

MAKE 7 GREAT PROJECTS FOR HOLIDAY GIVING

Better Homes and Gardens®

WOOD®

THE WORLD'S LEADING WOODWORKING MAGAZINE

DECEMBER 1996 ISSUE NO. 93

Build our laser-accurate **SLIDING TABLESAW JIG**

See page 70



- **Sure-grip holdowns**
- **Easily adjustable fence**
- **Laser-engraved angle scale**

USA \$4.95



Display until December 11



IMPORTS, INC.

Purveyors of Fine Machinery

NEW!
G1022Z
**10" HEAVY-DUTY TABLE SAW
WITH CAST IRON WINGS**
Includes **FREE 10" Carbide-Tipped Saw Blade**
\$425⁰⁰

FEATURES:

- All ball bearing arbor
- Quick-lock fence locks both front and back
- Cast iron table and extensions
- Self-tensioning belt drive
- Heavy-duty rip fence with micro-adjustment knob
- Extra-long 44" tubes for extra-long jobs
- Tubes are 1 3/8" dia.
- Table size with extension wings: 27 3/8" x 40 1/2"
- Height of saw to tabletop: 36 1/2"
- Arbor diameter: 3/8"
- Cutting capacity: 3" at 90°, 2 1/2" at 45°
- Motor: 1 1/2 H.P. Single Phase, 110/220V
- Shipping weight: approx. 270 lbs.

G1035

- 1 1/2 H.P. Shaper
 - 2 speed, forward and reverse
 - 2 spindle sizes: 1/2" & 3/4"
 - Shipping wt.: 225 lb.
- \$425⁰⁰**



G1071

- Spindle Sander**
- 10 spindle sizes
 - 25" x 25" table tilts 45°
 - Shipping wt.: 345 lb.
- \$495⁰⁰**

G1257

- 16" Scroll Saw**
- 400-1800 variable SPM
 - 2" cut @ 0°; 1" cut @ 45°
 - Shipping wt.: 40 lb.
- \$169⁹⁵**



G1018

- 8" Jointer**
- 8" x 65" bed
 - 1 1/2 HP, 220V motor w/ mag switch
 - Shipping wt.: 450 lb.
- \$660⁰⁰**

G1029

- 2 H.P. Dust Collector**
- 1182 CFM
 - Handles 2 machines
 - Shipping wt.: 140 lb.
- \$275⁰⁰**
w/ free hose



G1140

- 6" x 80" Edge Sander**
- 1 1/2 HP, 220V motor
 - Vertical & horizontal sanding
 - Shipping wt.: 265 lb.
- \$450⁰⁰**



G1021

- 15" Planer**
- 2 HP, 220V motor
 - Magnetic switch
 - Shipping wt.: 475 lb.
- \$795⁰⁰ w/ stand**



G1079

- 16" Drum Sander**
- 2 HP, 220V motor
 - 2 sanding drums
 - Shipping wt.: 325 lb.
- \$795⁰⁰**
(stand optional)



G1073

- 16" Bandsaw**
- 1 piece cast iron body
 - Includes fence & miter gauge
 - Shipping wt.: 450 lb.
- \$575⁰⁰**



G1037

- 13" Planer/Moulder**
- 2 feed speeds
 - Wide variety of profiles available
 - Shipping wt.: 200 lb.
- \$695⁰⁰**

WEST OF THE MISSISSIPPI

1-800-541-5537

FAX: 1-800-225-0021

P.O. Box 2069 Bellingham, WA 98227

Ask for Department # 65F



All machines are F.O.B. Bellingham, WA or Williamsport, PA

EAST OF THE MISSISSIPPI

1-800-523-4777

FAX: 1-800-438-5901

2406 Reach Rd. Williamsport, PA 17701

108496658

Editor **LARRY CLAYTON**
Managing Editor **JIM HARROLD**
Art Director **C. L. GATZKE**
Design Editor **JAMES R. DOWNING**
Senior Editor/Features **PETER J. STEPHANO**
Senior Editor/How-To **MARLEN KEMMET**
Assistant Managing Editor/Products **BILL KRIER**
Senior Editor/Special-Interest **LARRY JOHNSTON**
General-Interest Editor **KERRY GIBSON**
Associate Art Director **PERRY A. McFARLIN**
Assistant Design Editor/Project Builder **JAN HALE SVEC**
Project Builder **CHARLES I. HEDLUND**
Production/Office Manager **MARGARET CLOSNER**
Graphic Designer **CHERYL A. CIBULA**
Administrative Assistant **NATALIE COOLEY**
Correspondence Writer **DON MOSTROM**
Contributing Editors **KIM DOWNING, DAVE HENDERSON,
LORNA JOHNSON, ROXANNE LeMOINE, BOB McFARLIN**

©Copyright Meredith Corporation 1996
All rights reserved. Printed in the U.S.A.

Better Homes and Gardens® **WOOD**® magazine (ISSN-0743-894X) is published nine times a year in January, February, April, June, August, September, October, November, and December by Meredith Corporation, 1716 Locust St., Des Moines, IA 50309-3023. Periodicals postage paid at Des Moines, Iowa, and additional mailing offices. Better Homes and Gardens trademark registered in Canada and Australia. Marca Registrada en México. **ONE-YEAR SUBSCRIPTION PRICES:** U.S. and its possessions \$25; Canada, \$36; other countries, \$45. Canadian GST Reg. #BN 12348 2887 RT. **POSTMASTER:** Send address changes to Better Homes and Gardens **WOOD** Magazine, P.O. Box 55050, Boulder, CO 80322-5050.

CUSTOMER SERVICE INFORMATION: For service on your magazine subscription including change of address, phone toll-free **800/374-9663**. Or, write to Better Homes and Gardens **WOOD** Magazine, P.O. Box 55050, Boulder, CO 80322-5050. Please enclose your address label from a recent issue.

