

UPGRADE YOUR CNC ROUTER

with **freud®**
**CNC Router
Bits Sets**

8 Piece Sign Making
CNC Bit Set
Item # 87-108

Freud's premium CNC router bits are specially formulated with our exclusive TiCo™ carbide, unique cutting geometries and Perma-SHIELD® non-stick coating for unmatched cutting performance and durability on workshop and small CNC machines.

Whether you are creating detailed inlays, decorative projects or sign making, Freud's innovative small CNC bits and sets were designed for the professional and enthusiast CNC Maker to provide ultra long cutting life, maximum durability and high quality finishes in premium looking projects.

*Ideal for hardwoods, softwoods,
aluminum and plastics.*

8 Pc General
Purpose Set
Item # 87-208

**Unleash Your Creativity with
Freud Small CNC Sets at www.FreudTools.com**



www.facebook.com/freudtools



@FreudTools



www.FreudTools.com



@Freud_Tools

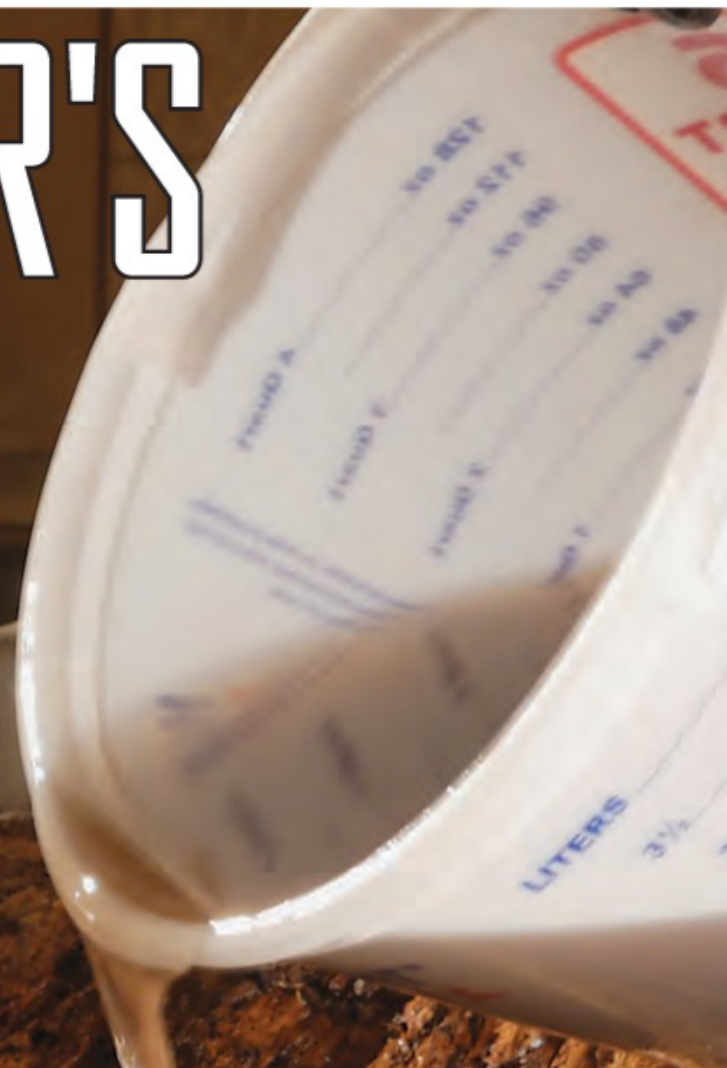


www.youtube.com/freudtools

EPOXY RESIN IN THE WOODWORKING SHOP

WOODWORKER'S JOURNAL

America's leading woodworking authority™



April 2020

\$7.99



Planers
Entry Bench
Modern Adirondack
Slab Table
More

SOMETIMES
WOOD
CAN
SPEAK
LOUDER THAN WORDS.



DON'T JUST FINISH IT. *Varathane* IT.

varathanemasters.com © 2019 Rust-Oleum Corporation

Available at



INTRODUCING

CNC SHARK HD5[®]

BEST IN CLASS:
PERFORMANCE,
VALUE, SUPPORT



COMPLETE YOUR SHOP WITH THE MOST ROBUST
AND FEATURE-RICH CNC SHARK EVER!

The CNC Shark HD5[®] features:

- Exclusive Virtual Zero Unlimited[®] software
- Includes Vectric VCarve design software
- Use a 2-1/4HP router or our water-cooled spindle
- Steel encased gantry legs for increased rigidity
- Available with extended 50" base and a wide array of accessories
- Made in the USA
- Lifetime tech support



Next Wave
Automation

AVAILABLE AT RETAILERS
NATIONWIDE



www.NextWaveAutomation.com

Tools for Every Turning



Easy Wood Tools[®] makes high quality, easy to use, hand-crafted turning tools and accessories so people will have more time to relax, create, and enjoy woodturning as a hobby or profession.

We're a family-owned business that takes its mission very seriously. We're the leading replaceable carbide-tipped woodturning tool manufacturer for a reason:

- We focus only on turning.
- We are consistently first to market with cutting-edge turning tool and accessory design.
- Our products are high quality and hand made in America.
- We design and manufacture our own carbide cutters for woodturning, ensuring end-to-end quality.
- Our customer service staff is knowledgeable, responsive, and fast.



www.easywoodtools.com
(859) 246-0294



Easy to Use. Easy to Own.

WOODWORKER'S JOURNAL

CONTENTS

APRIL 2020

VOLUME 44, NUMBER 2

PROJECTS



Modern Adirondack

By WJ Staff

Page 34

Here's a sturdy and comfortable lawn chair you can build in a weekend. Full-size templates or gridded drawings keep things simple.



Page 30

A Slab "Pond" Table

By Rob Johnstone

With a thick piece of spalted maple lumber, our publisher dips a toe in the "pond" of the current epoxy pour craze with this slab topped table project.



Page 38

Entry Bench

By Jeff Jacobson

This drawer and chest combo provides a convenient place to take a load off, plus plenty of storage space for your seasonal outerwear.



Style Adjustment, Thanks to Paint

By Rob Johnstone

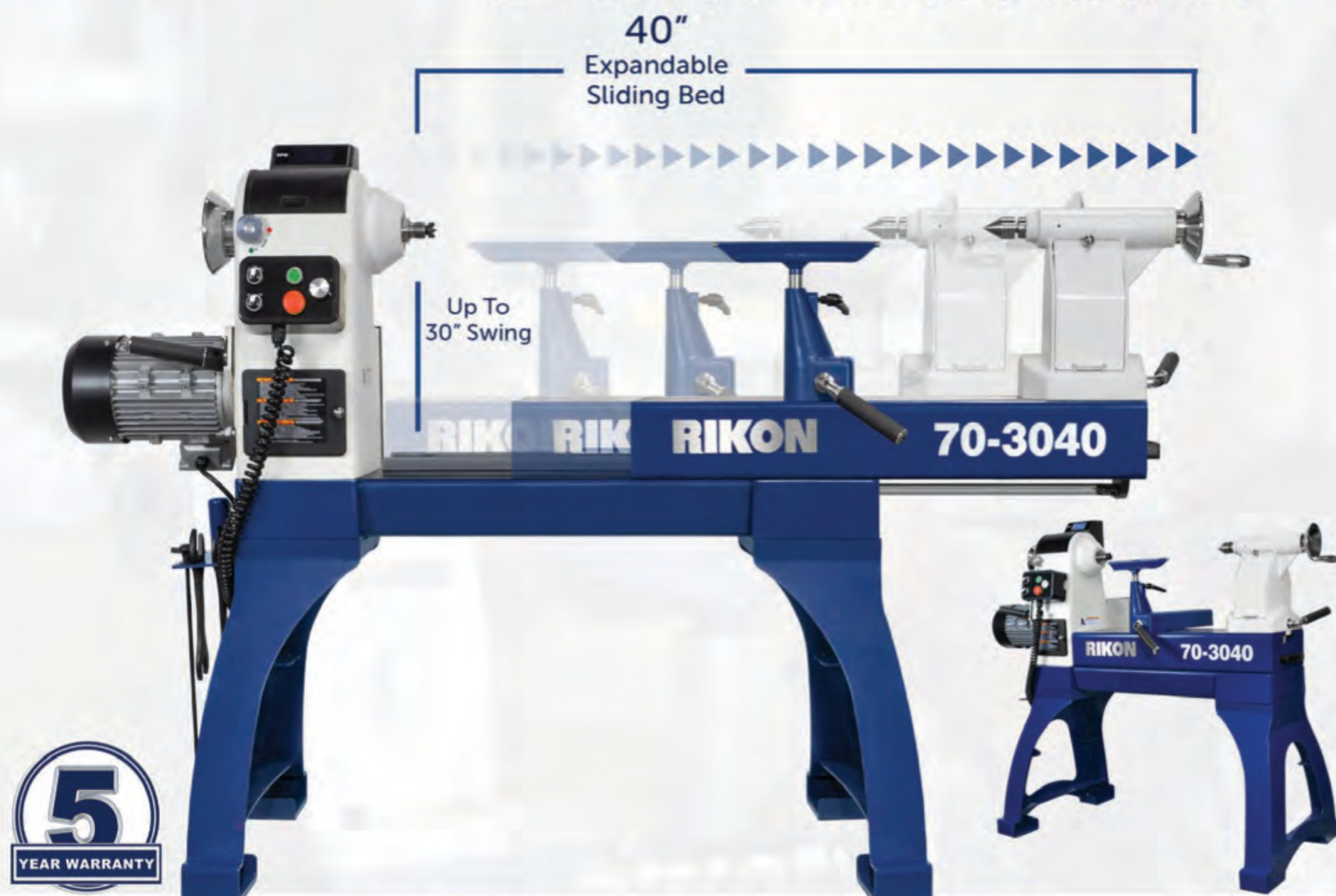
Page 60

Don't toss that sturdy but dated piece of furniture. A fresh coat of paint (gasp!) might be all the facelift it really needs.



EXPANDING

← The → Possibilities



Expandable Bed Lathe | 40" Between Centers | Beefy | 3 HP VSR Motor



Beefy 3HP motor delivers ample power to turn large diameter projects in forward or reverse modes.



Control Box has a magnetic back so that it can be set anywhere along the lathe for quick access when turning.



1-1/4" x 8 TPI threaded spindle is supported by 4 heavy-duty bearings for precise and dependable turning.



Tailstock's quill extends out to a generous 4-3/4" RAM travel with precision Acme threading.

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

DEPARTMENTS



- 8 From Our Readers/Stumpers**
Pin nailer conundrums; painting projects survey. Plus, patent art solves December mystery tool.
- 16 Tricks of the Trade**
Several non-slip shop suggestions and a smarter way to identify shelved lumber inventory.
- 18 Shop Talk**
Vintage reclaimed timbers transformed into huge end-grain table. Japanese woodworks exhibit.
- 22 Woodturning**
Enhance your turning shop with a better band saw. Our expert discusses the must-have features.

- 46 Builder Basics**
Eventually we all build drawers. Here are some drawer style and joinery pointers to keep in mind.
- 52 Tool Tutorial**
A thickness planer could put you in better control of your lumber species choices and sources.
- 58 Tool Preview**
Rockler's new Miter Gauge promises precise cutting and offers a handy hanging option for storage.
- 62 What's In Store**
Updated band saw mill; power cord clips for shop vac hoses and a low-cost through dovetail jig.

- 64 Six Simple Finishes**
While some might frown on it, paint can be a sensible finishing option if applied correctly.
- 66 Hardworking Woods**
Hard maple satisfies a myriad of furniture-making needs, and its figured forms dazzle the eye.



Check out our magazine archive!



History is at Your Fingertips

Or at least the history of *Woodworker's Journal* ...

One of the underutilized benefits of a subscription to *Woodworker's Journal* is the premium content that can be found on our website: woodworkersjournal.com. Not only is there video and other unique content for subscribers only, but you will also find every magazine that we've ever published — from the first volume in 1977 up to the current issue. There are more than 1,500 archival projects complete with their original illustrations and photos. (As hard as it is to believe, we were really stylish back in the 80s!) So if you haven't taken advantage of the subscriber-only premium content yet, be sure to check it out. You can log into the Premium Content section with your account number (found on your magazine's mailing label) and zip code.



LASERS STARTING AT \$7,995!

Personalization
Cutting Boards
Tap Handles

End Tables
Prototyping
Cabinetry

Inlays
Signage
Much more!



888.437.4564 | SALES@EPILOGLASER.COM | EPILOGLASER.COM/WWJ



McFeely's

**SQUARE
DRIVE**

- Essential Shop Supplies
- High Quality Fasteners
- Preferred by Craftsman & Contractors

McFeelys.com
1-800-443-7937

Router Table Joinery Jig

RTJ400 by Leigh



- Box Joints
- Half-Blind Dovetails
- Through Dovetails

See Video



Scan QR code

Better Tools.
Better Results.

LEIGH
leightools.com

FROM OUR READERS

Epoxy Resin in the Woodshop



A TABLETOP REFLECTING POND?

Many of us have used epoxy in our shops for years, but most of us have turned to it for its adhesive qualities. For some time now, woodworkers have been using large amounts of resin in new ways to fill voids and even become an integral part of a tabletop or a turning. The now ubiquitous “river table” should have its own URL on the Internet.

This “river of resin” trend in woodworking is replete with its proponents and critics, and that is completely as it should be. Trends come and go and styles change. When I was a young man, we went to great lengths to never show end grain in a piece of furniture. But end grain is now a lovely thing to behold — or at least it is to some of us.

In this issue, I took on the “plastic pour” challenge when I built a slab table from spalted maple that included a large “pond” and a good bit of punky grain. I can tell you that I liked the process as well as learning some tricks and techniques required to get good results. It is a bold-looking table, and I am sure there will be those who love it and others who don’t. I’m interested in your opinion, so please share your thoughts.

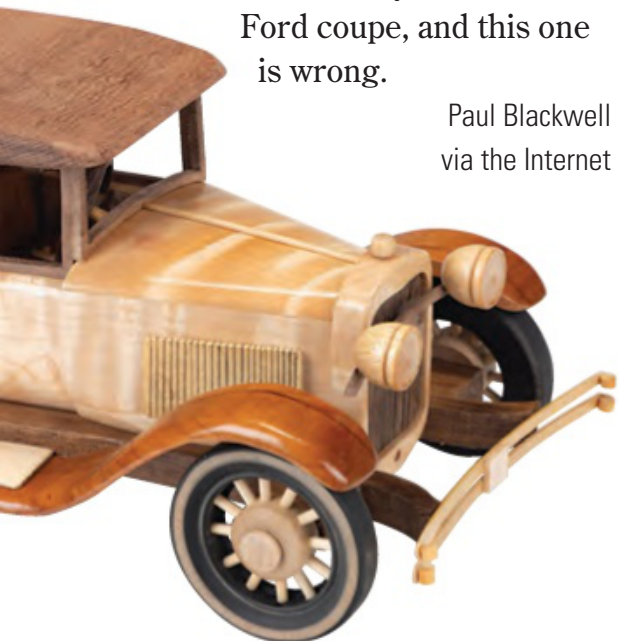
— Rob Johnstone

LETTERS

Backwards Bumper

I’m sure I’m not the only one to catch this, but the 1930 Ford on page 20 of the December 2019 issue [“Design in Wood Show Draws 365 Entrants”] has the front bumper mounted backwards. The curve in the bumper should be reversed so the concave side is towards the front of the car. I’ve made many old car models and actually owned a 1930 Ford coupe, and this one is wrong.

Paul Blackwell
via the Internet



Sander Recommendations

In December’s *Questions & Answers*, Sean Johnson was wondering about what benchtop sander to buy. I spend about two hours a day sanding cutting boards. I’ve sold more than 4,000 of them in the past 15 years. Here’s what I own and use for sanders: several 3" x 21" belt sanders, several random orbit sanders, a finishing sander and an oscillating belt sander. I use multiple sanders to avoid having to pull the sandpaper off the random orbit sanders, which shortens the life of the hook-and-loop pad and is time consuming. I use a 36-grit belt sander to get rid of the uneven wood pieces and dried glue, then go to 120-grit to get rid of the machine marks. I use the oscillating sander to round the edges because the end grain tends to chip when I use a roundover router bit on end grain (but I do use the roundover

Continues on page 10 ...

ROCKLER PRESS

THE VOICE OF THE WOODWORKING COMMUNITY

APRIL 2020

Volume 44, Number 2

ROB JOHNSTONE *Publisher*

ALYSSA TAUER *Associate Publisher*

CHRIS MARSHALL *Senior Editor*

JEFF JACOBSON *Senior Art Director*

DAN CARY *Senior Content Strategist*

MATTHEW HOCKING *Internet Production Coordinator*

Founder and Chairman

ANN ROCKLER JACKSON

Contributing Editors

NORTON ROCKLER

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. Reproduction without permission prohibited. Publications Mail Agreement Number 0861065. Canadian Publication Agreement #40009401.

©2020 Rockler Press Inc. Printed in USA.

April 2020 *Woodworker's Journal*

FREE



The most complete catalog for woodworkers

- Featuring over 10,000 items
- Innovative jigs and tools
- Router accessories
- Rare hardwood
- Turning supplies

Get your **FREE** catalog today
at rcklr.co/1023 or
call 1-800-279-4441 (Code 1023)



Origin, a handheld CNC that fits any shop



Welcome to the future of woodworking.
Shaper Origin™ brings precision to
handheld routing at any scale,
no programming required.

shapertools.com



Full Size Plans
Detailed with full size
drawings & text

Cycle Rocker
Plan #82 \$19⁰⁰
advanced skills project
Size 44"l x 27"h.

Plan #62
Cradle \$19⁴⁵
Swinging
Baby Cradle
21"x31"x39"H

**16 Pg catalog of
plans/parts \$2
or free with order**

**More plans @
armorplans.com**

Plan #24 \$16⁴⁵
Pony Rocker is
36" L x 24" H

**Visa/MC
call
800
292
8296**

Armor Box 576 Monterey TN 38574

For all the latest
information and releases
from

RIKON

Please visit Our Website
Today!

www.rikontools.com

**WE SELL
IN LARGER
QUANTITIES!**

STEVE WALL LUMBER CO.
*Quality Hardwoods and Plywood For The
Craftsmen and Educational Institutions*

Ash.....	4/4.....	1C.....	1.85.....	Select.....	2.60	8/4.....	Select.....	2.95	4/4.....	\$103.00	8/4.....	\$109.00
Basswood.....	4/4.....			Select.....	1.95	8/4.....		2.60	4/4.....	\$ 89.00	8/4.....	\$ 93.00
Birch.....	4/4.....			Select.....	3.50	4/4.....			4/4.....	\$117.00	8/4.....	NA
Butternut.....	4/4.....	2C.....	2.50.....	1C.....	3.25	8/4.....	1C.....	3.75	4/4.....	\$100.00	8/4.....	\$129.00
Cedar.....	4/4.....	1C+Btr.....	2.00.....			8/4.....			4/4.....	\$ 87.00	8/4.....	NA
Cherry.....	4/4.....	1C.....	2.75.....	Select.....	4.90	8/4.....		5.75	4/4.....	\$126.00	8/4.....	\$139.00
Cypress.....	4/4.....			Select.....	3.00	8/4.....		4.00	4/4.....	\$ 99.00	8/4.....	\$109.00
Hickory-Pecan.....	4/4.....	1C.....	2.00.....	Select.....	3.00	8/4.....	Select.....	3.50	4/4.....	\$110.00	8/4.....	\$137.00
Mahogany (African).....	4/4.....			Select.....	5.25	8/4.....	Select.....	5.55	4/4.....	\$124.00	8/4.....	\$127.00
Maple (Hard).....	4/4.....	Select (N).....	3.00.....	Select (W).....	3.65	8/4.....	Select.....	4.50	4/4.....	\$118.00	8/4.....	\$126.00
Maple (Soft).....	4/4.....			Select.....	2.60	8/4.....	Select.....	3.00	4/4.....	\$ 97.00	8/4.....	\$107.00
Oak (Red).....	4/4.....	1C.....	2.10.....	Select.....	2.80	8/4.....	Select.....	3.95	4/4.....	\$107.00	8/4.....	\$129.00
Oak (White).....	4/4.....	1C.....	2.20.....	Select.....	2.80	8/4.....	Select.....	4.95	4/4.....	\$107.00	8/4.....	\$135.00
Poplar.....	4/4.....	1C.....	1.30.....	Select.....	1.80	8/4.....	Select.....	2.00	4/4.....	\$ 87.00	8/4.....	\$ 91.00
Walnut.....	4/4.....	1C.....	3.25.....	Select.....	6.25	8/4.....	Select.....	7.00	4/4.....	\$129.00	8/4.....	\$149.00
White Pine (Soft).....	4/4.....	F.G.....	1.40.....			8/4.....	FG.....	1.80	4/4.....	\$ 80.00	8/4.....	\$ 86.00
Yellow Pine (Soft).....	4/4.....	Clear.....	2.20.....			8/4.....	Clear.....	2.60	4/4.....	\$ 92.00	8/4.....	\$ 99.00
Western Red Cedar.....	4/4.....	2C+Btr.....	2.50.....			8/4.....	2C+Btr.....	2.50	4/4.....	\$101.00	8/4.....	\$107.00

20 BDF BUNDLES

Above prices are for approximately 20 bd. ft. bundle of clear 1 Face (except for cedar and white pine or lumber listed as 1C + Btr. which have tight knots) 4" - 10" wide • 3' - 5' long. Lengths and widths are random. Add 15% to price of bundle if you specify particular lengths and widths. Lumber is surfaced two sides (13/16" on 1" stock • 1 3/4" on 2" stock) or rough. Some of the heavy woods are skinned to meet the 70 lb. limit even though rough lumber is specified. Prices include delivery prepaid in the Continental U.S. Sap wood in walnut and cherry is no defect. Please Specify Rough or Surfaced Stock. *Add \$5 if Rough. (Shipped in 2 bundles) Add \$5 if over 5' Long.

OLIVER MACHINERY DEALER

HARDWOOD PLYWOOD

CUSTOM RAISED PANEL DOORS

CUSTOM PLANK HRDWD FLOORING

THIN CRAFTWOOD

EXOTIC LUMBER

STEVE H. WALL LUMBER CO.

BOX 287
MAYODAN, N.C. 27027
336-427-0637
1-800-633-4062
FAX 336-427-7588
Email: woods@walllumber.com
Website: www.walllumber.com

Send \$1.00 For Lumber Catalog
Prices Subject to Change Without Notice

FROM OUR READERS CONTINUED



to shape the long grain). I also remove the machine marks on the edges with the oscillating sander. Then I start with 60-grit on a random orbit sander for the edges. For the entire board, I move to 80-, 120-, 180- and 220-grit. If I were just starting out, I'd use only one random orbit sander and the belt sander.

John App
Miloli'i, Hawaii

Old Delta Tools Live On

I found your article "One Hundred Years of Delta®" [December 2019 *Tool Preview*] of interest as I have four Delta tools I got from my grandfather when he retired in 1950. I think he bought them around 1929, and I'm still using them all. One is a jigsaw identical to the one pictured on the "Delta-gram" in the article. The other is a tilt-top table saw, all cast metal and heavy with a 1hp motor that is HUGE



and probably weighs close to 100 pounds; it drives both the table saw and the jointer.

Continues on page 12 ...

READER PROJECTS

Speaker Soundoff

These Bluetooth®-enabled Wireless Speaker projects from page 40 of your December 2019 issue made great holiday gifts. I built five of them shown here: two oak and one each of walnut, cherry and padauk with contrasting species of dowels used for the corner joints.

Kevin Knehr
Millis, Massachusetts



Couple Create Piano Accessory Table

When my wife and I aren't in our shop, chances are you'll find us at the piano. We each play and were jointly responsible for the unsightly clutter that regularly accumulated on the instrument: sheet music, eyeglasses, metronome, pencils and such. To neaten up the area, we decided to build a "piano accessory table" modeled on a kitchen cart we designed and built several years ago. Our project features a drawer for small objects and a shelf for matching music holders (which we also built for the table). We used quartersawn sapele — an attractive and

moderately priced alternative to the mahogany of our piano.

