an awl.

These four holes are 1" in diameter, angle outward and pass all the way through the seat. You'll bore them on the drill press. Install a backer board on its table to help minimize tearout when the drill bit passes through the seat blank and to protect your drill bit and table. Square the edges of the table to the drill press base.

I used a sharp Fisch Wave Cutter Forstner bit for boring these holes. After tilting my drill press table 11 degrees to the right, I drilled a little way into the backer board to create a reference hole that marks the bit's center point.

Then I used a square to draw a line across the backer board that went through the center of my reference hole. I could now place the seat on the table, lower the bit and center it on the first punch mark. While holding the drill bit against the punch mark, I rotated the seat blank until the layout line on its opposite edge was aligned to the layout line on the backer board. I could then clamp the seat in place and drill the hole. Repeat for the other holes.

Once those are done, attach your faceplate to the seat blank with stout sheet metal screws threaded into pilot holes. Since these screw holes are on the seat's bottom face, they won't show.

Shaping, Sanding the Seat

Mount the faceplate to your lathe and set the speed to around 800 rpm. Use a large scraper or bowl gouge to round the blank's top and bottom edges to a half circle. Then dish out the outer face to a depth of 3/4" to make it more comfortable to sit on. When you're satisfied with the seat's shape, use an orbital sander to smooth it with the seat spinning on the lathe. Or you can hand-sand the seat instead, but **not** while the lathe is running.

Bore a 1"-diameter through hole for each leg socket with your drill press table tilted to 11 degrees. The author used a Fisch Wave Cutter Forstner bit. A backer board helped to align these holes and minimize tearout.

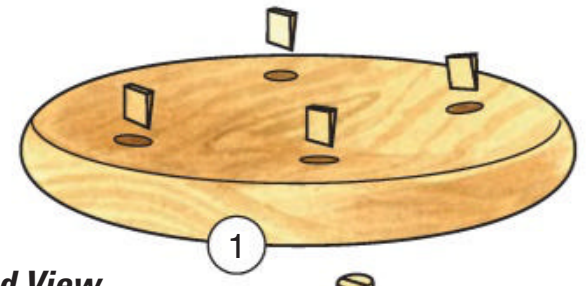
Turning the Legs

Turning the four legs is straightforward spindle work. Rip and crosscut four 1$\frac{7}{8}$"-square x 25"-long billets and mount one between centers. The first order of business is to turn the billet to just round (1$\frac{7}{8}$" diameter) with a roughing out gouge.

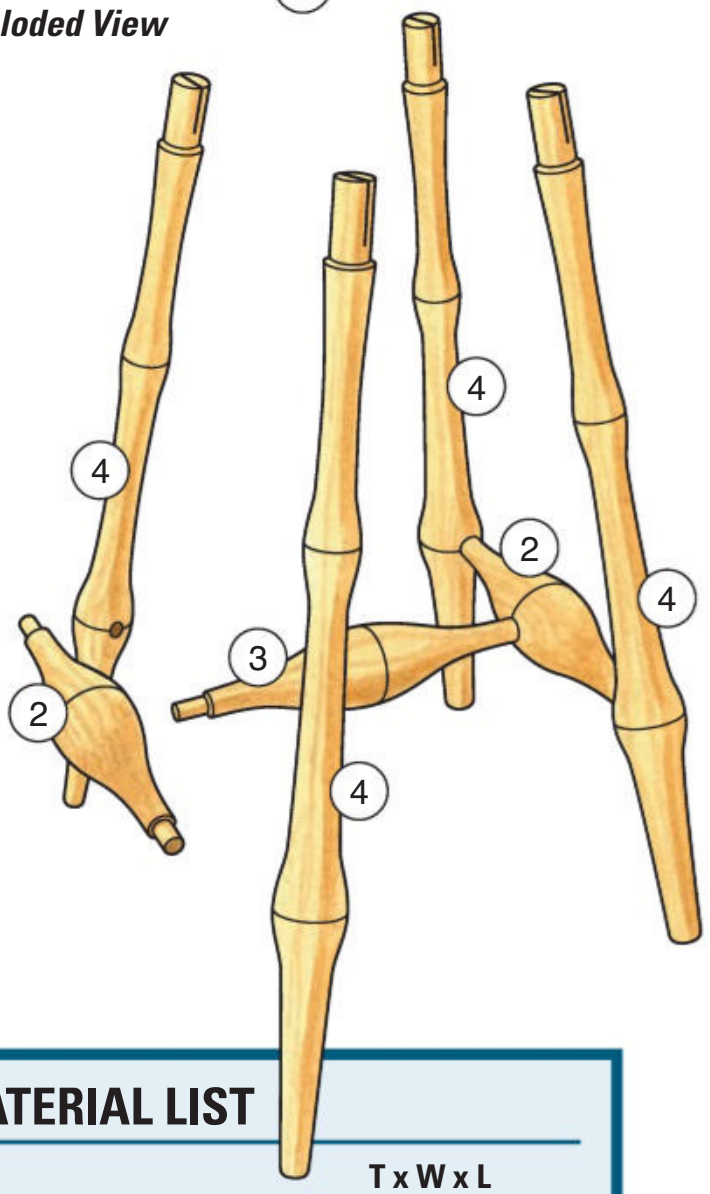
The leg's bottom will be toward the headstock and the top end is against the tailstock. Draw a line around the spindle 7" from the headstock (center of the larger lower bobbin), then turn the area from 12" from the headstock to the tailstock to 1$\frac{1}{4}$" diameter with a roughing out gouge. This sequence works from the center to the ends to keep as much strength

After rounding over the seat's top and bottom edges, dish out the top face about 3/4" deep for added seating comfort. Check your progress by placing a straightedge across the seat's face and using a ruler to measure the depth.

Shaping the four legs is straightforward spindle turning using a roughing out gouge and either a spindle gouge or a skew. The goal is to create four legs with matching profiles and a 1"-diameter, 2"-long tenon on top.



Exploded View



MATERIAL LIST

	T x W x L
1 Seat (1)	1⅞" x 14" x 14"
2 Side Stretchers (2)	1⅞" x 1⅞" x 12½"
3 Center Stretcher (1)	1⅞" x 1⅞" x 12½"
4 Legs (4)	1⅞" x 1⅞" x 25"

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO Watch an overview of the stool's hole-drilling procedure by visiting woodworkersjournal.com and clicking "More on the Web" under the Magazine tab.

in the leg as possible and to minimize harmonic vibration.

Now draw a line 16" from the headstock to mark the center of the leg's upper bobbin. Take two plunge cuts with the toe of a skew chisel to incise a 1/16"-deep line at the centerline of each bobbin and the same width.

Go ahead and turn the area between the upper and lower bobbins so each looks like a swollen garden hose, and neck down to a shaft diameter of 1$\frac{1}{16}$" in between them. Then turn the bottom half of the lower bobbin to match its upper half, and taper it to a 13/16" diameter at the headstock.

Lastly, turn the upper half of the upper bobbin, and neck it down to a diameter of 1⅛" all the way to the tailstock. Once that's reduced, make a pencil line 2" from the tailstock to mark the tenon length, and turn the tenon to 1" in diameter. (The actual size will depend on the drill bit diameter you bored the leg sockets with.) Using a 1" open-end wrench as a caliper to size the tenon will usually yield a tenon that is too big, but a very light cut with a skew will refine the fit.

Finish-sand this leg, then remove it so you can turn the other three to match it.

Making the Stretchers

Insert the four legs in their sockets in the seat, and place the stool upside down on your benchtop on two wood strips so the shoulders of the tenons can seat against the seat bottom. You'll locate the two side stretchers between the legs so they're oriented across the grain of the seat. The center stretcher will be parallel to the seat grain.

Measure the distance between the bottom bobbins at their center grooves and add 1$\frac{9}{16}$" to this distance to determine the length of the two side stretchers. Their lengths may vary slightly, which is fine. Cut a billet for each one, rough-turn them

To find the side stretcher lengths, measure between the legs' lower bobbins at the grooves and add 1$\frac{9}{16}$". This will create side stretchers with 3/4"-long tenons that will push the legs slightly farther apart for a snug fit.

Drill a 1/2"-diameter, 7/8"-deep hole in each of the legs at the groove locations to create sockets for the side stretchers. Orient the legs so these holes penetrate through the annual rings and not between them.

Dry-fit the side stretchers between the legs, then measure the distance between their bobbins at the grooves. The center stretcher's length is this span plus 1 9/16". Cut a billet and turn it to shape with a centered bobbin.

Adding wood wedges to the leg tenons will lock them in place. Arrange these wedges by penciling a line across the center of each leg tenon. Draw the lines perpendicular to the seat's grain direction.

to 1⅞" in diameter and shape them to match the *Exploded View Drawing* at left. Form 1/2"-diameter, 3/4"-long tenons on the ends. Cut a shallow groove, centered on each side stretcher's bobbin, just as you did for the legs. Finish-sand the side stretchers to complete them.

Next, twist the legs in their holes to arrange them so the side stretchers will penetrate through their annual rings and not between the rings; this will reduce the chances of splitting. Bore a 1/2"-diameter, 7/8"-deep socket hole into each leg for the side stretcher, parallel with the seat. Center these holes on the lower bobbin grooves.

Dry-fit the side stretchers into their sockets. Measure the distance between the side stretcher bobbin grooves and add 1 9/16". It marks the center stretcher's length. Turn this stretcher to shape and with 1/2"-diameter, 3/4"-long tenons on its ends. Sand it smooth. Then bore sockets in the side stretchers to fit it.

Gluing the Stool Together

We'll lock the leg tenons in the seat with wedges. Draw a line across the center of each tenon on its end so it's 90 degrees to the seat's grain direction. Use a band saw or back saw to cut a kerf at these lines that extends about three quarters down the length of the tenons. Cut thin, 1"-wide wedges from scrap to fit these kerfs.

Choose a glue with a long open time, such as Titebond III or even 90-minute epoxy, to assemble your new stool. Apply glue to all of the tenons and into the wedge kerfs, and assemble the stool. Carefully drive the wedges home with a mallet. While assembly shouldn't require force, use a band clamp to draw the legs and stretchers together if needed. When the glue dries, chisel the seat's protruding tenons flush.

Good Finishing Options

Finish your stool as you like. Multiple coats of a wipe-on finish such as Waterlox or General Finishes Arm-R-Seal are fine. If it's Christmas Eve already, switch to spray shellac or lacquer instead, which dry quickly and look great!

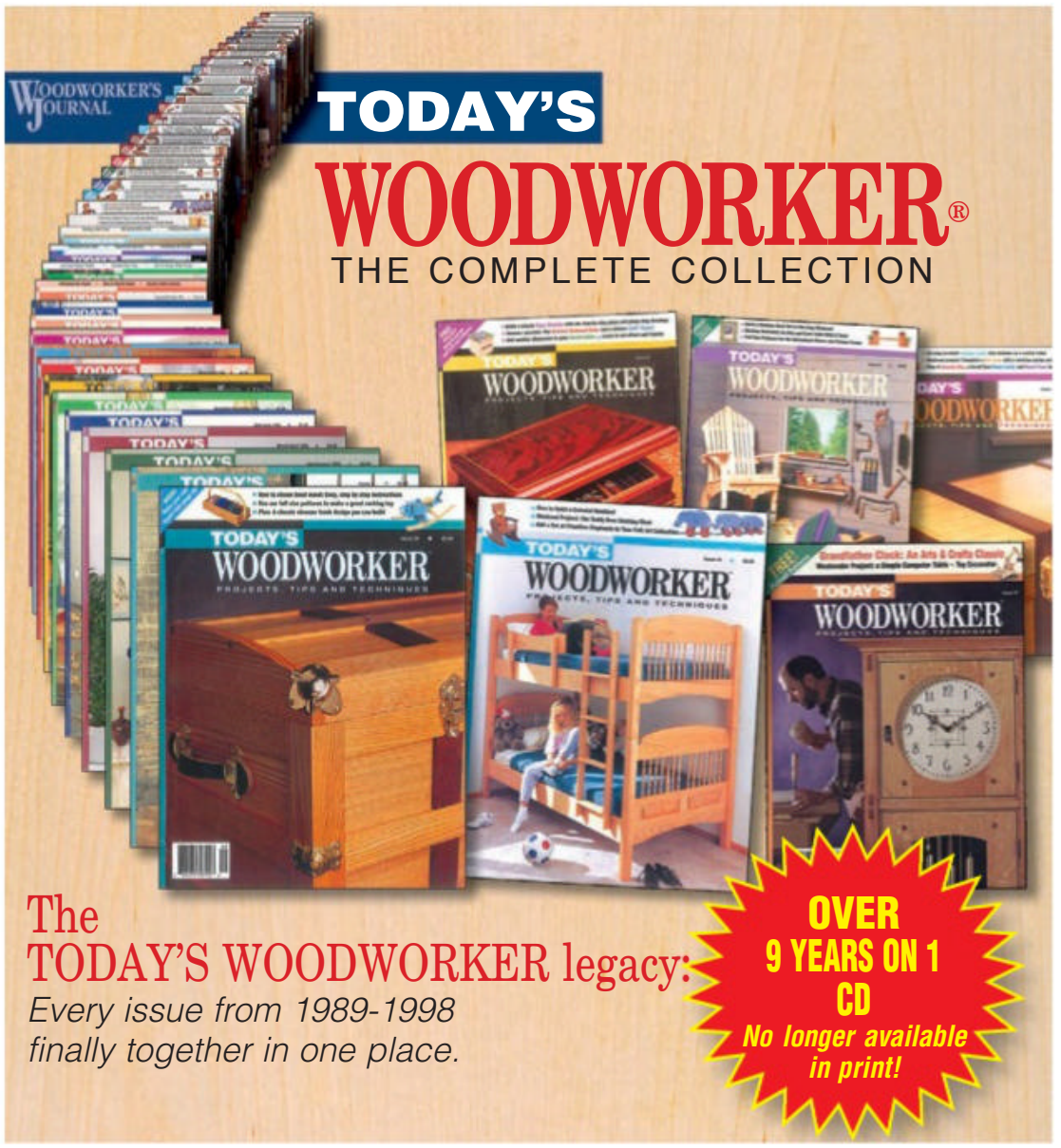
Ernie Conover is the author of The Lathe Book *and* Turn a Bowl with Ernie Conover.

Saw slots in the leg tenons, assemble the chair and drive a wedge into each tenon. Use a slow-setting glue such as Titebond III or 90-minute epoxy to provide ample working time for this assembly process.

The author used a fishtail gouge to trim the protruding tenons flush with the seat. Tap the chisel around the circumference of each tenon to score it, and work inward, being careful not to chip out the end-grain fibers.

TODAY'S
WOODWORKER®
THE COMPLETE COLLECTION

Today's Woodworker is back!



The TODAY'S WOODWORKER legacy:
Every issue from 1989-1998 finally together in one place.

This CD includes every single project, technique, trick and finishing article that ever appeared in Today's Woodworker magazine — the predecessor to Woodworker's Journal.The Today's Woodworker Complete Collection features over 200 project plans with complete step-by-step directions, elevation drawings and photos.

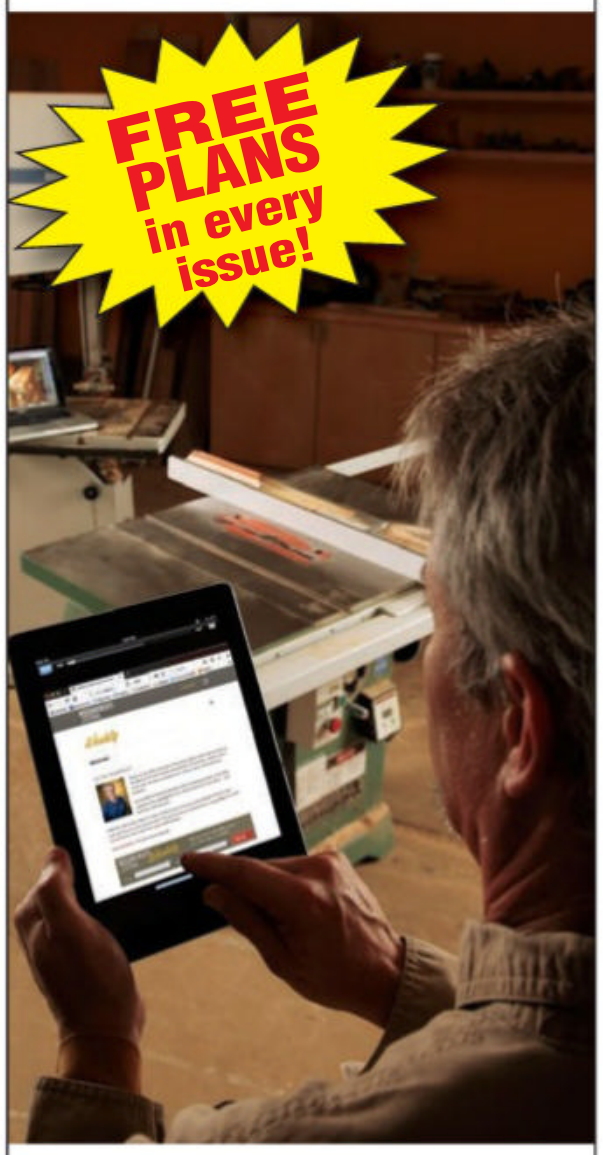
Order today!

Item #48689 . . . . . $29.99 $24.99

Call **800-610-0883** and mention code **WJ2166**
or visit us at **www.TodaysWoodworker.com**

WOODWORKER'S JOURNAL *Weekly*

The Best Online Woodworking Newsletter!



The **Woodworker's Journal Weekly** sends a friendly email to your inbox every week, full of virtual backfence chatter about your favorite hobby. It was the very first online woodworking newsletter and remains the most popular and widely read today!

Check it out and sign up for your **FREE** subscription at:
woodworkersjournal.com/weekly/subscribe

Modern Farmhouse Dining Table

By Huy Huynh

This substantial, handsome table will usher in many decades of holidays to come, thanks to sturdy Beadlock loose-tenon joinery.

When my family moved into our new home, we needed a table to fill the larger dining room space you see here. Our house's architecture is an open floor plan concept, so we wanted a table with a modern but very buildable design to closely match the house's styling. We also envisioned the table to have a substantial appearance, so we settled on a trestle table made of soft maple. I think the style has just the "heft" we were after, with 2¼"-thick splayed legs, an upper and lower stretcher, two diagonal braces and a 1¼"-thick tabletop. It seats six diners comfortably.

Since the table components are large and heavy, I decided to use Rockler's 1/2" Beadlock tenons, doubled up at each joint, to keep the joint-making process easy. Beadlock tenons are sturdy and simple to install with a jig and a drill/driver.

Milling Lumber and Laminating Parts

The thickest soft maple I am able to source locally is 8/4. In order to achieve the 2¼" thickness I needed for each member of the table's lower structure, I knew I'd have to glue two pieces of stock together and then plane the parts down to final thickness. To do that, I first identified the grain direction on the end of each board, then crosscut the stock to rough length for the legs, cross supports, stretchers and diagonal braces. I ripped this flatsawn lumber to rough width for the parts, flattened one face of the mating workpieces and glued and clamped them together. This allowed me to get at least two edges that display a straight-grain riftsawn look. When the glue dried, I planed the workpieces down 2¼" thick and ripped them to final width (see *Material List*, page 31).

After crosscutting his table workpieces to rough length and noting the growth ring orientation on the lumber, the author ripped workpieces to rough width to form a doubled-up lamination for each part.

Flatten the mating face of each workpiece on a jointer to ensure smooth, uniform gluing surfaces. Thick stock made push pads or push sticks less of a safety concern here, but it's always a good idea to use them anyway.

Templates Ease Construction, Provide a Road Map

This table's base is made entirely of flat, straight parts. But there are angles to contend with as well as joints to locate accurately. Now, you could measure and cut each part and locate every joint without templates, but I really like using them for layout and construction. So I made a set of four full-size templates from 1/2" plywood for the table's trestle assemblies — two legs, an upper and a lower cross support — plus a template for the diagonal braces. These templates verify that all of the angles will fit together well, and they also plot the locations of the Beadlock joints so I can just transfer those marks over to my workpieces without measuring. A set of these templates are handy to store for future use, too. If I ever want to make this table again, my templates will provide a quick "road map" of important details and part shapes.