EDITORIAL INFORMATION: Address letters and questions to THE EDITOR, **WOOD** Magazine, 1912 Grand Avenue, Des Moines, IA 50309-3379.

MPA

WOOD ONLINE™
Now at <http://woodmagazine.com>

- See our new Shop Tips section for pointers on gluing and clamping. New tips are added regularly.
- Preview 70 of the best projects from **WOOD** and **WEEKEND WOODWORKING PROJECTS®** magazines at the **WOOD PLANS®** section on our web site.
- If you're missing any back issues, visit our Back Issues section now—copies are going fast.
- For a source of lumber, plans, or hardware, check out the mail-order companies in our Woodworking Sources section.

THE EDITOR'S ANGLE

Now introducing our...

"Laser-Accurate" Sliding Tablesaw Jig

Let me be the first to admit that I get excited easily. Spotting a mature, beautifully formed oak tree while walking in the woods...watching a talented woodworker crafting a project requiring great skill...seeing a friend or relative look appreciatively at a gift I've just given them. All these things, and others, inspire me to achieve great woodworking feats.

Another thing that revs me up is watching **WOOD** magazine staffers come up with terrific ideas. It doesn't get any better than when one of them drops in my office and says, "Hey Larry, I've got something in the shop to show you." I just know it's going to be special, so I make the time right then to see what's up.

And so it was when Design Editor Jim Downing first showed me what we're now calling the "Laser-Accurate" Sliding Tablesaw Jig. He was so proud he couldn't wait to show it off, and I quickly became as excited as he was.

So what's so special about this jig? Let's take a look.

- The laser-engraved, expanded miter angle scale makes possible super-accurate angle cutting.
- The sliding table fits into both miter gauge slots, allowing you to make both left and right miter cuts using one sliding table.
- The edge of the sliding table aligns with the blade for easy cut-off reference.
- The infinitely positionable fence provides a full 90° of miter angle adjusting capability.

We've used it in the **WOOD** magazine shop for several months, and Project Builders Chuck Hedlund and Jan Svec agree that it does



Proud papa Jim Downing showing off his latest creation—The "Laser-Accurate" Sliding Tablesaw Jig. Way to go, Jim!

everything Jim said it would...and does it well. In fact, we think we've designed the best jig of its type ever conceived. We hope you agree.

If you want to learn more about this momentous development in jigmaking, turn to *page 70*. That's where we show you how to build and use the jig. We figure it takes about 5 hours to construct this marvel. But that investment in time will return you benefits in accuracy and good-quality results for the rest of your woodworking life. What a deal!

Larry Clayton

Better Homes and Gardens®

WOOD®

THE WORLD'S LEADING WOODWORKING MAGAZINE

CONTENTS



Page 33

33 Wolf of the West

Meet an Arizona woodworker whose intarsia designs capture images of the famed Old West.



Page 70

66 In search of the perfect miter clamps

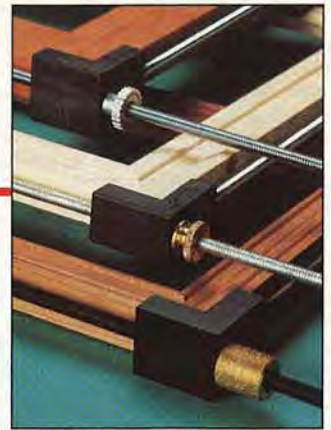
Pick from among six diverse types of clamping systems to achieve square, tight miter joints.

70 Laser-accurate tablesaw jig

Make dead-on angle cuts and tapers with this versatile plywood jig. See complete plans inside.

76 Waste not, want not

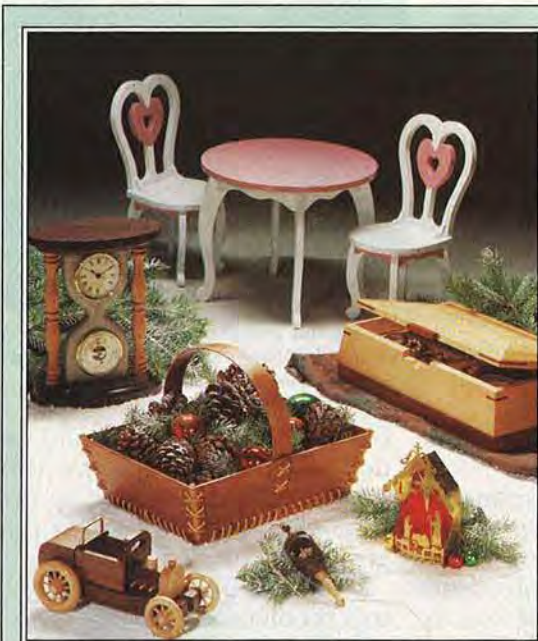
See how innovative practices help the lumber industry use every part of the tree, including the sawdust and bark.



Page 66



Page 76



Holiday Treasures

Great gift ideas for the entire family, page 39

40 Beveled beauty

Build a jewelry box with eye-catching tapered sides.

46 A bright and shining scene

Scrollsaw a three-dimensional nativity scene from brass.

48 Laced wooden basket

Assemble this centerpiece project using leather strings.

51 Teddy's table and chairs

Please a child by crafting and painting this furniture set.

54 A timely weather watcher

This hourglass design features a barometer and a clock.

57 A light turning

Use a lathe and drill to shape a lanternlike tree ornament.

60 Junior jalopies

These project parts let kids build six different vehicles.

SHORT-SUBJECT FEATURES

1 The Editor's Angle

4 Talking Back

8 What Woodworkers Need To Know

12 Great Ideas For Your Shop

14 Tips From Your Shop (And Ours)

20 Ask WOOD

28 Yesterday's Tools

30 Wood Anecdote

80 Products That Perform

104 Finishing Touches

This issue's cover wood grain: bird's-eye sugar maple

**IN SOME CIRCLES A MAN'S
STATUS IS MEASURED BY
FRIVOLOUS THINGS LIKE CARS.**



Extension table slides 3 1/2" for extra support of material.