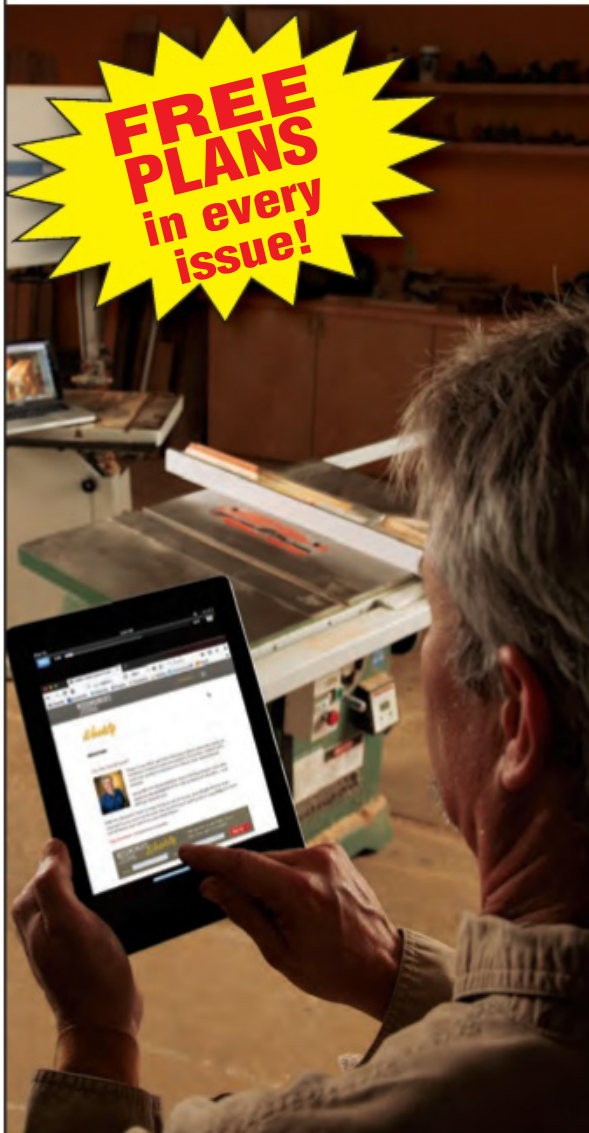
We enjoy working together, and our complementary woodworking skills make task assignment a breeze. For example, I used a table saw to bevel the edges of the top and shelf; she cut out the openings for the "wrap-around" shelf corners with the scroll saw. I cut the lower aprons to size; she embellished their bottom edges with smooth, concave curves.

The piece is everything we hoped it would be. The rest is up to us!

Joe Ilardo
Pawling, New York

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

nova™ VIKING

DVR DIGITAL DRIVE TECHNOLOGY



NEW!
INTRODUCTORY OFFER
SAVE \$50

\$949.99

Reg. \$999.99



teknatool.com

16" DVR Benchtop Drill Press

ALSO NEW!
COMET 14 DR MIDI LATHE

Offer valid January 1st - March 31st, 2020
While supplies last.
U.S. only.



EpilogLaser

WWW.EPILOGLASER.COM/WWJ

\$1 Project Plans

Download NOW!

**woodworkersjournal.com/
classics**

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):

Band saw features with wood-
turning in mind (video)

Slab "Pond" Table (page 30):

Complete build video including
pouring epoxy resin (video)

Modern Adirondack Chair

(page 36): Making templates
from gridded drawings (video);
gridded chair drawings and
cutting diagrams (PDF)

Entry Bench (page 40):

Advantages of the new Aileron
lid support hardware (video)

Tool Tutorial (page 52):

Tips for avoiding snipe during
planing (video)

Shop Extra (page 60):

Using an HVLP sprayer to paint
a small table (video)

What's in Store (page 62):

Featured tools in action (videos)

Finishing (page 64):

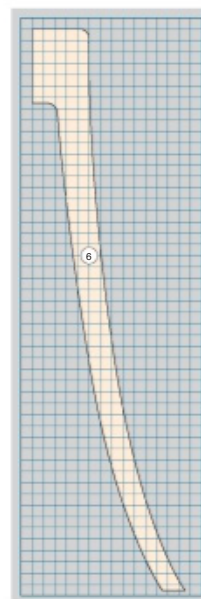
How to get good results when
painting raw wood (video)

There are no serial numbers
on any of them, and from
what I was told by the dealer
at the local Delta store, serial
numbers were not used by
Delta until around 1930.

Lynn Hirscher
Meadow Vista, California

I am not sure
of the best
way to get it
on a board.
Any sugges-
tions for me?

Paul T. Cox
Sparks, Nevada



use the drawing to mark a
dot at each intersection of the
leg shape and the grid. (You
can just count the grid lines
from the edge and the top
of the drawing.) I then use
something called a French
curve to help sketch out the
curves when connecting the
dots. When that's done, go to
the band saw and cut out the
leg template, then sand the
template to the line to clean
up the shape.

Down on Pin Nailers

I enjoyed your October 2019
Tool Tutorial article explain-
ing various types of power
nailers. About two years

Continues on page 15 ...

SURVEY

READERS CHIME IN ON THEIR PAINTED PROJECT PARTICULARS ...

An old controversy among woodworkers is whether
painting enhances or hurts the appearance of a
wooden project. Here's what you think:

Do you approve of painting indoor or "fine" wooden furniture projects?

Yes: 9%

No: 45%

Depends entirely on the project: 46%

Have you changed your mind about how you feel about painting indoor or "fine" furniture projects over the years?

Yes: 17%

No: 81%

Occasionally: 2%

Have you painted any of your indoor or "fine" furniture projects?

Yes: 35%

No: 63%

I don't make furniture projects: 2%

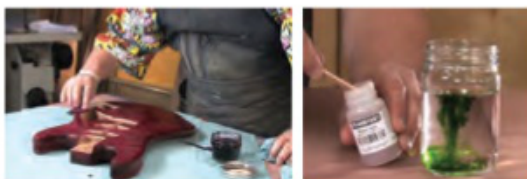


Step-by-Step to a Perfect Finish



Item #46512 \$29.99

Whether you're a beginner or an experienced finisher, you'll find a wealth of must-have information in this DVD. It's based on finishing expert Michael Dresdner's comprehensive step-by-step process, delivered in an easy-to-understand and entertaining format. It's everything you need to know to get a perfect finish every time!



CALL 800-610-0883
(mention code **WJ2021**)

Order online at:
woodworkersjournal.com/wj2021

Sponsors include ...



IT'S LIKE HAVING A FRIEND AT THE FACTORY.

For two decades, Harvey has been an OEM manufacturer of industrial woodworking machines for other brands. Now we're proud to introduce our own line of professional quality tools at factory-direct prices—Ambassador by Harvey. Learn more at harveywoodworking.com.



From

Kitchens to Heirlooms

Leigh **Super Jigs** Make Dovetails Easy



See Video



Scan QR code



Best Value Award
2019 Tool Guide
Fine Woodworking

LEIGH
leightools.com

STUMPERS

Engaging Gage

Readers Locate Patent

What's This?



This 9"-long threaded tool from R.K.

Motheral mystifies him. It's made mostly of brass, except for the center bolt and three "rosette" cutters that are 9/16", 5/8" and 3/4" in diameter. The bell-shaped sections unscrew from one another. Can you identify it? Email your answer to stumpers@woodworkersjournal.com

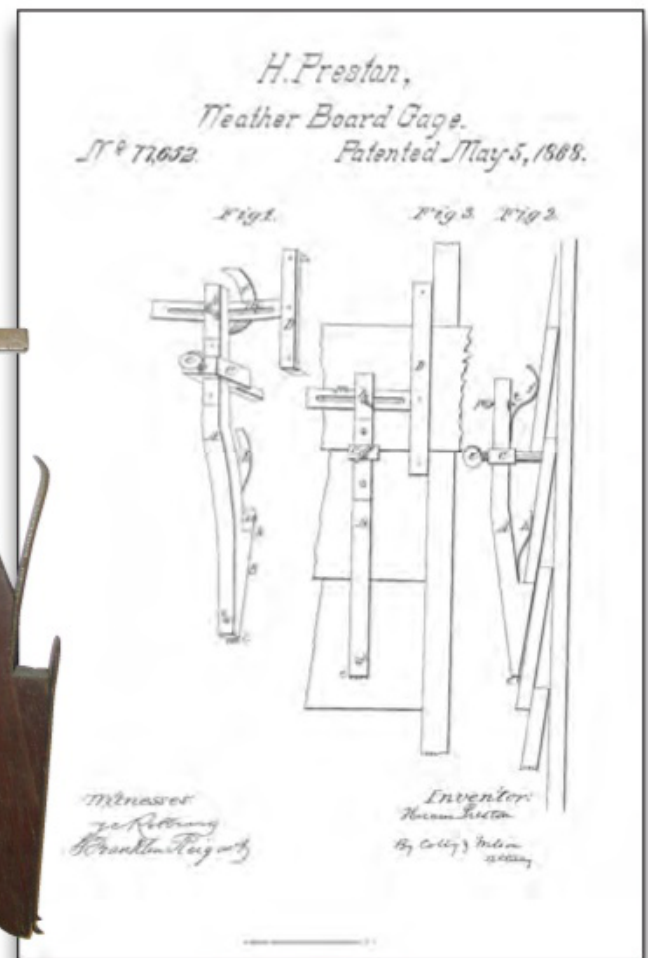
or write to "Stumpers,"

Woodworker's Journal, 4365 Willow Drive, Medina, MN 55340.

Don Swanson's December *Stumpers* tool prompted a culinary guess from **Doug Wathen** who speculated that the wood-and-metal apparatus shown at above right might be "a kitchen tool for coring or peeling fruits like apples or pears or potatoes." **Lawrence Balash** thought the object's purpose is closer to the building trades: "It appears to be a ticking stick."

Robert Rose of Escondido, California, took one of the device's smaller details more to heart and wished for a clear patent number: "The stamp 'Reston' (on it) sounds a lot like a residence, as in Reston, Virginia. The tool looks like it is part of a much larger assembly ... Given the time period, and the farming going on in Reston, my hunch is that this is part of a harvester, in which case the part would not have a stamped patent number."

But **Jay Mishler's** recent first-hand account of a similar tool was hotter on the trail of the truth: "Having just been to a rare live appearance of Roy Underhill at our Fredericksburg Woodworking Guild, I think I know what this issue's tool



is. (Roy) showed us an old Stanley

model of this kind of tool. It is a clapboard siding jig."

Without turning the matter into an academic search, "it looks like a tool used to help with putting siding on a house," **Ted Palmer** concurred. "The sliding adjustment would allow for different sizes of siding."

Others among you did your research to land the definitive answer. "It's a Weather Board Gage," said **Garrett Myers** of Pittsburgh, Pennsylvania. **Luc Gagnon** and **Eric Charlson** also found the original patent, shown above. **Ron Carlson** fleshed out more of those details: "It's a clapboard marker, Patent #77,652 and dated May 5, 1868, by Hiram Preston of Orfordville, Wisconsin. The tool is missing some parts but otherwise looks the same." Some of those parts, clarified **John Dimmick** of Carnation, Washington,

Hiram Preston's 1868 patent application for a Weather Board Gage bears a clear likeness to our recent mystery tool — even though it's missing some parts.

are "a pair of springs to hold the tool in place" as well as "an auxiliary fence for marking the clapboards for cutting." **Steven Connelly** of Portales, New Mexico, also pointed out that "it is missing its protractor and scribe."

Steve Walton of Hancock, Michigan, studied the patent drawing above to conclude that "the bottom right face of the gauge lays flat against one clapboard and the square notch is pressed up and under the next row while the gauge is held in place there by the spring just above. The bar with the thumbscrew is set for the particular spacing (height of reveal) of the clapboards and the next board up then sits on top of it to get nailed in place," he said. "That way, workers — or even one worker — could use two of these clipped in at either end to ... hold each clapboard as it gets nailed along its length."



Mediocre results when driving 23-gauge pin nails into red oak have made one reader skeptical of pin nailers in general.

ago, I bought a pin nailer. I had high expectations that it could speed up nailing the small types of items I build. I mostly use red oak on my projects, followed by maple and walnut. Boy, was I disappointed with the pin nailer. No matter how carefully I aimed the nailer, I would get blowouts in red oak. Then there were the frequent jams. My pin nailer must be disassembled to remove jams. I finally took the pin nailer completely apart and cleaned and lubricated everything, and the number of jams went down. So today, I am very selective on when I use the pin nailer. On projects where blowouts will ruin the most important areas, I go back to

pre-drilling for brads, then hammering them in. From my experience, pin nailers are not a panacea for woodworkers on small projects with hardwoods like red oak.

Dale C. Maley
Fairbury, Illinois

Twice-cut Miter Joints

I built the “Walnut Coffee Table” featured on page 32 of the October 2019 issue. The project reminded me of Rob Johnstone’s discussion in the February 2020 issue’s *Letters*, where he talks about miters being off on the final joint when making picture frames. Well, as perfect as I thought my table saw was at 45 degrees, my final joint was off by about the thick-



Cutting miter joints requires that the saw be carefully adjusted for accuracy, whether you use a miter saw like this or a miter gauge and table saw.

ness of my saw blade. To fix the problem, I temporarily glued all four corners of the tabletop together and then ran the saw through each miter joint. That way, the joint that originally was off by the thickness of the saw blade had a parallel partner. All the joints had to be cut to keep the inlay matching, due to the reduced size of about 1/8" inch all around. I don’t know if this would work for everyone in every situation, but it worked for me.

Frank Campanella
Hamburg, New Jersey



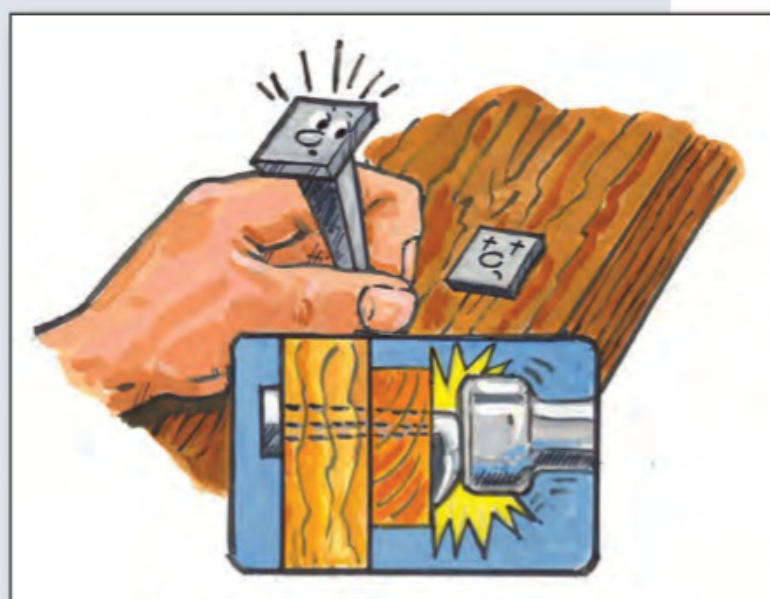
One reader found a clever work-around for refining the wide miter joints on his Walnut Coffee Table, featured in our October 2019 issue.

TRIVIA

What Makes a Door Nail so Dead?

Have you ever wondered what “deader than a door nail” means? The phrase traces its origin to medieval carpentry. A door to a cottage was a simple thing made up of boards held together by battens. Think of the decorative Z-pattern you see on barn doors. The doors were simply nailed together with extra-long flat cut nails. The extra length was bent into a hook and pounded or “killed” into the door to keep it from working loose. A door with killed nails could not be taken apart easily. The phrase “deader than a door nail” moved into the general language and came to mean unrepairable or unfixable. So when my lawnmower turned out to be deader than a door nail, I had to go buy a new one.

Jim Westbrooks
Canal Fulton, Ohio



TRICKS OF THE TRADE

Clever Upcycles that Reduce Slipping



Yoga Mat Sanding Pad

I've found that foam yoga mats serve a handy purpose in the workshop as non-slip pads for sanding. I purchased my 2' x 5' mat for only \$10. Whenever I don't need it, it rolls up conveniently for storage.

Dan Martin
Galena, Ohio



Label Your Lumber Before Shelving It

When I first bought some exotic lumber, the new species were visually unfamiliar to me. After stacking the boards on my lumber shelves, I realized that it would be tough to identify exactly what species I had in the mix. So I used a felt-tip marker to label my lumber on the board edges where they'd be easy to see. Now I do the same thing for all of my domestic inventory, too. This way, I'm never in doubt about what's in the stacks.

Bill Wells
Olympia, Washington



Tilted, Rolling Hand Plane Cart

Thanks to some scrap shelving and four caster wheels, I now have a space-saving way to store my collection of hand planes that rolls to wherever I'm working. I tilted the cart's uprights to 10 degrees and outfitted them with cleats and turnbuckles to hold the planes securely. My entire inventory of planes occupies only two square feet of floor space. And there's still room on the cart for a few more.

Michael Garrett
Paradise Valley, Arizona



Improved Project Dollies

Mover's dollies can come in handy for moving large projects around the shop when working alone, but their narrow top frames and carpeted surfaces would often cause my projects to slip off. So I replaced the carpet with a piece of 3/8" plywood and stapled a section of foam mat on top of it. The plywood adds surface area and the mats resist slipping.

Steve Meyer
Defiance, Missouri



PICK OF THE TRICKS

PVC Pipe Cork Holder Makes Abrasive Cleaning Safer

Synthetic wine corks work great for cleaning abrasives. But all it takes is accidentally bumping your fingers against the spinning sandpaper once, when the cork slips or wears down too far, to want some sort of a holder for the cork that makes this task safer. Here's my solution: I insert the cork into a 4½"-long section of ¾" I.D. PVC plumbing pipe. Wine corks usually have an outside diameter of about 13/16", which makes a good friction fit inside this "handle." It's a simple fix that saves my skin!

Jim Wilson
San Marcos, Texas



In addition to our standard payment (below), Jim Wilson of San Marcos, Texas, will also receive a **M12 FUEL™ Installation Drill/Driver Kit** for being selected as the "Pick of the Tricks" winner.

We pay from \$100 to \$200 for all tricks 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

WOODWORKER'S JOURNAL

25 JIGS & FIXTURES CD



You'll find 25 great jigs and fixtures on this CD, making it easier for you to create

everything from stopped dados to perfect miters. Plus, we've also included 5 bonus shop projects ... Don't wait, get your CD today!

ORDER YOURS TODAY!

Woodworker's Journal Jigs & Fixtures CD
Item #51729\$14.99

CALL 800-610-0883
(mention code WJ2022)

or order online:

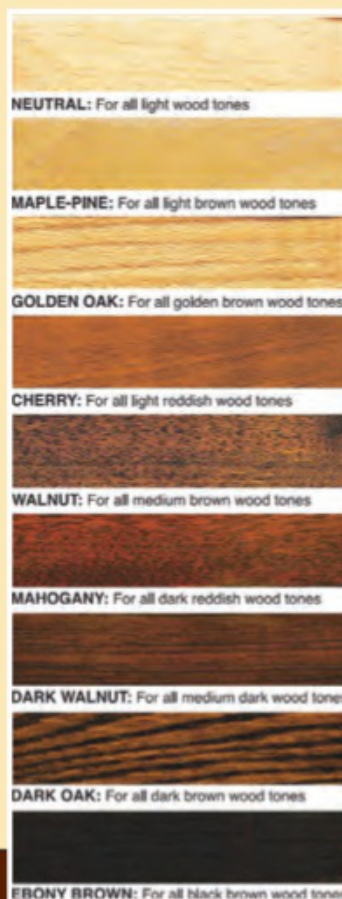
woodworkersjournal.com/wj2022

HOWARD



"Restore It - Don't Strip It!"

- Restor-A-Finish is a unique finish-penetrating formula that restores wood finishes while blending out minor scratches, blemishes, and abrasions
- With a simple wipe-on, wipe-off process, most finished wood surfaces that seem to need a complete refinishing job can be restored in a few minutes
- Removes white heat rings and water marks, sun fade, oxidation, smoke damage, etc.



Antiques, Cabinets, Desks, Tables, Chairs, Pianos, Paneling, Doors, Banister, etc.



Removes white heat rings

FOLLOW US!



800-266-9545 • www.howardproducts.com

SHOP TALK

Record-worthy End Grain Table Installed

“Old Bones” tasting table gives new soul to vintage timbers.



photo by Craig Terry

Eight species of reclaimed lumber from the Philadelphia and south New Jersey areas make up the table's end grain top, legs and center column. Its 485 board feet and iron framework weigh 1,798 lbs.



photo by Craig Terry

When you enter the tasting room of the Bonesaw Brewing Company in Glassboro, New Jersey, you won't be able to miss its recently installed tasting table — it quite likely is the largest end grain table in the world. Designed and built by Randy P. Goodman, founder of Random 8 Woodworks in Pedricktown, New Jersey, the table boasts impressive statistics: it is 19'6" long, 5" thick and made of 1,008 pieces of reclaimed wood, milled from structural beams acquired from the Philadelphia/south Jersey area. The table's 485 board feet of

wood, plus an angle iron under framework, tips the scales at 1,798 lbs.

“Guinness does not have a category for this and declined our request for the creation of a new category, saying they consider the ‘largest end grain table’ to be too narrow for their purposes,” says Dorsey Marshall, Random 8's shop foreman.

Bonesaw hired Random 8 to create a bar, tap wall, cabinetry and tables for the new brewery's tasting room. The owner envisioned a large community table that would be situated down the center of the space as its centerpiece. Random 8 was a logical team for the job:



photo by Craig Terry

Random 8 Woodworks's Dorsey Marshall (left) and Randy P. Goodman (right) spent a year building this massive table for Bonesaw Brewing Company's tasting room.

the company builds original figured wood and live-edge tables for a variety of clients.

“They trusted me enough to give me complete freedom to design and build the table,” Goodman recalls. “I imagined this hodgepodge of random blocks in a massive, thick table ... Once I had the idea, I couldn't *not* build it.”

Historic Timbers

Lockman Hardwoods of Elmer, New Jersey, sourced the table's timbers, which consist of eight different species: old-growth longleaf heart pine, longleaf heart pine, American chestnut,



Lockman Hardwoods of Elmer, New Jersey, provided the timbers, which were allowed to acclimate for more than six months in the Random 8 shop. They were extracted from various structures, including a now-raised cathedral, a train station, corn crib and 18th-century home.

Most of the table's 1,008 pieces were first milled into 6"-long blanks, then labeled with chalk and carefully cataloged prior to assembly.

hickory, loblolly pine, white oak, other pine, Douglas fir and Eastern red cedar. Most of the vintage lumber can be traced to its original structures. For instance, the old-growth longleaf heart pine once formed platform joists and carriage beams in Philadelphia's Broad Street Station. Its hickory was taken from a house in Salem, New Jersey, that was built in 1744.

Complex, Exacting Build

After acclimating in Random 8's shop for more than six months, the beams were first cut into 6" blocks of various sizes, according to two Fibonacci sequences.

"Using those fractional Golden Ratio measurements allowed us to create a pattern that fit together and hit our marks in both directions," Marshall says.

Given the challenges of using multiple block sizes, the tabletop pieces were meticulously cataloged, then assembled with slow-cure epoxy. Blocks were added to the tabletop in groupings of 18" to 24". Shop space restrictions required that the top be built in two halves, fin-

ger-jointed across the middle and bolted together with 1/2" steel rod.

In order to prevent tearout and accommodate for multiple wood species with various densities, the tabletop was saturated with epoxy to stiffen the wood fibers and then milled flat with a router and slab-milling jig.

End grain has limited tensile strength, so the tabletop is supported by a welded framework of 3/8"-thick angle iron. "It extends from the center pillar and is mortised into the corner legs," Goodman says. "Our aim was to distribute weight to the legs and prevent the tabletop from sagging."

The table's length, and unevenness in the taproom's concrete floor, required that each table leg be cut to specific length to suit its exact location on the floor. Lengths vary by as much as an inch.

Marshall says throughout the build, wood movement was a constant concern and was corrected for in various ways. Even now, several months after installation, the table has shrunk about 1/4" along its length.

Once the table sections were delivered, forklifted into position and bolted together, Goodman and Marshall still wondered if it would be level. But at the moment of truth, "all our calculations were validated and our second-guessing rendered irrelevant. It was dead-on," Goodman says.