If you decide to make the same templates for your table, first study the *End* and *Front View Drawings* on page 31. Notice that the upper cross support has a 40-degree angle on each end that starts 3/4" down from the top edge. The ends of the legs have matching 10-degree angles, and the lower cross support also has a pair of 10-degree angles that tilt inward so it can nest between the splaying legs. The ends of the diagonal braces are angled at 40 degrees. Rip and crosscut a blank for each of these five templates, then mark and trim the upper cross support angles at your table saw or on a miter saw. When you're marking and cutting the top and bottom leg angles, start with template blanks that measure 27⅛" long, then trim the matching angles without shortening the leg blanks in the process. Same goes for the diagonal brace, starting on a template blank that measures 30⅝" long. For the lower cross support template, make the blank 24 13/16" long to begin with, then trim the 10-degree,

Spread glue on the jointed faces of each lamination, and clamp the parts securely to ensure tight glue seams. Repeat this process for the legs, upper and lower supports, diagonal braces and stretchers.

When the glue cures, run each laminated workpiece through your thickness planer to reduce these parts to 2¼" thick. Try to take equal passes off of both faces so that the glue seams will be centered when you're through.

The author arranged his leg and upper and lower cross support templates on a large work surface in order to check their alignment and to extend Beadlock layout lines across each joint.

inward-facing angles. With that done, draw a centered layout line on the top ends of the leg templates and on either end of the lower cross support and the diagonal braces to mark the Beadlock mortise locations.

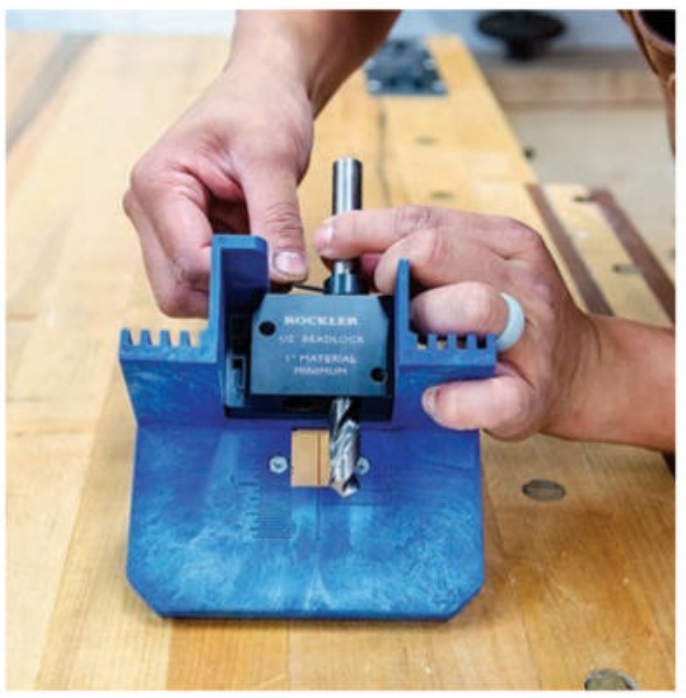
Now on a large work surface, arrange the leg and upper and lower cross support templates together into the table's trestle shape (see top left photo). Locate the top edge of the lower cross support 17 15/16" down from the bottom edge of the upper cross support. That position should spread the top inside corners of the legs 17 11/16" apart. Adjust the upper cross support on the top ends of the legs so its bottom flat edge overhangs the legs by 3 5/8" on both ends. Then carefully extend your layout marks on the leg and lower cross support templates to mark the upper cross support and the inside edges of the leg templates for the other side of these Beadlock joints.

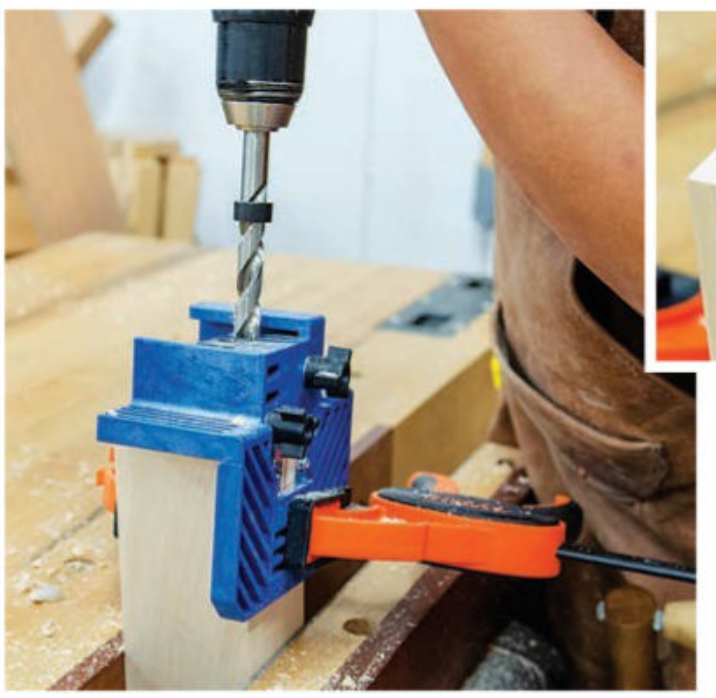
Cutting Parts, Drilling Beadlock Joints

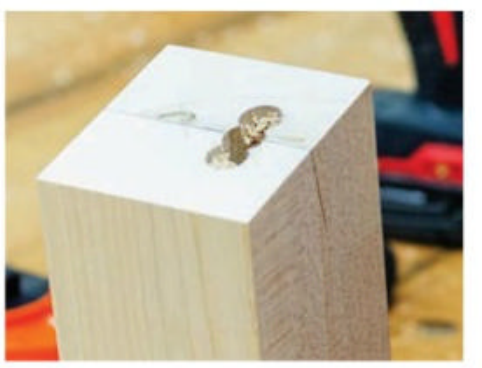
At this point I attached each template to a workpiece blank with double-sided carpet tape and used it as a guide for trimming the legs, upper and lower cross supports and diagonal braces to final shape. Once the angles were cut, I used a combination square to extend the joint layout lines from my templates onto the table components' ends and faces, where needed. Remove the templates and clean off any tape residue.

While you're at it, go ahead and locate the Beadlock joints on the upper and lower stretchers by setting them together with the diagonal braces on a work surface. The top stretcher overhangs the top ends of the diagonal braces by 21 3/8" on each end, and the ends of the bottom stretcher and braces should be flush. Mark these Beadlock joints by extending layout lines from the braces onto the stretchers. Mark the ends of the stretchers and the upper and lower cross supports

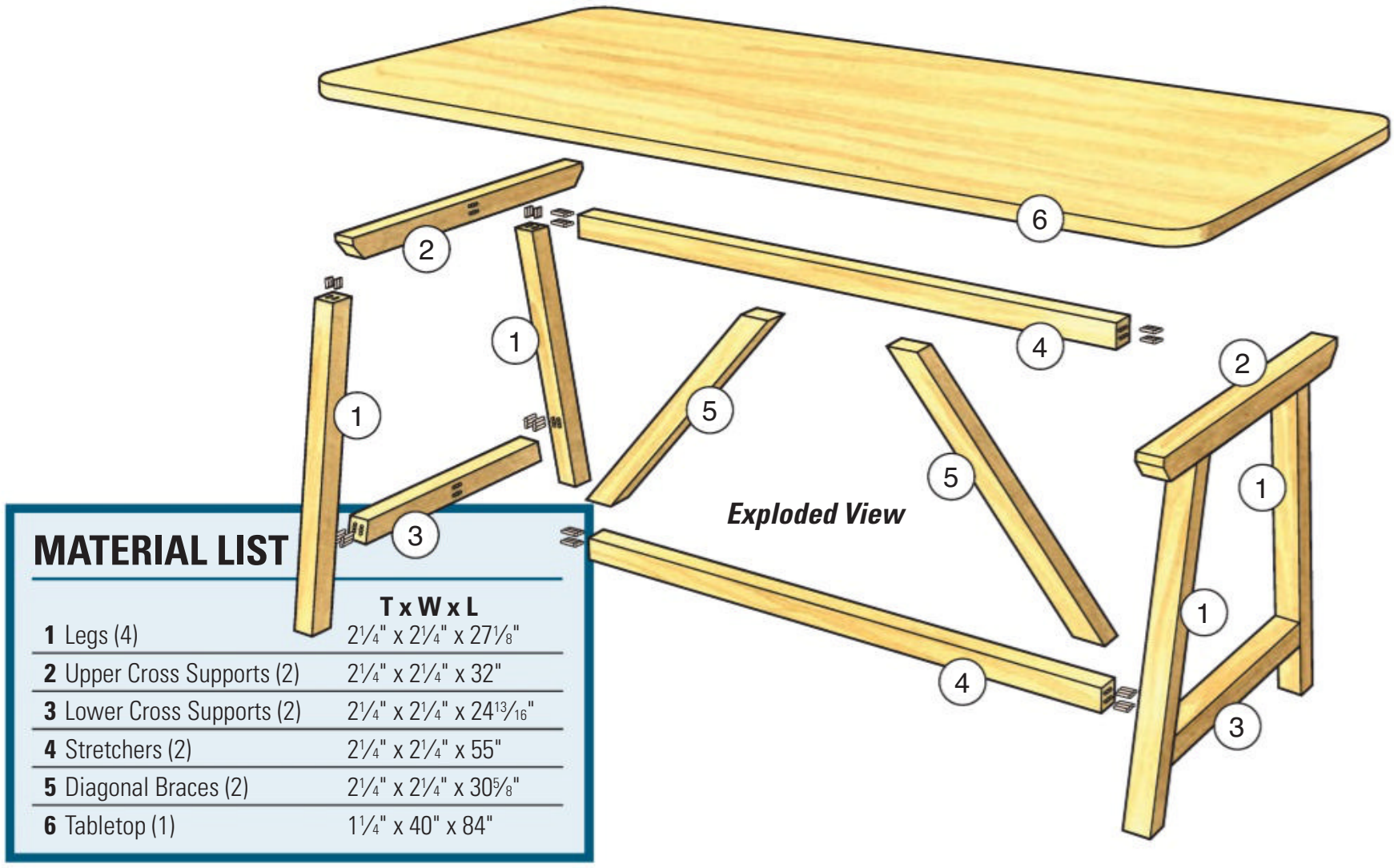
Angle-cut the part ends at 10 or 40 degrees, depending on the component. The author made these cuts with the appropriate template secured to the top of the workpiece with double-sided carpet tape.







Drilling 1/2" Beadlock joints involves boring two holes at the jig's "A" position and a third hole at the "B" position to create the overlapping, three-hole mortise pattern (inset). The author drilled each mortise 1 1/4" deep to fit 2 1/2"-long precut Beadlock tenons (left, center photos).



MATERIAL LIST

	T x W x L
1 Legs (4)	2¼" x 2¼" x 27⅛"
2 Upper Cross Supports (2)	2¼" x 2¼" x 32"
3 Lower Cross Supports (2)	2¼" x 2¼" x 24 13/16"
4 Stretchers (2)	2¼" x 2¼" x 55"
5 Diagonal Braces (2)	2¼" x 2¼" x 30⅝"
6 Tabletop (1)	1¼" x 40" x 84"

Table
(End View)

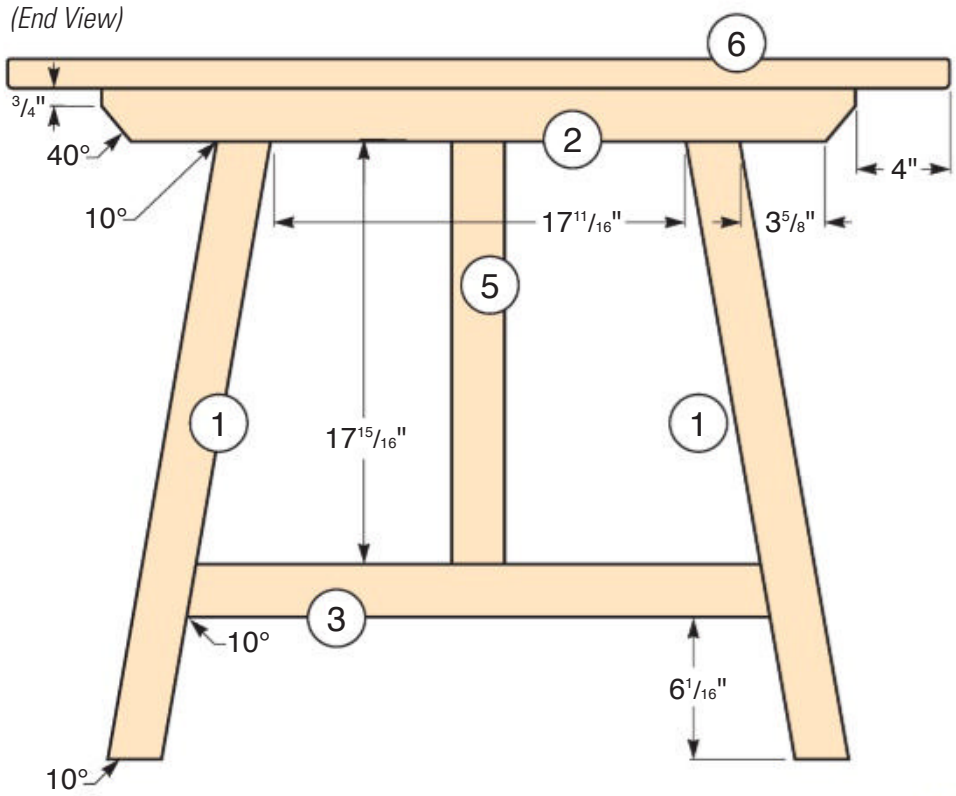
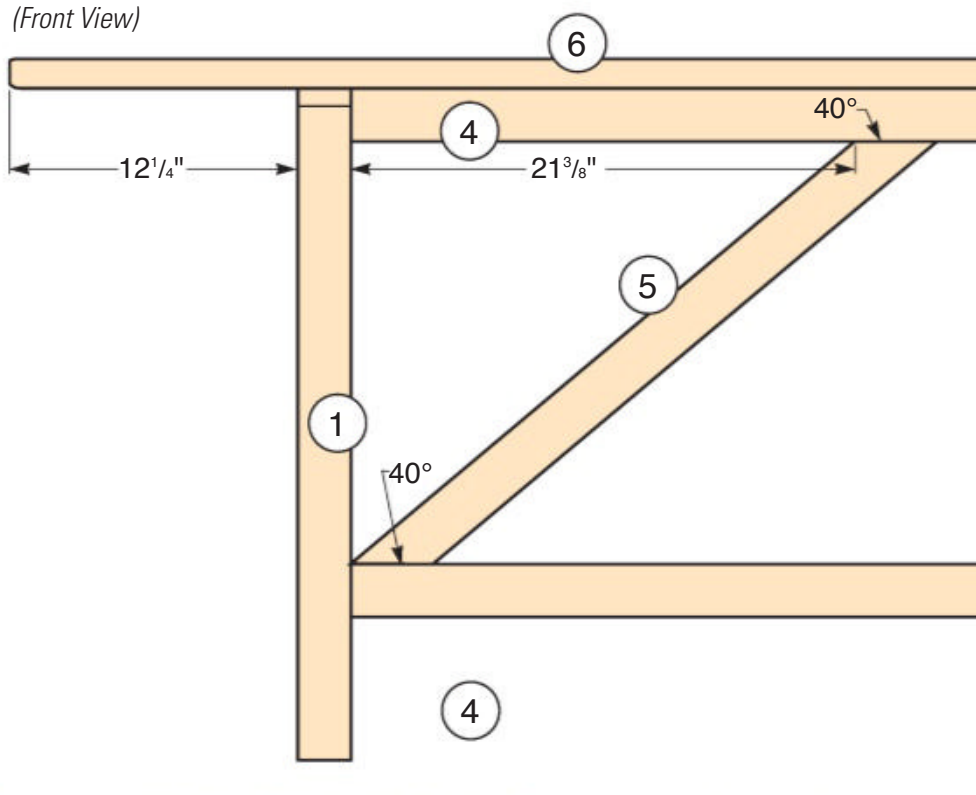


Table
(Front View)



for the Beadlock joints that will connect them, too.

It's time to drill pairs of Beadlock mortises where you've marked them. With the 1/2" drilling guide in my Beadlock jig and my drill bit set to bore 1¼"-deep mortises into each workpiece, I registered and clamped the jig to align with my layout marks. Bore the three overlapping holes that make up each mortise by drilling at the jig's "A" and "B" guide positions. Then re-clamp the jig to the opposite part face to drill a second mortise at every joint location.

Clamping cauls, made from the offcuts of the lower cross supports and the diagonal braces, enabled clamping pressure to be applied straight across the angled joints during glue-up. These were installed with tape and CA glue.

Once the Beadlock mortises are drilled, glue up the table's two trestle subassemblies. Notice that each joint receives two 1/2" Beadlock tenons and the use of clamping cauls across the leg/lower cross support joints.

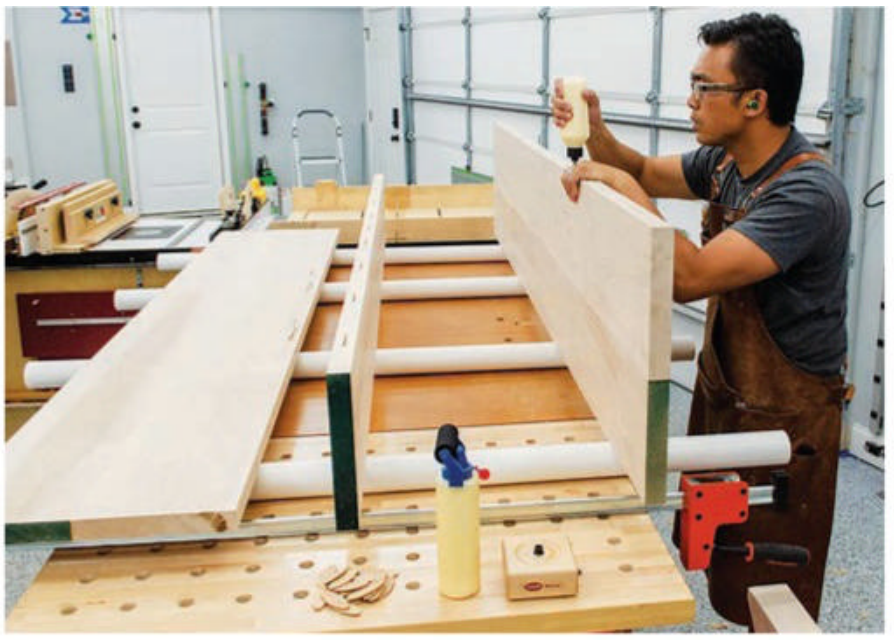
Assemble the long stretchers and diagonal braces to form a third table base subassembly. Here again, the author employed clamping cauls at the top and bottom ends of the diagonal braces to bring these joints together.

When the glue joints of the diagonal brace/stretcher subassembly cure, bring this component together with the two trestle subassemblies, Beadlock tenons and glue to complete the table base. Clamp the joints securely.

Cauls, Tape and CA Glue Aid in Assembly

Sand all the parts you've made up to this point to 180-grit so you can begin to put the table's base together. I glued up the two trestle subassemblies first, then made a third subassembly of the upper and lower stretchers and the diagonal braces. It can be difficult to direct the clamping force straight across angled joints like these, but not if you install some clamping cauls to help the process. In this case, those can simply be the offcuts that were left over when you miter-cut the lower supports and the diagonal braces. I applied a pair of the lower support offcuts to the outside faces of the legs (see upper left photo). I installed cauls on the diagonal braces as well — one to their bottom edges near the top of each brace and a second to the top edge near the bottoms of the braces (see top photo, right). I'm sure these photos have you curious, so here's the strong, simple way I attached the cauls: apply a strip of blue painter's tape to the table contact surfaces and bond the cauls to the tape with CA glue. Assemble each trestle with Beadlock tenons and glue, then glue up the stretcher/brace assembly with Beadlock tenons in those joints. When these subassem-

After planing his maple tabletop boards to 1¼" thick (left photo), the author flattened their edges and brought them into parallel on the table saw using a glue-line ripping blade (inset). He reports that the sawn edges require no further dressing on the jointer to be ready for glue and clamps.