Dual guide bearings allow for superior stability and joints tighter than Alcatraz.



Quick, accurate settings are a snap with rock-solid miter and bevel detents.

The new Bosch 10" slide compound miter saw cuts down any thought of compromise. With all the best features of any saw rolled into one, it's sure to be the envy of the neighborhood you're building.



STAINED GLASS



VIDEO & CATALOG

Improve the looks and value of your home with:

- Entry Doors and Sidelights
- Kitchen Cabinet Inserts
- Tiffany Style Lampshades

Save money and make it yourself - our video shows you how!

The perfect way to get started in stained glass. Our 25 minute video covers all the basics. Filled with clear, simple instructions, hints, close-ups, and examples to help you craft your own stained glass windows, lamps, and more. Package includes video, written instructions, plus 88 page full-color catalog. #6149VV...\$10.95 + \$3.00 shipping/hand.

To Order, Call Toll Free 1-800-248-2048



DELPHI
STAINED GLASS
Since 1972

2116 E. Michigan Ave.
Lansing, MI 48912

Circle No. 1920

Better Homes and Gardens®

WOOD Advertising & Marketing
THE WORLD'S LEADING WOODWORKING MAGAZINE

Publisher **WILLIAM R. REED**
Advertising Director **MARK HAGEN**

Display Advertising: 333 N. Michigan Ave., Suite 1401, Chicago, IL 60601 Phone: 312/853-2890 FAX: 312/580-0113
Eastern Advertising Manager **JAMES N. FORD**
Western Advertising Manager **WILL MURPHY**
Administrative Assistant **JENNIFER HAMMEL**

Direct Response Advertising: 1912 Grand Ave., Des Moines, IA 50309-3379 Phone: 515/284-3785 FAX: 515/284-3343
Direct Response Advertising Manager **LISA WIEMKEN**
Direct Response Advertising **CINDY ANDERSON,**
PATRICK MADDEN

Classified Advertising: Phone: 800/424-3090 FAX: 312/464-0512

Ancillary Sales Director **MAUREEN RUTH**
Marketing Manager **RICK PALLISTER**
Marketing/Ad. Services Supervisor **PAT HENDERSHOTT**

Circulation Director **SUSAN SIDLER**
Associate Circulation Director **KATHI PRIEN**
Business Manager **JANET DONNELLY**
Senior Product Manager **RICK GROW**
Publishing Director **MAX RUNCIMAN**

Meredith
CORPORATION
MEREDITH PUBLISHING GROUP

CHRISTOPHER M. LITTLE, President
BILL MURPHY, Custom Marketing; **JERRY KAPLAN**, Group Sales;
MAX RUNCIMAN, Controller; **BRUCE HESTON**, Manufacturing;
HAL ORINGER, Circulation; **DEAN PIETERS**, Operations
JACK D. REHM, Chairman and Chief Executive Officer
WILLIAM T. KERR, President and Chief Operating Officer
E. T. MEREDITH III, Chairman of the Executive Committee

TALKING BACK

Another cribbage-board drilling jig

I read with interest the answer to "One good way to ease a boring job" in the June 1996 Talking Back. And I have another solution to drilling multiple holes in a cribbage board. I use a variation of the box-joint cutting jig. The first hole in each row has to be drilled by eye, but from there on, the jig takes over (see drawing below.)

Drop a 1/8" pin through the jig hole and into the first hole drilled in the board. Then, drill the second hole in the row. Lift the pin, slide the second hole under the jig, and lock the board in place again with the pin. Repeat this process to drill the rest of the holes in this row.

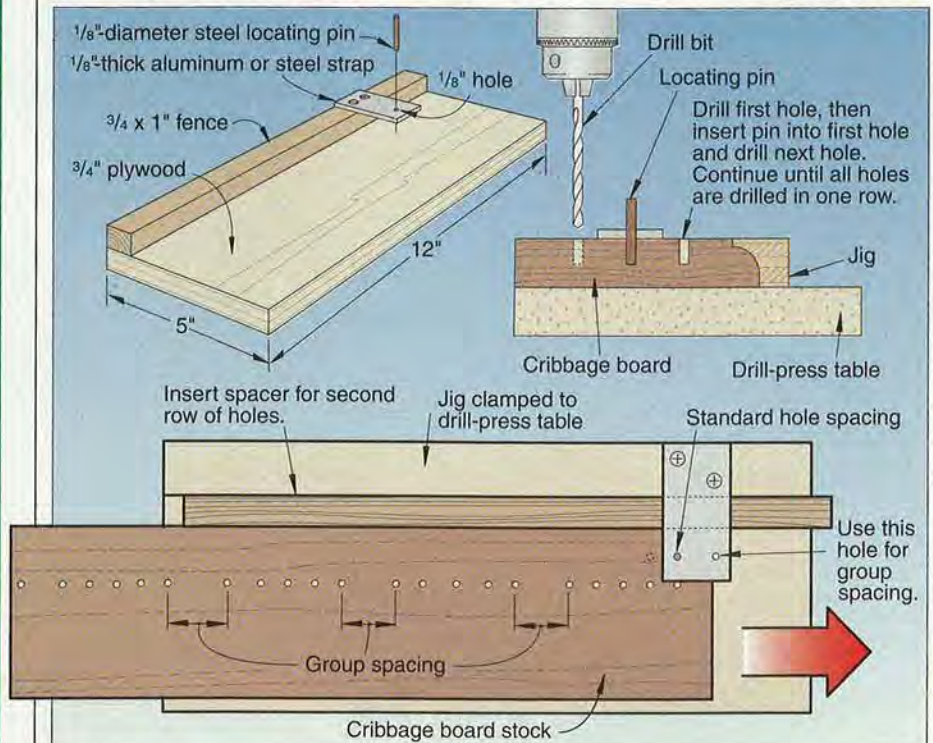
Turn the board around and repeat the above process for the second outside row. Then, reposition the jig for drilling the two inside rows of holes.