While the Random 8 team reflects that much was learned throughout the year-long building process, they also wonder how many other important lessons might have flown right over their heads.

"We're grateful to have had the opportunity, but we never want to do it again," Marshall jokes. "There's a reason nobody builds giant end grain tables ... it's really hard."

Two Fibonacci sequences enabled the blocks to be assembled accurately. Finger joints with a 1/2" steel rod driven through them eventually brought the two tabletop halves together.





HIDA Japanese Woodworking Exhibit

By Nerissa Silao

Company's century-long manufacturing legacy highlighted.

On display until April 12 at Japan House Los Angeles, “HIDA | A Woodwork Tradition in the Making,” brings Japanese woodcraft from its spiritual homeland of the Hida region of Japan to Los Angeles for the first time. The exhibition invites visitors to discover the legendary craftsmen of Hida and their design legacy today, embodied in the work of century-old furniture maker Hida Sangyo Co., Ltd.



Located in the center of the country in Gifu Prefecture, the Hida region became known for its woodworking traditions and skilled artisans 1,300 years ago. This fame continues today through innovative design and sustainable use of the region’s forests, particularly the iconic cedar tree, in everything from contemporary furniture to fragrant aromatic oils.

Guiding Principles

For nearly a century, Hida Sangyo Co., Ltd. has prioritized four core principles: Forest, Human, Time and Craft. Engaging all five senses, the exhibition guides visitors to experience these themes for themselves. Displays highlight regional specialties such as Hida-shunkei lacquerware, Ichii wood carving (*Ichii itto bori* — Japanese yew carving) and *mageki* (wood bending), as well as materials, prototypes and products developed by Hida Sangyo and its frequent collaborations with some of the world’s top contemporary designers, such as Enzo

Mari and Sori Yanagi.

The exhibition also spotlights where tradition meets technology and innovation, such as Hida Sangyo’s revolutionary wood compression techniques with cedar. This sustainable domestic wood is typically too soft for long-lasting furniture, but in the Hida Sangyo factory, cedar is compressed and strengthened for use in durable chairs, tables and flooring imbued with cedar’s subtle scent.

As a business leader, Hida Sangyo’s success has also influenced a community of other manufacturers to stay in or migrate to the Hida area, furthering the time-honored mastery of woodcraft.

Hosting the exhibit, Japan House is an innovative, worldwide project with three hubs in London, Los Angeles and São Paulo, Brazil. Conceived by the Japanese Ministry of Foreign Affairs, it seeks to nurture a deeper understanding and appreciation of Japan in the international community. For more information on all programs, visit japanhouse.jp/losangeles.

DOWELMAX

PRECISION ENGINEERED JOINING SYSTEM

JOINT STRENGTH IS DIRECTLY PROPORTIONAL TO ACCURACY



Above $\frac{3}{8}$ multiple dowel joint was used to construct a 1-3/4" thick entry way door & was tested against a M&T joint with $\frac{5}{8}$ " thick tenon: $\frac{3}{8}$ and $\frac{5}{8}$ joints failed at an incredible 2000 psi! Watch our latest project construction videos and strength test videos updated regularly at www.dowelmax.com

Full System Not Shown-Main Unit Only

OUR UNCONDITIONAL GUARANTEE: Joints Made Using Dowelmax are Test Proven Stronger and More Accurate than Comparable M&T or Domino Joints.



Call 1.877.986.9400 or visit dowelmax.com

Forrest Sharpening

Helps Prevent Bad Cuts Like These



Abrasion, pitch buildup, micro chipping and poor sharpening jeopardize the life and performance of even the finest carbide-tipped blades and dado sets. Our expert factory sharpening will help protect your investment. We handle all types and makes of blades. Typical turn-around is just 4 to 5 days.

We've been the leader for over 60 years, so contact us today.

FORREST
The First Choice of Serious Woodworkers Since 1946

www.ForrestBlades.com
1-800-733-7111
(In NJ, call 973-473-5236)

© 2019 Forrest Manufacturing Code WWJ

ALL NEW REVO 15|24

Closing the Gap Between Revo 12|16 and 18|36



Shown with options



- Extraordinary torque even at low speeds
- Infinite electronic variable speed 50 - 4200 RPM
- Patent pending Precise Point allows dialing in the tailstock quill

\$1999

LAGUNATOOLS.COM LAGUNALATHE.COM

LAGUNA

WOODTURNING

Selecting a Band Saw for the Turning Shop

By Ernie Conover

Today's improvements in band saw design make them more capable and pleasant to use for woodturning applications.



Turning does not require a lot of space because you only need a lathe, some tools, a grinder (and jigs) to sharpen them and a way to reduce wood to usable, balanced pieces that fit your lathe. For a long time, turners have picked a wood-cutting band saw because it fits this last requirement very well and does not take up much space. In fact, even a big band saw has a small footprint. The band saw's table height is higher than other tools and benches, and you only need enough space to walk around three sides of the table.

Band saws are sized by the depth of their throat, which is the distance from the blade to the column that supports the upper wheel. A second important dimension is the height of cut — how big a piece of material you can get under the upper guides. In the past, a typical turning shop's band saw sported a 10" to 14" throat, had a 4" to 6" height of cut, was made of cast iron and had 1/2 horsepower. The cast-iron body was often made in two pieces and bolted together. This allowed manufacturers to offer a riser block to raise the top wheel and give a greater depth cut. It often sacrificed rigidity and made the machine a bit rickety.

If the saw had dust collection at all, it was a pathetic



Large depth of cut on the author's RIKON band saw enables him to easily rip planks out of a section of log bucked to slightly longer than the diameter. Note the scrap-wood "V" push stick here.



Modern band saws sport great dust collection. It's a big improvement in their design. This machine has two dust collection ports to catch most of the swarf generated below the saw table.

little port just below the table. While a good dust collector could pull off some of the fine dust, much of the sawdust (swarf) still ended up inside the machine and on the floor. After a week of cutting bowl blanks for a turning class I would have to shovel out the area with a grain scoop shovel. Wearing a dust mask while cutting (even green wood) was mandatory.

Saw Feature Improvements

The last two decades have seen great innovation in wood-cutting band saw design. Manufacturers realized that depth of cut was more important than throat distance because resawing — placing thick boards on edge and sawing them into two or more thinner planks — was a principal need of users.

Welded steel construction has also come to the forefront, enabling longer columns to support the top wheel. These welded-frame saws are rigid and vibration free. In an internet search of 14" band saws, I find no new generation saw with a depth of cut of less than 11". There are still some manufacturers making 6" height of cut cast-

iron "legacy" saws. These machines are affordably priced and offer continuing popularity for some types of work. There are also some large cast-iron designs that were and still are great saws.

Dust collection is now integral to band saw design too, with one 4" port being standard and some saws equipped with two 4" ports. Dust and swarf end up in the collector and not in the machine or on the floor.

The upper and lower wheels of any band saw have crowned rubber tires. The blade was tensioned for life on saws of yore, which constantly compressed the tires. This caused the rubber to lose its resiliency, shortening the tire's life. If I had not sold my 14" saw, it would have gotten its fourth set of tires. Current design adds a tension release to the saw, which makes blade changes much easier and faster. The idea is to throw this

large lever at the back of the upper wheel housing at the end of each cutting session, thereby allowing the rubber tires to relax and go back to their original shape. Saws with magnetic start usually have a microswitch on the de-tensioning lever that will not allow the machine to be restarted until the blade is tensioned again. This is great because starting a de-tensioned machine often ruins the blade. If your saw does not have this feature, consider hanging a red tag on the upper guide when you de-tension it to serve as a simple reminder.



A de-tensioning lever releases blade tension, thereby extending the life of the tires and making blade changes a breeze. It's become a common feature on newer band saws.

MORE ON THE WEB



For a video on band saw design improvements and use for woodturning, visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



A foot brake near the floor allows the blade to be stopped quickly when needed. It also turns off the motor on most machines with magnetic start.

Many new models have a foot brake that allows rapid stopping. The break is the same as an automotive drum brake with a shoe that rubs against the inside of the lower wheel. Again, machines with magnetic start often have a microswitch on the brake pedal that turns the motor off simultaneously.

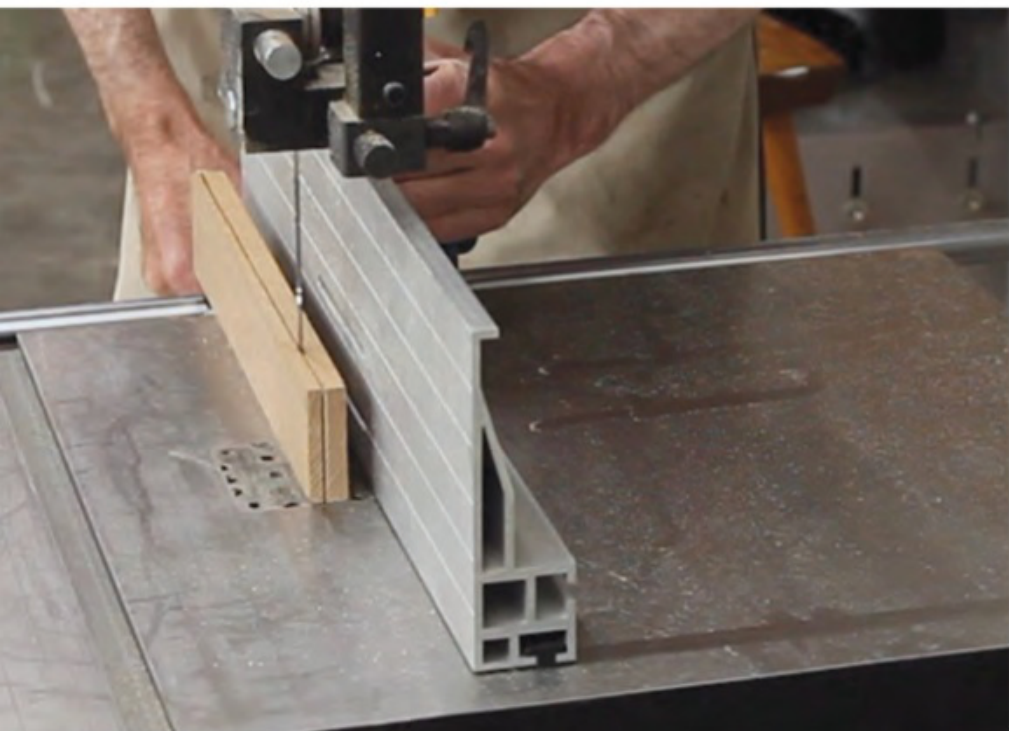
Many also add microswitches to the doors so the machine will not start if they are open. Strong construction, low vibration, great height of cut, good dust collection, de-tensioning and a brake are the hallmarks of modern band saw design.

Most manufacturers include (or offer as an addition) a rip fence. Since the blade of a band saw runs on a crowned tire, the blade's location on that crowned surface will affect where the blade tracks when cutting. Taking the same blade off and putting it right back on can change tracking. Therefore, the fence needs to be parallel to the line the blade

tracks on. If this is parallel to the table that is merely coincidental. Most modern saws have a knob that quickly skews the fence to adjust the tracking angle.

Sawing for Woodturning

A principle use of a band saw for bowl turners has been to cut rounds from planks ripped from a section of log with a chainsaw. Today's rigid frames and great height of cut allow ripping these planks from a section of log that is one to two inches longer than the diameter. Nice, square bucking cuts that allow the section of log to sit vertically on the table without rocking are key to



After sawing for a distance down the center of this piece of scrap, the author will now adjust the rip fence so it's parallel to the board face, to account for blade drift. That will enable the blade to track accurately.



Saws with ample resawing capacity, powerful motors and the correct blade can easily handle the task of cutting a log section into thick planks for woodturning. The author recommends using a "V" push stick for this job.



With the top and bottom faces of a plank flattened, a band saw can then make easy work of cutting the slab into round bowl blanks. Here's a task no other woodworking machine can match with equal finesse and safety.



A shop made V-block sled, which rides on a rail in the saw's miter slot, immobilizes logs for crosscutting into round sections. This is the only safe way to crosscut round stock on a band saw. Make one for your saw.

this scheme. You also want to make a simple push stick that is no more than a "V" cut in the end of a scrap (see top left photo, page 23). This allows you to control the cut while keeping your hands well clear of danger.

It is now a simple matter to lay out circles on the planks you have ripped from the log section and cut the circles out. Always adjust the upper blade guide so it's located just above the work.

I try to never push workpieces through the cut with my arms. Instead, I use nudging pushes with my thumbs, keeping my fingers locked to the side of the table or the fence rail. I also improvise push sticks where appropriate. The V-block sled (see upper right photo) is one of the first things you should make for any band saw. It cradles and immobilizes logs, enabling you to cut them without accidentally rotating them in the process. Any rotation can cause the blade to grab and spin the piece violently out of your control, putting your hands at risk.



A 3/4"-wide by 3 tpi blade (coiled at right in photo) is ideal for resawing. For general cutting, however, the author buys 100' coils of 3/8"-wide, 4 tpi blade stock and brazes it into 162" lengths for his 18" RIKON band saw.

Expert Blade Advice

Band saw blades are listed by the width of the blade, which dictates how tight a radius it can cut. This is followed by the number of teeth per inch (tpi), which range from three to 10. In all of my cutting for woodturning (which entails much cutting of green wood) I use a 3/8"-wide, 4 tpi blade that I buy in 100' rolls. I then braze 13' 6" lengths into blades, getting seven blades per

roll. For resawing, a wider blade tracks straighter so I use 3/4"-wide, 3 tpi blades. I order these individually and already brazed, because one lasts a long time. Where a smooth, fine finish to a cut is desired, I use a blade with more teeth. Again, I buy these individually and ready for cutting out of the box.

Ernie Conover is the author of The Lathe Book and The Frugal Woodturner.



ROCKLER®

CREATE WITH CONFIDENCE

FREE SHIPPING* for Woodworker's Journal subscribers!

\$39+ orders qualify • Order at Rockler.com or call 800-279-4441 • Use promo code 11P925 at checkout

One dust solution for many tools!

Dust Right® Flexiport Hose Kit: now available in two versions!



NEW FlexiPort Power Tool Hose Kit, 12' Hose Fixed Length

Flexible rubber ports connect the included fixed-length dust hose to a huge variety of handheld power tools, even those with odd port shapes! Ports swivel to avoid tangles, and are molded with an elbow to lift the hose off your work. Reverse thread for easy, airtight hose connections. 2 1/4" OD end connects to most shop vacuums or separators. FlexiPort diameters include 3/4" ID x 1 1/4" OD, 1" ID, 1 1/4" ID and 1 1/2" ID.

51170 \$59.99



Dust Right® FlexiPort Power Tool Hose Kit with Free Auxiliary Ports, 3' to 12' Expandable (\$14.99 value!)

Award-winning flexible ports connect to almost any handheld power tool! Amazingly flexible stretch hose won't fight you as you move about, and expands from 3' to 15' long. Four flexible rubber ports, 3/4", 1", 1 1/4" and 1 1/2" ID, conform to nearly all small tool port shapes. The ports swivel to avoid twisting and have an elbow to lift the hose off your work. The 2 1/4" OD swiveling port connects to most shop vacuums or separators and threads securely into the hose. Patent Pending.

57013 ~~\$54.98~~ **\$39.99**

* Additional shipping charges will apply for select oversized items, express orders, international orders APO/FPO addresses and orders to Alaska, Hawaii, Guam, Puerto Rico and the Virgin Islands. This offer cannot be combined with other offers, applied to previous orders or used in conjunction with Rockler Professional pricing. Some offers available only online. Rockler Woodworking and Hardware reserves the right to limit quantities, correct errors or omissions and modify or end this promotion at any time. Not all items available at retail stores. Offer not valid at Rockler's independent resellers. To shop now and get Free Shipping, use the 6 digit code 11P925 when checking out online, or when calling us with an order. Offer valid through April 2, 2020.

Big CFM in a small package!



54352



Y-adapter inlet for multiple hoses

Shown with optional hoses sold separately

64952

NEW

Dust Right® 1250 CFM Wall-Mount Dust Collector

Enough power for your whole shop, plus a Y-adapter inlet for multiple hoses, and a remote for easy on/off! Mounts to wall with keyhole slots, saving valuable floor space. Motor has sealed shaft and bearings for quiet, long lasting operation. Includes 30-micron bag with clear window and zipper.

★54352 1250 CFM \$529.99

Dust Right® Canister Filter for Rockler 1250 CFM Wall-Mount Dust Collector

Premium fabric pleats filter dust down to an incredible 1 micron in size—fits the Rockler 1250 CFM Dust Collector. With this one simple upgrade, you'll increase the filtration of your 1250 CFM Wall Mount Dust Collector by up to 30 times, giving the air quality in your shop a welcome boost. The premium pleated filter captures dust down to 1-micron in size, compared to 30 microns for the stock filter bag. You also get the convenience of a crank-style filter cleaner—just rotate the handle to clear dust off the pleats. Last but not least, the dust now drops neatly into an included plastic bag for easy emptying.

54818 1-Micron Canister Filter \$299.99



54352



54818

COMING SOON!

Replacement 30-Micron Bag for Dust Right® 1250 CFM Wall-Mount Dust Collector

Filters to 30-microns. Clear window shows dust level. Zipper for easy emptying.

63922 \$49.99



High-Performance 5-Micron Bag for Dust Right® 1250 CFM Wall-Mount Dust Collector

Heavy-duty cloth filters to 5 microns. Clear window shows dust level. Zipper for easy emptying.

64952 650 CFM \$79.99



Dust Right® Dust Hose Cord Clips

Clips snugly onto your dust hose to hold the power cord in place, preventing twisting and tangling. Reduces chance of tripping on the cord or stepping on it. Durable polymer with easy-grip texture.

55678 For 1 1/2" Hose, 3-Pack ... \$7.99

51774 For 2 1/4" Hose, 3-Pack ... \$9.99

50715 For 2 1/2" Hose, 3-Pack ... \$9.99



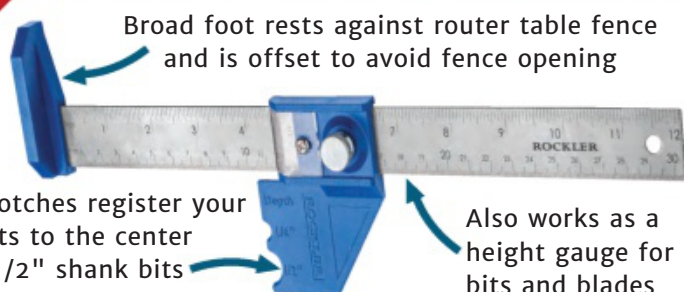
800-279-4441

Prices valid February 28th – April 2nd, 2020

NEW Innovations from Rockler!



NEW



Broad foot rests against router table fence and is offset to avoid fence opening

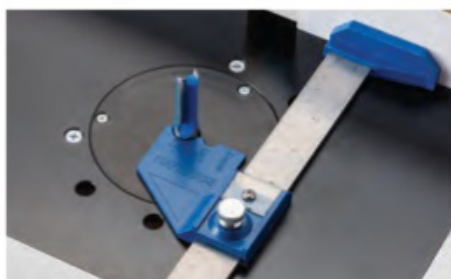
Half round notches register your measurements to the center of 1/4" and 1/2" shank bits

Also works as a height gauge for bits and blades

Rockler Router Bit Center/Depth Gauge

Quickly set your router fence a precise distance from the center of the bit—ideal for dados and flutes. Also works as a height gauge for bits and blades. Notches measure from center of 1/4" and 1/2" shank router bits. Use the notchless portion to measure to the edge of the cutter, rather than the middle of the shank. 12" long steel ruler with metric and imperial measurements.

55010.....\$19.99



Sets your router fence a precise distance from the center of the bit

NEW



Rockler® Precision Miter Gauge

Keep your miters tight with precision-machined positive stops at the most common angles, plus a miter bar with nylon set screws so it fits your slot tightly, and slides smoothly. Angles from 0° to 70° left/right. Detents at 0°, 15°, 22.5°, 30°, 45° and 60°. 3/8" x 3/4" miter bar fits both standard slots and T-slots. Easy-to-Grip rubber knobs for mounting a shop-made fence.

53310.....\$99.99



COMING SOON!

NEW



Rockler® Glue Caddy

Keeps all your glue and applicators in one compact, portable caddy. Stores up to four glue bottles in sizes up to 16 oz. Trays and brushes fit into slots on the side. Hooks onto our Lock-Align Wall Brackets (#52058, sold separately) for easy access. Made of durable ABS—wood glue flakes off easily when dried.

56823.....\$9.99

NEW



Rockler® Silicone Glue Keeper

Keeps glue where it belongs: in the container, on the brush, or on your project. Lid cradles hold brushes so excess glue drips back into container. You can also set the lid on the bench to catch drips. Sloped bottom keeps glue pooled. Rounded corners for easy cleaning. Lid seals for short-term storage. Wet glue pours cleanly back into the bottle, and dried glue peels right off. Holds 2 oz. of glue.

52296.....\$9.99

NEW



Rockler® Silicone Micro Glue Brush Set

The finest precision in glue applicators—perfect for dowels, dovetails, box joints, veneer repairs and joinery repairs. Also great for cleaning bits of wet glue out of corners. Silicone tips rinse off and shed dried glue easily. Includes fine point brush, angled chisel brush, and tapered flat tip brush with ribs for glue retention.

50822.....\$7.99

NEW

LED Lighting

- Continuous Illumination
- Exceptionally Thin
- Simple to Install



SEE all styles at Rockler.com/new-lights

NEW



Shaper Origin Handheld CNC Router

World's first hand-held CNC Router! Shaper Origin combines computer-guided accuracy with hand-held familiarity.

SEE more at Rockler.com/Shaper-Origin



Rockler® Exclusives – Quality you can trust

Rockler.com



Prices valid February 28 through April 2, 2020

**SAVE
20%**

**All Bench Dog
Hand Planes!**



**Which hand plane
is right for your job?**

Our Bench Dog hand planes, from Rockler, feature gorgeous sapele handles and solid brass fittings. A certificate of Inspection guarantees sole flatness and blade hardness right out of the box. Each hand plane comes with a storage sock and instruction manual.



Bench Dog® Tools No. 4 Smoothing Plane

Leave a silky smooth finish with this premium smoother, featuring gorgeous sapele handles and solid brass fixings. Sole is flat out of the box. Plane body: 2½" x 10". Blade width: 2".

58837 ~~\$149.99~~ **\$119.99**



Bench Dog® Tools No. 4½ Smoothing Plane

Remove the thinnest of shavings with this premium smooth plane—slightly wider than the No. 4 for faster planing. Sapele handles and solid brass fixings. Sole is flat out of the box. Plane body: 3" x 10¼". Blade width: 2⅜".

50258 ~~\$179.99~~ **\$143.99**



Bench Dog® Tools No. 5 Jack Plane

The "jack of all trades" among bench planes—excellent for flattening, squaring and removing mill marks. Sole is flat out of the box. Plane body: 2½" x 14". Blade width: 2".

59102 ~~\$179.99~~ **\$143.99**



Bench Dog® Tools No. 5½ Jack Plane

Excellent for flattening, squaring and removing mill marks. Slightly wider and longer than the No. 5 jack for faster planing and a heftier feel. Sole is flat out of the box. Plane body: 3" x 14¾". Blade width: 2⅜".

54865 ~~\$219.99~~ **\$175.99**



**Bench Dog® Tools No. 62
Low Angle Jack Plane**

Low bedding angle and adjustable mouth let you take the aggressive cuts of a jack plane and the fine shavings of a smooth plane. Sole is flat out of the box. Plane body: 2½" x 13¾". Blade width: 2".

51138 ~~\$219.99~~ **\$175.99**



Bench Dog® Tools No. 7 Jointer Plane

Extra-long sole quickly levels dips and high spots. Ideal for edge jointing and final flattening of surfaces before smoothing. Sole is flat out of the box. Plane body: 3" x 21⅞". Blade width: 2⅜".

58682 ~~\$319.99~~ **\$255.99**



Bench Dog® Tools No. 60½ Block Plane

Solid brass cap and knobs with precision machining throughout. Sole is flat out of the box. Plane body: 1⅝" x 6¼". Blade width: 1⅜".