While the amount of strength #20 biscuits add to panel assemblies is debatable, they do make it much easier to keep the joints aligned during gluing and clamping, especially when working alone.

Use a compass to draw 2" radius corners on the tabletop, and cut them to shape with a jigsaw. Smooth these cut edges with a sharp block plane or by filing or sanding.

It's always a good idea to break the edges of tabletops to make them more "skin friendly." The author used a 1/4" roundover bit in a handheld router to break the top edge and a 1/2" roundover bit to ease the bottom edge.

Sand the tabletop to 220-grit, then apply several coats of a durable finish. After each coat dries, rub the surfaces with 0000 steel wool to buff them smooth and to remove any dust nibs that have settled in the cured finish.

blies dry, remove the cauls by simply peeling off the tape. Nice trick, huh? Now glue and clamp the stretcher assembly between the trestles with Beadlock tenons inserted to complete the table's base.

Installing the Tabletop and Finishing Up

The tabletop is just a large 1¼"-thick panel I glued up from wide maple boards with #20 biscuits inserted along the joints. I trimmed the ends of the panel flush and to final length with a track saw, then traced a 2" radius at each corner and cut the curves to shape with a jigsaw. I softened the top edge of the panel with a 1/4" roundover bit in my handheld router, then switched to a 1/2" roundover bit to ease the bottom edge. A thorough sanding up to 220-grit completed the job.

Eight of Rockler's "figure eight" desktop fasteners were a good solution for attaching the tabletop to the upper cross supports. They allow for the top to expand and contract across the grain seasonally while still holding it securely. I used a Forstner bit and a chisel to create the shallow mortises for this hardware before installing the top on the table base with a pair of flathead wood screws driven through each fastener.

At this point you're done with the construction phase of

Steel "figure eight" desktop fasteners and screws are a handy way to attach the tabletop to the upper cross supports. Each will require a shallow mortise cut into the upper cross supports to install them flush.

your new dining table, and all that's left is to apply your choice of finish. To that end, I used equal parts semigloss oil-based polyurethane, mineral spirits and tung oil to create a durable wipe-on blend. I flooded it on the wood and removed the excess with lint-free paper towels. I applied three coats, buffing between them with 0000 steel wool after each coat cured.

See more of Huy Huynh's work at alabamawoodworker.com.

Gift Project

Pouring Resin Coasters

By LiLi Jackson

So many creative options!

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO To watch a video of the author mixing and pouring coasters, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.

Handmade gifts never go out of style, and they're a fun way to explore your own creativity. Lately I've been excited to make some epoxy coasters using Rockler's cool new silicone coaster molds (for more about the molds, see "Tool Preview," page 60). These coasters are not hard to make, do not require special tools and present so many opportunities for customization!

I've been experimenting with the molds for awhile and have come up with a number of ideas to share with you. My first attempt was making a mini "coaster" version of the epoxy waterfall tables we've featured in past articles. This is a great starting point for beginners, testing out adding colorants to the epoxy and using tiny offcuts of wood you might also have around your shop.

I've also explored some other ideas using different materials and methods. Some of my favorites were a photo of my grandpa and "woodworkers' coasters" using screws and washers ... plus, of course, various holiday themes.

Prepping for Pouring

Make sure your work area is set up for measuring, mixing and pouring epoxy that will stick to nearly everything, such as your workbench and clothing. I recommend using a silicone mat or plastic sheeting to protect work surfaces. And if you're working in a kitchen or small workspace, covering the floor with plastic sheeting or a painting drop cloth is

Prepping and Pouring Basics

The author prepares her workspace to get started making resin coasters. She recommends Alumilite Amazing Clear Cast Epoxy in the 16 oz kit (Rockler item 65911; $21.99). It cures very clear and accepts color well.

Spraying Rockler's silicone molds with a mold release isn't imperative, but it will help make the coasters easier to pop out when they cure hard. It will also help to protect the molds over time.

For this set of coasters, the author poured a thin layer of resin into the molds, deep enough to fill the lower lip.

Bubbles can form in the newly poured resin. They're easy to remove, either with a quick pass of a torch or by misting with isopropyl alcohol.

also a good idea. Drop cloths from a big box store are cheap, and you can reuse them. They'll protect against spills and make cleanup easy.

When using these gray silicone molds, mold release is not required, but I highly recommend it for prolonging the life of your mold. Mold release is a spray that allows cured epoxy castings to pop out of the mold more easily (see the top right photo on this page).

Open Time and Mixing

Epoxies have different cure times. The epoxy I'm using here cures in about 30 to 40 minutes at 70°F. Larger pours and warmer room temperatures will shorten your working time.

This epoxy's mix ratio is 1:1 by volume. Using a graduated mixing container, measure out equal parts. If the ratio is off even a little bit, you could end up with tacky, uncured surfaces.

Make sure to mix thoroughly; keep the stir stick in contact with the bottom of the cup to reduce air bubbles in your resin. Mix for approximately 3 to 5 minutes. Make sure to scrape the sides and bottom of the mixing cup, and continue to stir until no swirls are visible. Once the fluid is clear, mix it for an additional two minutes. Because of the differences in viscosity between the two parts, mixing does take some time.

Customize with Embedded Bling or a Special Photo

Shiny metallic baubles (above) or even a family photo (bottom left) are two options you can embed in epoxy. The objects should be clean and dry.

Gently tilt the mold if needed to spread and level the liquid resin, and be aware that the epoxy will begin to harden quickly. Don't dally!

Pouring, Layering and Embedding

At this point you could introduce a pigment or mica powder to the resin. When you're ready to pour, do it down the side of the mold to avoid making air bubbles.

Allow the resin to cure for 18 to 24 hours. Heat and mass will dictate the amount of cure time required; the more mass, the faster it will cure. And the warmer the room temperature the faster the cure. Thin areas take longer to cure.

I found that to create interesting layers, a good technique is to pour just enough epoxy to fill in the lip of the coaster. After the first layer cures, it's a perfect time to add objects and pour another layer. This layer could be of a different color.

If bubbles form in the uncured resin, wait about 10 minutes, then lightly heat the surface with a torch and watch them disappear — it works like magic!

Cleaning Up Liquid Resin

To clean up drips or spills on hard surfaces, use rubbing alcohol (even hand sanitizer works) on a clean rag, wiping

A clean stir stick from a coffee shop or a tongue depressor can help you arrange the embedded objects however you like in the liquid resin.

A mix of brightly colored tiny decorations and glitter create a whimsical Christmas-inspired coaster set.

A variety of colorants can help to create dynamic pours, too. Be sure to mix the colorant thoroughly into the resin to achieve an even tint.

Mica powder (above) can add sparkle to a coaster. Once the resin cures, buff it to a glossy finish with Novus #2 Fine Scratch Remover (Rockler item 58280; $8.99).

up the epoxy immediately. Once cured, epoxy resin is nearly impossible to remove, but it sure makes a great coaster!

Check out my "More on the Web" video at *woodworkersjournal.com* to learn more. Here's wishing you a creative and happy holiday season!

LiLi Jackson is a frequent contributor to Woodworker's Journal.

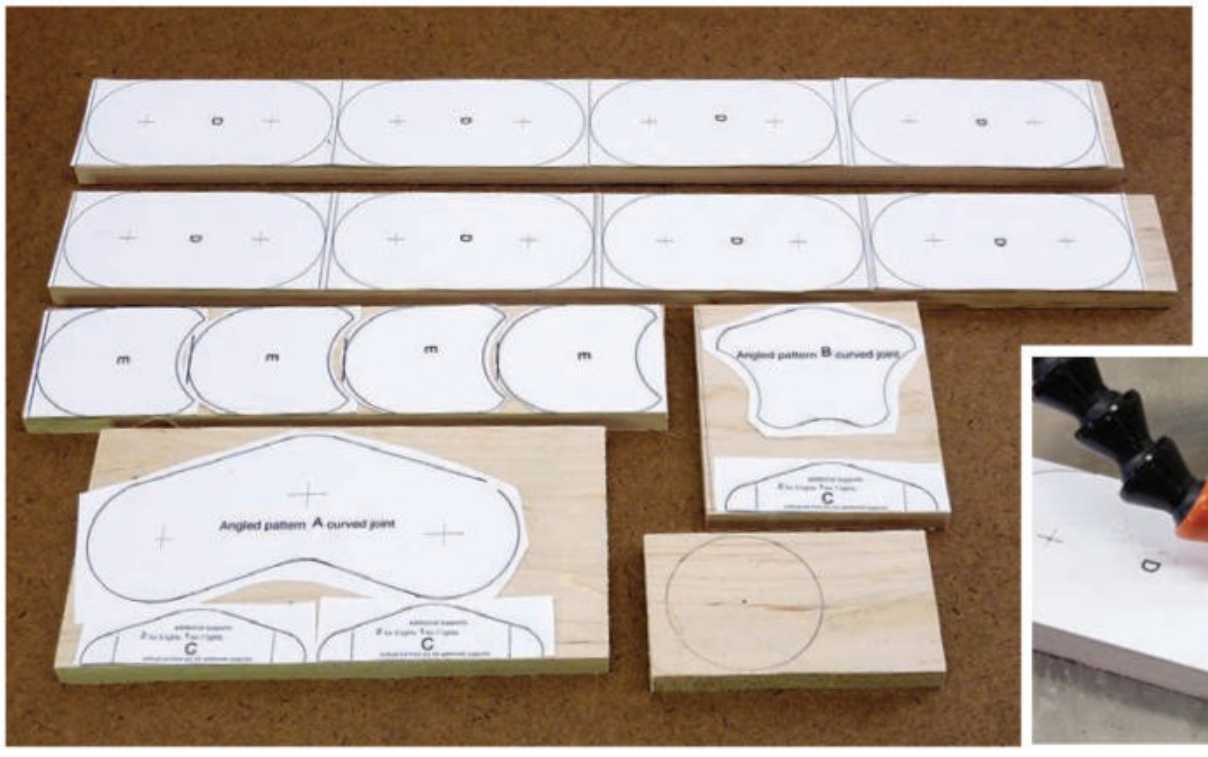
Gift Project

Menorah/Holiday Tea Light Candleholder

By Carole Rothman

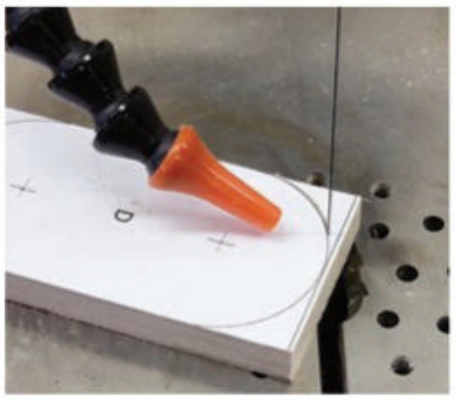
Modular construction ensures easy building.

Whether secular or religious, festive candleholders are an integral part of the holiday season. My "modular" design uses tea light candles for a stylish, modern look. It can be made with nine candles as a menorah or with fewer candles as a table decoration. All versions require one center module and two end modules; the number of side modules linking the center and end modules can vary as you wish. The modules can be arranged and glued to form either straight or curved arms (see inset, above).

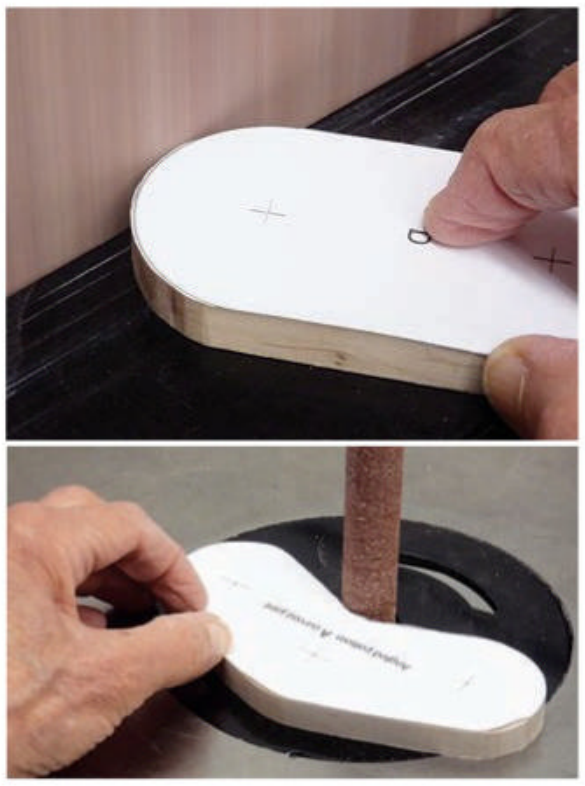


Cutting Components from Patterns

Each module consists of two 3/8"-thick pieces: a top piece that is drilled with holes for the candles and a bottom piece that allows the convex and concave ends of adjacent modules to slide into each other. Additional pieces of 3/8"-thick stock are used for the lower center support and the collar for the center candle. While all of these parts can be cut out with a scroll saw, you can expedite the cutting process for the side and end modules by first using a table saw to rip that stock to 1⅞" wide.



All of the components for the nine-light menorah (shown at left) are cut from 3/8"-thick stock. They are then drilled and sanded as needed before being glued together. Cut out the parts using a scroll saw or band saw, sawing just outside the layout lines (inset).



Cutting proud and then sanding the concave or convex contours to the lines is the simplest way to make accurate cuts with smooth edges.

We'll build the nine-candle menorah shown here. Start by downloading and printing out the free PDF patterns (it's a "More on the Web" feature for this project), cut them out and attach them to your 3/8" stock with repositionable spray adhesive. Prick all drilling points with an awl, then cut and sand all pieces labeled A through E to shape. Trim the sides where indicated from two of the C pieces. Then remove the paper patterns and any adhesive residue that remains.

Drilling the Holes

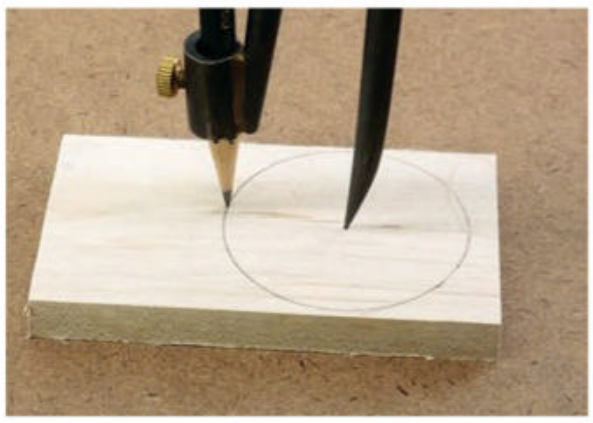
I chose 3/8"-thick stock for a more delicate look than is typical of most tea light candleholders. This, however, will require drilling both through and shallow holes in the modules to obtain the necessary depth for the candles. You'll use a 1$^{9}/_{16}$"-diameter Forstner bit to drill all holes. This size easily accommodates a standard tea light candle without excessive play. (A 40 mm Forstner bit, about 0.5 mm larger, can also be used.)

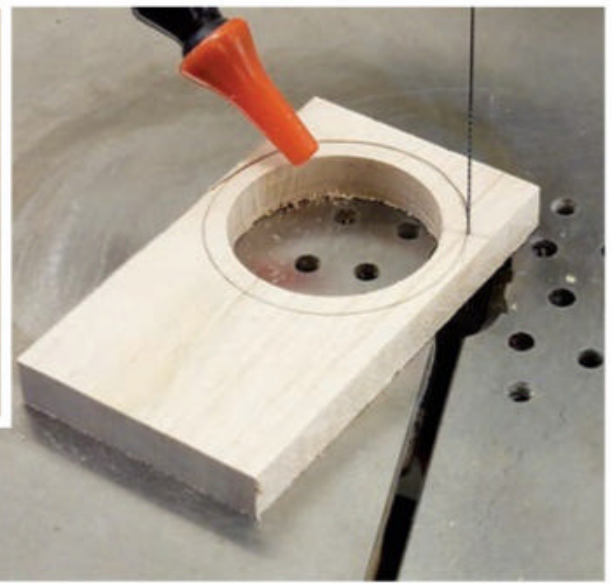
Before drilling each hole, deepen the awl mark with a center punch to make it easier to position the Forstner bit accurately. Start by drilling a through hole at one end of each of four D pieces, which will become the tops of the four side modules. Drill through holes at both outer awl marks of piece A as well. (The center hole of piece A is shallow and will be drilled later.) Then make the collar for the top center hole. Begin by using a compass to draw a 1$^{7}/_{8}$"-diameter

Before drilling the candle holes, stabilize the fragile end of the piece being drilled by butting it against the matching curve of a bottom side piece (E). Adjust the drill press to the correct speed for the bit size.

circle at one end of the 2" x 3" workpiece. Deepen the center mark with a punch and drill a through hole at this mark. Cut to the outside of the circle and sand to the line with a belt sander to complete the collar; set it aside for now.

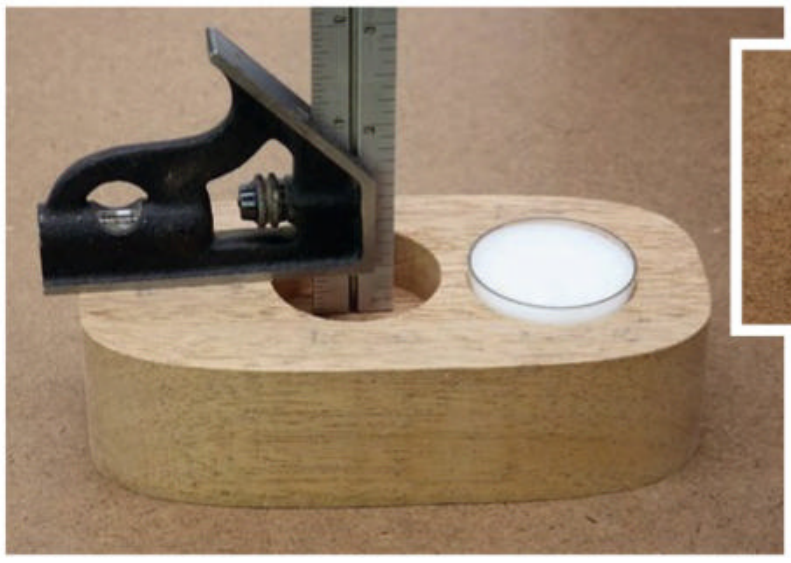
Next, compute the full depth of the candle holes by measuring the height of your candles and subtracting 1/16". My



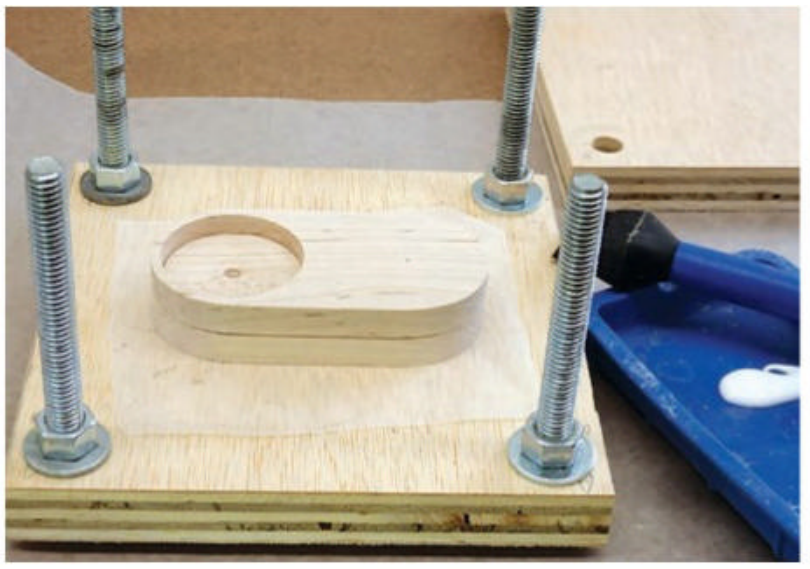


Use a compass to draw the 1$^{7}/_{8}$"-diameter outer perimeter of the top center collar (inset) before boring the 1$^{9}/_{16}$"-diameter center through hole and cutting the collar out (right).