—Eric Horner, Waukegan, Ill.

Eric, how about a couple of additions to your jig? If you make the metal placement plate long

enough to reach the center rows of holes, you can save the effort and trouble of repositioning the jig. Just use wooden spacers to move the cribbage board into position for drilling the outside row of holes.

Many cribbage boards we've seen also have larger spaces between the groups of holes. A second pinhole could be placed in the metal plate to allow easy alignment of these longer spaces.



Continued on page 6



Freud Red

Maximum Safety

Maximum Performance

THE NEW FREUD ANTI-KICKBACK ROUTER BIT LINE

SAFETY FIRST

Freud is the first major manufacturer dedicated to converting their full line of router bits to the anti-kickback design. Our anti-kickback design limits the cutters' bite to insure a smooth and safe cut, without holding back on speed. Unlike other so-called "anti-kickback design bits", Freud's are manufactured to meet one of the most rigid safety standards in the world: The German Industry standard, DIN 8085 and DIN 31000.

SUPERIOR FINISH

Our bits give you the smoothest, most burn-free and chatter-free cuts available. To do this, we custom designed a special computer-controlled grinder to provide the proper relief angles that eliminate the burning associated with the radial type of relief. This equipment gives each tool a mirror-finish cutting surface that starts sharper and stays sharper longer.

THICK CARBIDE TIPS

Our micrograin carbide tips are up to .094" thick. This makes them less prone to chipping and insures a long resharpening life. We use a tri-metal brazing to mount the carbide tips to the bit body; silver, copper and silver brazing absorbs heat and impact.

COMPUTER BALANCED

We computer balance all of our bits for precision cuts and vibration-free operation every time. Even our larger bits leave a chatter-free, silky-smooth finish.

FULL LINE LIFETIME GUARANTEE

How can a company prove that they truly have a superior product? By putting their money where their mouth is! We back our complete line of router bits with a LIFETIME GUARANTEE*.

TOTAL QUALITY COMMITMENT

At Freud, quality is a lifestyle and not just a sales promise. Our commitment is to produce the world's highest quality bits. By our continual investment in the best technology, you can be sure you are getting a quality product.

EXTENSIVE LINE

We have one of the most extensive lines of carbide router bits available and we're growing daily. If you're looking for an unusual bit, give us a call, chances are pretty good that we have it.

RATED EXCELLENT BY THE PROS

In a recent survey by Hanley-Wood, the majority of readers who were familiar with Freud ranked our products as excellent!

NEED MORE INFORMATION?

Just call one of our dealers, they are ready to answer your questions. Don't forget to ask for one of our new 92 page router bit catalogs. If you need the name of a dealer near you, give us a call.

freud[®]

Precisely what you need.

High Point, NC • 800-472-7307

*Does not constitute entire warranty. For a complete copy of our Freud warranty, please send a self-addressed envelope to: Freud Inc., P.O. Box 7187, High Point, NC 27264

Continued from page 4

Reintroducing Dremel's model 1672 benchtop scrollsaw

In the scrollsaw review in the October 1996 issue of *WOOD*® magazine, we misrepresented Dremel's model 1672 benchtop scrollsaw, shown *below*. To set the record straight, the 1672 does not require you to remove screws to access the lower blade clamp beneath the table. Instead, a hinged door allows you to more quickly access this area.



Also, the two-speed 1672 is powered by a direct-drive induction motor, not a universal motor as indicated in the article. Though the telephone number that appeared in the article was correct, we did not include Dremel's toll-free number: 800/437-3635.

A correction on how wood cups

I would like to make a correction on the confusing subject of wood movement due to changing moisture content. In the Ask *WOOD* response "How wide a board can I edge-glue?" in the September 1995 issue, you said, "Cupping or across-the-grain curving of a board happens because the wood on the side of the board closer to the center of the log expands more than wood closer to the outside." Actually, the reverse is true. The amount of wood movement is proportional to the length of the annular rings in the wood.

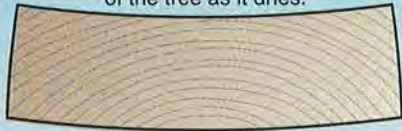
The length of an annular ring near the center of the tree is shorter than the length of a ring near the outside. This results in greater movement in the wood near the outside.

—Kevin J. Fleming, Albuquerque, N.M.

Kevin, to get to the bottom of this issue, we checked with Bill Simpson of the U.S. Forest Products Lab.

He said, "A piece of flatsawn green lumber will cup toward the outside as it dries," as shown in the drawing left. "However, if you have a kiln-dried board, and it takes on moisture while adjusting to your shop, the wood will cup toward the center of the tree."

Green wood cups to the outside of the tree as it dries.



Dry wood cups to the inside as it takes on moisture.