51006 ~~\$99.99~~ **\$79.99**



Bench Dog® Tools No. 92 Shoulder Plane

Ideal for fine-tuning tenons and other joinery elements. Nose piece is removable for conversion to a chisel plane. Adjustable mouth for fine or coarse shavings. Plane body: ¾" x 5¼". Blade width: ¾". Sole is flat out of the box.

51527 ~~\$99.99~~ **\$79.99**

Storage sock
not included



Bench Dog® Tools 3-in-1 Shoulder Plane

Install the long extension for a shoulder plane, the short extension for a bullnose plane, and no extension for a chisel plane. Sole is flat out of the box. Plane body: 1" x 6⅞". Blade width: 1".

52378 ~~\$139.99~~ **\$111.99**

800-279-4441

*Additional shipping charges will apply for select oversized items, express orders, international orders APO/FPO addresses and orders to Alaska, Hawaii, Guam, Puerto Rico and the Virgin Islands. This offer cannot be combined with other offers, applied to previous orders or used in conjunction with Rockler Professional pricing. Some offers available only online. Rockler Woodworking and Hardware reserves the right to limit quantities, correct errors or omissions and modify or end this promotion at any time. Not all items available at retail stores. Offer not valid at Rockler's independent resellers. To shop now and get Free Shipping, use the 6 digit code 11P925 when checking out online, or when calling us with an order. Offer valid through April 2, 2020.

Prices valid February 28 through April 2, 2020



NEW

Full stereo sound with large left and right speakers for spatial depth and richness!

Rockler® Stereo Wireless Speaker Kit with 2 Speakers and Playback/Volume Controls

Full stereo sound with large left and right speakers for spatial depth and richness. Connects to any Bluetooth® device! Playback and volume controls in the control pod. 3.5mm aux input lets you connect accessories with a headphone jack. Use a 1⁷/₈" Forstner bit for the control pod, and 2³/₄" for the speakers. Solder-free, quick-connect wiring. Included USB cable charges internal 500mAh battery. 50995 \$39.99



The Bluetooth® word and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Rockler Companies Inc. is under license. Other trademarks and trade names are those of their respective owners.



FREE PLAN
Download at
Rockler.com/build



NEW AND IMPROVED

Make a mini speaker with a beautiful wooden cabinet



Rockler Wireless Speaker Kit

Make a mini speaker with a beautiful wooden cabinet! Connects to any Bluetooth® device, and features full playback/volume controls. 3.5mm aux input lets you connect accessories with a headphone jack. Use a block of wood with a hole drilled in it, build a hollow cabinet, or integrate speakers into furniture items. For the hole, use a 1⁷/₈" hole saw, Forstner bit or a jig saw—the bezel will conceal any rough edges. Solder-free, quick-connect wiring. Included USB cable charges internal 500mAh battery. 57033 \$29.99

The Bluetooth® word and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Rockler Companies Inc. is under license. Other trademarks and trade names are those of their respective owners.



Rockler Corner Key Doweling Jig

Beautify and strengthen mitered joints using hardwood dowels, non-ferrous metal tubes and more! Exposed oval dowel ends provide a unique decorative effect. Double-drill to create dowels with a multi-layered core. Precisely molded reference lines and clear alignment window for fast, accurate setups. Includes 1/8", 1/4" and 3/8" drill guides. Drill bits sold separately. 59517 Doweling Jig \$35.99
64775 Doweling Jig & Bits . . . \$71.99

Drill Bits

68329 1/8" x 6" Drill Bit . . \$11.99
63837 1/4" x 6" Drill Bit . . \$14.99
67434 3/8" x 6" Drill Bit . . \$19.99



25% OFF LADDER KITS
See Rockler.com/deals



Rockler.com

A Slab “Pond” Table

By Rob Johnstone

A huge slab of spalted maple found its way into our shop. It had one big problem: a hole surrounded by punky wood. So we decided to find out what pouring epoxy resin was all about.



This table is an example of a couple of unusual milestones in my woodworking experience. First, while I can't be dogmatic about this, it is likely the heaviest table I have ever built. And second, in terms of material expense, it might be the most expensive single piece of furniture I have ever created. Now, neither of those things are good or bad in and of themselves, but combined together, I have to admit this turned into a pretty epic project with a special learning curve: pouring epoxy.

www.woodworkersjournal.com
MORE ON THE WEB



For a video demonstrating a complete build of the table including pouring epoxy, please visit woodworkersjournal.com and click on “More on the Web” under the Magazine tab.

Preliminary Design Choices

I’ve been very interested in trying a unique looking set of metal legs called a Straw Bundle “Light” Table Base (item #66460, \$399.99; rockler.com). Made of steel tubes cut and welded at dramatic angles, they struck my fancy. And yes, if you’re thinking these legs added to the aforementioned weight and expense of the table, you are spot on.

When I saw the spalted maple slab, I remembered those legs. It occurred to me that I might be able to use that wood to make a tabletop for which the legs would be appropriate. It took a bit of noodling, but our art director Jeff Jacobson and I came up with a plan. However, the plan did have something of a hole in it — a really big hole surrounded by punky (okay, rotted) wood fibers.

Anyone who has looked at woodworking videos on YouTube in the last score of years has likely not been able to avoid the hundreds of examples of “river” tables — two interesting pieces of lumber joined in the middle by a river of epoxy resin to make a tabletop. There is a reason that they are as popular as they are: river tables look stinking cool. While this lumber was not great for a river table, its unique configuration did lend itself perfectly to becoming a “pond” table. So with the axiom “still waters run deep” bouncing around in my mind and absolutely no experience in pouring resin, that is what I decided to do.

Turning a Slab into a Tabletop

Turning the lumber into a tabletop required some pretty basic woodworking, made more interesting by the thickness of the slab and the rough nature of the maple. I started by crosscutting the board with a track saw, creating two



After crosscutting the big slab, the author used various methods to flatten and smooth the top and bottom faces of both pieces. Then, he cut away waste wood to form a center joint for the tabletop using a track saw to rip the edges straight. After this, the edges were further refined on a jointer.

pieces that would be joined later to make a wider glued-up tabletop. With that done, I took a straightedge and located the high points of the boards, then I used an 07 jointer plane to knock them down. I could have continued with the 07 to flatten the boards completely, but I have a wide belt sander at my disposal, so that’s how I continued. Once the two boards were flat and smooth, I used the track saw to rip one edge of each piece of the tabletop, then a jointer to flatten those edges into a long glue joint.

I didn’t want to crush the live edges with clamp heads, so I attached some temporary clamping cauls to the boards with hide glue. In addition, I used loose tenons to help me align the table during clamp-up; it came together well. After removing the clamping cauls and sanding the surfaces up to 220-grit, I removed some of the weathered wood and added texture to the up-facing waney edge with a power carver. Then it was time to push ahead with staining and filling the “pond” with a deep pour resin.



Making use of temporary clamping cauls glued to the tabletop, as well as loose tenons to help align the two pieces, gluing and clamping the tabletop components together was easy. When the glue dried, the author removed the clamping cauls and sanded the tabletop up to 220-grit.



Removing darkly weathered wood fibers from the tabletop's wane edge produced a better surface for finishing while also adding texture. A power-carving blade made short work of the effort. It was also used to shape the front edges to match.



The first finishing step involved wiping the maple with thinned stain. Notice how the stain absorbed differently on either side of the center glue joint. Glazing the top with full-strength stain over a base coat of polyurethane solved this color mismatch.



MAS Penetrating Epoxy Sealer was applied to the punky grain and all around the exposed fibers of the "pond." It was important to seal both faces of the tabletop with this product to reduce resin leakage later on.

Staining and Prep Work

The maple had a lot of dark spalting lines, but the rest of the fibers were very light colored. The quality of the wood fibers varied so much that I feared it wouldn't take a stain evenly. So I decided on a multi-step process for adding color. I selected an Old Masters Red Mahogany Wiping Stain (Rockler item 62929) and then mixed a portion of it half-and-half with mineral spirits. I flooded it on and wiped it off. This thinned mixture penetrated the eroded fibers and punky grain well, and it was a lighter color than the full-strength stain would have been. When it dried, I put a coat of sanding sealer on the top and bottom faces of the tabletop. Through this process I left the hole in the tabletop alone ... no color, no sealer.

Preparing to pour the epoxy was critical to the success of this technique. First, I sealed the top and bottom punky grain with a penetrating epoxy. Then I applied a coat of paste wax to my melamine work surface so the epoxy wouldn't bond to it. I put thick beads of silicone on the bottom of the tabletop around the opening in the pond and clamped it firmly to the melamine. I also applied a "dam" of modeling clay to close off the edge of the pond (see the top photo, next page). I was now at the point of no return. It was pour time!

Adding Deep Pour Resin

Resins come in different formulas. I wanted a version that would allow me to pour thick layers, so I used MAS Deep Pour Epoxy (rockler.com, item 67112) consisting of three parts resin to one part catalyst. Two aspects of this product are its relatively thin consistency and its long cure time. Those combine to make a deeper pour more successful by allowing air bubbles the time and ability to escape. Other one-to-one epoxy products recommend not pouring

much thicker than a 1/4" or 3/8" layer. With my pond being more than 3" deep, you can see why I wanted to use the Deep Pour product. I added color to the resin with the idea of making the pond look darker as it gets deeper. I poured four 1" layers to fill the void, as some of the resin leaked out on the first pour, allowing the epoxy to cure for 24 hours. The slow cure aspect of the deep pour formula means that it does not heat up as much as other formulas.

Glazing Balances Wood Tones

When I first stained the tabletop, the color didn't blend the wood tones well. So I used a technique called glazing to balance the look. To get started, I wiped on a coat of Old Masters Gel Polyurethane. When it cured, I removed the dust nibs with 400-grit sandpaper.

Next, I wiped full-strength stain down the center of the tabletop and around the edges. Then, with a dry paintbrush, I feathered out the stain to make the color pattern look more natural and attractive. Because the stain was on top of a smooth layer of poly, I could manipulate it easily — that's the glazing aspect. And if I didn't like what I saw, I could wipe it off with a clean rag and start over. I was able to hide the stark color difference on either side of the glue joint and highlight some of the spalting with this process. When I was satisfied, I let the glazing dry and then applied several more coats of poly to seal in the stain. The poly has a satin sheen, so I didn't put it on any of the epoxy resin, which is shiny when it cures. This way, the pond's glossiness makes it stand out.

My last step was to attach the Straw Bundle legs to the tabletop, completing the project. All in all, this most eclectic table was a very enjoyable build.

Rob Johnstone is Publisher of Woodworker's Journal.



In order to successfully create thick layers of resin, the author chose MAS Deep Pour Epoxy. It allows 1" or even a bit thicker layers to be poured. While pouring the first layer here, a good bit leaked out. The next layers were more successful.



Mixol Universal Colorant was added to the epoxy mixture. The resin takes many hours to cure and even more time if the temperature is low. This long cure allows air bubbles to escape — important when pouring thick layers of resin. The last pour of clear resin, below, sealed in the punky grain.



Modern Adirondack

By WJ Staff

Here's one of the the simplest designs you'll find for a sturdy, comfortable Adirondack chair. Start it on a Saturday, and you'll be sitting pretty before the weekend is out.





Use templates to trace outlines for the shaped parts onto your workpieces, then carefully cut them out on a band saw or with a jigsaw. Cut just outside of the layout lines.



Here, an MDF template is affixed to a back leg workpiece with double-sided tape so the leg can be routed to an exact match with a piloted flush-trim bit. Alternatively, you could sand the chair parts to final shape instead of template-routing them.

Summer is just around the corner, but if you've been putting off making some outdoor seating to usher in the warmer weather, this simple Adirondack chair project will help you make up for lost time. The plan doesn't require expensive or unusual lumber either — we built ours from off-the-shelf cedar boards purchased at a home center. To build a single chair, buy the following six boards: two 1 x 6 x 8'; one 1 x 8 x 8'; one 2 x 4 x 8'; one 2 x 6 x 8' and one 2 x 8 x 8'.

Rockler offers a set of seven full-size templates (item 61139) for tracing the shaped parts to build this chair. Or visit woodworkersjournal.com and download a free PDF of gridded drawings to create your own templates instead (see "More on the Web," page 36). The PDF also includes a helpful layout/cutting diagram.

Shaping Parts from Templates

There are two ways to use cardboard templates to make these chair parts. The first method is to trace the shapes directly onto the workpieces, then cut them just outside their traced outlines with a band saw or jigsaw and refine the shapes by sanding up to the line.

The second method is to trace the cardboard templates onto hardboard or plywood and create rigid templates for pattern routing. Then trace the part shape onto the workpiece, cut close to

the line and attach the rigid template to the workpiece with double-sided tape. With that in place, use a handheld router with a bearing-guided flush-trim bit to trim the workpieces flush with the templates. It's the method we followed in the two photos, above.

Whichever templating method you choose, lay out and crosscut slightly oversized blanks on your project lumber for all of the parts except for the back

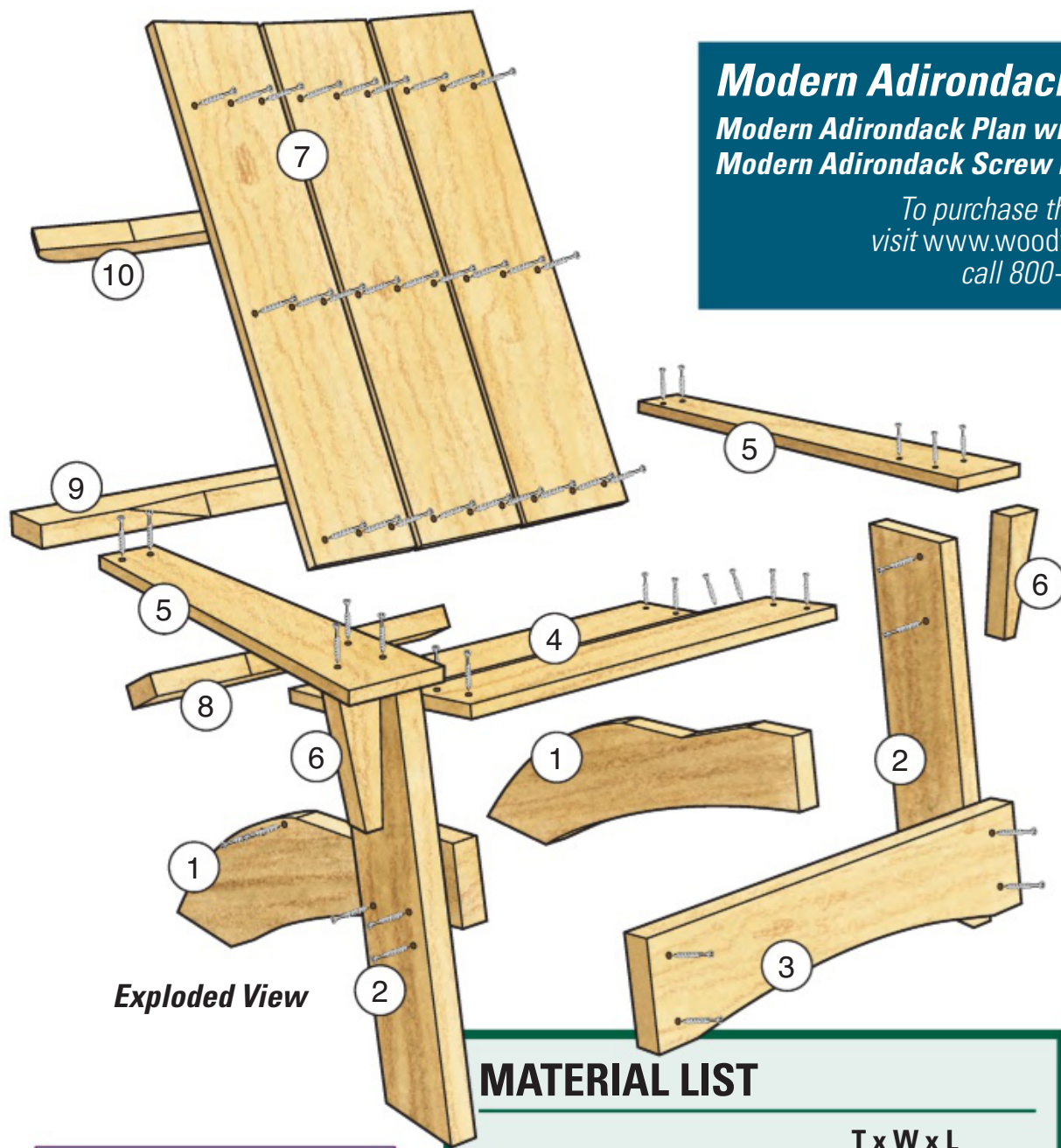
slats. Those three back slats will need to be cut to exact length in order to obtain all three from one 1 x 8 x 8' board.

Next, use your templates to trace and cut out the back legs, arms, arm braces, front cross brace, lower back brace and upper back brace. When these parts are done, trace the template for the middle back brace onto the top face of its blank. Note that this is the only part that requires making a bevel cut



The front shaped edge of the middle back brace needs to be bevel-cut at a 30° angle to match the angle of the backrest. Cut this angled edge with your jigsaw's base tilted to 30° or using a band saw with the table tilted to 30°. Set up the cut so the blade angles out toward the part's front edge.





Exploded View

Modern Adirondack Hard-to-Find Hardware

Modern Adirondack Plan with Templates(1) #61139 \$24.99 ea.
Modern Adirondack Screw Hardware Pack (1) #65175 \$24.99 ea.

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

to match the angle of the backrest. Tilt your jigsaw base or band saw table to 30°. Arrange the saw or the workpiece so that the blade angles out toward the front, concaved edge of the workpiece, and cut out this shape.

Give all the workpieces a thorough sanding up through at least 120- or 150-grit. If you're building this chair from cedar, which can be splintery, ease the edges while you're at it with a sanding block or even a 1/8"-radius piloted roundover bit in a router.

Building the Chair Framework

Attach the front cross brace to the back legs with #8 x 2½" exterior screws. Align the top edges of the parts and drive the screws through the front cross brace into the front ends of the back legs. Drill countersunk pilot holes first, to prevent splitting the wood.

Next, it's time to attach the front legs. Lift the front cr

"feet" of the back legs are flat on your work surface. Clamp a scrap to the front cross brace to prop up the front of this assembly at the correct height. Now position the front legs against the outside faces of the back legs and so their front edges are flush with the front face of the front cross brace. Be sure the bottoms of the front legs are flat on the work surface. Clamp the legs together, and attach the front legs to the back legs with three #8 x 2½" exterior screws driven through each front leg.

MATERIAL LIST

	T x W x L
1 Back Legs (2)	1½" x 7¼" x 29½"
2 Front Legs (2)	1½" x 5½" x 24⅝"
3 Front Cross Brace (1)	1½" x 5½" x 25½"
4 Seat Slats (3)	¾" x 5½" x 25½"
5 Arms (2)	¾" x 5½" x 28"
6 Arm Braces (2)	1½" x 2½" x 8"
7 Back Slats (3)	¾" x 7¼" x 32"
8 Lower Back Brace (1)	1½" x 3½" x 22½"
9 Middle Back Brace (1)	1½" x 3½" x 31¾"
10 Upper Back Brace (1)	1½" x 3½" x 22½"

MORE ON THE WEB



For a video on making templates from a gridded drawing, or to download a PDF cutting diagram and grids for making your own chair templates, visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



Make a reference mark on each back leg's top edge, 1" behind where the rearmost seat slat will attach (see inset). Locate the front edge of the lower back brace flush with these marks before fastening the legs to it with #8 x 2½" exterior screws.



Now, on the top edges of both back legs, make a mark 1" back from the point where the curve for the seat begins (see inset photo, preceding page). Slip the lower back brace between the back legs, and position its front edge to align with these back leg reference marks. Its top face should be flush to the top edges of the back legs. Attach it with #8 x 2½" exterior screws driven through the back legs and into its ends.

You're ready to attach the arm braces to the top outside faces of the front legs with pairs of #8 x 2½" screws driven through the front legs and into the arm braces. Then, grab a couple of short clamps, and clamp the middle back brace to the back ends of both arms so the ends of the parts are overlapped and flush. Set this assembly on top of the front legs with the front ends of the arms aligned with the front edges of the legs. Drive three countersunk 2½" screws down through each arm to attach it to the arm braces and front legs. Then secure the arms to the middle back brace by driving a couple of #8 x 2½" screws through these joints.

Adding Back and Seat Slats

Set the back slats into place so their bottom ends are aligned with the bottom face of the lower back brace, and space the slats about 3/8" apart. Attach the back slats to the lower and middle back braces with #8 x 1⅝" exterior screws. Use three evenly spaced screws per joint, countersinking their heads. Once that's done, you can clamp the upper back brace to the back of the back slats. Locate it about 3¼" down from the tops of the slats, and attach the slats to it with #8 x 1⅝" screws, driving three screws per slat into the brace.

All that's left to wrap up construction on this chair is to attach the three seat slats to the back legs with #8 x 1⅝" exterior screws. Arrange the slats to allow the front seat slat to overhang the front cross brace by about 1/4". Position the other seat slats so there's consistent space between all three.

Apply an exterior finish of your choice. When that dries, your chair is ready for summer seating!



Clamp the middle back brace to the arms to form a subassembly. Drive countersunk screws down through the arms to fasten them to the front legs and arm braces. Once those are secured, attach the arms to the middle back brace with more screws.



Spread the back slats 3/8" apart. Clamp the upper back brace to them, 3¼" down from their top ends. Secure it with three countersunk 1⅝" exterior screws driven through each back slat and into the brace.



Install the three seat slats on the back legs. Position the front slat so it overhangs the front cross brace by about 1/4", and spread the other two slats evenly apart. Attach the seat slats to the back legs with 1⅝" screws, using two screws per joint.

Entry Bench

By Jeff Jacobson

This practical and stylish organizer and bench combo will make going out and coming home more convenient.



This attractive entry bench offers a helpful place to sit and change a pair of shoes. You'll also appreciate its storage capabilities: four drawers can hold gloves, scarves and hats, and its deep chest can stow boots

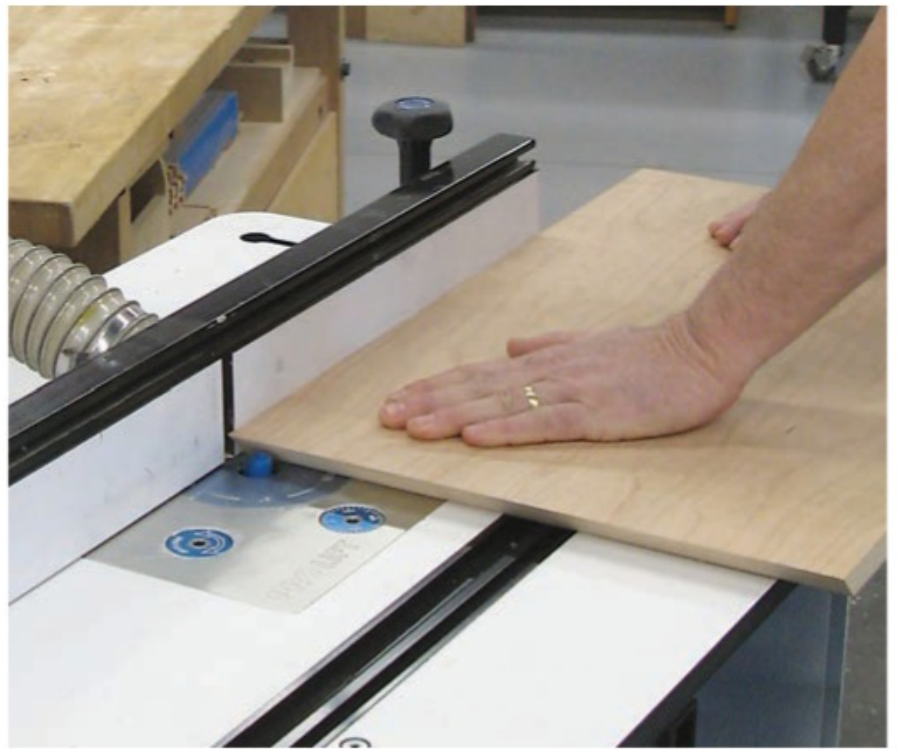
and other seasonal footwear.