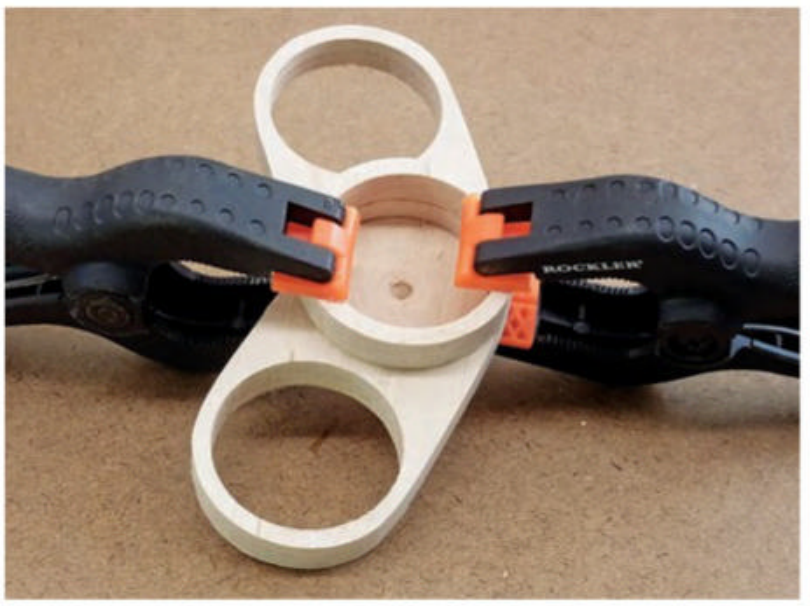
candles measured 5/8" tall, so their full hole depth is 9/16". It's a good idea to drill a test hole to confirm the correctness of your setting. Use this figure to compute the depth for the shallow holes by subtracting 3/8" (6/16") from your computed full depth; mine came to 3/16" (9/16" minus 6/16"). Drill a test hole to that depth, set the center collar over it and insert a candle; it should seat to the same depth as with the full hole. The spur of the bit may pierce the underside of the wood when you drill these shallow holes, but it should leave just a pinpoint. Drill a shallow hole at the middle punch mark of piece A and the remaining punch marks of the four drilled side module D pieces. Next, drill shallow holes at one end of two of the remaining undrilled D pieces. These are the tops for the two end modules.



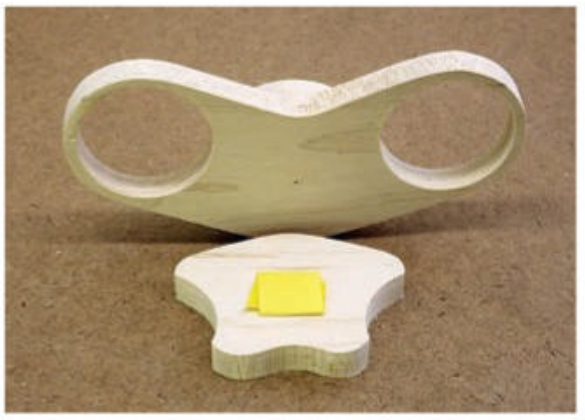
Determine the overall candle hole depth on scrap wood that will make the tea candles easy to insert or remove (left). This depth, minus 3/8", sets the shallow hole drilling depth (inset).

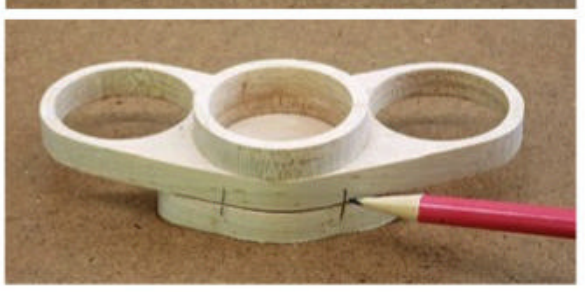


Clamp the parts of the modules securely during glue-up, watching closely for slippage. A small press made of two plywood panels, four carriage bolts, nuts and washers, such as the one the author used here, ensures even clamping pressure on this end module.



The top center collar is highly visible. Glue, position and clamp it carefully over the shallow hole of the top (A) workpiece, correcting for any slippage before the glue sets and dries.





To locate upper support B under top A, adhere these parts temporarily with a loop of tape (top). Now butt two side module D pieces into place (center) to make fine adjustments to the taped position, lining up the through and shallow candle holes. Then mark pieces A and B (bottom), remove the tape and glue the two parts together.

Gluing and Clamping the Components

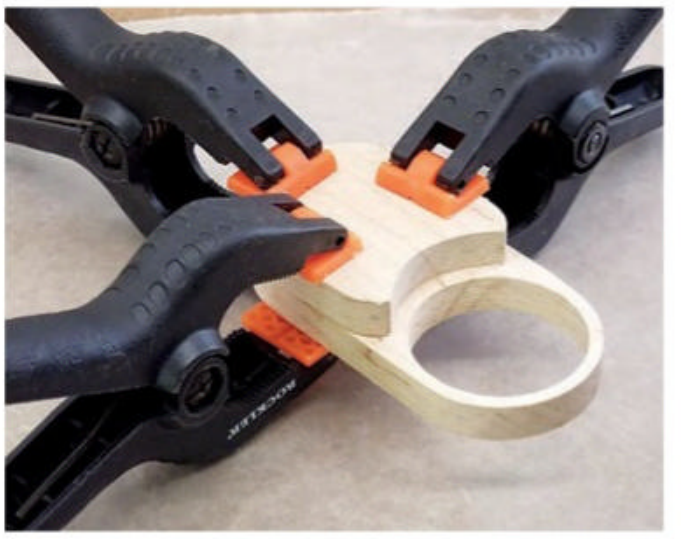
Glue each of the tops for the end modules to one of the remaining undrilled D pieces. When the glue dries, drill a full-depth candle hole at the remaining drilling point of each of these end modules. These deeper holes will face outward when the end modules are glued into place.

To make the center module, glue the collar into place on piece A, aligning it with the shallow-drilled hole. A toothpick can help spread glue around the rim of the shallow hole to minimize excess. Clamp, carefully remove any squeeze-out, and let the glue dry.

Place a loop of masking tape on the top face of the upper support (piece B) and press that piece gently into position on the underside of piece A, aligning their front and back edges. Slide the shallow-drilled end of a D piece under each end of the A piece. Adjust the parts as needed until the through and shallow candle holes on both sides are aligned. Press down on A to compress the tape loop and secure this position. Remove the D pieces and mark across A/B to register the glue-up. Then peel off the masking tape and glue A and B together. Clamp the parts, making sure the penciled reference marks remain aligned while the glue dries.

To make the four side modules, glue one bottom side E piece to the underside of each of the four remaining D pieces. Clamp each module, carefully removing any squeeze-out, and let the glue dry. Sand the sides of the modules flush with a vertical belt sander.

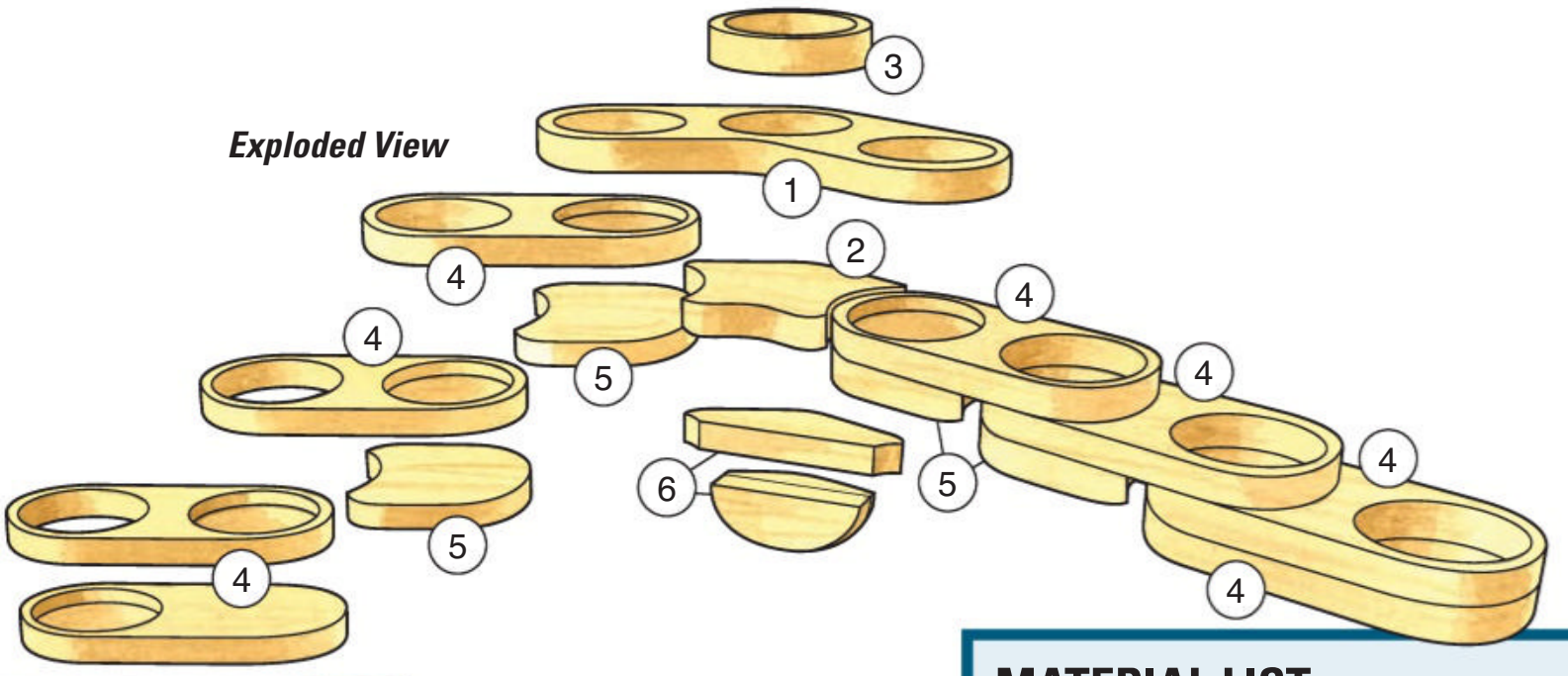
Before gluing all the modules together, it's a good idea to do a dry run to determine the sequence that gives the best fit between adjacent units and the most attractive appearance. Use pieces of 3/8" scrap to stabilize the modules as you try out your options. When you're satisfied with the arrangement, number the modules to prevent confusion during glue-up. If you're planning a curved version, make a small angle guide to keep the menorah's overall shape uniform.



Position the interlocking bottom side pieces (E) beneath the shallow-drilled end of the upper sides when gluing up these parts (top). Align the part edges as closely as possible to reduce the amount of sanding that will be needed to smooth the module profiles (bottom).

Assembling Modules, Finishing Up

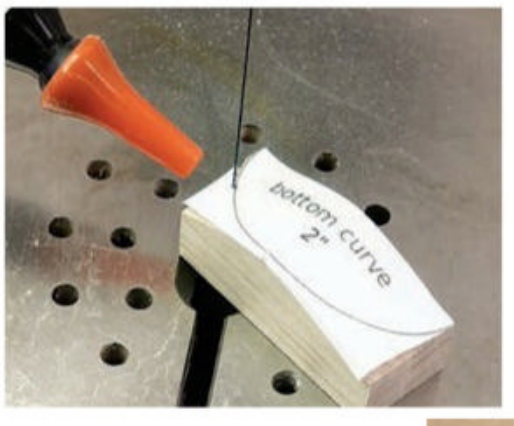
Begin by gluing a side module to one end of the center module. Clamp the glued unit, clean away squeeze-out, then attach a module to the other end in the same way. Add modules outward in this manner. Make sure the deeper candle holes on the end modules face out.

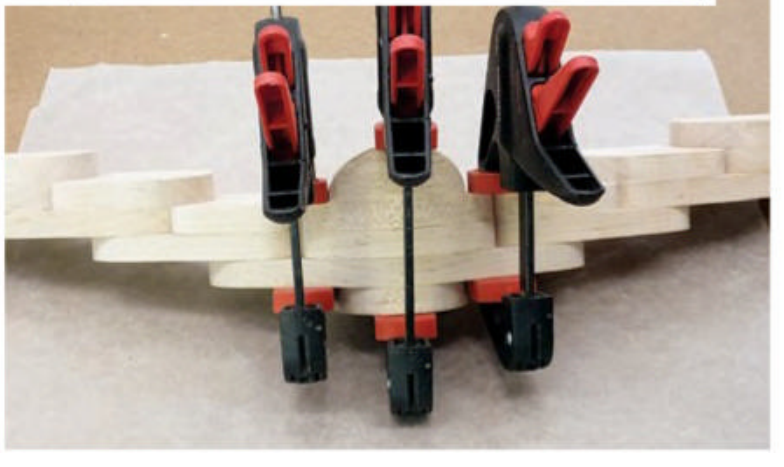


MATERIAL LIST

	T x W x L
1 Top, A (1)	3/8" x 3" x 5⅝"
2 Upper Support, B (1)	3/8" x 2⅜" x 3"
3 Top Center Collar (1)	3/8" x 2" x 3"
4 Sides and Ends, D (8)	3/8" x 1⅞" x 4"
5 Bottom Side Pieces, E (4)	3/8" x 1⅞" x 2⅜"
6 Lower Support, C (3)	3/8" x 7/8" x 2⅞"

Starting from the center and working outward, carefully glue and clamp the modules together, making sure their through and shallow candle holes align. Check for symmetry between the sides as you work. A small block of wood can help aid in this alignment if the project arms are straight (inset).





Cut along the curved line of pattern F to create the laminated center foot (above left). Glue it to the full-length lower support (C) so that their curves are flush (above right). Sand it smooth when the glue dries. Then glue and clamp this assembly to the bottom of the menorah's upper support (B), with the curved back edges of the parts aligned (right).

www.woodworkersjournal.com
MORE ON THE WEB

To download a complete set of full-size PDF patterns for this project, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.

The center of the menorah is stabilized from behind by a three-piece glue-up of lower supports (C). Face-glue the two shortened lower supports and let this assembly dry. Then orient this piece with its curved side up and attach pattern F to the top face. Cut along the pattern's curved line to create the foot for the stabilizing unit (see photo, far left). Sand it smooth. Now glue the flat face of the foot to the full-length lower support piece, matching their curved and flat faces (see photo at left). Sand this assembly when it dries, then glue and clamp it into place at the back edge of the menorah (see bottom photo at left).

Sand the whole project to 220-grit. I finished my menorah with shellac, then several coats of lacquer, smoothing between coats with 0000 steel wool.

Carole Rothman is the author of Creative Wooden Boxes from the Scroll Saw *and* Scroll Saw Wooden Bowls: Revised & Expanded Edition, *both published by Fox Chapel.*

Gift Project

Simple Serving Tray

By Rob Johnstone

This colorful project is a great way to get started in woodworking!

This simple geometric serving tray can be made using only a handsaw, a drill, three clamps and some sandpaper. It is a perfect beginner's project, and experienced woodworkers could make several of them as nice gifts in a short time, too.

The tray consists of three pieces of 3/4"-thick hardwood. The handles are cut from one piece of 1/4"-thick lumber, and the feet and handle details are made from eight maple pegs cut to two different lengths. All of these supplies are available at *rockler.com* or from a Rockler store (see the "Hard-to-Find Hardware" box on the opposite page).

Cutting, Clamping and Sanding

I used padauk for the center board and made the two outer boards from black walnut. My plan was to use a food-safe oil finish, and those species looks great together when finished this way.

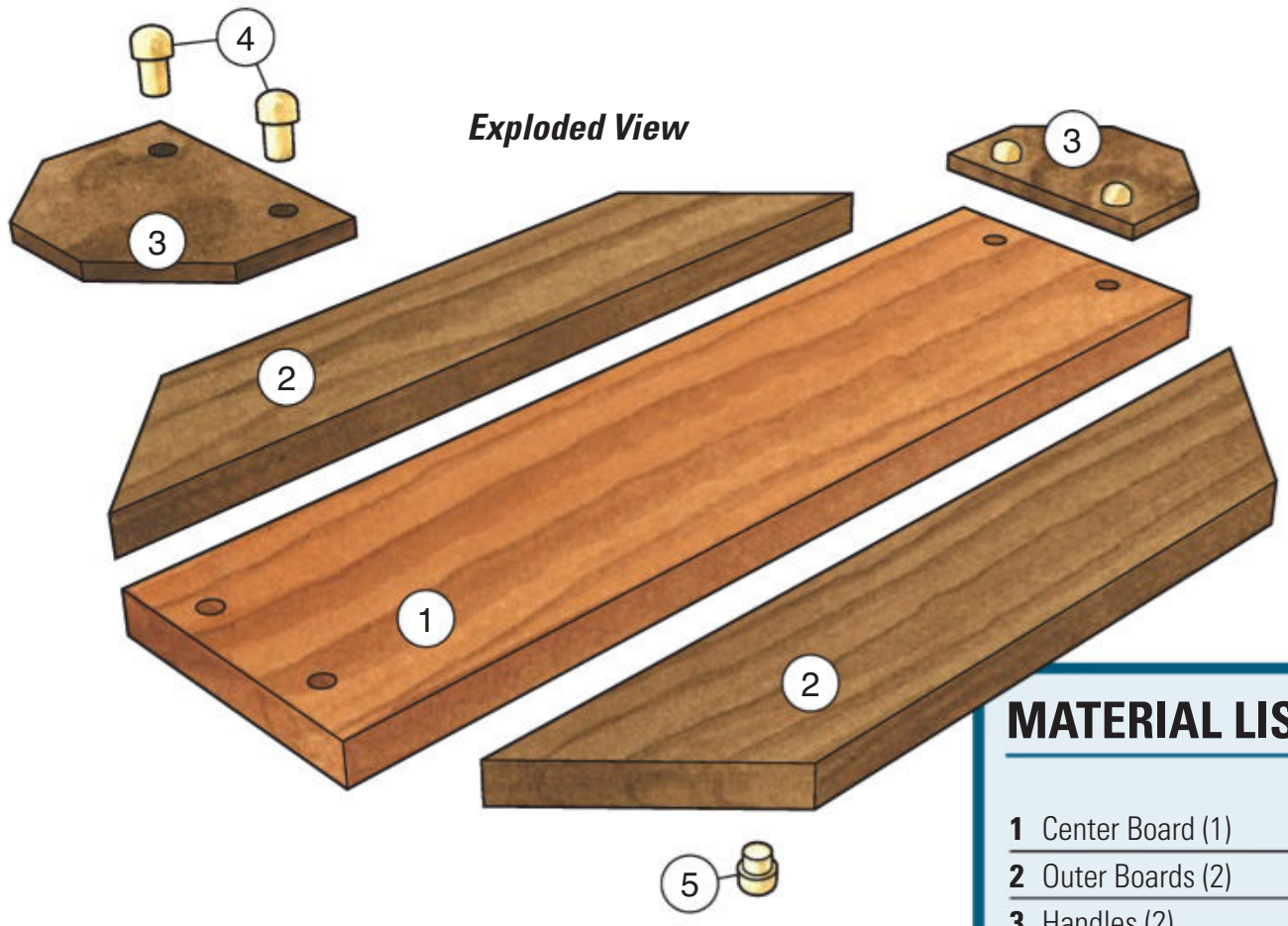
I cut the center and outer boards to length and then mitered two corners of the outer boards with a handsaw. Then I edge-glued the boards together. When the glue cured, I sanded the tray flat by hand, but a random-orbit sander would certainly speed that process along!

Use three clamps to glue the tray components together. The center padauk board extends past the outer walnut boards by 1" on each end.

Grabbing the 1/4" walnut board, I cut the handles to length and then mitered their corners as shown in the *Drawings*. Sand the handles smooth and soften their edges. Now lay out the peg holes in the handles and use a 1/4"-diameter bit to bore through them. Transfer the hole locations to the tray using the handles as guides. Drill those holes. Cut the handle peg shafts to 1/2" long and then install the handles on the tray with glue and pegs. I put a weighted board across the top of the pegs to clamp the parts.