Grandpa's bevel trick

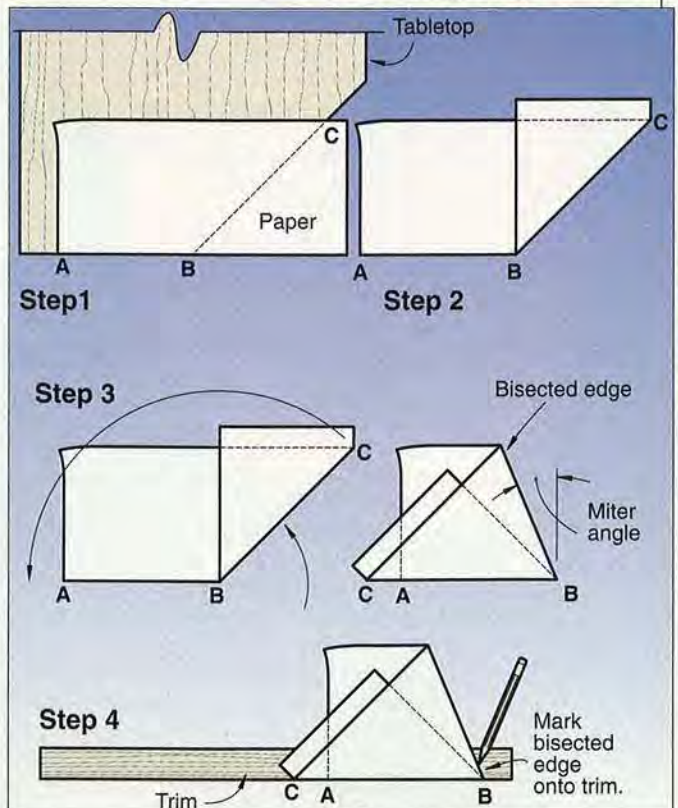
I enjoyed the article "Develop Your Shop Skills: Bevel Basics and Beyond" in the January 1996 issue. The section on bisecting an angle brought back a memory of when I helped my grandfather build a cabinet for my grandmother.

He watched while I nervously bisected an angle using the bevel and compass as I had seen him do. After I was done, he said "We only use the compass when Grandma's watching, to make it look hard to do." Then, he went on to show me how to do this with the sliding bevel and a piece of paper. Here's Grandpa's four-step way of bisecting angles:

- 1 Set a piece of paper on the corner to be bisected, with one edge of the paper flush with one edge of the corner (AB). The paper should overlap the other edge of the corner (BC).
- 2 Fold the paper downward along the edge it overhangs (BC). Then, fold it upwards along the established crease as shown in step 2 *below*.
- 3 Fold the paper in half, so that side AB is flush with side BC. This bisects the angle.
- 4 Set the bottom edge of the paper (CB) flush with the edge of the trim. Mark the cutoff line along the bisected edge of the paper.

This process also works with inside corners. Place the sheet against one wall of the cabinet, and fold the paper to match the other side of the corner. ♣

—Ron Princing, Hartford, Mich.



HELP WANTED: Strong, hardworking, dependable worker to assist in numerous large projects, including, but not limited to sawing, planing, sanding, ripping, routing and cutting. Must be able to press up to 350 lbs. Days, evenings, nights, weekends and holidays. No wimps, please.

CARPENTER NEEDED

Good help just got easier to find.

With the HorsePower™ Handy Clamp, you can get the help you need anytime, anywhere. It attaches easily to a saw horse, workbench or work vehicle. It turns your work surface into a clamping center so you can work safely and efficiently by yourself. And it never needs a coffee break. Find them wherever quality tools are sold.



Cam-action lever locks work into place quickly and easily.

HorsePower™
HANDY CLAMP



Turns your work surface into a clamping center.

What
woodworkers
need to know

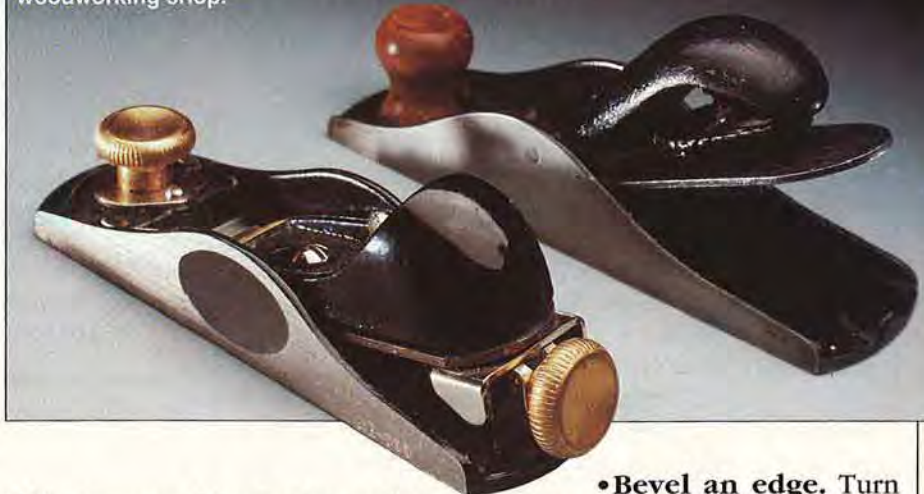
BLOCK PLANE BASICS

More and more woodworkers are bringing power jointers and planers into their shops, often pushing hand planes into dusty corners. But a plain old plane still comes in handy, even in the most up-to-the-minute shop. Here's one of the handiest: the block plane.

A sharp, properly adjusted hand plane allows a woodworker to peel a whisper-thin shaving from wood while leaving a surface of unsurpassed quality. That's why these venerable tools—planes go back to Roman times—still fit into today's shop. And, among hand planes, the block plane ranks near the top for versatility and convenience.

Using a block plane feels almost natural—and very craftsmanlike. You hold it in one hand, as shown *below*, with the rounded top of the *iron cap* (see the Plane Parts illustration, *page 10*) in your palm. When you push the plane forward, you also press the *sole* down against the wood.

Compact and versatile, block planes such as the low-angle one (left) and the standard version belong in any woodworking shop.



What can a block plane do?

A block plane handles many tasks, including some that would be difficult or unsafe to perform with power tools. With one, you can:

- Erase mill marks.** Rely on the block plane to wipe out the wavy machine-milling marks on lumberyard stock, leaving it satin-smooth. After sawing out your parts, eliminate saw marks with a few passes of the block plane.

- Square up small stock.** Grab the block plane to true a piece too small to run safely over your jointer. Clamp the plane upside down in your vise, and you can plane parts barely large enough to grasp, as shown *below*.