We built this project mostly from cherry plywood — you can harvest the majority of the parts from a single 4x8 sheet, plus some 1/2" and 1/4" plywood for the drawer parts. The drawers

feature the latest Blum® soft-closing slides. Even the lid offers soft-close conveniences, thanks to a new Aileron lid support system. Our “More On the Web” video for this project shows how this unique Aileron system works.



When trimming the beveled ends or edges of the project panels, use a clean sharp blade and sneak up on the final cuts carefully (inset). Adjust the rip fence incrementally, if needed; these exacting cuts establish the final width or length of the workpieces.



Plow 3/8" x 3/4" grooves along the inside faces of the bench panels to accept the bottom. Position these grooves 3/8" up from the bottom edges.

Preparing the Plywood Panels

Follow the *Cutting Diagram* on page 41 to cut a 4x8 sheet of 3/4" plywood into slightly oversized panels for the bench and drawer cabinet. For the drawer cabinet, you're cutting the back, sides, subtop and bottom. For the bench, you need the front, back, sides and bottom. If you lay out the panels according to the diagram, the face grain will align around the perimeter of each box.

Now, trim the panels to final width, using a sharp blade in your table saw to cut the plywood's face veneer cleanly.

The front, back and side panels of the bench will be assembled with 45-degree bevels, then later modified with solid wood trim strips. Likewise, the drawer cabinet's back panel connects to the side panels with the same bevel joints. Tilt your saw blade carefully to 45 degrees, and trim the appropriate edges or ends of the panels. Test your saw setup first on scrap material to be sure the bevel joints will meet at 90 degrees. These bevel cuts should also bring the ends of the bench panels to final length.

Next, mill 3/8"-deep, 3/4"-wide dadoes across the inside faces of the drawer cabinet panels to fit the subtop and bottom panels. Position these dadoes 3/8" in from the panel ends. Likewise, plow a groove for the bottom panel in the bench's front, back and side panels. Locate this groove 3/8" up from the bottom edges of the panels.

Apply iron-on veneer edge tape to the

front edges of the drawer cabinet's side panels as well as the top and bottom edges of the bench's front, back and side panels. Notice that tape will cover the ends of the dadoes on the drawer cabinet's front edges. Carefully trim and file away the excess tape as needed.



Apply adhesive-backed veneer edge tape to hide the plywood edges, and heat it with an iron to bond it to the substrate. Press it down firmly.



File the edges of the tape flush with the panel faces. Here, its side teeth cut off the protruding veneer, while the bottom teeth smooth the edge.

Dry assemble the front, back, side and bottom panels of the bench to make sure the bevel joints close properly. If they do, spread glue along the bevels and dadoes, and assemble the bench with strap clamps. Don't assemble the drawer cabinet at this time.



Trim off the overhanging ends of the tape with a sharp knife when the adhesive cools. Score the veneer several times, if needed, to cut it cleanly.



The front ends of the cabinet dadoes will be concealed behind veneer tape. Be careful when filing or trimming the fragile veneer here.



Glue and clamp the chest's front, back and side panels together with the bottom in place. For this glue-up, strap clamps will keep the bevel joints from slipping out of alignment while under pressure.

Making Drawers

These drawers are made of 1/2" plywood with 1/4" plywood bottoms. Notice in the *Drawing* on page 42 that the drawer boxes are assembled with butt joints to keep the construction process easy. Follow the *Material List* on page 42 to rip and crosscut parts for the four drawer boxes to size. Don't cut the 3/4" drawer faces now — those will come later.

fit the drawer slide hardware). Rout the grooves the full length of the parts.

Dry assemble the four drawer boxes to check their fit; the sides overlap the ends of the fronts and backs. Then finish-sand the pieces with 150- or 180-grit sandpaper. Assemble the parts with glue, reinforcing the joints with 1 1/4" brad nails. Make sure their corners are square; out-of-square drawer boxes are much more difficult to install.

At the router table, plow 1/4"-deep grooves in the drawer fronts, backs and sides for the bottom panels. Since most plywood is slightly thinner than its stated thickness, use a router bit that matches your plywood thickness so the drawer bottoms will fit their grooves well. Position these grooves 1/2" up from the bottom edges of the parts (that spacing is necessary to

Installing Tandem Edge Slides

We're hanging these drawers on Blum Tandem Edge 7/8 Extension Drawer Slides. Each consists of two components: a cabinet-side member that attaches to the cabinet walls and a plastic and metal locking drawer component that tucks underneath the drawer bottom behind the drawer front. The two parts clip together and provide a soft-close action, while also making the drawers easy to remove from the cabinet when necessary. Rockler offers a helpful PDF installation document for these slides that can be downloaded at rockler.com to assist you, along with the following instructions.

The cabinet-side slide components require that a 1/2"-deep, 3/4"-wide notch be cut through the back face of each drawer box, adjacent to the drawer sides. We cut these notches at the router table with a straight bit.

When the notches are done, flip the boxes over and fit a pair of drawer-side locking devices against the front bottom corners of each drawer box. Drive the



Cut the drawer box parts to size. A rip fence can help crosscut them to length, provided there's a step-off block to prevent trapping the cutoffs.



Plow 1/4"-deep, full-length grooves along the inside faces of the drawer front, back and side workpieces to fit the drawer bottoms.



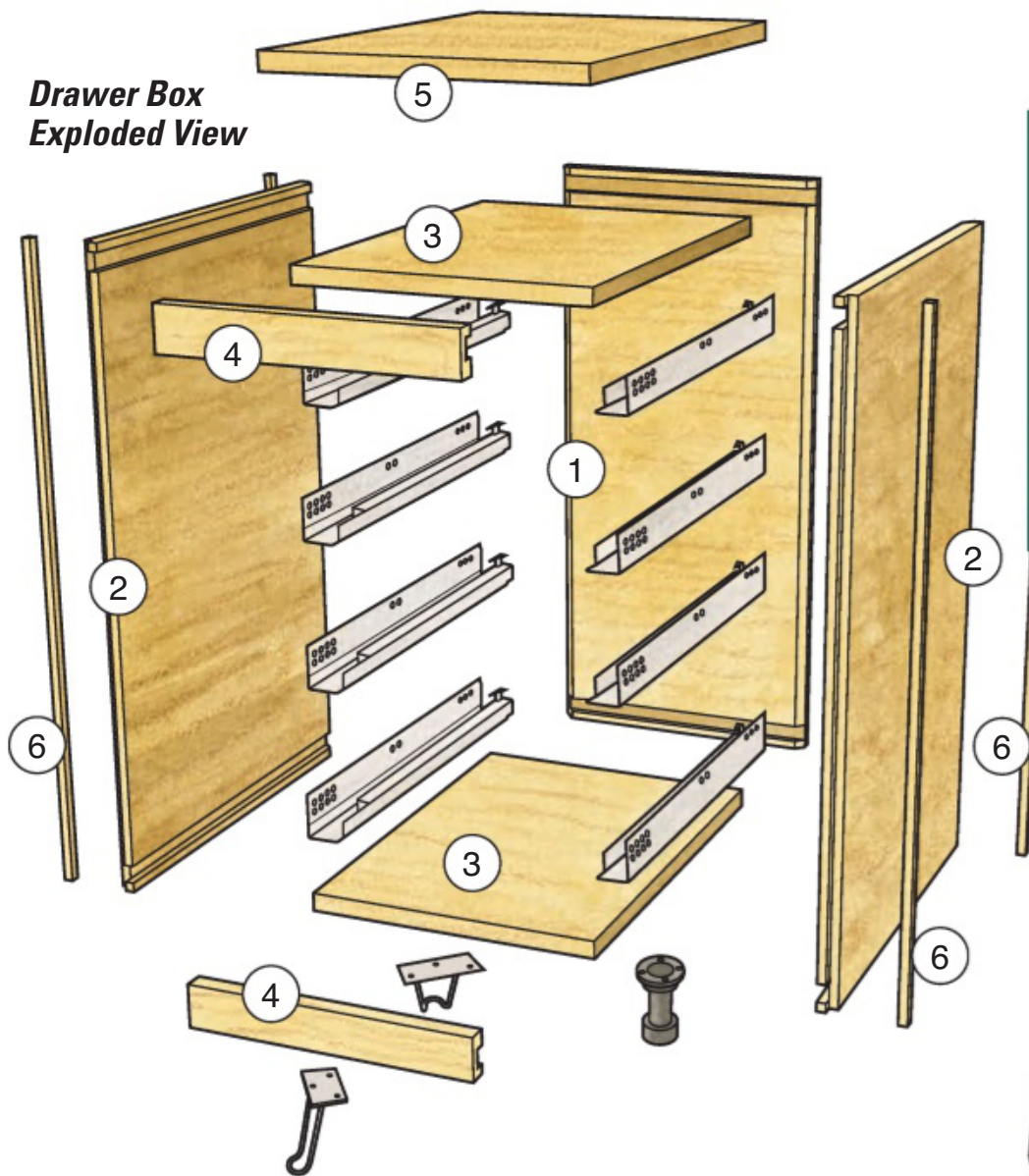
Their butt joint construction makes these four drawers quick and easy to assemble with glue and 1 1/4" brad nails.

Entry Bench Hard-to-Find Hardware

128mm (5in C to C) Wisdom Stone Corba Pull - Chrome Finish (4) #73804	\$9.99 pr.
Modern Hairpin Legs/Feet, 4"H, 2-Pack (2) #61604	\$24.99 pk.
Adjustable Leveler Leg, 4-Pack (1) #32183	\$19.99 pk.
Sugatsune Aileron Lift-Assist Soft-Close Hinge Set and Lid Stay for Chests, Set (1) #67858	\$38.25 st.
Blum 15" Tandem Edge 7/8 Extension Drawer Slides (4) #63111	\$19.99 pk.

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

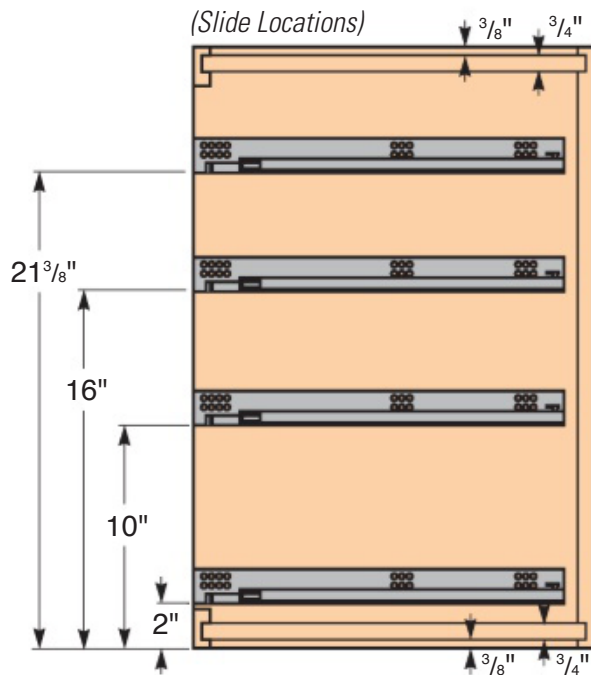
**Drawer Box
Exploded View**



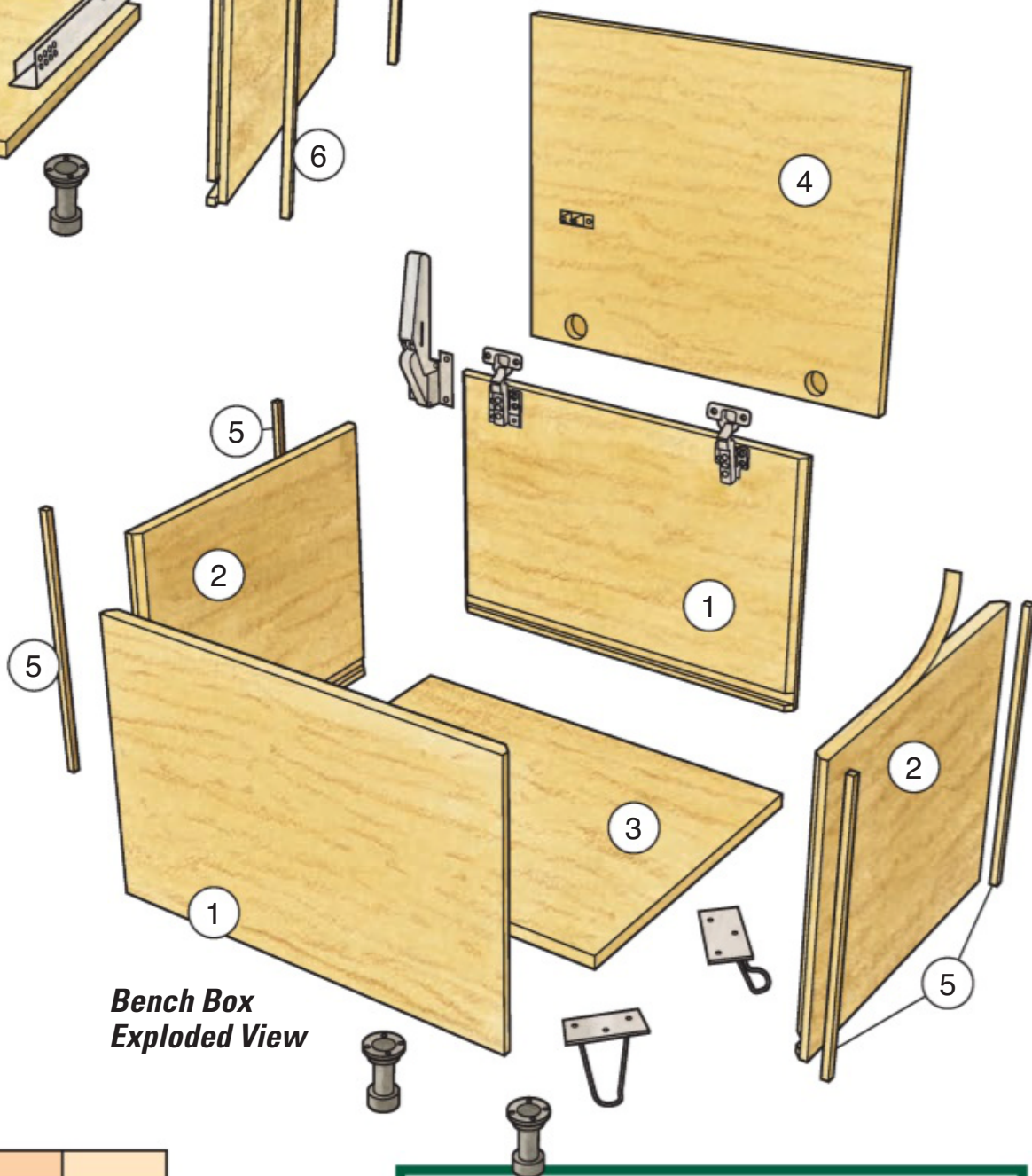
MATERIAL LIST

Drawer Box	T x W x L
1 Back (1)	3/4" x 27" x 13"
2 Sides (2)	3/4" x 27" x 18"
3 Subtop and Bottom (2)	3/4" x 12 1/4" x 17 1/4"
4 Front Rails (2)	3/4" x 1 3/4" x 11 1/2"
5 Top (1)	3/4" x 18 3/4" x 13"
6 Corner Trim (1)	3/8" x 3/8" x 108"

**Drawer Box Side
(Slide Locations)**



**Bench Box
Exploded View**



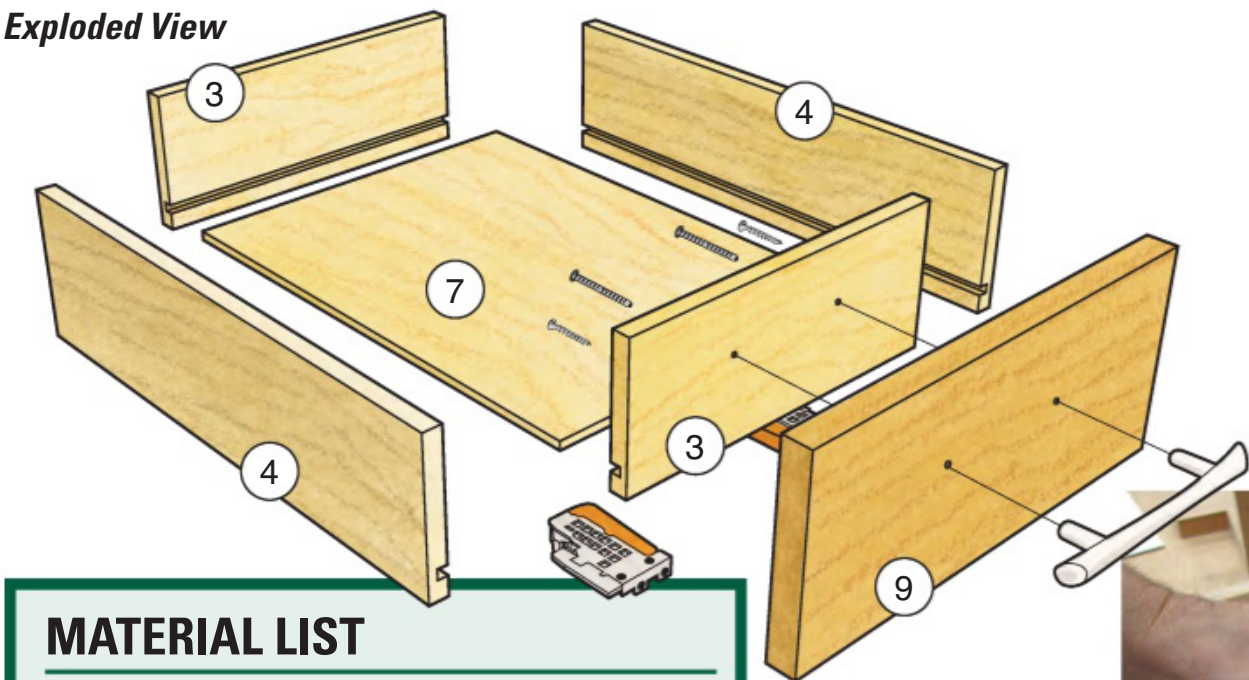
MATERIAL LIST

Bench Box	T x W x L
1 Front and Back (2)	3/4" x 15" x 23"
2 Sides (2)	3/4" x 15" x 18"
3 Bottom (1)	3/4" x 17 1/4" x 22 1/4"
4 Seat (1)	3/4" x 18 3/4" x 22 7/8"
5 Corner Trim (1)	3/8" x 3/8" x 60"

Bench Box

Front 1	Side 2	Back 1	Side 2
Drawer Box			
Side 2	Back 1	Side 2	Drawer Faces
Bench Box Bottom 3			

Drawer Exploded View



MATERIAL LIST

Drawers	T x W x L
1 Top Front and Back (2)	1/2" x 2 3/4" x 10"
2 Top Sides (2)	1/2" x 2 3/4" x 14 7/8"
3 Center Fronts and Backs (4)	1/2" x 4" x 10"
4 Center Sides (4)	1/2" x 4" x 14 7/8"
5 Bottom Front and Back (2)	1/2" x 6 1/4" x 10"
6 Bottom Sides (2)	1/2" x 6 1/4" x 14 7/8"
7 Bottoms (4)	1/4" x 10 1/2" x 14 3/8"
8 Top Face (1)	3/4" x 4 1/2" x 12 1/4"
9 Second Face (1)	3/4" x 5 1/4" x 12 1/4"
10 Third Face (1)	3/4" x 5 7/8" x 12 1/4"
11 Forth Face (1)	3/4" x 8 1/4" x 12 1/4"

Note: The drawer boxes for the second and third drawer are identical. The drawer faces are different sizes.



A pair of plastic and metal locking devices fit behind the drawer fronts and against the bottom panels. Attach them with short screws.



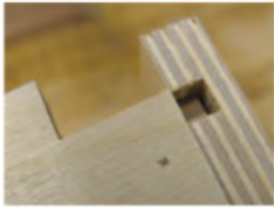
Each slide requires that a notch be cut through the drawer back, adjacent to the drawer side. We milled these left and right notches with a wide straight bit at the router table. Setting the bit and fence spacing accurately was easy, using a 1/2" brass setup bar (inset).

included screws at an angle through holes in the hardware to attach them. These slides have a pointed metal locator hook on their back ends that must fit into a 1/4"-dia. hole bored into the back face of the drawer box back, one hole per slide. Lay out and bore these holes 13/32" deep; you can locate the holes by measuring, of course, but

there's another simple way to do it without measuring (see photo, this page). It's much easier to align and attach the cabinet-side slide components to the side panels when you can still lay them flat on a bench, and that's the reason why we haven't assembled the drawer cabinet yet. Carefully lay out the four slide locations, as shown in the *Draw-*



Once the locking devices were installed, marking a centerpoint in the drawer back for the slide's hook was a simple matter of engaging the slide hardware and bumping the hook against the drawer back (top inset). Drill the 1/4"-dia. hook holes 13/32" deep (bottom inset).



www.woodworkersjournal.com
MORE ON THE WEB



To watch a video that introduces how the Sugatsune Aileron system works, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



For a narrow cabinet like this, drawer slide hardware is easier to install while the cabinet's side panels can be laid flat. Mark the slide locations, and attach them with short screws (inset). Once those are in place, bring the front rails, subtop, bottom, sides and back panel together with glue and clamps. Both strap and quick-grip clamps were put to good use here.



ings. Make sure that your panel layouts match and that the slides will be square to the panel edges. Attach the slides to the side panels with their included screws.

Next, rip and crosscut a pair of front rails for the drawer cabinet from solid wood. Plow a 3/8"-deep, 3/4"-wide groove along the inside face of each front rail, 3/8" in from one edge. These grooves will fit around and capture the subtop and bottom panels.

Dry fit all of the drawer cabinet workpieces together, making sure that the subtop and bottom panels seat in their dadoes or grooves and that the back bevel joints close properly. Make any necessary adjustments. Then give the parts a finish-sanding, and assemble the cabinet with glue and clamps.

Adding Wood Corners

You'll see in the *Drawings* that the four vertical edges of the drawer cabinet and bench are actually strips of 3/8" x 3/8" solid wood. There are two good reasons for adding this corner trim detail. First, if any of these long bevel joints come together less than perfectly after glue-up, replacing the plywood with a strip of solid wood allows one more chance for a better-looking corner. Second, the trim provides a tougher wear surface than thin plywood veneer for the scuffs and dings this project will certainly endure when used in a busy entryway.

To trim off the beveled corners, install a very sharp blade in your table saw,

and lock the rip fence 3/8" away from the blade's outside face. Raise it to exactly 3/8". Make test cuts on scrap to be sure your blade and fence settings are accurate. Then, carefully feed the drawer cabinet and bench boxes over the saw to trim the corner material away.

Once those notches are cut, rip eight 3/8"-wide strips from a piece of 3/8"-thick solid wood that are long enough to cover the notched corners. Trim them to length, and glue them into place on the drawer cabinet and bench. Hold the trim in place with tape.



Wood strips strengthen the corners of both the drawer cabinet and bench. A pair of cuts at the table saw created 3/8" x 3/8" notches, into which the strips were glued. Set up and make these cuts carefully with a sharp blade.



Mounting Drawer Faces

Find the remaining 3/4" plywood panel you set aside initially for the drawer faces. Trim the panel to 12 1/4" wide, then follow the *Material List* on the preceding page to crosscut it into the four sequential drawer faces. Mark each face to remind you of their original ordering. This way, their grain pattern will align down the bank of drawers.

Cover the ends and edges of the drawer faces with veneer edge banding, trimming and filing it neatly. While you're at it, finish-sand the "show" sides of the drawer faces.



One panel of plywood forms all four drawer faces. Mark the orientation of these faces so you can install them on the drawers and maintain a consistent grain pattern from top to bottom.



Now, clip the drawer slide components together to hang the four drawers in the cabinet, and test their action. If they open and close smoothly, you're ready to mount the drawer faces. We installed ours using Rockler's Drawer Front Installation Clamps (item 54804). A pair of these clamps enable you to clamp a drawer face to the drawer box, then easily make final adjustments to it while still being able to close the drawer. Install the faces beginning with the top drawer and working your way down,

one drawer at a time. Drive several 1" flathead screws through each drawer front and into its drawer face to secure the parts. Countersink their heads.

When the drawer faces are in place, go ahead and drill mounting holes for the four drawer pulls. We located all four pulls 2 1/4" down from the top edges of the drawer faces and centered them, side to side. Carefully drill through holes for these screws, backing up the drilling area with a piece of scrap wood to prevent the drill bit from splintering the face veneer as it exits.