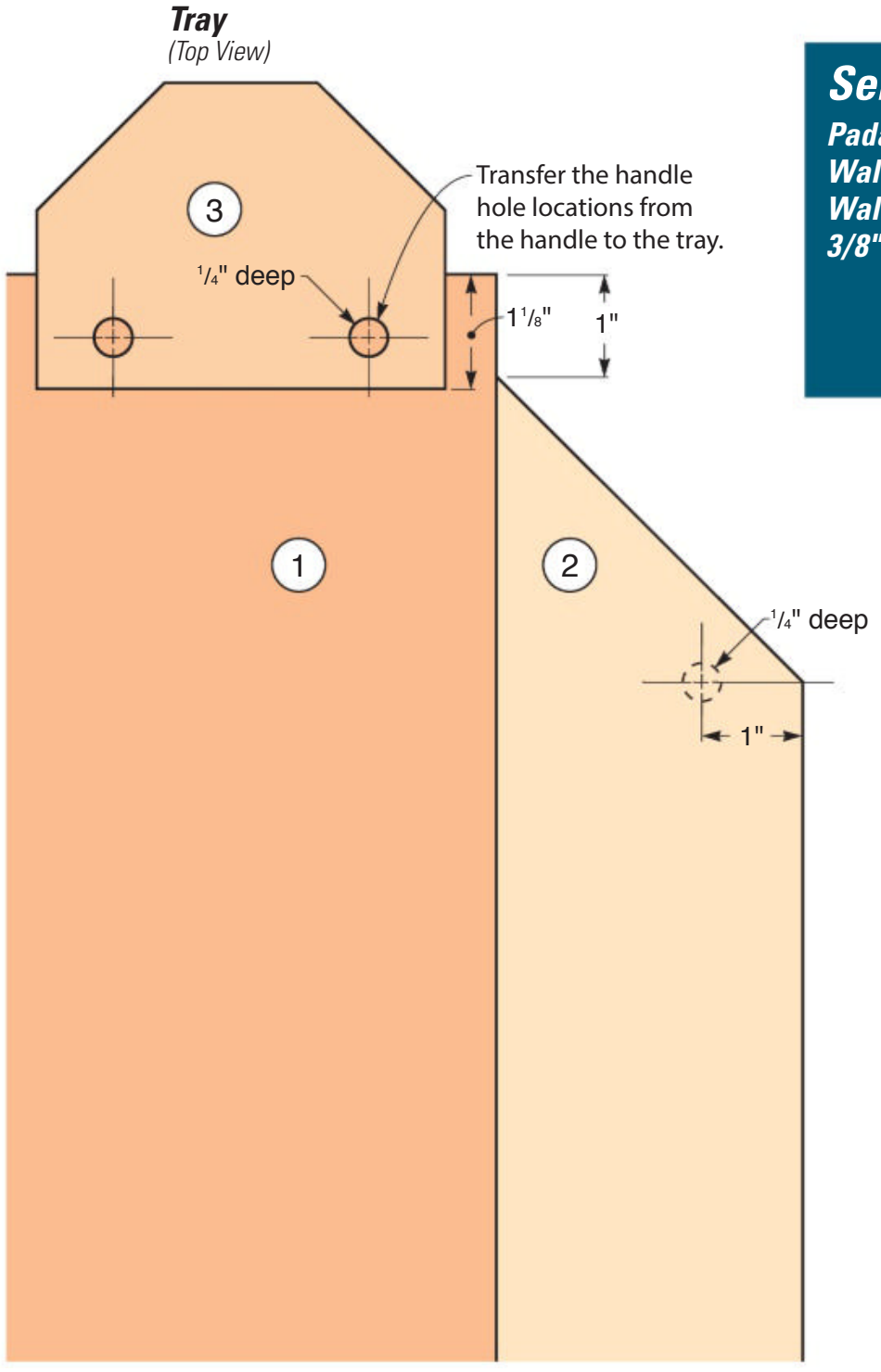
When the glue dries, drill holes for the foot pegs. Cut their shafts to 1/4" long, and glue them into place. Wipe on two coats of Walrus Oil® finish or similar, and you're done. Time to party!

Rob Johnstone is publisher of Woodworker's Journal.



MATERIAL LIST

		T x W x L
1	Center Board (1)	3/4" x 5" x 18"
2	Outer Boards (2)	3/4" x 3" x 16"
3	Handles (2)	1/4" x 4" x 3"
4	Handle Pegs (4)	3/8" Dia. x 1/2" shaft
5	Feet Pegs (4)	3/8" Dia. x 1/4" shaft



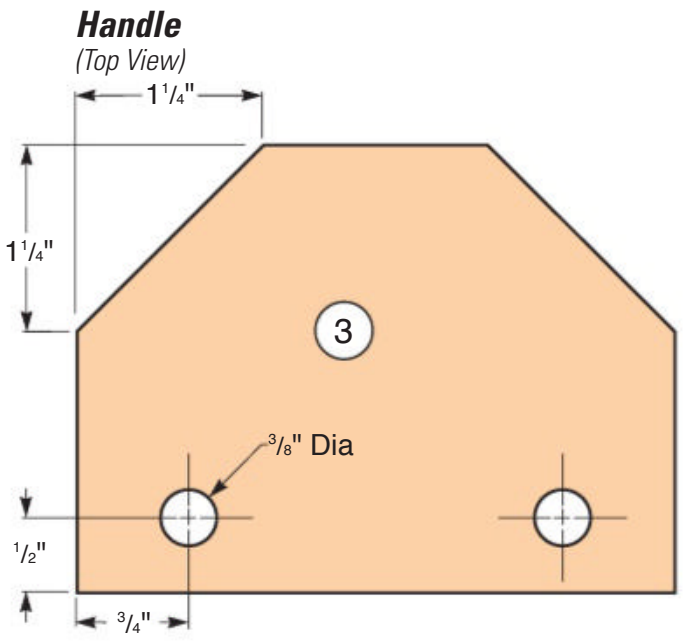
Serving Tray Hard-to-Find Hardware

Padauk by the Piece 3/4" x 5" x 24" (1) #39769 ..... $20.99 ea.
Walnut by the Piece 3/4" x 3" x 24" (2) #38915 ..... $15.99 ea.
Walnut by the Piece 1/4" x 3" x 24" (1) #65100 ..... $11.99 ea.
3/8" Hole Maple Pegs (2) #75929 ..... $2.99 pk.

To purchase these and other products online, visit www.woodworkersjournal.com/hardware
Or, call 800-610-0883 (code WJ1577).

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO To watch a video of the author making this tray from start to finish, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



Gift Project

Beehive Honey Dipper

By Chris Marshall

Turn a knob or handle to give Rockler's stainless-steel honey dipper hardware a personalized touch.

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO To watch a video of our staff turning honey dipper handles, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.

If nothing tastes better in a steaming cup of tea or on top of a slice of toast than a dollop of honey, a special honey dipper like this could sweeten how you dispense that drizzle. Rockler offers a stainless-steel honey dipper (item 65970) with an end that's threaded to accept any knob or handle you can dream up. I turned mine from a block of swirly colored resin using micro tools with negative-rake carbide cutters from Easy Wood Tools. Rocker carries these tools and 1½" x 1½" x 6"-long turning blanks in a variety of fun colors and patterns.

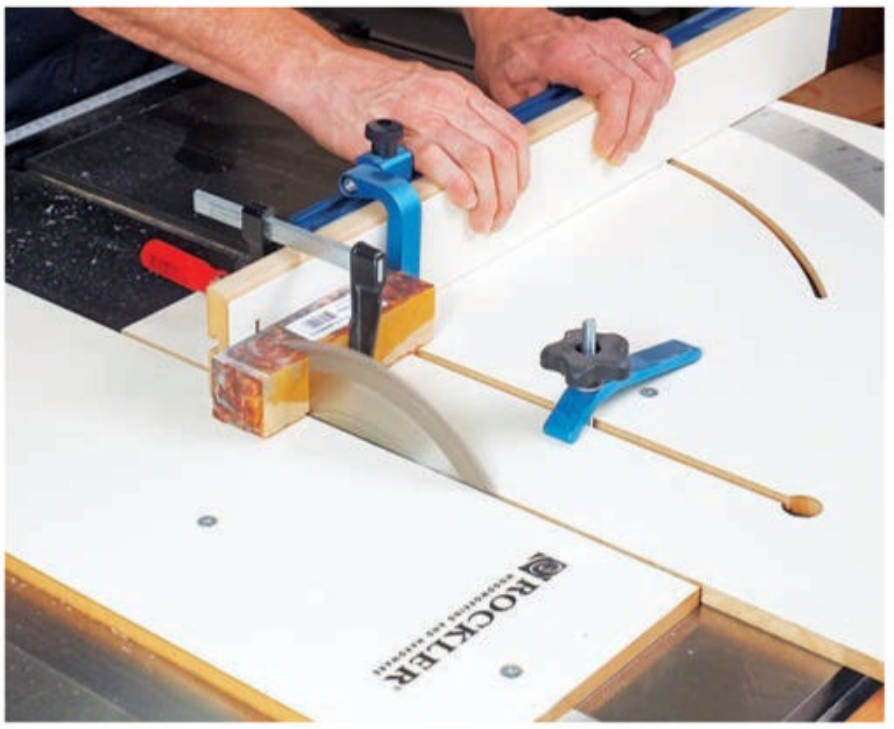
To add some whimsy, I shaped the knob for my honey dipper to resemble a beehive. I turned a little "beehive" bowl from scrap cherry to go with it for catching the residual honey left in the dipper during use. It was a fun chance to try my hand at turning resin, but you could certainly make your handle or knob from wood scraps or even one of today's deep-pour epoxies and colorants, if you prefer. (Rockler now sells molds for pouring handle blanks like this — see *Tool Preview*, page 60.) And if perhaps you need a fresh gift idea, a little "Santa's elf" creativity at the lathe could deliver a production run of these honey dippers in plenty of time for the holidays.

Mounting the Blank, Roughing into Round

Let's get this little beehive knob underway by crosscutting a 1½"-long piece of resin from a longer block at the miter saw or table saw. Mark the centerpoint on one face, and drill a straight hole into the blank about 7/8" deep. Use a 5/16" or 19/64" twist drill bit to bore this hole.

You need to thread the hole with a 3/8"-16 tap in order to mount it on the mandrel we'll use for the turning process. Insert the tap carefully when starting the threads — it needs to be pressed and turned into the hole as straight as possible, because adjusting the tap for an out-of-straight start by prying it while you twist it in can cause the surrounding surface of the resin to chip and flake. (Don't ask me how I know this…)

Rockler sells a steel turning mandrel specifically for making handles and knobs for honey dippers like this; it's item 62683. Remove the larger steel sleeve that comes with it, and install the smaller of the two included plastic washers onto the threaded end. Screw the resin blank onto the threaded end of the mandrel until it's snug against the plastic washer. Now insert the mandrel into your lathe headstock's #2 Morse taper



Crosscut a blank for the knob from a longer block of resin. The author used a crosscut sled and clamped the block in place to make this cut safely. Resin can be cut with general-purpose saw blades or on the band saw.

spindle, and tap the end of the resin blank with a rubber or deadblow mallet to seat the mandrel in the spindle.

Bring up the tailstock with a live center installed in it to secure the "outboard" end of the resin blank. This will help reinforce the turning when bringing the square resin blank initially into round. Raise the tool-rest on your lathe's banjo so the edges of your carbide-insert turning tools will be even with the lathe's axis of rotation. I used negative-rake cutters for all of the steps to follow, and the reason for that is very simple: their top edges are beveled slightly downward to turn chip-prone resins like these smoothly and easily. Incidentally, Easy Wood Tools also recommends these cutters for turning hardwoods to help minimize tearout on tricky end grain.

I used a carbide-insert turning tool with a gradually radiused square cutter to turn my square-edged resin blank into a 1¼"-diameter cylinder. Keep the handle of the tool held level with the floor when carrying out this roughing work. Be sure to wear eye protection — or better yet, a face shield — to protect your face from shards of flying resin as you carry out this step. They will be plentiful. When you reach the final diameter, go ahead and remove the tailstock. Score a line with a diamond-shaped or thin parting tool to mark the blank at 1⅜" long.

Bore a centered hole into one end of the blank using a 19/64" or 5/16" twist bit. Then carefully cut threads for the honey dipper with a 3/8"-16 tap. This enables the blank to mount to Rockler's #62683 turning mandrel (inset).

Shaping the Beehive

Now turn the cylinder into an ovoid shape, and reduce its length to 1⅜". Imagine the form of a hot-air balloon or a guitar pick when carrying out this shaping step, and taper the end that's threaded into the mandrel until it's nearly flush with the plastic washer. Once round, the resin blank will turn with thin, ribbon-like shavings and tiny flakes instead of shards. Resin isn't terribly hard, so it doesn't require much force to shape it with sharp tools. But their cutting edges will load quickly, so dust collection helped whisk away the debris while I worked.

Next, with a round cutter, turn a small cove that flares out from the threaded end of the knob. Make the end of the cove flush with the mandrel washer. At this point, I used the tip of a diamond-shaped cutter to score a series of lines into the turning, stepping it off evenly from the coved to the bulbous end. I scored each of these lines about 1/16" deep. They'll establish the ends of each bead that create the beehive's outer shape. Use the corner of a square cutter, or the tip of a diamond-shaped cutter, to cut a small V-shaped notch at each scored line down to its depth.

Rough the blank into a 1¼"-diameter cylinder with a carbide-insert turning tool. The author's tools were equipped with Easy Wood Tools negative-rake cutters for turning composites.

Turn the cylinder into an ovoid that resembles a guitar pick or hot-air balloon. Square- and round-edge cutters make quick and easy work of this shaping process.

Score a series of shallow lines in the knob to establish the limits of each cove. Widen these lines into V-notches with the corner of a square cutter to begin the bead-making process.

Continue to shape the beads by swiveling the cutting tool from the center of each bead outward to the edges to create smooth radii. It doesn't take much force to cut this material, so be sure to use a gentle touch.

The tip of a diamond-shaped, negative-rake cutter can help to deepen the lines between the beads even further, and its long, sharp edges work well to smooth the curves.

Forming Beads, Finishing Up

You're ready to shape the beads with a square or slightly radiused square cutter. It's an easy process: simply swing the cutter from the top center of each beaded area down to the "V" as you apply the cutting edge to form each half of a bead. Use a very gentle touch to prevent shortening the height of these beads — the goal here is simply to form smooth radiuses. And remember, the resin is pretty soft so changes happen fast.

Once the beads are formed, clean up the lines between them with light touches using the tip of a diamond-shaped cutter. If the beads aren't as pronounced as you would like, you can also use the point of the tool to cut deeper valleys, then use its sharp edges to help transition the curves again.

Resin isn't wood, but that doesn't exempt it from needing a good sanding. So, starting with 600-grit sandpaper I bought at an auto parts store, I sanded away any scratches I could see on the knob. I cut the sandpaper into narrow strips, folded over on themselves, to help "sneak" the paper down between the beads. Then I switched to foam-backed abrasives (Rockler item GRP17318) and sanded up through the grits from 1,500 to 12,000. Check your progress by wiping the turning periodically with a clean rag as it spins. You'll see any evidence of scratches that remain as tiny white lines in the surface. Once done with that step, I polished the surfaces with Novus® #2 Fine Scratch Remover for Plastics (Rockler item 58280) and a clean rag, which quickly buffed the resin to a glossy sheen.

If you're satisfied with the look of the knob, carefully unscrew it from the mandrel. Thread it onto the honey dipper hardware to finish up this portion of the project.

Creating a Beehive-shaped Holder

As I mentioned at the outset, I turned a little bowl from scrap 8/4 cherry to hold the honey dipper and catch the drips. To create this bowl and its beaded "beehive" exterior, I used traditional bowl-turning techniques and tools — after all, it's just a very small version of much larger cousins. Once the bowl was turned and sanded, I wiped on several coats of mineral oil to provide an easy-to-maintain, food-safe finish.

Chris Marshall is senior editor of Woodworker's Journal.

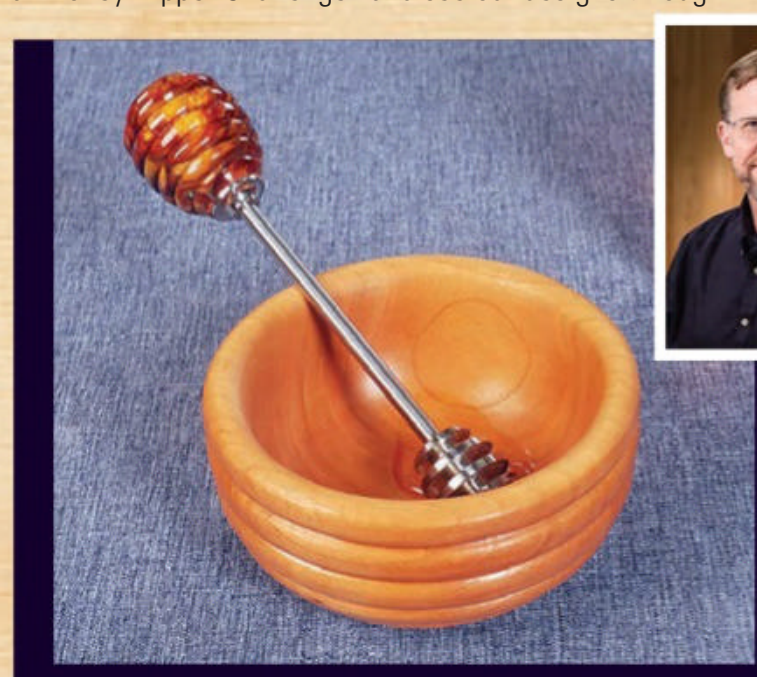
Rockler offers many kitchen utensil turning kits and supplies

The author used a set of color-coded, foam-backed micro abrasives to sand away all evidence of tool scratches. Light pressure is all that's required here. Sanding up through the grits takes just a few minutes.

Buff the knob to a glossy sheen with a liquid scratch remover such as Novus #2. Then carefully unscrew the knob from the mandrel and blow out any dust inside the threaded hole. Screw it onto the honey dipper.

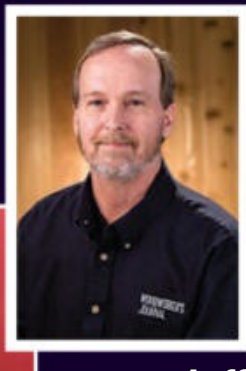
Vote for the Best Design in Our Honey Dipper Challenge!

When the idea of turning a honey dipper for the issue was decided, several staff members came forward wanting to do the project and article (well, all of us). Chris was selected to take charge of the article, but several of us felt excluded and wanted to join in the fun anyway. Hence it was decided that we should have a "Honey Dipper Challenge" and see our designs through to reality. We hope you'll watch our video as we let our lathe creativity loose! Then vote on which honey dipper design you think is the sweetest, so to speak. Go to *www.woodworkersjournal.com/honey-dippers* Your vote counts. (And if you vote, you might win a prize!) May the best dipper win!