- Bevel an edge.** Turn to the block plane to bevel or chamfer edges, especially on short or narrow pieces. Just draw guidelines as shown *below*, and plane to them. For best results, make several passes, angling the plane across the edge. Planing bevels or chamfers by hand is often almost as fast as machining them, considering setup time. And it's always quieter than routing them.

- Plane to a line.** When sawing a tapered part, many woodworkers like to cut slightly outside the layout line, then sand down to it. But, shaving down to the line with a block plane results in a nicer surface and a truer edge.

Continued on page 10



The compact block plane fits your hand comfortably, making it easy to use.



Clamp the block plane upside down in a vise to plane tiny or hard-to-hold pieces.



Angle the plane across the edge of the workpiece to form a bevel or chamfer.

JET's rebate

a bright idea!



JWS-18HO
Shaper
\$15
Rebate



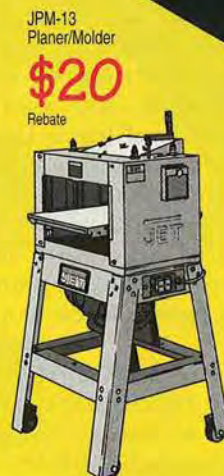
DC-1200
Dust Collector
\$20
Rebate
DC-650
Dust Collector
\$15
Rebate



JDP-17MF
Drill Press
\$20
Rebate



JWBS-14CS
Closed Stand
Bandsaw
\$20
Rebate
JWBS-14OS
Open Stand
Bandsaw
\$20
Rebate



JPM-13
Planer/Molder
\$20
Rebate



JJ-6CSX
Jointer
\$20
Rebate



JWP-12
Planer
\$15
Rebate



JWCS-10
Cabinet Saw
\$40
Rebate

Rebates
up
to **\$100**

Buy these JET tools today —
and see woodworking
in a whole new light!

Offer effective Oct. 1, 1996
through Feb. 28, 1997.



JWP-15HO
Planer
\$100
Rebate



JWTS-10
Tablesaw
\$20
Rebate

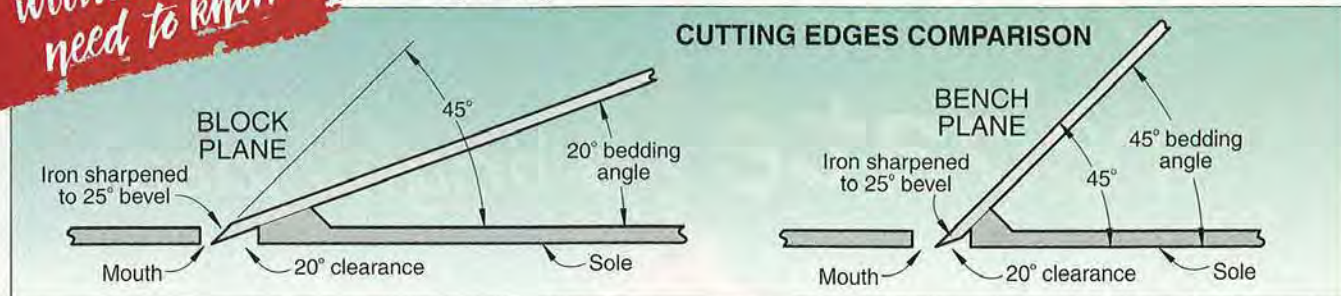
JET
EQUIPMENT & TOOLS
Auburn, Washington

For the name of your local JET dealer, call 1-800-274-6842 or e-mail to jet@jettools.com • <http://www.jettools.com>

What
woodworkers
need to know

BLOCK PLANE BASICS

Continued from page 8



•Fit doors and other parts.

You've built a small cabinet and hung the door. But it binds a bit. Instead of taking the door off to rework it, just mark the high spot and shave it off with your block plane. When any project part would fit better if it was just a smidgen narrower or shorter, the block plane can save the day.

•Sharpen your shop pencil.

WOOD® magazine's project builder, Chuck Hedlund, even sharpens flat carpenter's pencils with a block plane. "It's quicker, easier, and neater than using a knife," he reports. Just be sure to brush off the graphite before planing light-colored wood.

A low blade makes it small

The block plane owes its handy size in part to the shallow angle between the blade—or *iron*—and the sole. This *bedding angle* is usually in the neighborhood of 20° for block planes. In a bench plane, it's normally about 45°.

Even so, a block plane's cutting edge meets the wood at about the same angle as a bench plane's (see the Cutting Edges Comparison drawing). That's because the bevel on the block plane's iron faces up. (For a block plane, the angle of the cutting edge to the work equals the bedding angle plus the iron's bevel angle.)

You'll also find block planes with a bedding angle of approximately 12°. These low-angle planes slice through wood more easily, but may cause tear-out along the grain. Some woodworkers prefer low-angle block planes for end-grain work.

Tuning your plane

Tuning benefits any plane, old or new. On a block plane, you should check two main points—sole flatness and iron bedding.

Check the sole with a sheet of 180-grit wet-or-dry sandpaper laid abrasive side up on a flat surface. (A cast-iron saw table or piece of glass would do.) Retract the iron, and rub the plane sole over the abrasive. Scuff marks indicate high spots on the sole.

To flatten the sole, wet the sandpaper, then continue rubbing the plane sole over it. When the sole shows a uniform scuff pattern, it's flat. Polish it, following the same procedure with progressively finer sandpaper grits.