Bringing Cabinet, Chest Together

You still need to prepare a top panel for the drawer cabinet and a seat for the bench. Follow the *Material Lists* on page 41 to glue those up from solid wood. When the panels come out of the clamps, trim them to final size and sand them up through the grits to 180.

Position the top panel on the drawer cabinet with its back edge flush to the cabinet back, in order to create a 3/4" overhang on the front. The panel edges should be flush with the outside faces of the cabinet sides; this is particularly important on the side of the cabinet that will be adjacent to the bench — the bench lid will need to pivot past it when opened. Attach the top panel to the subtop with either brad nails or screws only — no glue. Since this panel is made of wood and not plywood, it must be allowed to expand and contract across the grain with changes in humidity. If you use screws to attach it, drive them through slotted holes in the subtop where necessary so it can move.

You're now ready to attach the drawer cabinet to the bench with glue and screws. On a large flat worktop, set the cabinet (without drawers) and bench into position. Spread glue on their contact faces, and clamp them together. Make sure their front edges are perfectly flush. Drive eight to 10 countersunk #8 x 1 1/4" flathead wood screws through



Rockler's unique Drawer Front Installation Clamps enable drawer faces to be held in place and positioned vertically and horizontally as needed. The clamps free your hands to make necessary adjustments. Their narrow profile allows drawers to be closed with the clamps still in place to check your progress. Once properly aligned, attach each face to its drawer front with countersunk screws.



After the Aileron cup-style hinges are installed and adjusted on the chest and seat, a lid stay arm mounts on top of one hinge with a pair of brackets. This arm can be adjusted for the level of soft-close action you prefer.



Three black adjustable leveler legs — one under the drawer cabinet and two under the bench — provide added support to the metal hairpin legs/feet when this project is used as a seat.

the side of the drawer cabinet and into the adjacent side of the bench. This way, the screws won't show once the drawers are in place.

We're installing the seat on the chest using Sugatsune Aileron Hinges. They incorporate a soft-close lid stay that mounts over the top of one of the two included hinges. These hinges require that a 35 mm hole be bored 11" deep into the seat to fit a hinge cup, similar to "Euro-style" cabinet door hinges. Mark and bore these two cup holes into the panel's bottom face along the back edge. We positioned the hinge cups 3½" in from the ends of the seat panel.

Finishing Up

Smooth any areas of the bench that may still need a bit of touch-up sanding, then apply several coats of finish to the assembled bench, drawers and seat panel. When it cures, mount the cup side of the hinges to the seat and the hinge brackets to the back inside wall of the chest with screws. Snap the hinges together to mount the seat on the bench, then fine-tune the hinges with their adjustment screws so the seat overhangs the front and side of the chest evenly. Also make sure the lid can open and close without brushing against

the drawer cabinet. Complete the lid's installation by attaching the Aileron Lid Stay arm and bracket hardware over one of the hinges (see left photo, above). Adjust the arm for the lid closing action you prefer. Then fasten the pulls to the drawers with screws.

The bottom corners of this entry bench are supported by Rockler's 4"-tall Hairpin Legs/Feet, screwed to the chest and drawer cabinet. However, we also added three black leveler legs along the bottom center of the project. You'll see in the right photo, above, that two of these legs are installed beneath the chest and one is located under the cabinet. These legs allow the project to bear the load when the bench is used as a seat.

A combination of deep chest and shallower drawer storage provides plenty of room for organizing shoes, boots and other outerwear such as scarves, hats and gloves.

Now, ask a friend to help you move this project into place near your entry door. Then, get ready to enjoy its practical conveniences.

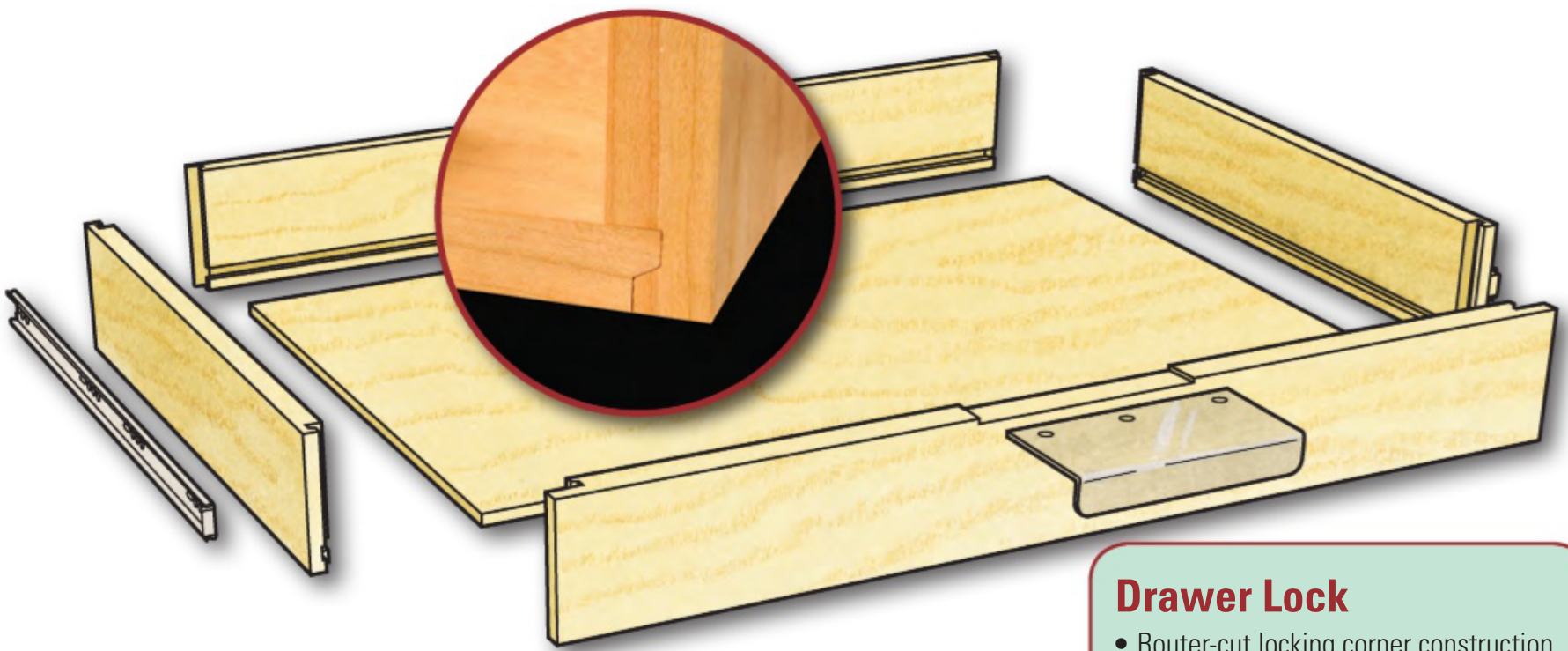
Jeff Jacobson is senior art director of Woodworker's Journal.



Drawer-making Details

By Rob Johnstone

Drawers are some of the most useful furniture components we can build. You can make them in several ways with various corner joints. Here are some considerations.



Drawer Lock

- Router-cut locking corner construction
- Drawer front is often also drawer face
- Wood or plywood front, back, sides
- Captured plywood bottom panel
- Typically installed with drawer slides

Building drawers can bring out huge differences in maker philosophies. My friend and master woodworker Ian Kirby tells me that building a drawer was one of the most important construction tasks in the British Arts & Crafts furniture-making movement. When completed, the hand-made drawer would fit perfectly in its opening to such a degree that when pushed in, it would cause a small audible rush of air. (Ian likens it to a piston in a cylinder.)

On the other hand, the late Mike McGlynn, a full-time woodworker, would just glue and nail drawer boxes together with butt joints. When I wondered about it, he boldly said, “They are bombproof. Purists be damned!”

The Basics

The most basic drawer consists of five components: two sides, a front and back and a bottom. The drawing above is an example of that simple form. Sometimes a separate drawer face is added to hide the drawer opening or the slide hardware.

But even with the most basic configuration, there are many options to be considered. How to join the corners is key among them.

Dovetailed corners have a long tradition of representing premium corner joints. For hundreds of years, those handmade joints secured corners and looked great doing it. Through, half-blind (also called single lap) and “secret” mitered dovetail

variations all provide solid mechanical joints that will keep on working even after the glue fails. And that is one of the primary reasons that the joint was designed and used for so long. Hide or fish glues were not as durable as our modern glues, and the joinery had to accommodate that fact.

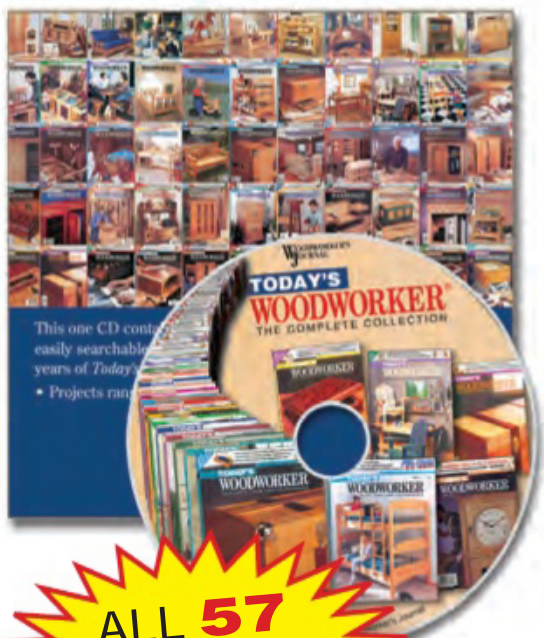
In terms of durability and effectiveness, however, other corner joints such as drawer lock, box and rabbet-and-dado will serve perfectly well, too, especially when secured with today’s wood glues. These joints also have the added benefit

Continues on page 48 ...

TODAY'S

WOODWORKER®

THE COMPLETE COLLECTION



ALL **57**
ISSUES ON
ONE CD!

This CD includes every single project, trick, technique 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! \$24.99

Item #48689 ~~\$29.99~~

Call **800-610-0883** and mention code **WJ2023**

or order online:

woodworkersjournal.com/wj2023

NEW!

**Through
Dovetail Jig
by Leigh**

Model TD330

Classic Dovetails Made Easy



The Leigh Through Dovetail Jig is easy to use, affordable, and provides great joint fit. Two router bits are all you need to make many sizes of beautiful through dovetails right out of the box.

See video at
leightools.com/td330

See Video



Scan QR code

LEIGH
leightools.com

World's Most Powerful Leaf Vacuum!



Perfect for **SPRING CLEAN-UP!**

Tow-Behind

- Rated #1 in Vacuum Power
- Huge Capacity!
- Stores Flat in Minutes
- Easy, one-handed dumping!



Walk-Behind

- Easy on/off collector bags hold up to 8 bushels!
- Perfect for landscaped areas and smaller properties.
- Self-propelled model is available.



DRleafmachines.com

SIMPLER STRONGER FASTER ...than any Hydraulic Log Splitter!

DR® KINETIC SPLITTERS



SIMPLER. No hydraulic pumps, valves, pistons, hoses or fluids to leak or replace—EVER.

STRONGER. Cast iron fly-wheel and hardened steel components show almost no wear after splitting hundreds of cords.

FASTER. The world's fastest splitters. Split anything a hydraulic splitter will—but in one-sixth the time!

**ELECTRIC
MODELS
TOO!**

Split wood indoors!

DRlogsplitters.com

**FREE SHIPPING
6 MONTH TRIAL**

SOME LIMITATIONS APPLY
Go online or call for details.

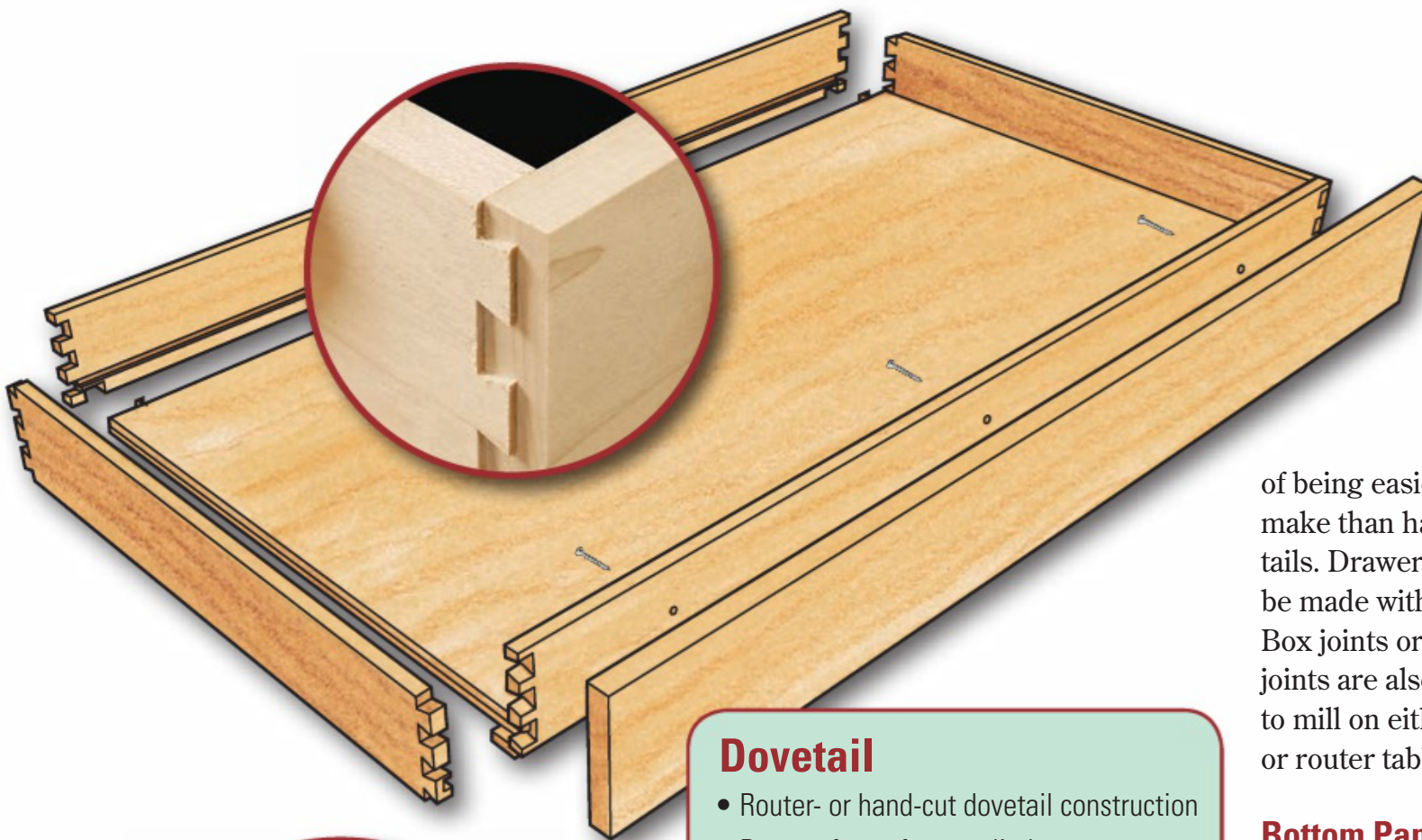
Go Online or Call for FREE Info Kit!

Includes product specifications and factory-direct offers.

TOLL FREE **888-212-8704**

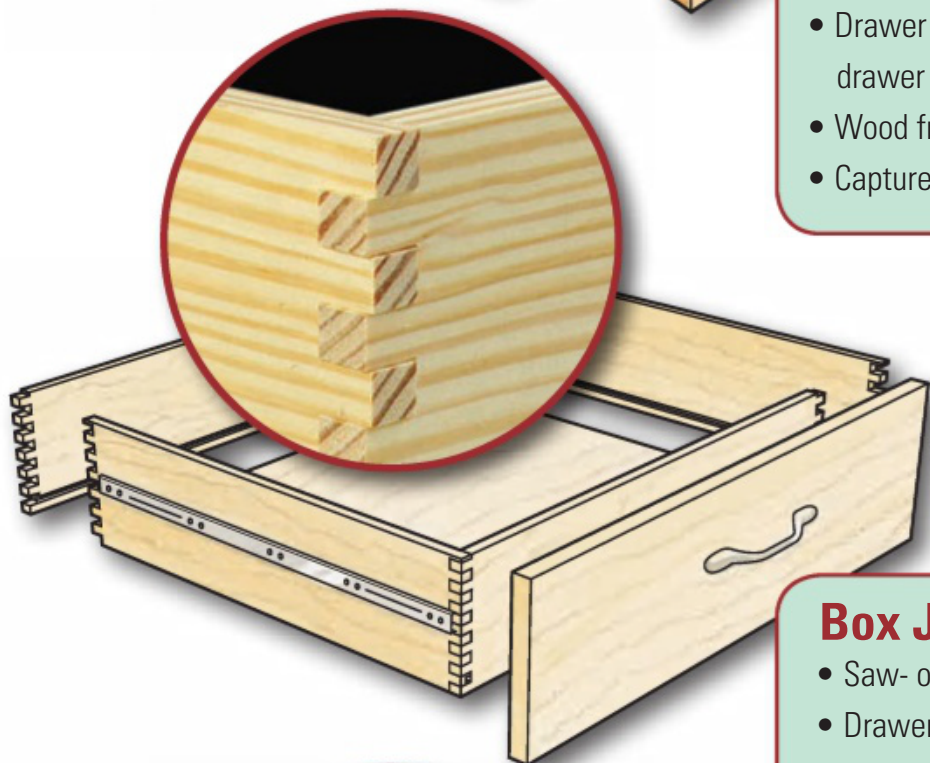
*Assembled in the USA using domestic and foreign parts.





Dovetail

- Router- or hand-cut dovetail construction
- Drawer face often applied over drawer front
- Wood front, back, sides
- Captured plywood bottom panel



Box Joint

- Saw- or router-cut construction
- Drawer face often applied over drawer front
- Wood front, back, sides
- Captured plywood bottom panel
- Typically installed with drawer slides



Rabbet-and-Dado

- Saw- or router-cut construction
- Applied drawer face
- Wood front, back, sides
- Captured plywood bottom panel
- Typically installed with drawer slides

of being easier for novices to make than hand-cut dovetails. Drawer-lock joints can be made with one router bit. Box joints or rabbet-and-dado joints are also relatively easy to mill on either a table saw or router table.

Bottom Panel Options

If you have ever looked at the solid wood bottom of an antique drawer, you will likely notice that the grain runs side to side in the drawer. The panel fits in a groove and slides into place beneath the drawer back. This way, the bottom can swell and shrink under the drawer back freely. Like frame-and-panel doors, this was an elegant solution for the materials at hand.

Now drawer bottoms are most often made of plywood or other sheetstock that do not expand and contract. Dimensional stability allows the panel to be captured inside the drawer box frame and work just fine.

Solutions for Sliding

Drawers are mostly installed on several styles of metal drawer slides these days. Slides are durable, adjustable and often provide full access to the drawer's interior. But drawers have also been sliding in and out of their openings on waxed wooden ways for centuries and are still going strong.

Woodworker's Journal *presents* **Accurate Router Joinery**



In this DVD-ROM, you'll learn to put the full precision and power of the router to work for you. Learn to cut the major joints that hold furniture and cabinets together, including dadoes, sliding dovetails, loose tenons, half-blind dovetails, rabbets and cope-and-stick joints. The easy-to-read articles are accompanied by helpful videos that guide you firsthand through the steps to a picture-perfect result.

ORDER YOURS TODAY!

Item #58224 \$9.99

CALL 800-610-0883
(mention code WJ2024)
or order online:

woodworkersjournal.com/wj2024

WOODWORKER'S JOURNAL

BE A BETTER CRAFTSMAN WITH **GREX® 23 GAUGE HEADLESS PINNERS**



GCP650
The First and Only Cordless
2" 23 Gauge Headless Pinner

2019 Visionary Awards
Best Power Tool
AWFS

2019 PTIA
Most Innovative
Cordless Finish Nailer

2019 Tool Awards
Best Nailer
Popular Mechanics

CORDLESS or **AIR**-powered; be a better craftsman with proven precision built GREX tools. It's the same award-winning robust build quality that users have trusted in GREX tools for 25 years. And GREX continues to lead the industry's innovation of 23 Gauge Headless Pinners. Don't be fooled by look-alikes. The difference really is in the details.



P630
No frills workhorse
3/8" to 1-3/16"

P635
The lexus of pinners
3/8" to 1-3/8"

P650L
Trim carpenter's best friend
3/8" to 2"

P650LXE
SUPER PINNER
3/8" to 2"