Chris

Rob



Jeff

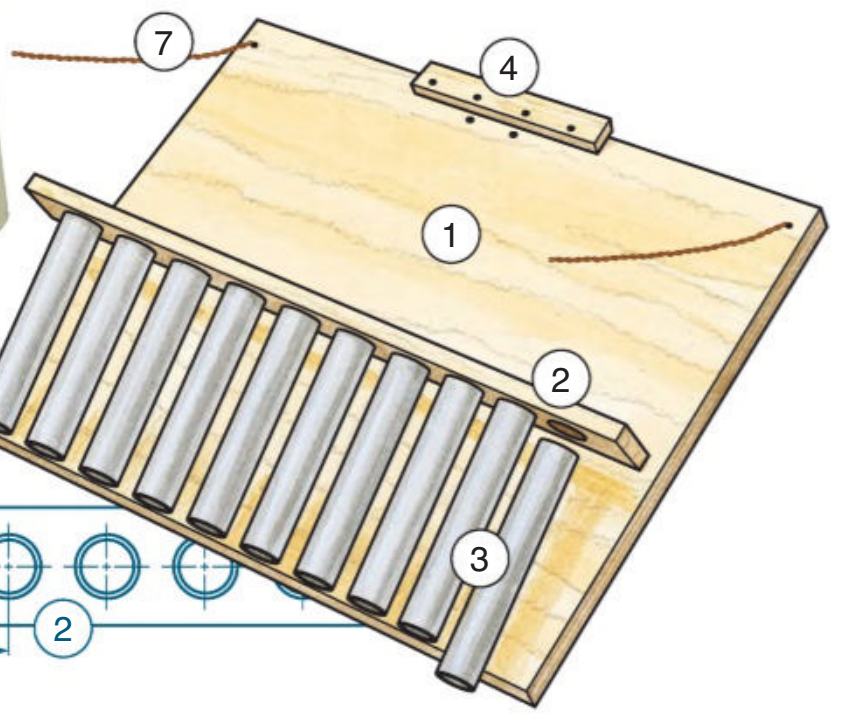
Nick

JIGS & FIXTURES

Turner's Tool Holder

By WJ Staff

Exploded View



Tube Stretcher
(Top View)

Tube Stretcher
(End View)

When you're in the middle of a turning project, it's handy to have all of your lathe tools within easy reach. This tip-out tool holder, which began as a "Trick of the Trade" submitted years ago by reader James Mossinghoff, can bring that convenience to most open-stand lathes. It converts unused space between the legs into practical storage for 10 tools. PVC tubing holds each tool stationary and prevents the cutting edges from contacting one another. The holder is made to fit our Delta 1440 lathe shown above. Be sure to measure your own lathe's stand and adjust the *Material List* part sizes as needed.

The Tool Holder

Get this project underway by cutting the main panel and tube stretcher (pieces 1 and 2) to size. Then, tilt your table saw blade to 3° and bevel-rip one long edge of the stretcher. This beveled edge will enable the bottoms of the tubes to rest against the main panel when assembled. Bore ten 1½"-diameter holes through the stretcher, spaced evenly along its length. Sand the panel and the stretcher up through the grits at this point to prepare them for further assembly. Step to your miter saw and cut your PVC pipe into ten, 10" lengths (pieces 3). You may need to sand down one end of each tube slightly so they will fit into the stretcher holes. Mount the tubes in the stretcher with epoxy.

Once the adhesive sets, determine the position of the stretcher on the main

MATERIAL LIST

	T x W x L
1 Main Panel (1)	5/8" x 21½" x 30¾"
2 Tube Stretcher (1)	7/8" x 3" x 30¾"
3 PVC Tubes (10)	1⅝" OD x 10"
4 Tilt Stop (1)	5/8" x 1½" x 12"
5 Pull (1)	3/4" x 3⅞"
6 Hinges (3)	1" x 2½"
7 Chains (2)	18"

Once the tubes are installed in the stretcher, mark its position on the inside face of the main panel (left). Attach the stretcher with glue, clamps and brads, as shown in the photo below (left). A chalk line can be used to provide a simple reference to help center the brads.

panel. Line it up so the bottom ends of the tubes are flush with the bottom of the panel, and draw a pair of reference lines to mark the stretcher's location. Secure the stretcher to the panel with glue, clamps and a few brads.

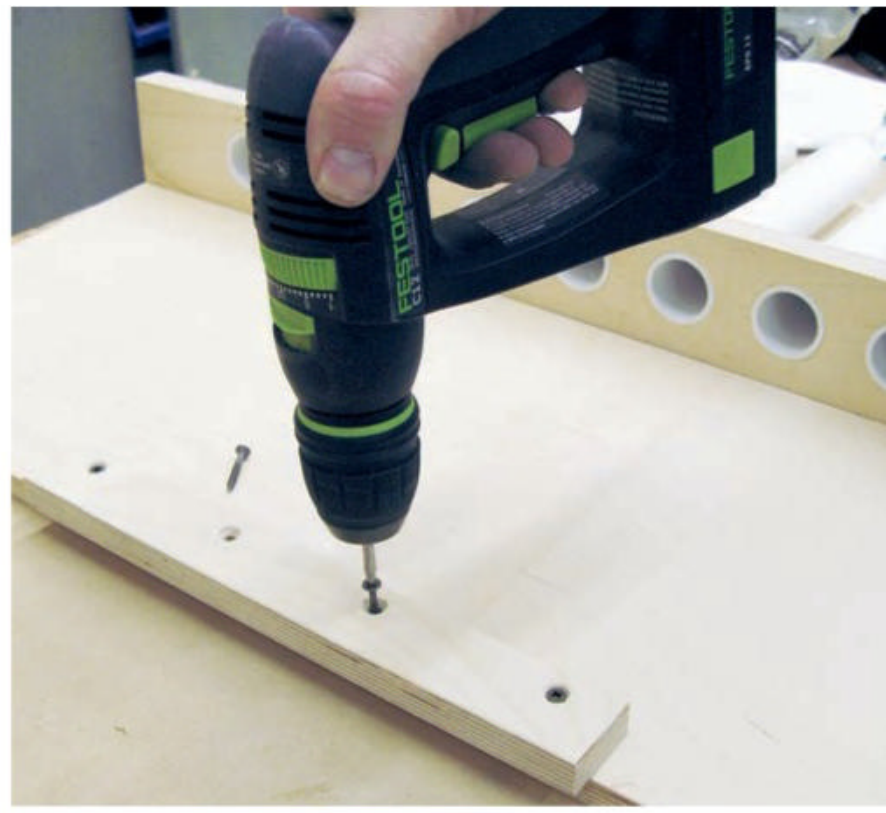
Cut the tilt stop (piece 4) to size and center it on the inside of the top edge of the panel. Extend the stop a bit past the panel edge to create an overlap, and screw it in place. (Note: Remember, this is for our Delta 1440 lathe ... your requirements may end up eliminating or resizing this piece.) Next, fasten a pull (piece 5) to the outside face of the panel about 1½" below the top edge. Apply your choice of finish now.

Installing the Project on Your Lathe

We used three hinges (pieces 6) to mount the tool holder to the lower stretcher of our lathe stand. You'll need to locate the hinges on the outside face of the panel so the tilt stop will make contact with your lathe bed with the hinges mounted to the lathe's stretcher. Center one of the hinges and space the other two about 2" in from the panel ends.

A pair of chains (pieces 7) will stop the tool holder when you pull it open. Fasten one end of each chain about 1½" in from the top corners of the inside face of the panel with #8 x 5/8" wood screws or equivalent panhead screws.

It's time to fasten the hinges to the metal stretcher. We used a single pop rivet through each hinge to make these connections secure and yet minimize extra drilling, but you could also use machine screws and nuts. Now, tip the tool holder out from the lathe about 10" (far enough that its weight will keep the holder open for use), and locate positions on the back legs of your lathe to install the other ends of the chains. Drill these two holes, and loop the end links through them to wrap up the project.



Position the tilt stop so it overlaps the top of the main panel on the stretcher side, by 1/2" in our case. Fasten it in place with screws.

Drive the screws through the inside face of the main panel to secure the wooden pull to the other face.

The panel tips open on three hinges mounted to its outside face and to the lathe's metal stretcher. We used a combination of wood screws and pop rivets to make these connections.

Attach the two support chains to the main panel with short screws. Thread the endmost links on the other ends of the chains through small holes drilled in the lathe stand's rear legs (see inset).

New

GETTING STARTED

Veneering: Skin-deep Beauty

By Rob Johnstone

Veneering is a time-honored technique that has enhanced woodworking for centuries. Is it time for you to give it a try?

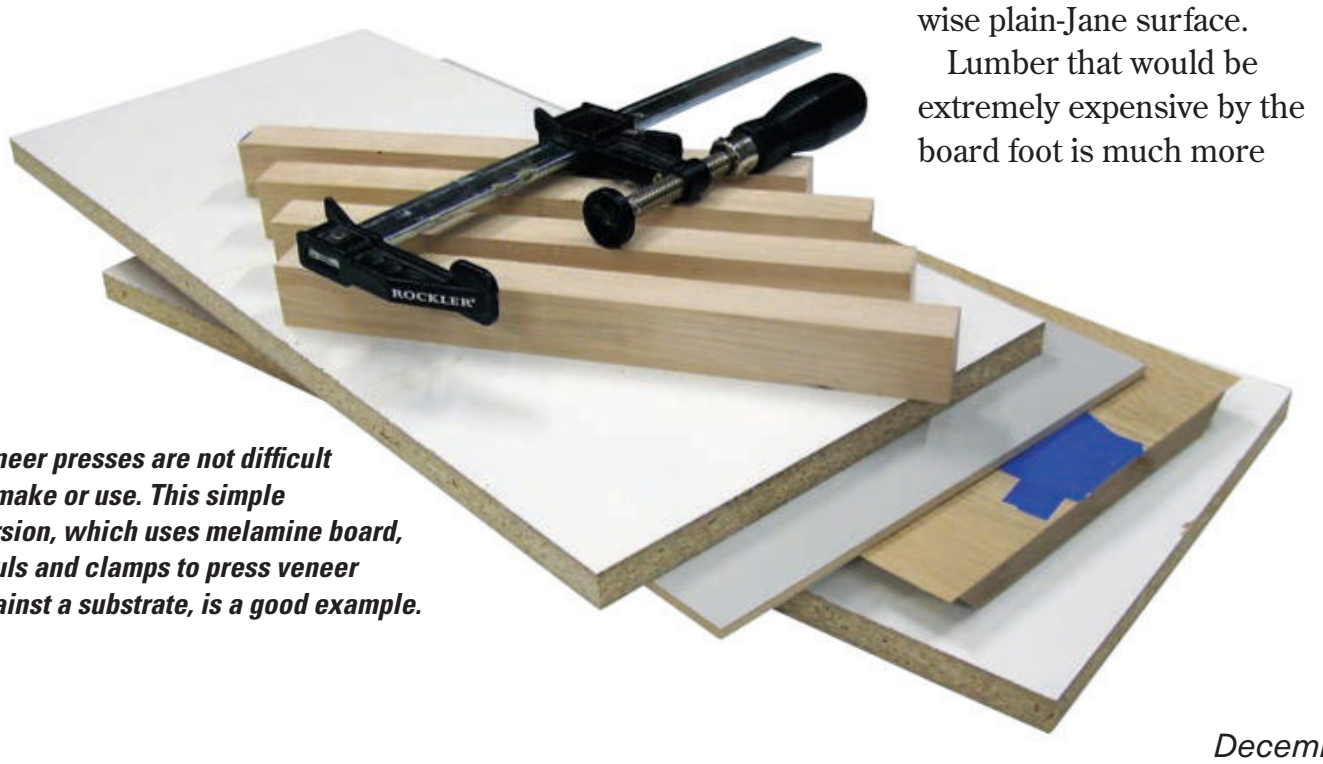
Lacewood veneered sides with a burl veneer top add color and beauty to this small box.

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO To watch a video of veneering basics, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.

Veneering — or applying very thin layers of wood to cover a substrate — has been around since, well, forever. Even the ancient Egyptians used veneer! Still, many new and even experienced woodworkers can be hesitant to make use of veneer in their work. But veneer can add a truly beautiful arrow to your woodworking quiver. Highly figured grain patterns from a wide variety of species — exotic or domestic — are at your fingertips. A dash of veneer can bring distinctiveness and vibrancy to what might otherwise be ordinary-looking projects. Even a small piece of highly figured veneer can provide a lovely accent to a tabletop. Geometric shapes are easy to inlay and add spark to an otherwise plain-Jane surface.

Lumber that would be extremely expensive by the board foot is much more affordable when it's sliced thin into veneer and spread out over a larger area. Some will argue that veneer is also a more ecologically responsible way to use rarer woods, like ebony or rosewood.



Veneer presses are not difficult to make or use. This simple version, which uses melamine board, cauls and clamps to press veneer against a substrate, is a good example.

Flitch-cut Veneer

While veneer comes in various forms, flitch-cut veneer is the product most people think of when talking about veneer. "Flitch cut" means the veneer has been sequentially sliced from a log, so its figure or grain pattern will be extremely similar from one piece to the next. The consistency of appearance makes flitch-cut veneer ideal for creating book-matched furniture panels.

This sort of veneer needs to be glued to a substrate (sometimes called a grounding). MDF and plywood are the best products for substrates because of their dimensional stability and smooth surfaces. The most common way of applying this sort of veneer is with a veneer press (see photo at left). It sandwiches the veneer, glue and substrate between layers of sheet material, wooden clamping cauls and lots of clamps to press the veneer and substrate tightly together while the glue dries.

Peel-and-stick Veneer

Veneer also is manufactured in pressure-sensitive (peel-and-stick) sheets. This option

comes in 24" x 32", 24" x 96" and other standard sizes. There will be fewer species to choose from in this product (mostly limited to common domestic hardwoods), but its ease of use is impossible to deny. Effectively, you peel off the backing, position the veneer over a substrate, stick it down and roll it flat.

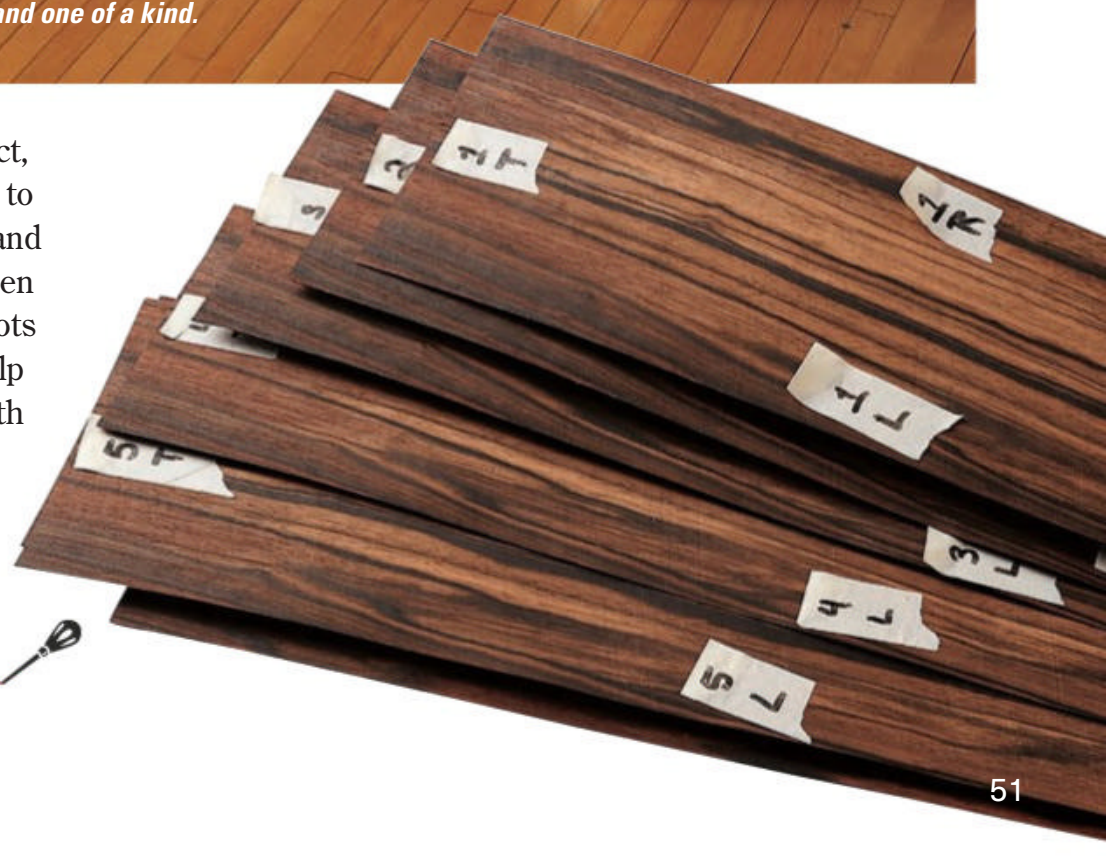
One common use for peel-and-stick veneer is refacing kitchen or other built-in cabinets. Applied properly (especially if captured in a frame of some type) it is a great DIY option.

Paper-backed Veneer

Available in large sheets (4' x 8') in a similar choice of common species as pressure-sensitive veneer, this third option has a 10 mil paper backing applied to it. Paper-backed veneer can be glued down with white or yellow glue and flattened with either a veneer press or a vacuum bag and pump. Or it's attached with contact cement and rolled flat.

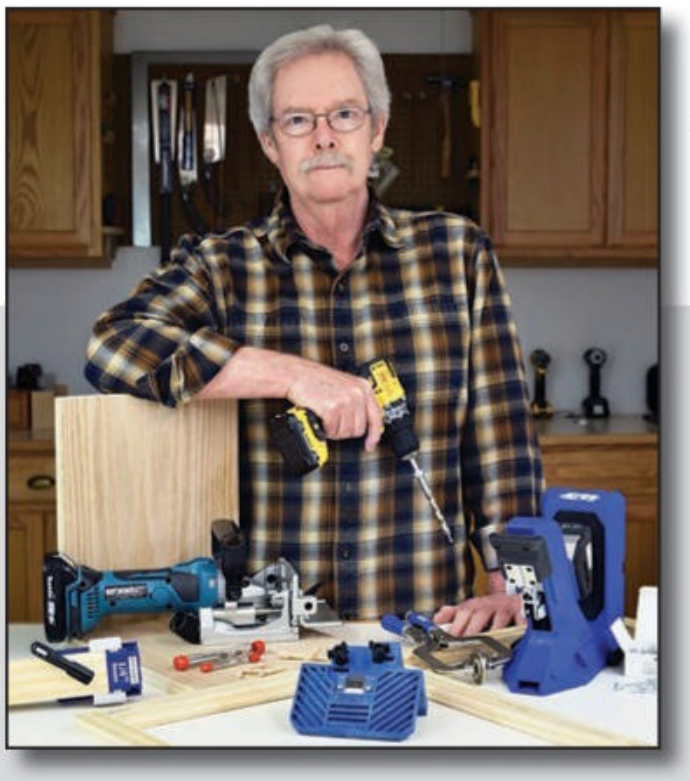
Whichever option you choose, applying veneer is really just gluing very thin layers of wood to something thicker. Granted, to a degree, veneering is more specialized woodworking than, say, gluing a couple of boards together. But the process doesn't have to be overly complicated. Still, before you invest in expensive veneer or dive full-on into a big veneering project, find a few good resources to learn more. Many books and magazine articles have been written on the topic, and lots of YouTube videos can help you along. Experiment with the installation process using inexpensive veneer to begin with. Pressure-sensitive veneer is a good place to start.

The flitch-cut macassar ebony veneer (below) used on this Ruhlmann-inspired cabinet make it both visually stunning and one of a kind.