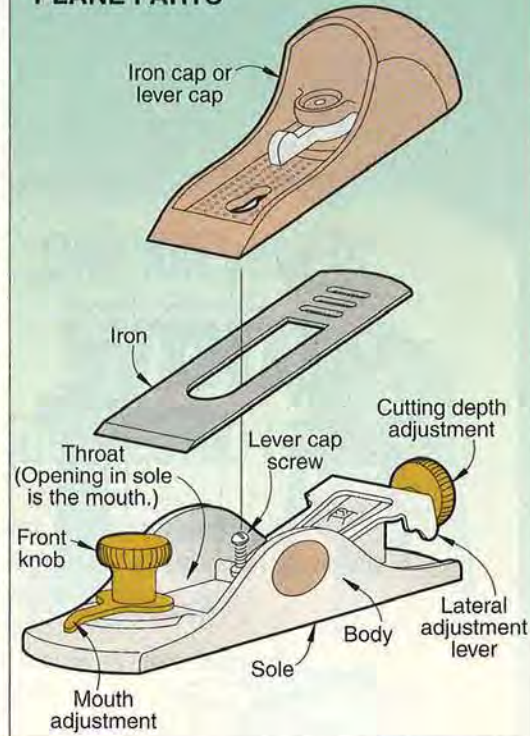
To check the bedding, extend the iron. Then, inspect the back of the

mouth to determine how solidly it supports the iron. If gaps appear between the back of the iron and the back of the mouth, or if the iron rocks in the throat, remove the iron and carefully file down the high spots in the plane. Check the cap for full contact, too. Solid bedding helps prevent chatter.

Adjusting the block plane

Sharpen the iron to a 25-30° bevel. Position it in the plane's body, bevel up, engaging the appropriate notch over the tang on the adjuster, when applicable. Center the iron in the throat, and install the iron cap.

PLANE PARTS

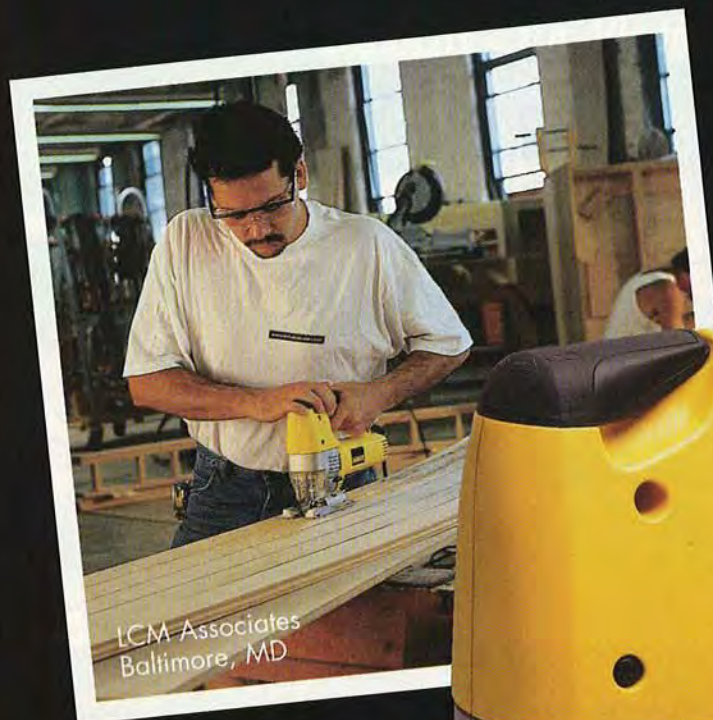


Extend the cutting edge slightly past the sole. (Determining the proper amount of protrusion takes some trial and error; the thickness of a business card is a good starting point.) Square the end with the mouth, then tighten the iron cap.

Some block planes feature an adjustable mouth. To regulate the length of the mouth opening, turn the front knob to loosen the sliding part, and move the eccentric lever. Generally, a smaller opening suits finer work. ♣

Illustrations: Roxanne LeMoine; Lorna Johnson
Photographs: Wm. Hopkins; John Hetherington
Written by Larry Johnston

People Strive For The Perfect House,
The Perfect Car And The Perfect Job.
All That Matters To You Is The Perfect Cut.



ICM Associates
Baltimore, MD

Your work demands the highest degree of accuracy. So do the designers of our new jig saw. Introducing DEWALT's new 5.8 amp, 500-3,100 SPM variable speed jig saw. It's designed to provide extremely accurate cuts with decreased deflection and increased perpendicularity. And when

coupled with DEWALT's new cobalt steel blade with patented tooth design, it offers the fastest cutting performance in the industry. Plus, you'll find a unique tool-free blade change system for both "T" and universal shank blades, a non-marring tool-free shoe which bevels 45° in each direction and a counterbalance system to reduce vibration. If you're looking for comfort, precision and performance, your saw is ready. For the distributor nearest you, call 1-800-4-DEWALT.



Extremely accurate cuts
with decreased deflection.



Dedicated To Perfection.