FIND YOUR DEALER
www.grextools.com
888-447-3926 866-633-7788



HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES

1,000+ Stores Nationwide • HarborFreight.com

Bauer

SUPER COUPON

15 AMP. 12-1/2" PORTABLE THICKNESS PLANNER

Customer Rating
★★★★★

Powerful 15 amp, 9400 RPM motor for faster, smoother cuts in hardwood

Four-carriage frame reduces the movement that causes snipe

Two-knife cutter head leaves a blemish-free surface

Extra long in-feed and out-feed tables provide over 31" of material support

Handles lumber 12-1/2" wide to 6" thick



~~\$349.99~~

NOW \$299.99

COMPARE TO DEWALT \$449
MODEL: DW734

ITEM 63445
SAVE \$149



24193484

LIMIT 1 - Coupon valid through 4/29/20*

BRAUN

SUPER COUPON

5000 LUMEN, 4 FT. LED HANGING SHOP LIGHT

• 30,000 hour LED life

Customer Rating
★★★★★

SAVE 33%

~~\$29.99~~
NOW \$19.99

ITEM 64410



24200217

LIMIT 3 - Coupon valid through 4/29/20*

CENTRAL MACHINERY

SUPER COUPON

10", 12 SPEED BENCHTOP DRILL PRESS

Customer Rating
★★★★★

~~\$139.99~~

NOW \$99.99

SAVE \$61

COMPARE TO WEN \$161.97
MODEL: 4212

ITEM 63471/44836/60237 shown



24202654

LIMIT 1 - Coupon valid through 4/29/20*

WARRIOR

SUPER COUPON

29 PIECE TITANIUM DRILL BIT SET

Customer Rating
★★★★★

~~\$10.99~~

NOW \$10.99

SAVE 83%

COMPARE TO DEWALT \$68.14
MODEL: DW1369

ITEM 5889/62281/61637 shown



24206814

LIMIT 3 - Coupon valid through 4/29/20*

CENTRAL MACHINERY

SUPER COUPON

70 GALLON, 2 HP HEAVY DUTY HIGH FLOW HIGH CAPACITY DUST COLLECTOR

Customer Rating
★★★★★

~~\$209.99~~

NOW \$179.99

SAVE \$226

COMPARE TO SHOP FOX \$405.99
MODEL: W1885



24212322

LIMIT 1 - Coupon valid through 4/29/20*

U.S. GENERAL

SUPER COUPON

30", 4 DRAWER TECH CARTS

• 12,600 cu. in. of storage
• 580 lb. capacity

Customer Rating
★★★★★

SAVE \$740

COMPARE TO Snap-on BLUE-POINT \$880
MODEL: KRBC10T8PC

Item 56387, 64096, 56386, 56392, 56393, 56394



24215748

LIMIT 1 - Coupon valid through 4/29/20*

SUPER COUPON

SUPER COUPON

7 FT. 4" x 9 FT. 6" ALL PURPOSE/WEATHER RESISTANT TARP

Customer Rating
★★★★★

~~\$4.99~~

NOW \$2.99

SAVE 65%

COMPARE TO BLUE HAWK \$8.78
MODEL: B68X10-Y

ITEM 69115/69121/69129/69137/69249/877 shown



24235584

LIMIT 4 - Coupon valid through 4/29/20*

CENTRAL MACHINERY

SUPER COUPON

16" VARIABLE SPEED SCROLL SAW

Customer Rating
★★★★★

~~\$99.99~~

NOW \$69.99

SAVE \$129

COMPARE TO PORTER-CABLE \$199
MODEL: PCB375SS

ITEM 62519/63283/93012 shown



24240514

LIMIT 1 - Coupon valid through 4/29/20*

drillmaster

SUPER COUPON

1/4" SHEET ORBITAL PALM SANDER

Customer Rating
★★★★★

~~\$14.99~~

NOW \$9.99

SAVE 66%

COMPARE TO BLACK+DECKER \$29.98
MODEL: BDEQS300

ITEM 40070/61509/61311 shown



24250593

LIMIT 4 - Coupon valid through 4/29/20*

CENTRAL PNEUMATIC

SUPER COUPON

20 OZ. GRAVITY FEED AIR SPRAY GUN

Customer Rating
★★★★★

~~\$15.99~~

NOW \$9.99

SAVE 80%

COMPARE TO HUSKY \$49.98
MODEL: H4840GHVSG

ITEM 67181/62300/47016 shown



24261651

LIMIT 4 - Coupon valid through 4/29/20*

FORTRESS

SUPER COUPON

1 GALLON, .5 HP, 135 PSI ULTRA QUIET OIL-FREE PROFESSIONAL AIR COMPRESSOR

Customer Rating
★★★★★

~~\$129.99~~

NOW \$109.99

SAVE \$51

COMPARE TO MAKITA \$161.32
MODEL: ACO01

ITEM 64592/64687 shown



24264994

LIMIT 1 - Coupon valid through 4/29/20*

HARDY

SUPER COUPON

MECHANICS GLOVES

AVAIL. IN SM, MED, LG, XL, XXL

Customer Rating
★★★★★

~~\$5.99~~

NOW \$4.99

SAVE 66%

COMPARE TO VALEO \$14.99
MODEL: 25521

ITEM 62434, 62426, 62433, 62432, 62429, 64178, 64179, 62428 shown



24266120

LIMIT 1 - Coupon valid through 4/29/20*

CENTRAL MACHINERY

SUPER COUPON

UNIVERSAL TOOL STAND

Customer Rating
★★★★★

~~\$39.99~~

NOW \$29.99

SAVE 41%

COMPARE TO POWERTEC \$51.27
MODEL: UT1002

ITEM 46075/69805 shown



24274053

LIMIT 2 - Coupon valid through 4/29/20*

SUPER COUPON

DUST AND PARTICLE MASKS PACK OF 5

Customer Rating
★★★★★

~~\$1.99~~

NOW \$1.69

SAVE 81%

COMPARE TO ACME UNITED \$9.27
MODEL: ACM13259

ITEM 62606/50027/63723 shown



24274269

LIMIT 6 - Coupon valid through 4/29/20*

drillmaster

SUPER COUPON

4-1/2" ANGLE GRINDER

Customer Rating
★★★★★

~~\$14.99~~

NOW \$9.99

SAVE 44%

COMPARE TO PERFORMAX \$17.99
MODEL: 2411-1

ITEM 69645/60625 shown



24274458

LIMIT 5 - Coupon valid through 4/29/20*

PREDATOR

SUPER COUPON

9000 WATT MAX. STARTING EXTRA LONG LIFE GAS POWERED GENERATOR

Customer Rating
★★★★★

~~\$649.99~~

NOW \$599.99

SAVE \$2,189

COMPARE TO HONDA \$2,789
MODEL: EM850GSK2AT

ITEM 63971/63970 shown



24277829

LIMIT 1 - Coupon valid through 4/29/20*

PITTSBURGH

SUPER COUPON

9 PIECE FULLY POLISHED COMBINATION WRENCH SETS

Customer Rating
★★★★★

~~\$7.99~~

NOW \$5.99

SAVE 66%

COMPARE TO HUSKY \$17.97
MODEL: HCW10PCSAE

ITEM 42305 shown



24283563

LIMIT 6 - Coupon valid through 4/29/20*

HaulMaster **SUPER COUPON**

72" x 80" MOVING BLANKET

Customer Rating **★★★★★**

NOW \$5.99

COMPARE TO BLUE HAWK \$19.99
MODEL: 77280

SAVE 70%

ITEM 69505/62418/66537 shown

24300962

LIMIT 4 - Coupon valid through 4/29/20*

GOOD **CHICAGO ELECTRIC** **SUPER COUPON**

12" DUAL-BEVEL SLIDING COMPOUND MITER SAW

Customer Rating **★★★★★**

Not available in AZ, OH, OK, and VA.

3-1/2" VERTICAL CROWN MOLDING CAPACITY
2-5/8" TALL SLIDING FENCES
LASER GUIDE LIGHT

NOW \$129.99

COMPARE TO RYOBI \$218.71
MODEL: R33120L

SAVE \$88

ITEM 56597
56775/61970
61969 shown

24303893

LIMIT 1 - Coupon valid through 4/29/20*

BETTER **ADMIRAL** **SUPER COUPON**

12" DUAL-BEVEL SLIDING COMPOUND MITER SAW WITH LED AND LASER GUIDE

Customer Rating **★★★★★**

6-1/2" VERTICAL CROWN MOLDING CAPACITY
4-1/2" TALL SLIDING FENCES
LASER GUIDE LIGHT & LED WORK LIGHT

NOW \$179

COMPARE TO RYOBI \$269
MODEL: R33120L

SAVE \$90

ITEM 64686

24304942

LIMIT 1 - Coupon valid through 4/29/20*

BEST **HERCULES** **SUPER COUPON**

PROFESSIONAL 12" DUAL-BEVEL SLIDING COMPOUND MITER SAW WITH LED SHADOW GUIDE

Customer Rating **★★★★★**

7-1/2" VERTICAL CROWN MOLDING CAPACITY
4-3/4" TALL SLIDING FENCES
LED PRECISION SHADOW GUIDE LIGHT

NOW \$329

COMPARE TO DEWALT \$599
MODEL: VSS3200

SAVE \$270

ITEM 56682
63978 shown

24312680

LIMIT 1 - Coupon valid through 4/29/20*

PITTSBURGH **SUPER COUPON**

24" CLAMP EDGE AND SAW GUIDE

Customer Rating **★★★★★**

LIFETIME WARRANTY

NOW \$9.99

COMPARE TO BORA \$70.28
MODEL: S43030K

SAVE 85%

ITEM 66126

24313652

LIMIT 4 - Coupon valid through 4/29/20*

drillmaster **SUPER COUPON**

1/4" TRIM ROUTER

Customer Rating **★★★★★**

NOW \$19.99

COMPARE TO MAKITA \$99
MODEL: RT0701C

SAVE \$79

ITEM 44914/61626
64314/62659 shown

24318090

LIMIT 4 - Coupon valid through 4/29/20*

ADMIRAL **SUPER COUPON**

12", 80 TOOTH FINISHING SAW BLADE

Customer Rating **★★★★★**

NOW \$19.99

COMPARE TO DEWALT \$59.98
MODEL: DW3232PT X

SAVE 66%

ITEM 64911/62725 shown

24326588

LIMIT 4 - Coupon valid through 4/29/20*

CHICAGO ELECTRIC **SUPER COUPON**

MOBILE MITER SAW STAND

Customer Rating **★★★★★**

Supports 16 ft.

NOW \$99.99

COMPARE TO HITACHI \$169
MODEL: U240F

SAVE \$69

ITEM 63409/62750 shown

24333332

LIMIT 2 - Coupon valid through 4/29/20*

CENTRAL MACHINERY **SUPER COUPON**

14" OSCILLATING SPINDLE SANDER

Customer Rating **★★★★★**

NOW \$109.99

COMPARE TO TRITON TOOLS \$152.99
MODEL: TSPS450

SAVE \$43

ITEM 62146/69257 shown

24339429

LIMIT 1 - Coupon valid through 4/29/20*

WINDSOR DESIGN **SUPER COUPON**

11 PIECE WOOD CARVING SET

Hardwood handles for comfort

NOW \$5.99

COMPARE TO \$8.99

ITEM 56186/62673 shown

24369019

LIMIT 5 - Coupon valid through 4/29/20*

CENTRAL MACHINERY **SUPER COUPON**

12" x 33-3/8" WOOD LATHE WITH REVERSIBLE HEAD

Customer Rating **★★★★★**

NOW \$299.99

COMPARE TO NOVA \$440
MODEL: 572255875

SAVE \$140

ITEM 34706

24371926

LIMIT 1 - Coupon valid through 4/29/20*

Lifetime CARBIDE **SUPER COUPON**

ALUMINUM OXIDE SANDING SPONGES PACK OF 10

Customer Rating **★★★★★**

Item 46751 shown

NOW \$3.99

COARSE ITEM 46751/63918
MEDIUM ITEM 46752/63915
FINE ITEM 63912/46753

SAVE 20%

24373861

LIMIT 5 - Coupon valid through 4/29/20*

SUPER COUPON **Customer Rating**

4 PIECE ANTI-FATIGUE FOAM MAT SET

Each pad measures 25" x 25"

NOW \$6.99

COMPARE TO NORSK \$19.99
MODEL: 001119348

SAVE 65%

ITEM 40187/61607/62389
94635 shown

24380568

LIMIT 4 - Coupon valid through 4/29/20*

luminar OUTDOOR **SUPER COUPON**

24 FT., 18 BULB, 12 SOCKET OUTDOOR LINKABLE STRING LIGHTS

Customer Rating **★★★★★**

NOW \$21.99

LINK UP TO 9 STRINGS

BLACK WHITE

ITEM 64486 ITEM 64739
63483 shown

COMPARE TO PORTFOLIO \$39.98
MODEL: SLC12BK

SAVE 44%

24388425

LIMIT 2 - Coupon valid through 4/29/20*

CENTRAL PNEUMATIC **SUPER COUPON**

18 GAUGE, 2-IN-1 NAILER/STAPLER

Customer Rating **★★★★★**

NOW \$19.99

COMPARE TO PORTER-CABLE \$49.97
MODEL: BN200C

SAVE 59%

ITEM 63156/64269/68019 shown

24391317

LIMIT 4 - Coupon valid through 4/29/20*

PITTSBURGH AUTOMOTIVE **SUPER COUPON**

ADJUSTABLE SHOP STOOL WITH BACKREST

275 lb. capacity

Customer Rating **★★★★★**

NOW \$49.99

COMPARE TO NORTHERN TOOL \$74.99
MODEL: 20230

SAVE 33%

ITEM 64499

24398415

LIMIT 2 - Coupon valid through 4/29/20*

HaulMaster **SUPER COUPON**

18" WORKING PLATFORM STEP STOOL

Customer Rating **★★★★★**

350 lb. capacity

NOW \$19.99

COMPARE TO NEOCRAFT \$39.99
MODEL: 60635

SAVE 50%

ITEM 62515/66911 shown

24415843

LIMIT 4 - Coupon valid through 4/29/20*

CHICAGO ELECTRIC **SUPER COUPON**

4" BISCUIT PLATE JOINER

Customer Rating **★★★★★**

NOW \$44.99

COMPARE TO MAKITA \$179
MODEL: PJ7000

SAVE \$134

ITEM 38437
68987 shown

24416561

LIMIT 3 - Coupon valid through 4/29/20*

COVERPRO **SUPER COUPON**

10 FT. x 20 FT. PORTABLE CAR CANOPY

Customer Rating **★★★★★**

NOW \$99.99

COMPARE TO SHELTER LOGIC \$199
MODEL: 23522

SAVE \$99

ITEM 63054/62858 shown

24418755

LIMIT 2 - Coupon valid through 4/29/20*

HaulMaster **SUPER COUPON**

4 PIECE, 1" x 15 FT. RATCHETING TIE DOWNS

400 lb. working load

Customer Rating **★★★★★**

NOW \$6.99

COMPARE TO KEEPER \$22.80
MODEL: 5505

SAVE 69%

ITEM 90984/63056/63057/63150/56668/63094 shown

24435470

LIMIT 4 - Coupon valid through 4/29/20*

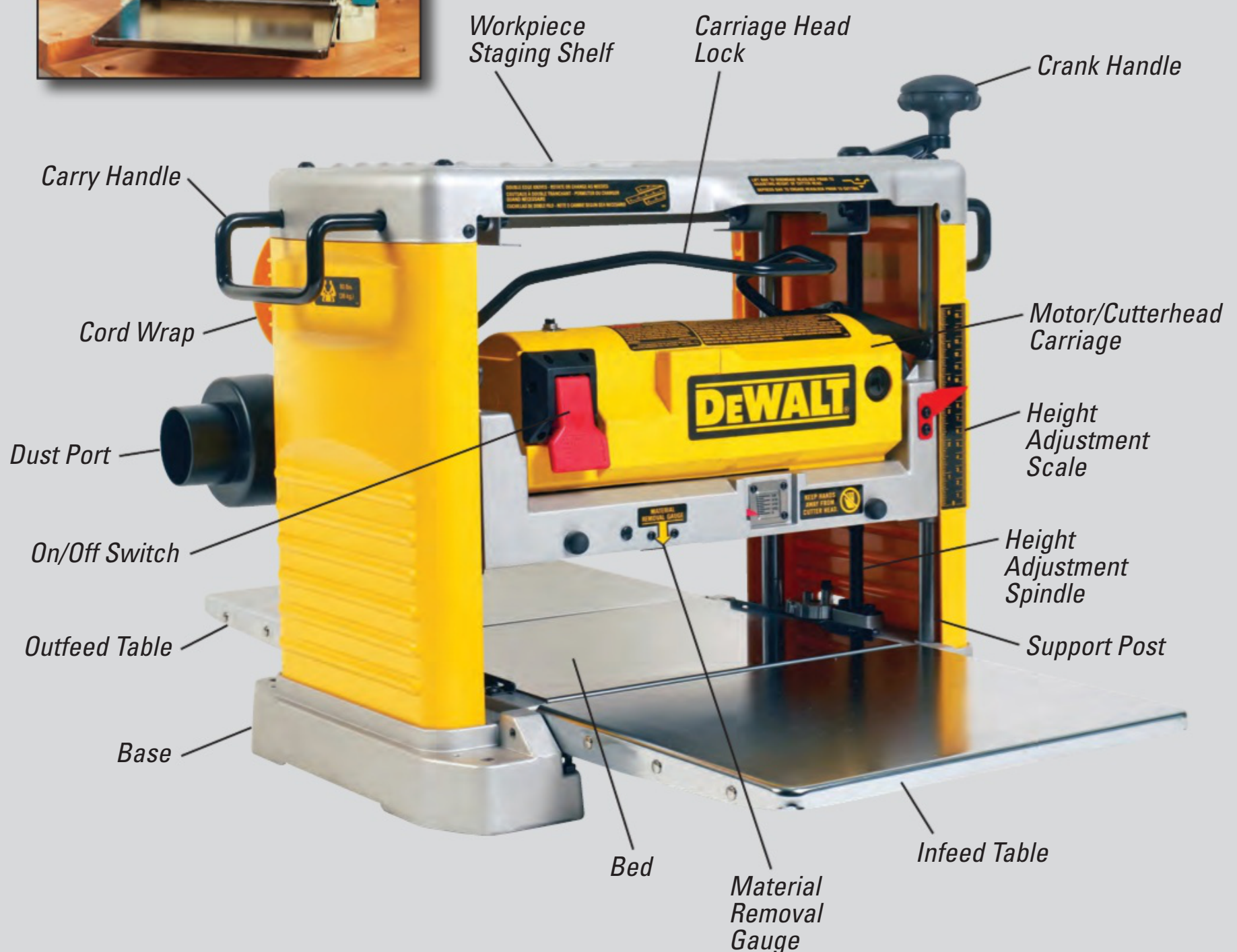
TOOL TUTORIAL

Thickness Planers: A Jointer's Best Friend

By Chris Marshall



In the one-two punch of stock surfacing, planers pick up where jointers leave off: flattening and smoothing second faces and reducing material thickness to whatever your project requires.



While you can get by as a woodworker without owning a thickness planer, shop life certainly improves once you make the investment! For one, you'll no longer have to be satisfied with just a few common lumber thicknesses — namely 3/4", 1/2" or 1/4". When the time comes that you need some 7/8", 3/8" or any other thickness for that matter, a planer puts you in control. It also expands your lumber buying options, because you don't have to settle for ordinary pre-milled stock at a lumberyard or home center anymore. With a planer, you can purchase roughsawn boards in any

species and from any source you like (even that guy down the road with a portable sawmill!), usually at big savings. And when used with a jointer, a planer closes the loop of the surfacing process, creating a parallel, smooth face opposite the joined "reference" face. It will help to ensure that every piece of lumber you need for a project starts out as close to perfect as you can hope for with machines: accurately thick, flat and uniform with the rest of your supply. Here's what you need to know before you buy a planer.



Planer Basics

Planers sandwich workpieces between a cutterhead on top and a flat bed underneath. Two powered rollers — one in front of the cutterhead and one behind it — pull workpieces into the spinning blades on the infeed side of the machine and usher it out the rear (outfeed) side. Once the infeed roller grabs the workpiece, the planer feeds itself at a constant speed and shaves a layer of material off the board's top face.

The cutterhead spins against the feed direction, but a row of pawls and/or roller pressure prevent the cutterhead from grabbing the wood and kicking it back out the front. For all intents and purposes, once you've fed a board into the machine, the planer will do the rest.

Most planers these days have an infeed and outfeed table on either end of the bed; some models use a series of rollers instead. Either way, these tables or rollers help to provide a longer bearing surface so heavier or longer lumber is easier to manage, and workpieces are less prone to tip upward or

downward when entering or exiting the cutterhead. When this does happen, the cutterhead will take a deeper bite into the ends of the board, resulting in a condition called snipe. It's the bugaboo of planer design.

Two or four support posts inside the planer enable either the cutterhead or the bed and infeed/outfeed tables to move up and down evenly. The posts also ensure that the bed and cutterhead remain parallel. Turning a hand wheel or a crank on top of the planer moves the cutterhead or bed as needed to establish workpiece thickness, which is reported on a large thickness scale in front. Some planers also have a material removal gauge that references stock thickness directly off the workpiece, so you'll know just how much wood the next planing pass will remove.

Portable benchtop planers have universal motors, similar to miter saws or routers, that drive the feed rollers and cutterhead. Heavier-duty stationary machines use more powerful, longer-lasting induction motors instead.



A benchtop or stationary planer enables you to take full advantage of roughsawn lumber options while enjoying its cost savings. It also gives you the ability to reduce stock to any thickness your project requires.



Infeed and outfeed tables provide added support for long stock and help reduce the tendency for them to tip, which can exacerbate snipe. On benchtop models, these tables fold up for more compact storage.



A hand crank dials in cutting depth, which is reported on a large scale on the machine's infeed side. Some planers also have a material removal gauge (inset) that reads cutting depth directly off the workpiece.

Some benchtop and most stationary planers have two-speed transmissions that set

the feed roller speeds; the faster setting is handy when you have a lot of boards to surface, while the slower speed provides smoother finished surfaces.

Snipe is often a more pronounced problem with benchtop planers, so a locking lever or other anti-snipe provisions may be built into the motor carriage to help minimize the problem.

No matter the machine or size, planers produce an enormous volume of debris. If your new planer doesn't include a hood that can be attached to a dust collector or shop vac, buy the accessory — or get ready for plenty of sweeping up afterwards.



Without a chip hood in place and the machine connected to a shop vac or dust collector, a planer will quickly produce a flurry of chips and dust.

Cutterhead Evolutions

Over the last 25 years or so, cutterhead designs have evolved to make planers much easier to maintain. Many benchtop planers have double-edged, disposable knives that are simple to change. Indexing pins on the cutterhead enable the knives to simply be set in place and bolted down without the need for other fussy adjust-



Combination Machines

Jointer/planer combination machines are another option to consider. The same motor and cutterhead supply jointer (left) or planer (right) functions. Changeover basically involves pivoting the jointer table and flipping a chip hood into place. These machines offer several advantages: their jointer capacity matches the planer capacity (10" or more), and they occupy a smaller overall footprint than two separate machines. But changeovers are required.





Double-edged disposable knives like these register on pins on the planer's cutterhead. When they dull, switching to the fresh edge is as easy as unbolting, flipping them around and reinstalling them on the index pins.



Helical cutterheads, equipped with rows of four-edged carbide inserts, are simple to maintain. Their shear-angled geometry also produces cleaner cuts — a big advantage on figured or interlocked wood grain.

ment tools. And, should a knife become nicked, it can be slid slightly left or right to prevent the nick from leaving a raised track on the wood. Helical cutterheads with four-edged carbide inserts are also prevalent among current stationary and benchtop models. The inserts seat into pockets on the cutterhead, so no special height adjustment is required. When they nick or dull, they can be rotated a quarter turn to a fresh, sharp edge by loosening one set screw. When the time comes to buy a planer, you'll thank yourself in the long run by investing in one of these improved cutterhead styles over an older model that requires its knives to be sharpened and individually set to correct height.

Which Planer Do I Need?

Planers are sized by their maximum width of cut. Benchtop models offer between 12" and 13½" of cutting width. Floor-standing versions start at 15" and extend upwards to 25". New benchtop machines sell for around \$350 and up. Expect to spend around \$1,500 or more for a floor-standing stationary model with conventional knives. Adding a

helical cutterhead option will tack another \$500 to \$1,000 to its sticker price.

But pricing issues aside, which style and size of planer does a hobbyist woodworker really need? Well, as you probably know already, it's often not a good idea to bargain-basement shop for woodworking machinery. Case in point: a \$150 portable table saw. Will it cut wood? Yes, in a manner of speaking, but will it do the job with a high degree of precision and for many years? Probably not. However, to some degree planers might be an exception to this rule. I've found budget-friendly benchtop planers from reputable manufacturers to be excellent tools. They're relatively easy to lift and carry, convenient to store and powerful enough to remove 1/16" or even 1/8" of wood without bogging down. With sharp cutters, they can produce smooth surface quality on par with much more expensive floor-standing machines. Their knives/cutters are typically easy to install and replace too, which checks an important box on my "must-have" criteria list.

That said, I've also had the luxury of using the 15"

Powermatic planer shown in the bottom right photo for many years. Built for light production use, this cast-iron machine is a beast — but its mass comes in handy when I'm planing heavy planks of 8/4 lumber or overly long boards that would tip a benchtop machine unless it was bolted down. Regardless of the surfacing task, my floor-standing planer gives me no cause for concern; it will plane anything I can fit into its maw accurately and easily.

But if the day came that I had to start choosing an inventory of tools all over again, a stationary planer wouldn't be a necessity. Sure, it's a welcomed convenience, but a benchtop planer could handle most of my stock prep tasks just fine.



Portable benchtop planers are quite affordable, easy to store and capable of producing smooth, consistent results on both hard and softwoods.



Thanks to their mass and power, floor-standing stationary planers are ideal for surfacing long, heavy material, like this plank of 8/4 mahogany.



Stationary styles: While the beds on benchtop planers are always fixed and their motor/cutterhead carriage moves to set planing height, that isn't always the case with floor-standing machines. For instance, the bed/tables of the 20" JWP-208HH JET planer (at left) raise and lower, but its cutterhead on top is fixed. Conversely, the bed/tables of JET's JWP-15BHH 15" planer (at right) are fixed, and its cutterhead assembly moves instead.

Using a Planer

Thickness planers are simple machines to operate effectively, but there are a few step-by-steps to follow:

Step 1: Join one face flat and smooth. Remember, a planer can only make one board face parallel to the other; if the reference face is cupped, bowed or twisted, a planer will duplicate the defect on the second face. The only exception to this fact is if the workpiece is so thick that it can resist the down-

ward force of the planer's feed rollers without deflecting — we're talking plank-like thickness here. Regardless, head to the jointer first to create a flat reference face. Or flatten the reference face with a router and a slab surfacing jig setup instead.

Step 2: Determine the workpiece's maximum thickness. Grab a tape, rule or calipers and measure the ends and edges of the board to determine its thickest

area; keep in mind that distortion might make the center of the board thicker than its edges. The board's maximum thickness, minus 1/16", is a good place to start the planing process, so set your planer's cutterhead height to that measurement.

Step 3: Carry out the first planing pass. With the joined face against the planer bed, feed the board into the planer on the infeed side. Always position yourself beside the workpiece and never be-

www.woodworkersjournal.com MORE ON THE WEB

 To watch a video of tips for preventing planer snipe, visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



PLANING BY THE NUMBERS: First, flatten and smooth one board face at the jointer to serve as a reference face. This face will be against the planer's bed/tables.

Second, measure the board's ends and edges to find its maximum thickness. That distance, minus 1/16" for the first planer pass, is a good "ballpark" for setting the planer's initial cutterhead height.