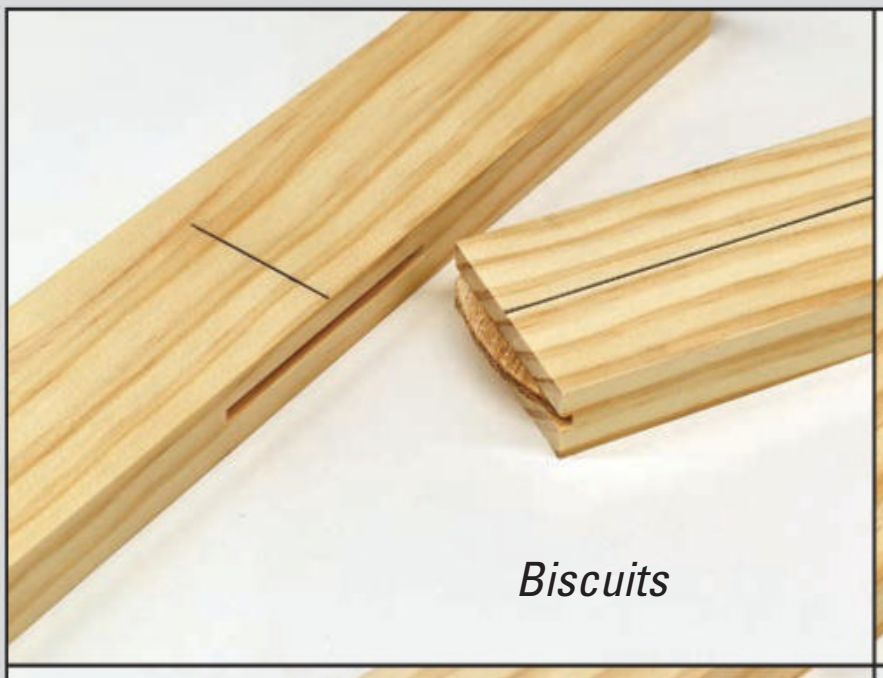


Quick-and-easy Joinery Solutions

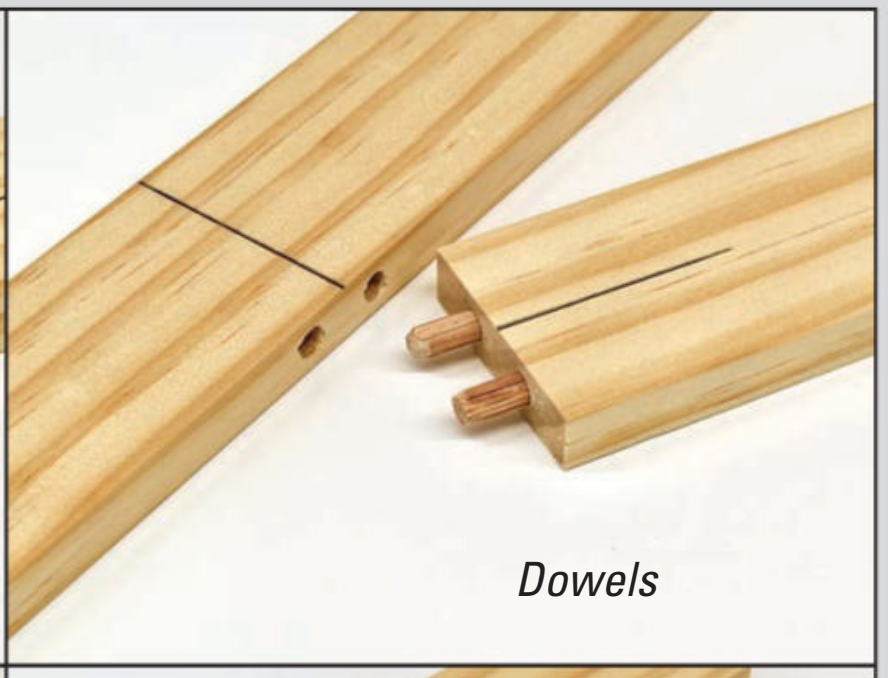
By A.J. Hamler



These four mechanically reinforced joint options form strong connections with minimal fuss.



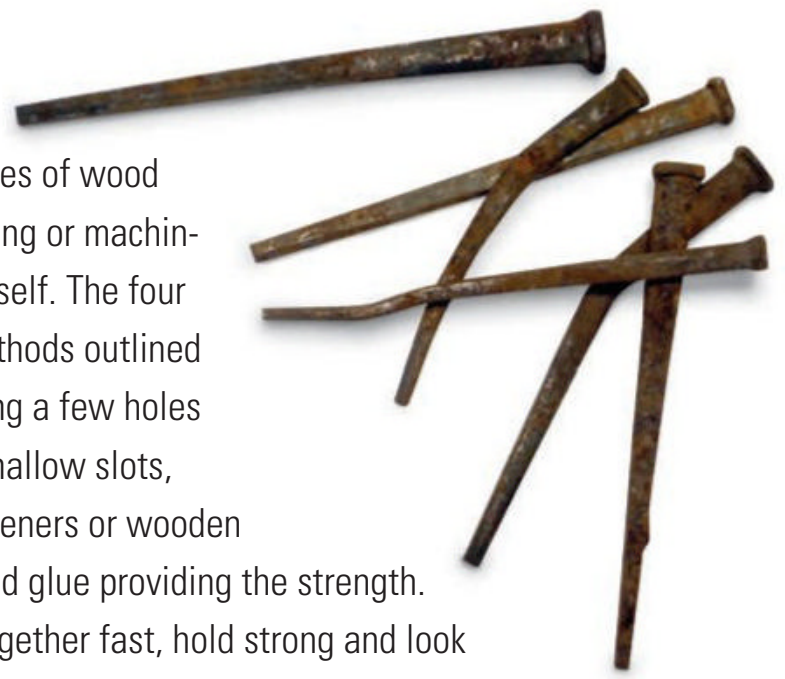
Biscuits



Dowels

Loose Tenons

Pocket Screws



Woodworkers have a variety of joinery methods to choose from, with many of them being both decorative and strong — but complicated to build. There's nothing wrong with fancy dovetails, for example, if you have the time to make them well and the project benefits from them. But when a joint merely needs to be strong, are dovetails really necessary?

That's where quick-and-easy joinery alternatives come into play, offering simple, strong connections between two pieces of wood with minimal cutting or machining of the wood itself. The four most common methods outlined here require drilling a few holes or cutting some shallow slots, with auxiliary fasteners or wooden reinforcements and glue providing the strength. These joints go together fast, hold strong and look great! What's not to like about that?

There are a lot of ways to join wood, both plain and fancy. But when it comes down to a combination of speed and strength, four methods rise to the top in most woodworking applications: biscuit joints, dowels, loose tenons and pocket screws. Jigs — and in one case, a specific tool — make the process easy, while also taking it easy on your shop budget.

Each method has pros and cons, but they all share a surprising number of strengths. So to make their comparison easier I've created the same 90-degree joint for each of the four methods. As with all joinery, remember that precise cuts are absolutely necessary for workpieces to be joined properly. Ready? Let's find out which one (or more) is best for the way you work and what you build.

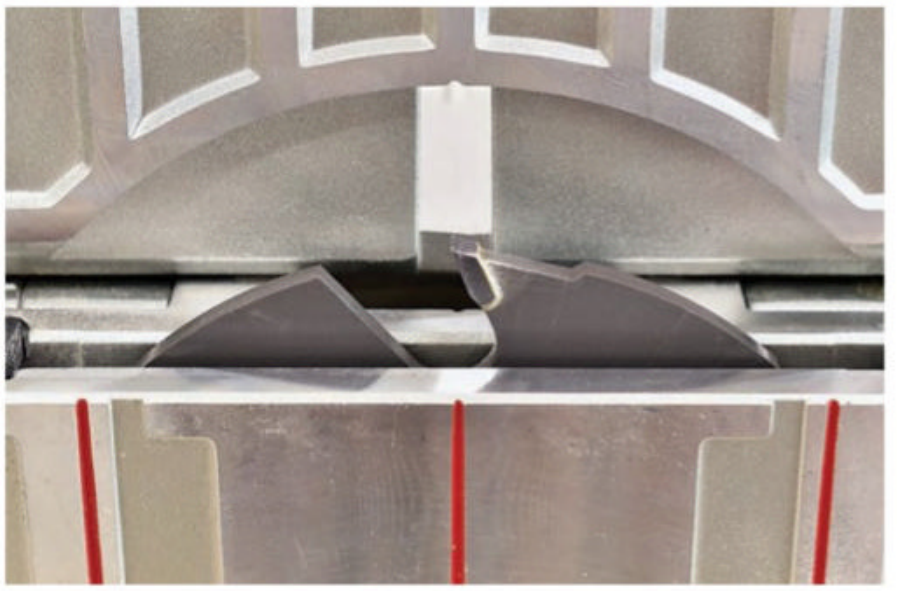
Biscuit Joints

Biscuit joints are basically a type of loose-tenon joinery, in that a separate piece of wood is set into matching recesses in two workpieces, with the joint glued together to capture the tenon. In this case, the tenons are thin wafers stamped out of solid compressed wood that resemble little footballs.

Creating the joint requires a means of cutting matching concave slots in both workpieces to accept the biscuit. You could do that on a router table using a slot-cutting bit, but the task is far easier and more accurate with a dedicated tool called a biscuit joiner or, less frequently, a plate joiner. (Yes, it's joiner, not jointer.)

A biscuit joiner contains a cutter that looks like a miniature table saw blade, typically measuring 4" in diameter and sporting four, six or eight teeth. There are smaller blades for installing tiny biscuits in detail applications, too. In its normal position, the blade is retracted inside the joiner. It extends into the workpiece by pushing the body of the tool forward. The mechanism is spring-loaded and returns the blade safely inside the joiner when it is pulled away from the work.

The most common biscuit sizes are 0, 10 and 20, measuring about 1⅞", 2" and 2¼" long respectively. Biscuits used strictly for face frames, designated as FF biscuits, are only 1¼" long, while less commonly used detail biscuits are even smaller. There's some variance in biscuit sizes depending on the manufacturer.

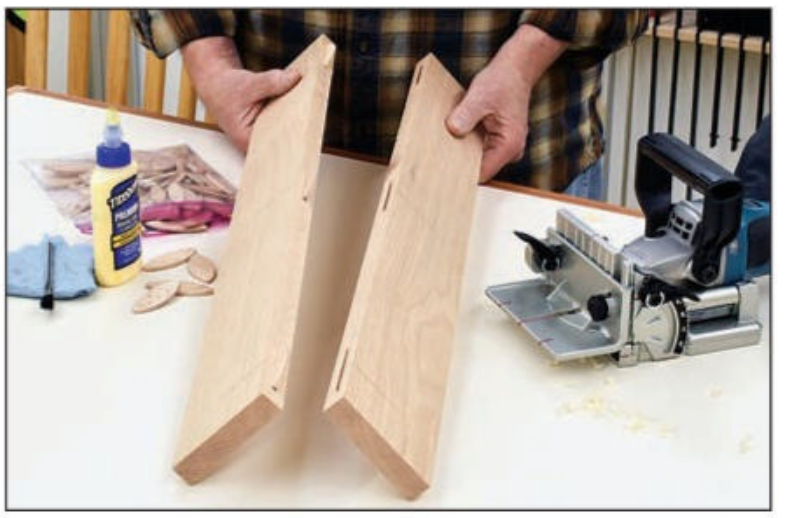


The business end of a biscuit joiner features a small-diameter blade, similar to the one on your table saw. It works with a plunge-cut action.

With the workpiece secure and the biscuit joiner's fence in place, slide the body of the tool forward into the wood to cut a concave biscuit slot.

The process for creating a biscuit joint begins by drawing a registration line at the joint site that bridges the two workpieces. With the depth of cut set on the tool to match half the biscuit width, typically done with presets built into the machine,

Apply glue to the biscuit and into the slot, then slide the biscuit down into place.



Biscuits used for edge joints align workpieces perfectly and keep them from slipping while being clamped.

Biscuits can also be used in corner joints for building casework such as cabinets, consoles, boxes and shelves.

you align the joiner's front fence with the mark on one piece and press it in place. Key on the power and then plunge the tool body into the workpiece, which extends the blade into the wood. Ease back on the tool to re-house the blade, then turn it off. Repeat with the mating workpiece to complete the joint.

To assemble it, apply a bit of glue into the slots on each piece and maybe a bit more on the biscuit itself, slide it into the slot on one side, then press and clamp the two workpieces together.

Biscuit joints are most often used for edge joints, especially panel creation, as they automatically align the two workpieces for clamping. The exact amount of additional strength you gain in this application is a hotly debated topic among woodworkers, but the ease of alignment speaks for itself.

For angled joints like face frames and miters, plus applications such as corners in casework, there's no question about added strength. In these cases, biscuits function exactly like loose tenons to bridge the joint with solid wood — and you get the benefit of perfect alignment when you really need it during the clamping process.

Alignment is critical for dowel joints. Make sure the jig is positioned carefully and square to the workpiece before clamping it into place.

With the doweling jig set and clamped, a few quick plunges with a stopped drill bit creates half the joint.

Dowel Joints

Joining wood with dowels is probably the oldest method in our group of four, and it goes back hundreds or even thousands of years to when dowels and pegs were often used in place of nails. Like nails (and tenons), dowels bridge across joints.

It's very difficult to hand-drill for dowel joints in mating workpieces, as the holes must be dead-on perpendicular on both sides. This is possible on a drill press, but it's not always practical if you can't bring the work to the machine. Instead, a doweling jig lets you take the drill to the work.

As with biscuits, dowels also align joints, so every doweling process begins by drawing a line across the two pieces being joined. Most jigs, like the Rockler Doweling Jig (bottom left photos), have a window and registration marks to make the process of alignment easy. Some also have movable stops to register against the workpiece.

To make the joint, secure the workpiece in a vise or clamp it to a workbench, and place the jig on the wood. Align the jig to the marked line and clamp it in place. Adjust and tighten a stop collar on the drill bit to slightly more than half the dowel length, and drill the holes by plunging the bit down into holes in the jig's hardened-steel drilling guides. When drilling, clear the chips by partially withdrawing the drill bit periodically.

You don't always need a vise to use a doweling jig. Clamping the wood and jig directly to a bench or worktable is fine — and sometimes easier.

Dowel "pins" for joinery incorporate grooves or spirals that allow glue to spread evenly when they're driven in.

Repeat the process with the mating workpiece, again taking care to align the jig with your layout mark. When both sides are drilled, put glue in the holes and along mating edges, insert the dowels into one side, then assemble and clamp until dry.

By the way, dowels used for joinery aren't just short pieces cut from a longer length of dowel. Joinery dowel "pins" are slightly rounded on the ends and scored, either lengthwise or spirally, to both increase gluing surface and to channel excess glue up and out of the dowel hole. Without the scoring, glue can pool under pressure when dowels fully seat in the holes, making assembly more difficult. With a dowel joint at the end of a workpiece, such as a face frame, this pressurized glue can actually be forced along the grain and out the end of the wood.

Dowels can also be used after assembly to strengthen joints and create a nice detailed accent to a project (see photos at right). Hand-drilling is fine here, so no need for a jig, as there's no aligning to do — the joint is already assembled.

The process is simple: Drill a hole deep enough to bridge the joint, squirt in a bit of glue and tap a dowel into place. Clean off any excess glue, then cut and sand the dowel flush. You won't want to use scored dowel pins here, which would be visible, but regular dowels cut to length and rounded on the end that penetrates the joint.

An alternative that presents a clean, smooth visible dowel but is still easy to tap into place without glue-pooling issues is the Miller dowel. Introduced a few decades ago, Miller dowels have a unique stepped shape, and they are set into holes created by a drill bit that bores the matching stepped profile.

The stepped design allows the dowels to be almost fully inserted before seating, eliminating glue pooling at the bottom of the holes. Miller dowels (and drill bits) are available in four sizes and a variety of wood species.

Doweling can also be done after a project is completed to add both strength and a decorative flair. Here, the author adds Miller dowels to a finished box.

Squirt a bit of glue into the drilled holes and tap in the dowels firmly with a mallet. A small amount of glue squeeze-out is perfect.

Miller dowels use a stepped drill bit to create holes that match the stepped dowels. The stepped design allows for easier dowel insertion and greater gluing surface area.

Like a doweling jig, the Beadlock loose-tenon system uses a drill to create a mortised joint. A hardened-steel drilling guide inside the jig enables a series of overlapping holes to be drilled.

The Beadlock jig can be used in various orientations to suit different joint applications. Notice here how the alignment line is visible through the jig's window, making it easier to register the jig accurately before drilling.

Premade Beadlock tenons exactly match the drilled mortise's shape. They just slip into the mortise on each workpiece for quick and easy assembly.

Loose-tenon Joints

Mortise-and-tenon joints are among the strongest woodworking joint options, but they can be difficult to fabricate. A tenon must be cut on one workpiece and a matching slot created on the other. Their sizing is critical. Strength-wise, these joints are hard to beat, but they take time to make properly. Loose tenons speed up the process, allowing slots to be easily machined for standard-sized tenons that just slip into both members of the joint.

Creating traditional loose-tenon joinery typically requires a dedicated mortiser or a router, but an alternative system called "Beadlock" simplifies the process even further — you only need an inexpensive Beadlock jig and a drill/driver.

Once again, you'll need penciled alignment marks, but the joint-making process is nearly identical to a doweling jig. In fact, the premade Beadlock tenons look like a row of overlapping dowels.

As with a doweling jig, secure the first workpiece and clamp the Beadlock jig into place so your pencil mark is centered in the jig's window. Using a stopped bit, drill the first series of holes into the workpiece. These holes will be slightly spaced apart.

Now, with the jig still clamped in place, reset the drill guide to its other position, which allows several more holes to be drilled between the initial holes, connecting them in a continuous overlapping line. Remove the jig and repeat the drilling process on the mating workpiece.

The end result is matching slots on both workpieces, allowing you to insert glue and slip the Beadlock tenon into place between them. Clamp the joint until the glue dries.

Beadlock tenons can take the place of regular tenons without compromise, and they're ideal for projects requiring a lot of strength, such as tables and chairs.

Pocket-screw Joints

Once exclusive to production furniture makers and cabinet shops, pocket-screw joints are now widely used in home shops. Instead of requiring large dedicated machines, which are still used in production situations, pocket-hole jigs come in many consumer-friendly styles.

From small units that are clamped directly to workpieces, to larger self-clamping setups featuring excellent dust collection and work-support extensions, pocket-hole jigs are available for just about any shop budget. All use a specialized drill bit that is stepped on the business end to create a flat-bottomed hole that's large enough to accept the screwhead, with a narrower hole for the screw shank at the bottom.

The joint-making process begins by drawing a registration line on the workpiece, typically centered and in line with the grain at the end of

Playing Dominoes

Combing multiple aspects of joinery methods we've discussed here, the Festool Domino is a unique — albeit pricey — tool option for making fast, strong joinery.

Visually similar to a biscuit joiner, the Domino uses an oscillating plunging bit to make mortises for the company's proprietary loose tenons. Joints are cut the same way, too, in that the tool's fence is placed against a workpiece, and sliding the motor housing forward extends the cutter into the wood to mill straight mortises with rounded ends.

The cutting action is different from a biscuit joiner, however. The cutter is very similar to a spiral router bit, and it cuts both forward as the bit enters the wood as well as side-to-side with its internal oscillating action. Mortise width is adjustable on-tool, and interchangeable cutters accommodate four sizes of Dominoes.

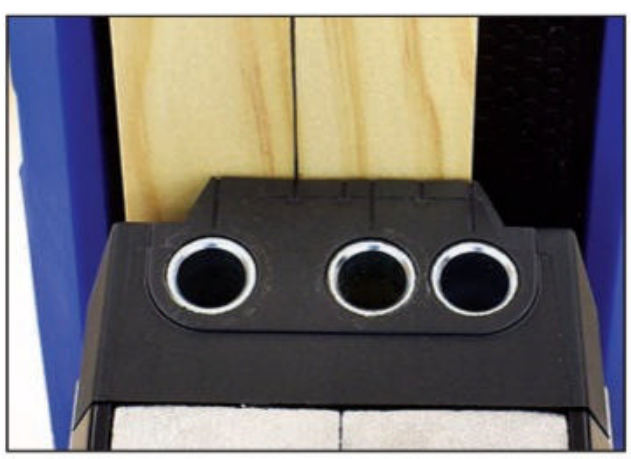
Festool's Domino DF 500 (Rockler item 43035) currently sells for around $1,000.

The simplest and most economical pocket hole jigs clamp to the workpiece. This also enables them to retrofit to already-assembled projects, if needed.

one component. This way, the threads will anchor in edge or face grain when the joint is created. Depending on the workpiece size and the number of screws desired, use the jig's registration marks to set the drilling locations accordingly.

With the workpiece secured in the jig or the jig clamped to the workpiece in the case of a smaller unit, use a drill bit with a stop collar to bore the appropriate holes. That's it; only one workpiece is drilled.

To assemble the joint, butt the drilled piece up against its mate, and clamp the joint solidly on any flat surface. This keeps all faces flush and aligned. When secure, just drive in the pocket screws — the self-drilling tips on the screws means no pilot holes are needed in the mating workpiece. Depending on the requirements of the application, these joints can be made with or without glue, although glue is recommended to help control seasonal movement.



Depending on the size of the workpiece and number of holes desired, line up the workpiece with the appropriate registration lines when clamping up stock in a pocket-hole jig.

Pocket screws come in multiple sizes, ranging from 3/4" to 2½", and in a couple of finishes for indoor and outdoor use. For softwood, washerhead screws with a coarse thread are best. For hardwood, fine-threaded screws with either a washerhead or pan-head are available.

Deluxe pocket-hole jigs have a built-in clamping system for securing workpieces, plus extensions for supporting long parts. After the holes are bored into one workpiece and the joint is clamped together, special self-drilling screws complete the assembly (inset).