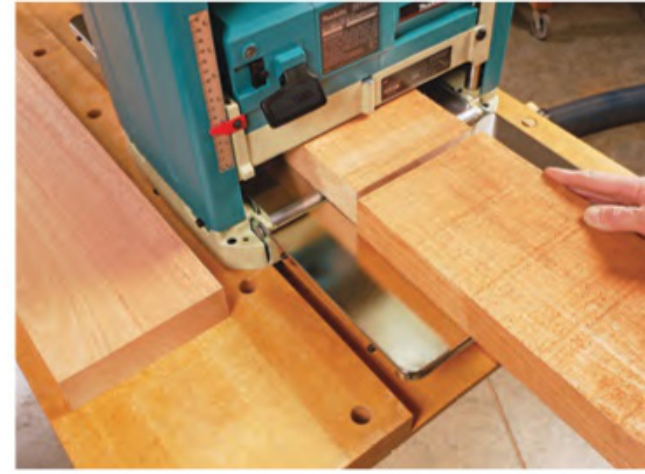
Third, feed the board into the planer on its infeed side, standing beside the wood. Repeat as needed to smooth the second face. Then make more passes, alternating board faces to balance the stock removal.



Snipe — a deeper cut on the ends of workpieces — results when board ends tip up and into the cutterhead, due to uneven roller pressure or poor handling methods when boards enter or exit the machine.



Some portable planers are engineered with manually engaged anti-snipe carriage locks, such as this DeWALT model. Similar features are integral to the depth-setting mechanism of other benchtop planers.



A simple remedy for snipe is to plane same-thickness stock continuously instead of one piece at a time. Only the first and last pieces will be subject to snipe.

hind it (while unlikely, planer kickback is possible, so stand clear). Make sure sleeves are rolled up and long hair is tied back. Also, be careful that your fingers are not wrapped around the bottom face of the board. Feed rollers provide substantial downward pressure against the wood; don't let your fingers get pinched between the wood and the infeed table.

Once the infeed roller grabs hold, the board will advance into the cutterhead. Sometimes, the feed rollers will encounter an extra thick area and bog down or begin to slip. When this happens, quickly raise the cutterhead as needed to reduce the pressure so that planing can resume. Conversely, if the board's thickness varies along its length and the feed rollers lose contact with it, give the board a nudge forward to re-engage the rollers. Or step around behind the planer and pull the loose workpiece the rest of the way through the machine.

Step 4: Lower the cutterhead and repeat. Make a second or third pass, lowering the cutterhead by 1/16" each time until the planed face is fully smooth. Provided

the bottom reference face was flat to begin with, this planed face will now be parallel to it. If the planed face shows some tearout, turn the board end for end to reorient the planing direction "with" the grain direction.

Step 5: Plane to final thickness. Continue planing in passes of 1/16" to no more than 1/8" until you achieve the stock thickness you need. It's a good idea to alternate board faces between passes by flipping the workpiece end-for-end. This way, you'll remove a more equal amount of stock from both faces, helping the board better equilibrate to its environment and reducing the chances that it will distort.

Tips to Minimize Snipe

Planer snipe is very common, so plan for it. If your machine has a carriage lock, get in the habit of engaging it after lowering the cutterhead for each pass. Another way to minimize snipe is to feed workpieces one after the next instead of one at a time: continuous feeding will only allow snipe to occur on the leading end of the first piece and the trailing end of the last. Intermediate workpieces



If you must plane stock thinner than about 1/2", build a full-length auxiliary bed from melamine board (as shown above) or MDF with a lip under the ends to hold it stationary during use. It will provide continuous support through the planer to help prevent thin stock from distorting upward under feed roller pressure, potentially catching the cutterhead and shattering.

will be snipe-free. Here's a third option: plan your planing strategy to leave boards a tad thicker than needed. Then, whisk snipe away with a light pass or two over the jointer again, or by using a smoothing plane or card scraper. Snipe doesn't have to be a big deal if you know a few easy ways to work with it.

A planer can put you in greater control of your lumber choices and costs while improving workpiece quality. You won't regret adding this handy tool to your shop.

Chris Marshall is senior editor of Woodworker's Journal.

TOOL PREVIEW

Rockler Precision Miter Gauge

By WJ Staff

Improve your table saw or band saw's miter-cutting accuracy affordably.



If setting your saw's standard miter gauge to a specific angle amounts to a guessing game at best, Rockler's new Precision Miter Gauge can improve your accuracy without breaking the bank. Available at Rockler stores and rockler.com starting in April, this miter gauge has features found on more expensive aftermarket



A pair of smaller holes in the miter gauge's head enable scrap fences to be attached to it with screws to improve overall workpiece support.

miter gauges, plus a unique way to store it off the saw.

Its aluminum head is outfitted with an easy-to-read scale displaying single-degree increments. Eleven precision-machined detents set the head to 15°, 22.5°, 30°, 45° and 60° in both directions as well as 0°. These detents are easy to lock into place, thanks to a low-profile knob that retracts a spring-loaded stop.

An adjustable, clear hair-line indicator makes it easy to set the gauge accurately to other non-detent angles, too. Those settings can be locked in place by tightening its 4⁵/₈"-tall handle.

This miter gauge is equipped with an 18" steel miter bar that fits into standard 3/8"-deep, 3/4"-wide mi-

ter slots. A removable washer affixed to the front bottom face of the bar prevents the gauge from tipping off the saw table when starting cuts on wide material. Four nylon set screws, embedded in the edge of the bar, enable you to adjust it to your saw's miter slots for a snug fit to eliminate side-to-side play that can affect accuracy.

Rockler includes a pair of round knobs and 1"-long T-bolts that fit into larger holes in the head, so you can make T-slot style auxiliary fences from scrap material and mount them to the gauge without tools. Or simply drive a pair of conventional panhead or washerhead screws through smaller holes in the head to attach scrap fences that way instead.





Two round knobs and T-bolts (included) enable scrap fences with T-slots to be installed on the gauge. Aside from their supportive benefits, these scrap fences also help to eliminate blade tearout during cutting.

The handle and knobs are covered with rubber over-mold to make them more comfortable to use. It's a nice touch at a bargain price.

Simplified Storage

If your saw doesn't have a way to store a miter gauge, Rockler provides a helpful solution here: just rotate the head left to an 88° detent that aligns and locks the head parallel to the miter bar, and hang the gauge wherever its convenient from a larger hole near the bar's end (see pho-

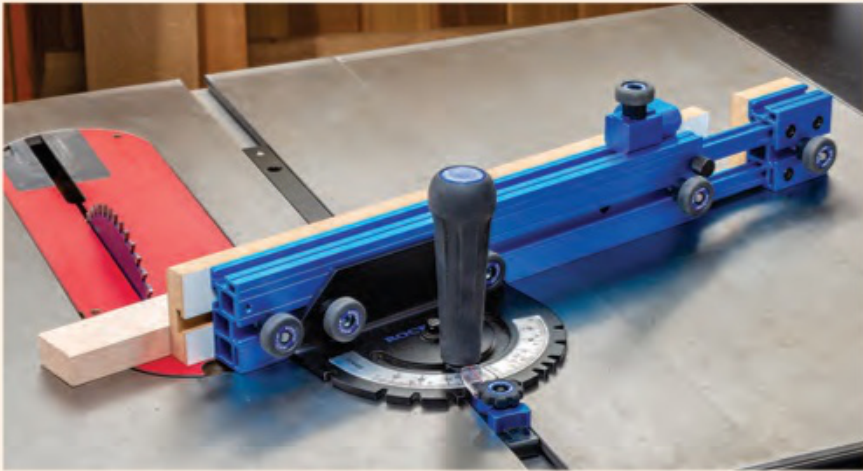
to, right). Rockler's Precision Miter Gauge (item 53310) will sell for \$99.99.

Coming in May, the company will also offer a 16"-long aluminum Miter Gauge Fence (item 61967; \$49.99) to fit this gauge (see photo, below). The fence features a telescoping arm that extends its length to 24". T-slots mount it to the miter gauge and provide the attachment point for an included melamine-coated MDF sacrificial fence.



Eleven preset detents lock the gauge to common miter angles. Loosening the round, low-profile knob and pulling it back releases the blue stop for changing settings. A twelfth detent provides for compact storage (below).

Fence Coming Soon



Launching in May, Rockler's Miter Gauge Fence (item 61967) features extruded aluminum construction and an extendable arm. It attaches to the Precision Miter Gauge with T-bolts and knobs.



Style Adjustment, Thanks to Paint

By Rob Johnstone

Would a true woodworker paint a table and then dare to tell about it?



General Finishes Seagull
Gray Milk Paint 57520

to the world. There are plain pieces of poplar or boring boards of basswood that are just best used inside of a cabinet ... or yes, covered with paint.

Now, I can almost hear some of you saying, “this little table is clearly made of maple ... North America’s sweetheart of the hardwoods!”

And you are correct, it is solid maple, and more than that, it is a really well-made piece. Its dovetailed drawer joints and other connections are rock solid, even though it has many years of age on it.

With that said, let’s step back, settle down and think this through. First off, the piece was styled in what was known as a “honey maple” finish. Like me, it was super groovy looking in the 1970s. But I am no longer sporting platform shoes, shiny shirts, aviator glasses and rocking a righteous mullet. I have moved on. And the honey color of the table was suspended in the finish — probably a nitrocellulose lacquer. The result was opaque at best, and very little wood figure was seen through the film coat. So, observed from the platform of my purist pulpit, while the wood was not painted, it might as well have been.



Liberon Black Bison Fine
Paste Wax 60087

There was a time when I would have ridiculed and shamed a woodworker for “painting a perfectly good piece of furniture.” In fact, I may have lobbied to take away their “woodworker’s card” and asked aloud about their par-

entage and where they were raised — in a very public manner.

But with age comes wisdom and with marriage comes painted furniture ... at least in my case. The truth is, every piece of wood is not up to the task of being shown off



For videos demonstrating preparing and painting this small table, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



The honey maple finish of this lovely little table was dated and bland. But stripping the commercial finish down to raw wood and applying stain and clear coat was a lot of work, and there was no reason to think the figure of the wood was attractive. Painting became a logical option.



While the finish of the small table had gone out of style, the "bones" of the table were top quality: dovetailed drawers, solid maple, turned legs and tight joinery. It was a perfect item to simply refinish.

Paint is Pretty

As my style sense evolved, I came to see the benefit of painted wood on occasion. Painted sections of furniture can positively accentuate areas of exposed highly figured wood. A painted legset on a farm table suspends the natural wood tabletop in a way that makes the wood grain shine. I confess this was the beginning of a slippery slope. Soon, fully painted projects were coming from my shop.

Which brings us to this little table here. I sprayed on one coat of Seagull Gray Milk Paint — I far prefer to spray spindles and turned legs — then applied an accent coat of Liberon Medium Oak Fine Paste Wax to add a color patina. I think this has refreshed the look of an otherwise solid piece, giving it more curb appeal. Trust me: you can paint wood furniture and live to tell about it.



Prepare for painting by cleaning the surface with a household cleaner. Then wipe down the piece with paint thinner or denatured alcohol to remove possible contaminants. Remove all hardware.



The author then sprayed a coat of paint onto the table and allowed it to cure. One coat was sufficient here, but two coats is common. An accent of colored paste wax highlights the details on the turned spindles

WHAT'S IN STORE

Budget Buys for Glue Storage, Dovetailing

Contact Information

Leigh Industries
800-663-8932

Milwaukee Tool
800-729-3878

PaintLine
510-477-9100

Rockler
800-279-4441

Wood-Mizer
800-553-0182

www.woodworkersjournal.com MORE ON THE WEB



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

When you need to dispense a moderate quantity of glue and apply it in dabs, the *Silicone Glue Keeper* from **Rockler** (item 52296; \$9.99) provides handy short-term storage. The soft container holds about 2 oz., and its polished rim forms a positive seal when closed to keep the remaining glue inside from drying out. The lid when inverted can be fitted over the edge of the base in a half-open position. It also has pairs of curved notches that cradle brushes during use to help prevent drips. The container's slightly tapered and rounded interior pools the glue and makes it easier to peel out when dry.



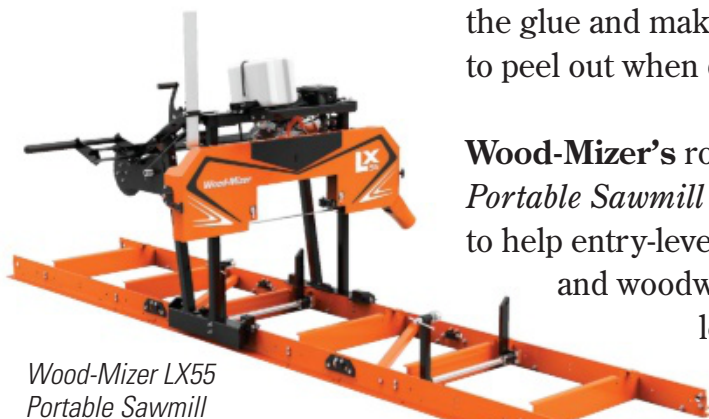
Rockler Silicone Glue Keeper



lumber. It replaces the company's entry-level LT10 sawmill, providing a larger cut capacity, more engine/motor options and upgraded features. Powered by either a 9.5 or 14hp gas engine or a 7hp electric motor, the mill will saw logs up to 26" in diameter into 22"-wide boards or slabs. Its low-profile, twin rail 149"-long bed with quick-adjust log clamps and side supports makes logs easier to load. Optional 60" bed extensions are available to handle longer logs. Other

features include a quick saw head up/down hand crank and a simple push feed system for advancing the blade through each cut. The rigid LX frame saw head tower holds the control panel, engine and sawmill head. Made in the USA, the LX55 Portable Sawmill has a starting price of \$4,495.

Wood-Mizer's robust *LX55 Portable Sawmill* is designed to help entry-level sawyers and woodworkers turn logs into usable



Wood-Mizer LX55
Portable Sawmill



The *TD330 Through Dovetail Jig* (\$109) from **Leigh Industries** is a low-cost option for routing dovetails in boards up to 12⁷/₈" wide and 13/16" thick. Its tough, 30 percent glass-filled nylon template provides straight fingers on one edge for routing the tails side of a joint with an 8° dovetail bit; angled fingers along the other edge create the pins with a 1/2"-diameter straight bit. Both router bits are included. The template mounts to a user-made beam of MDF or other scrap to provide a backup and clamping surface for workpieces being routed. Two green adjustable side stops register the pin and tailboards. The TD330, which can be used either with a handheld router or on a router table, also incorporates Leigh's cam-style e10 elliptical guide bushing



Leigh TD330 Through Dovetail Jig

that mounts to your router base to help dial in a precise joint fit. A pin wrench and attachment screws are also included.



The powder-coated steel framework of the **PaintLine ProDryingRack TT** enables you to store up to 20 cabinet doors while their finish is drying. Each shelf area measures 14½" x 15½" and will hold up to 25 lbs. Shelves are spaced 3" apart, and the overall height of the unit is 35". The rack assembles



PaintLine ProDryingRack TT

with four wingnuts or folds flat when not in use. The ProDryingRack TT (Rockler item 69478) sells for \$145.

Milwaukee reports that its *M18 FUEL™ 12" Dual Bevel Sliding Compound Miter Saw* (model 2739-21HD; \$699 bare or \$849 kitted with char-

ger and battery) generates the power of a 15-amp corded 12" miter saw while being 15 percent lighter. Its brushless motor delivers up to 330 cuts per charge in ¾" base molding when powered by an M18™ REDLITHIUM™ HD12.0 Battery. When set to 90° or tilted up to a 45° bevel angle, the 50.8-lb. saw will crosscut up to 2" x 14" lumber. It will miter-cut 4"-thick, 8"-wide material when swiveled to 45°. The saw offers 48° of bevel tilt either left or right, and its mitering capacity is 50° left or 60° right. The tool also features a Shadow Cut Line Indicator

for improved accuracy: an LED directs light onto both sides of the blade, casting a crisp shadow the width of the blade kerf that is also easy to view in sunlight. Equipped with Bluetooth® ONE-KEY™ technology, the saw can be tracked, managed and secured with a free phone app.



Milwaukee M18 FUEL 12" Dual Bevel Sliding Compound Miter Saw



Rockler's Dust Right® Dust Hose Cord Clips remedy the problem of power tool cords tangling with attached shop vacuum or dust extractor hoses during use. These 1½"-, 2¼"- or 2½"-diameter polymer helpers clip snugly onto your dust hose and feature a channel that holds power cords up to 3/8" in diameter neatly in line with the hose. This prevents tangling, twisting or tripping on the power cord. An internal rib helps keep the clips from shifting. Three-packs of Dust Right Dust Hose Cord Clips sell for \$7.99 (item 55678) or \$9.99 (item 51774 or 50715), depending on the clip size.



Rockler Dust Right Dust Hose Cord Clips



SIX SIMPLE FINISHES #2

Painting Wooden Projects

By WJ Staff

Durable and attractive, paint can be a sensible wood finish. A few simple steps will deliver quality results.

www.woodworkersjournal.com
MORE ON THE WEB

VIDEO For a video demonstrating the technique of painting raw wood, please go to rockler.com/finishing.

Painting is a great way to protect wood and add color to a project. Although many woodworkers find painting wood to be objectionable, there are times when it makes perfect sense. Some woods like yellow poplar are not attractive to look at with a clear finish but paint exceptionally well. Combining a painted surface within a project that has a clear finish can look great, too. Paint also is an excellent choice for outdoor projects, because it stands up well to the punishing effects of Mother Nature.

Paint is easy to apply successfully if you follow a few simple steps. Like nearly



Paint is an exceptionally good choice as an outdoor finish. It protects wood extremely well, adds color and can be touched up or repainted.

every finishing task, this one begins with sanding, but only to about 150-grit. You can set those finer grits aside for your clear finishes and drying oils. While you are sanding, it's a good idea to "break" the sharp edges of your wood pieces. Paint adheres better to slightly rounded profiles than sharp edges and corners.

Next, fill any nail holes, cracks or defects in the wood. Allow the wood filler to dry and then sand it smooth. If the filler shrinks, apply more and sand it until it feels level and smooth. (Fingers sometimes "see" better than our eyes do when assessing surface quality.)

Applying the Paint

Now you're ready to apply the first coat, and primer is the order of the day. People sometimes skip the primer step, but paint will adhere

better and last longer when applied over a primer coat that seals the raw wood.

When the primer dries, sand it lightly, especially if you have noticeable brush lines. In that case, sand them smooth and apply a second coat of slightly thinned primer, if needed.

Some latex paints are now being formulated as "one step" solutions with primer and paint combined. We've used them for both interior and exterior projects, and they seem to hold up well. But if you go this route, try it on samples first.

Like other finishes, paints have variations that should be considered, based on the project. Flat sheen mars easily and is harder to clean. Enamel or oil-based paint, as well as latex in satin or gloss sheens, are more durable and easier to wipe clean.

Painting Raw Wood

Step-by-step instructions:

1. Sand the project up through 150-grit. It is a good idea to sand pieces that will be hard to reach before assembly.
2. Fill nail holes, cracks or defects to hide the blemishes. Sand the filler smooth when it cures. Add more and re-sand, if needed.
3. Brush on a coat of a primer appropriate to the type of paint you are using. For example, latex primer is the correct base coat for latex paint. Lightly sand the primer coat to smooth it.
4. Brush or spray on the first coat and allow it to dry thoroughly. Keep in mind that a quality painted finish may require multiple coats and even a light sanding in between.
5. Optional: After the final coat, colored wax applied here and there can accentuate the finish.

Woodworking Tools & Supplies Index



April 2020

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	ADVERTISER	Page No.	Web Address
Armor Crafts	9	www.armorplans.com	Laguna Tools	21	www.lagunalathe.com
Dowelmax	21	www.dowelmax.com	Leigh Industries, Ltd.	7, 13, 47	www.leightools.com
DR Power Equipment	47	www.drpower.com	McFeely’s	7	www.mcfeelys.com
Easy Wood Tools	3	www.easywoodtools.com	Next Wave Automation	3	nextwaveautomation.com
Epilog Laser	7, 11	www.epiloglaser.com/wwj	Rikon Power Tools	5, 9	www.rikontools.com
Forrest Manufacturing Co.	21	www.forrestblades.com	Rockler	9, 26-29	www.rockler.com
Freud	68	www.freudtools.com	SawStop	67	www.sawstop.com/upgrade
Grex Power Tools	49	www.grextools.com	Shaper Tools	9	www.shapertools.com
Harbor Freight Tools	50-51	www.harborfreight.com	Steve Wall Lumber Co.	9	www.walllumber.com
Harvey Industries	13	harveywoodworking.com	Teknatool International Group	11	www.teknatool.com
Howard Products, Inc.	17	www.howardproducts.com	Varathane	2	www.varathanemasters.com

www.woodworkersjournal.com/woodworkers-marketplace

AMERICA'S LEADING WOODWORKING AUTHORITY

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!

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

HARDWORKING WOODS

Sugar Maple: *Acer saccharum*

By Chris Marshall

Hard maple is an abundant species offering ample uses and several fine figures.



If you've got mom's old rolling pin in your kitchen, or a tough-as-nails cutting board for that matter, chances are very good that it's made of *Acer saccharum*, known as sugar maple to syrup producers or hard maple to us woodworkers.

Among some 14 native species of maples in the United States, sugar maple and its cousin, black maple (*Acer nigrum*), are both sold under the general term hard maple. Hard maple makes up six percent of all the hardwood harvested in the U.S. annually. Only red oak and yellow poplar outrank it.

While plainsawn hard maple tends to be pale blonde in color, straight grained and

rather plain, it has numerous indoor uses. Whether called to service for kitchen cabinet doors, gymnasium flooring, plywood veneer, various and sundry turning applications or all manner of furniture parts, maple is up to task. Moderately priced, it's also relatively easy to find in



widths over 12" and in long, clear lengths. The wood cuts, routs, planes and drills cleanly and easily — provided your blades and bits are sharp. Carbide is a big help.

Be prepared for a workout, though, when it comes to lugging large or thick boards around the shop: hard maple is dense and heavy. Take your time when sanding it, too. Erasing milling marks or burns from its surfaces should be done with care, because hard maple won't hide those blemishes or your impatience very well. Start with a coarse grit and work dutifully upwards from there.

When shopping for roughsawn hard maple, avoid boards with dark stripes crossing the grain. These are often signs of sticker stain that occurs during the drying process. The black or blue marks can penetrate deeply into the lumber and be nearly impossible to remove.

Dazzling Grain

Aside from its versatility, sugar maple's other desirable trait is that it commonly produces two stunning figures: curly (also known variously as fiddleback, tiger stripe or flame) as well as bird's eye — small patterns of tight swirling dots.

My first chance to get lost in the undulating grain of top-grade fiddleback came when I built the dresser shown above. Straight out of the planer, the lumber's showy grain already teased me. But it positively lit up once I sanded it to a high polish and splashed it with mineral spirits for a sneak peek. At that moment, I wondered if any other lumber could be quite as pretty to behold. Try some for a project, and I bet you'll agree.

Shop Score Card

Uses: Furniture, flooring, cabinetry, veneer, musical instruments, turnings of all sorts

Hardness: Heavy, strong, hard and shock resistant

Country of Origin: Northeastern North America, from the Atlantic to Canada and southward

Workability: Works well with power or hand tools, provided bits and blades are sharp. Sands slowly; change abrasives often. Fastens and glues well.

Finishing: Oils and clear film finishes accentuate grain. Dye stains and shellacs are more effective at coloring hard maple than pigment stains.

Cost: Moderate for plainsawn hard maple; high for figured lumber, especially in instrument grades

FREE UPGRADE

ON ANY NEW PROFESSIONAL CABINET SAW



A \$249 VALUE

Buy a new 3.0 HP or 1.75 HP Professional Cabinet Saw between March 1 and April 30, 2020, and we'll offer you:

a FREE Overarm
Dust Collection*



a FREE Integrated
Mobile Base**



sawstop.com/upgrade

*Overarm Dust Collection requires a Dust Collection Blade Guard (TSG-DC), which is included with the 3.0HP Professional Cabinet Saw but must be purchased for the 1.75HP model. **Not compatible with the In-Line Router Table