These joints go together fast and are particularly useful for face-frame construction. However, pocket screws are adaptable to almost any application — panel and tabletop construction, cabinet and other casework, mitered picture frame reinforcement, shelving and dividers in bookcases, etc. Their versatility and simplicity are what make them so popular.

A.J. Hamler writes frequently for Woodworker's Journal.

New

BUYING LUMBER VENEER

Veneer Pack Options are Great for Newbies

By Rob Johnstone

For your first smaller veneering projects, use a trusted source.

For those of you who have been taking advantage of veneering's many benefits, you likely have your own special sources. But if you're just getting started with the craft of veneering, I suggest a source that you know and trust: Rockler Woodworking and Hardware.

The primary advantage to purchasing from Rockler is that you'll find many different types and styles of veneer sold in packages that are practical for experimenting and for small project applications.

Pick a Pack

One of the most practical options is flitch packaged veneer in three-square-foot selections. There is a nice range of species and grain orientation in this product. The veneer comes in pieces from 4½" to 7" wide and 24" to 48" long. The edges of the veneer are trimmed straight so they are easy to join together. Best

yet, they are 1/16" thick, providing plenty of thickness for sanding after they are laid up on a piece of furniture. This veneer size is great for tabletops, side cabinets and other small furniture.

Many woodworkers find themselves deciding to try veneering when they want to add interest to a small project like a jewelry box or the like. For that sort of task, Rockler has a couple of great options: a package of mixed domestic and exotic veneer or a mixed burl veneer pack. This veneer is 4½" to 6½" wide and 12" long. It's great for mixing and matching for a box top or sides. These options are often chosen by people doing marquetry.

More Options

Pressure-sensitive veneer, with peel-and-stick adhesive applied to one face, is another choice. Pre-colored veneer and more durable, thicker two-ply veneer are also available through Rockler.

Veneering can add exquisite grain and variety to your projects. Give it a try!

Rob Johnstone is publisher of Woodworker's Journal.

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Required by 39 USC 3685) 1. Publication Title: Woodworker's Journal. 2. Publication No. 0199-1892. 3. Filing Date: October 1, 2021. 4. Issue Frequency: bimonthly. 5. No. of issues published annually: six. 6. Annual Subscription Price: $19.95. 7. Complete mailing address of the publication office: 4365 Willow Dr., Medina, MN 55340. 8. Complete mailing address of the headquarters: 4365 Willow Dr., Medina, MN 55340. 9. Full names and mailing address of publisher and editor in chief: Rob Johnstone, Publisher; Chris Marshall, Editor. Rockler Press, Inc., 4365 Willow Dr., Medina, MN 55340. 10. Owner, names and addresses of stockholders: Rockler Press, Inc.; Ann Rockler Jackson, 4365 Willow Dr., Medina, MN 55340. 11. Not applicable. 12. Not applicable. 13. Publication Title: Woodworker's Journal. 14. Issue date for circulation data below: September/October 2021.

15. Extent and nature of circulation

	Average no. copies each issue during preceding 12 months	Actual no. of single issue pub. nearest to filing date
A. Total number of copies (net press run)	74,310	74,897
B. Legitimate paid and/or requested distribution		
1. Mail subscription	67,237	65,062
3. Sales: dealers, carriers, counter and vendors	916	916
C. Total paid and/or requested circulation	68,153	65,978
D. Non-requested distribution		
1. By mail samples, complimentary and other free	742	739
4. Outside the mail	537	733
E. Total nonrequested distribution	1,279	1,472
F. Total distribution	69,432	67,450
G. Copies not distributed	4,878	7,447
H. Total	74,310	74,897
I. Percent paid and/or requested circulation	98.2%	97.8%
16. Electronic copy circulation		
a. Requested and paid electronic copies	989	855
b. Total requested and paid print copes and requested/paid electronic copies	69,142	66,833
c. Total requested copy distribution and requested/paid electronic copies	70,421	68,305
d. Percent paid and/or requested circulation (both print and electronic copies)	98.2%	97.8%

I certify that 50% of all my distributed copies (electronic and print) are legitimate requests or paid copies.

17. Publication of Statement of Ownership for a Requestor Publication is required and will be printed in the November/December 2021 issue of this publication. 18. Signature and Title of Editor, Publisher, Business Manager or Owner: Rob Johnstone, Publisher. Date: 09/17/21. I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).

TOOL PREVIEW

New Silicone Casting Molds

By WJ Staff

Pour your own custom epoxy resin blanks to make pens, rings, coasters, handles and knife scales.

Alumilite Amazing Clear Cast Epoxy is ideal for pouring durable, bubble-free resin blanks for projects like these. Both 16 oz (item 65911; $21.99) and 32 oz (item 62474; $31.99) kits are available from Rockler.

Pen Mold

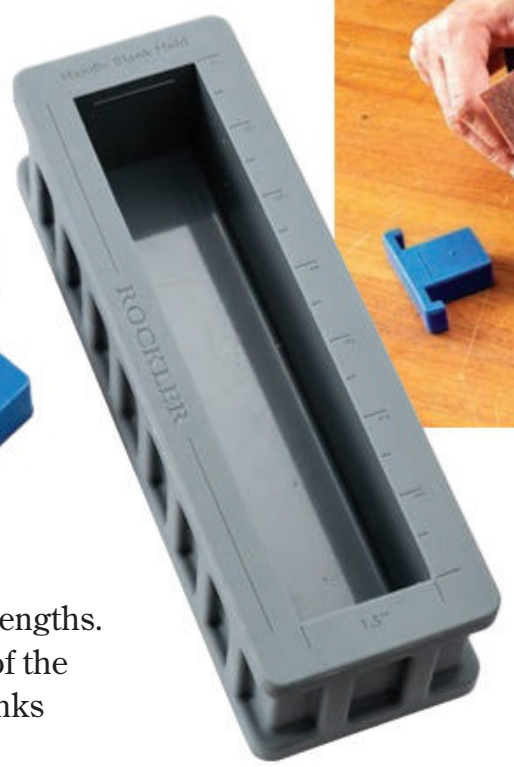
Ring Mold

Poured resin, mixed with a cornucopia of different colorant options, can make a variety of small projects more eye-catching and exciting! With five new types of reusable casting molds from Rockler, you can pour custom epoxy resin blanks for turning pens, utensil handles or wearable rings as well as creating dynamic drink coasters and knife scales.

Each mold option is made of flexible gray silicone so the resin blank is easy to extract after it cures. Excess resin will peel off the matte exterior, while a high-gloss interior leaves a smooth finish on the casting. Outer ribbing helps the molds retain their shape during use.

The **Pen Blank Casting Mold** (item 69213; $24.99) includes cavities for pouring two 3/4" x 3/4" x 7" blanks. Eight blue stoppers, also made of silicone, each have a pair of conical faces to capture and center brass pen tubes inside the resin blanks. This feature makes it unnecessary to drill the blanks before turning, because the tubes are already cast in place! The cones will accept tube sizes from 0.175" to 0.5" in diameter, up to 7" long, and they can be adjusted within the mold to suit

Handle Mold



different pen blank lengths. Or use the flat side of the stoppers to pour blanks without tubes.

The **Handle Blank Casting Mold** (item 69157; $19.99) also includes a single blue stopper with a dot that marks the center of the resin blank for mounting it accurately between lathe centers. This mold enables pours up to 1½" x 1½" x 7" long — or make shorter blanks, depending on where you position the stopper.

You can also turn custom-colored rings you've poured from resin using the **Ring Blank Casting Mold** (item 69671; $9.99). Its cavity measures 1/2" deep x 1½" wide x 1½" long, and the mold includes a handy hang hole for convenient storage.

Or consider pouring one-of-a-kind drink coasters with two **Coaster Casting Mold** options (round, item 69734, or square, item 67390; $14.99 ea.). These resin coasters can be poured to 1/2" or 3/4" thick and have a groove around their top edge to capture drips and condensation. The round coasters measure 4" in diameter, and the square coasters are 4" x 4". Learn how to make them on page 34 of this issue.

Scales for knives don't have to be made of wood if you use a **Knife Scale Casting Mold** (item 62200; $19.99). It has two cavities for pouring 2" x 6" scales up to 3/8" thick, plus a hang hole for storage.

Coaster Molds

Knife Scale Mold

Safer Track Saw, Forest-friendlier Mallets

Contact Information

Festool
888-337-8600
festoolusa.com

Metabo HPT
800-829-4752
metabo-hpt.com

Rockler
800-279-4441
rockler.com

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO For videos demonstrating featured tools, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.

Drilling accurate screw holes in doors or drawers for pull hardware should be much easier to do if you use a *JIG IT Knob and Pull Pro Drilling Guide* (item 53038; $49.99) from **Rockler**. That's because you mount the pull you're installing onto the jig using the two holes provided above the jig's steel drilling guides to set the precise hole spacing. A pair of gray legs adjust left to right and up and down to accommodate pulls with posts up to 7½" apart (center to center) and to enable the hardware to be positioned from 1" to 8¼" from an edge. Sawtooth racks on the jig's blue fence and legs ensure that settings won't slip and the jig can be returned to previous settings accurately. An indexing foot with a stop collar on the post installs on either the left or right side of the jig — helpful for drawers with two pulls. A 3/16"-diameter twist bit and hex wrench are included.

Rockler JIG IT Knob and Pull Pro Drilling Guide

Metabo HPT 36V MultiVolt 1/2" Plunge Router

With the ability to run on either an AC adapter or a single 36-volt MultiVolt battery, **Metabo HPT's** *36V MultiVolt 1/2" Plunge Router* (model M3612DA) is the industry's first cordless mid-size plunge router. Its 2-peak hp brushless motor offers a variable-speed range of 11,000 to 25,000 rpm, soft start and quick braking features. At 6.6 lbs with battery installed, this router is 40 percent lighter than its corded equivalent. It has a plunge stroke of 1$^{31}/_{32}$", and depth-of-cut settings can be made without tools. An LED light brightens the area around the bit, and an included dust port helps to contain debris. For a street price of $399, the router comes with a 2.5Ah MultiVolt battery, rapid charger, 1/4" and 1/2" collets, a seven-piece template guide set, straight guide, wrench and carry bag. Metabo HPT's AC adapter (model ET36A) is sold separately and will power the router as well as a number of other MultiVolt handheld and benchtop 36-volt cordless power tools.

Rockler Bench Cookie Storage Rack Master Kit

GreenWood Tropical Hardwood Mallets

Coming soon to **Rockler**, *GreenWood Carving Mallets* are hand-turned by Honduran artisans and come in three sizes — small (item 63587; $28.99), medium (item 69355; $34.99) and large (item 62417, $38.99). The wood species may vary, but all are moderately dense, sustainably-harvested hardwoods that provide heft and durability and are comfortable in hand. The bellied face of these mallets offer excellent directional control, while their rounded edges help to prevent chipping. As a non-profit organization, GreenWood promotes the use of lesser-known species such as cumbillo, huesito, rosita, cinch and guapinol. The goal is to reduce the tendency for rain forests to be logged for high-demand trees, helping to prevent agricultural conversion and both species and habitat loss.

Keep all your Bench Cookie Work Grippers and accessories neatly organized and within easy reach with **Rockler's** *Bench Cookie Storage Rack Master Kit* (item 67778; $24.99). Made of durable ABS plastic, the six included racks store up to eight Work Grippers, eight Finishing Cones or Finishing Bridges (not both) and a dozen Risers or Risers XL. The racks mount either to standard Masonite/MDF pegboard with included proprietary plastic screws or can be attached to walls or other surfaces with steel screws, also included. Their open bottom design allows dust to fall through, and notches in the sides make it easy to remove contents. Or you can purchase the racks for $5.99 apiece as Work Gripper Storage Racks (item 61723), Riser Storage Racks (item 62005) or Cone/Bridge Storage Racks (item 63264).

Festool's *TSC 55 K Cordless Track Saw* has a unique Kickback Stop feature that senses dangerous blade binding and stops the blade in an instant. However, after the Kickback Stop has been activated, the saw can be used immediately again without having to replace the blade or any parts. It can be deactivated manually when minor blade binding might be an issue (such as when operating the saw apart from a guide rail). The safety automatically reactivates after the saw is powered down. This 36-volt brushless saw in kitted version (Rockler item 64937; $699) includes two 18-volt 5.2 Ah batteries, a rapid charger, 42-tooth saw blade, splinter guard, clear sight window, chip/dust collection bag and a Systainer carry case.

Festool TSC 55 K Cordless Track Saw Kit

Replacing My Antique Table's Sticky Finish?

By Tim Inman

Self-destructing finishes and an "easy-does-it" refinishing approach.

Tim Inman is a professional woodworker and finishing expert and the author of *The Art of Classical Furniture Finishing*.

Vintage oil/varnish finishes can begin to turn gummy as they age. On this table, it has resulted in a soft finish that becomes sticky when heated by warm coffee cups and cookware. Refinishing will improve durability.

Q The finish on my family's antique dining table gets sticky when it's wet or heated by serving dishes. I'd like to refinish it before the holidays arrive. What's the old finish and what should I replace it with?

A Without a chemistry lab test, it is virtually impossible for me to know for sure what your table's finish is. There are some very common classes of finish that do this, though, so let's stick with that approach (no pun intended). As a practical matter, before the 1950s, finishers did not have the modern resins we have today. Polyurethane was unheard of. Acrylic plastics did not hit their commercial stride until we needed curved windscreens for aircraft in WWII. So if your dining table was finished "back in the day" before the big wars, the topcoat is probably a linseed oil/varnish resin-based product.

Shellac often gets blamed, but shellac is actually a very stable and long-lasting finish. Frequently, shellac was used as a sealer or "wash" underneath varnish coats because it dried fast and sanded easily without gumming up. Your culprit is probably an oil/varnish. Why? They dry quickly by evaporating their carrier solvents, and then a chemical reaction with the air finishes their hardening. They "dry to touch" in a couple of hours and reach "full hardness" within a couple of days or weeks. BUT, the last part — the chemical reaction with the varnish oils and air — actually never stops; it just slows down. Over the years, the varnish oils continue reacting and begin to turn the corner on themselves. Instead of getting harder and harder, they cannibalize themselves and turn soft and gummy. They self-destruct. This might be the case with your table's finish now.

Refinishing Approach

I like to be as non-destructive as possible when I work with antique furniture. Modern chemistry and abrasives will let us totally and completely remove all traces of the old finish so we can start over from the "ground up." With old, soft oil/varnish finishes, it is usually pretty easy to use solvents like mineral spirits and maybe a splash of denatured alcohol with fine steel wool or nylon scuff pads to dissolve and wipe off the old finish. Take it down to the "color" layers and stop. Scuff sand, re-color and reseal (shellac or a modern sealer with acrylic, for example).

Now build up a new "high-tech" top surface using acrylic or polyurethane, such as Enduro-Var II shown at left. Then be careful. No finish can be tougher than the wood beneath it, so take care of it. As one of my mentors in the finishing world often said when asked about the toughness of a beautiful new finish on a fine piece of furniture, "You don't go four-wheeling in a Rolls Royce."

— Tim Inman

Woodworking Tools & Supplies Index

December 2021

For product information in the blink of an eye, visit woodworkersjournal.com *and click on "Woodworker's Marketplace" under the Magazine tab.*

WOODWORKER'S MARKETPLACE

ADVERTISER	Page No.	Web Address
Armor Crafts	**59**	*www.armorplans.com*
Bear Hollow Supply	**11**	*www.bearhollowsupply.com*
Freud	**68**	*www.freudtools.com/cnc*
Howard Products, Inc.	**9**	*www.howardproducts.com*
Leigh Industries, Ltd.	**11, 21**	*www.leightools.com*
Next Wave Automation	**7**	*www.nextwavecnc.com*
Oneida Air Systems	**9**	*www.oneida-air.com*
Rikon Power Tools	**5, 59**	*www.rikontools.com*
Rockler Woodworking and Hardware	**2-3, 9**	*www.rockler.com*
SATA Spray Equipment	**7**	*www.satausa.com*
Steve Wall Lumber Co.	**9**	*www.walllumber.com*

www.woodworkersjournal.com/woodworkers-marketplace

HARDWORKING WOODS

Bubinga: *Guibourtia tessmannii*

By WJ Staff

A convincing substitute for rosewood, this beautiful lumber is now CITES protected.

Bubinga is wood derived from trees in the genus Guibourtia, named after the French pharmacologist Nicholas Jean Baptist Gaston Guibourt, who lived from 1790 to 1861. There are 16 known species of Guibourtia with 13 occurring in Africa and three in South America. Two species are commonly sold as bubinga (*Guibourtia tessmanni* and *Guibourtia demeusei*). Other trade names for wood from the genus are essingang, ovang, kevazingo and waka. Some species of Guibourtia also produce Congo copal.

Bubinga occurs through Nigeria, Cameroon, Equatorial Guinea, Central African Republic, Gabon and Democratic Republic of the Congo. It grows in swampy and inundated forests and near lakes and rivers. The tree can reach a height of 130 to 150 feet in huge girths with straight boles up to 70 feet long before the first limb. Trunks are often fluted or buttressed at the base, much like tupelo gums and cypress here in the U.S.

This waterfall bubinga top appeared in a sideboard project in the April 2008 issue of Woodworker's Journal.

Shop Scorecard

Uses: Fine furniture, carvings, inlays, flooring, tool handles, workbenches, veneer and for other purposes as a convincing rosewood substitute

Hardness: Hard, resists bending and denting

Area of Origin: West and central Africa

Workability: Coarse, open grain is sometimes straight but often swirling and interlocked, which mandates sharp cutting edges. Glues well.

Finishing: Readily accepts common topcoats without special finishing considerations; polishes to a fine surface finish

Cost: Expensive, given limited availability

CITES Protected

The trees are considered rare in their native forests. Very little information is available about the natural history of the species, and management techniques are not well understood. This fact enhances the potential for rapid depletion of bubinga from the equatorial African forests. The problem is compounded by a high demand in China for bubinga as a substitute for rosewood.

Principally for that reason, three Guibourtia species were added to the Convention on International Trade in Endangered Species (CITES) Appendix II, effective January 2, 2017, as at-risk. Small amounts of bubinga are still permitted for personal use, but commercial, international trade of the lumber and products made from it are now closely regulated.

WOODWORKER'S JOURNAL *presents*

The Way To Woodwork:

Mastering the Table Saw

Learn to safely and confidently operate the most important tool in your workshop with the latest installment in *The Way To Woodwork* series: *Mastering the Table Saw*. Our experts teach everything, from the basics of ripping and crosscutting, working up to more advanced techniques. You'll also discover how jigs add versatility, safety and accuracy to your table saw. Expert or rookie, this DVD has something for every woodworker.

Our experts put these techniques to work building a classic Arts & Crafts Nightstand made entirely on the table saw — free plan included!

FREE
White Oak Nightstand plan included!

ORDER TODAY!

Visit **www.woodworkersjournal.com/wj2161**
or call **800-610-0883** (item **#57292** and code **WJ2161**)

Sponsors include ...

POWERMATIC — THE GOLD STANDARD — SINCE 1921

FORREST

ROCKLER® WOODWORKING AND HARDWARE

THE BEST freud®

USE THE BEST

The Industry's Most Complete Range of Coated CNC Bits

UP TO 2x LONGER CUTTING LIFE

Item: 87-308
3-Piece Black I.C.E. Fine Detail CNC Set

With over 25 years' experience in developing premium CNC bits, Freud offers the most complete range of finite, yet durable CNC bits that deliver:

UP TO 2X LONGER CUTTING LIFE, UNMATCHED PERFORMANCE AND SUPERIOR QUALITY FINISHES.

Specially formulated with exclusive Freud-made TiCo™ Hi-Density carbide and unique cutting geometries, these solid carbide bits offer an unmatched cutting performance and durability on workshop and small CNC machines.

Featuring the industry's first functional coating, Black I.C.E. (Industrial Cooling Element) protects the solid carbide cutting edge by creating a slick, lubricant like action for less friction, heat and pitch buildup.

Whether you are creating detailed inlays, 3D decorative projects or sign making, Freud's unique, expanded offering of over 100 bits and sets delivers superior cutting performance and quality finish.

@FreudTools | @FreudTools | FreudTools.com/cnc | @Freud_Tools | @FreudTools