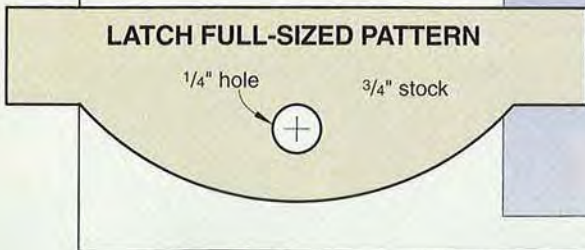
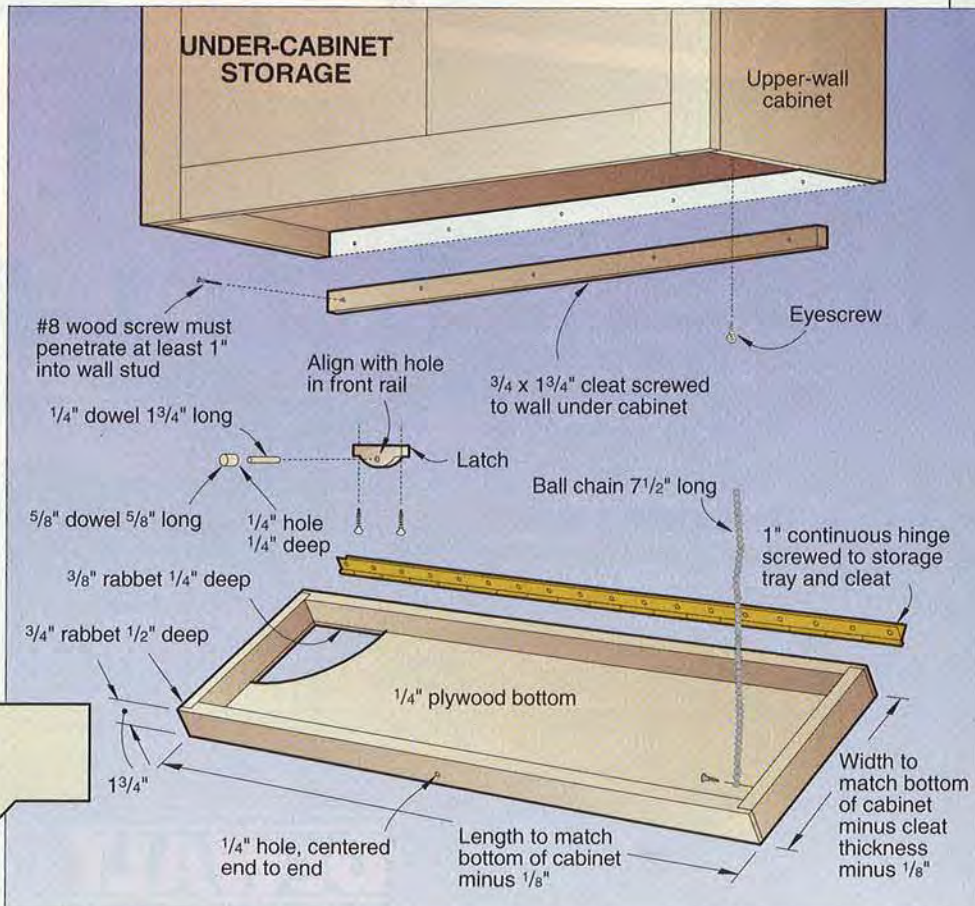
DROP-DOWN TOOL-STORAGE TRAY

Here's a great way to squeeze a lot of tool-storage space into a small area. The storage tray shown here holds nine measuring and marking tools and quickly folds up into an often-unused space. You could just as easily customize your tray to hold chisels, screwdrivers, wrenches, or other tools.

To build the tray, you must first measure the underside of the cabinet. The length of the tray should equal the inside measurement between the two sides of the cabinet minus $\frac{1}{8}$ " for clearance. The width of the tray must equal the measurement from the wall to the inside edge of the cabinet face frame minus the thickness of the wall cleat and minus $\frac{1}{8}$ " for clearance.

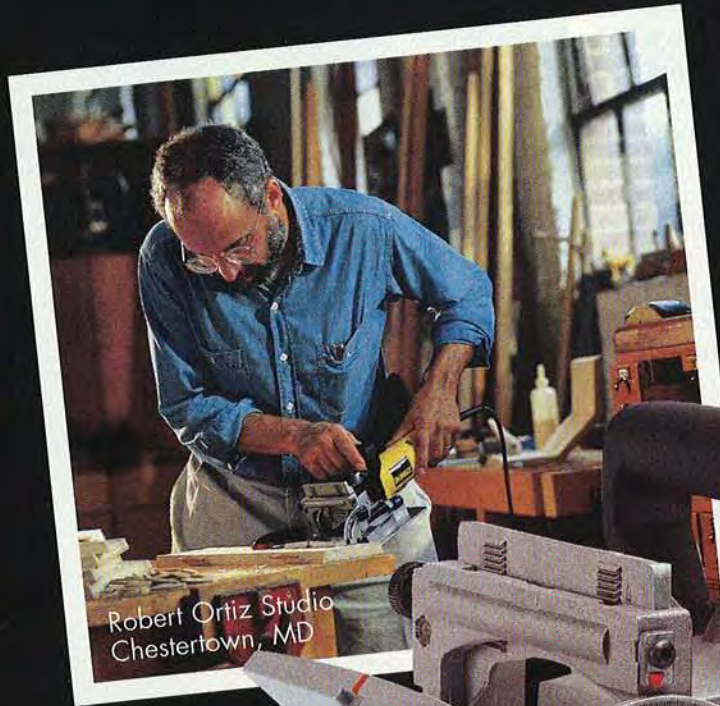
For accurate positioning, center and screw the wooden latch to the bottom edge of the cabinet face frame after you have installed the tray. Then, hold the tray in the closed position, and drill the hole for the dowel through the latch and into the front rail of the tray. Finally, cut tool-holding blocks and glue them to the tray bottom to prevent your tools from sliding around.

Project Design: R.B. Himes
 Photograph: John Hetherington
 Illustration: Roxanne LeMoine



Most People Wouldn't Care If
A Joint Was Off By A Degree.

We Didn't Design Our Plate Joiner For Most People.



Robert Ortiz Studio
Chestertown, MD

When your reputation rides on every joint, nothing performs like the DEWALT plate joiner. Its one piece integral fence and patented rack and pinion control virtually eliminate the risk of an inaccurate cut. Flush cuts can be made at 0° without removing the fence. And for fine woodworking, its miter detent makes indexing off either the inside or outside surface of a mitered joint easier and more precise. They say you're only as good as your last piece. And somehow that suits you just fine. For the distributor nearest you, call 1-800-4-DEWALT.

Rack and pinion control for precise vertical adjustments.



Dedicated To Perfection.



Edge-routing can mean shuffling clamps to keep them out of your way.

Occasionally, projects come along that defy conventional clamping schemes. For example, to hold down a board on my workbench, the clamps usually wind up right in the way of the edge I'm trying to shape.

To get a grip on these "unclampable" situations, reader Walter Koldan built an elevated, temporary raised top for his workbench. A gridwork of slots lets him slide bar clamps into position over the entire face of the top.

The shop tip review committee and I liked Walter's idea so well that we awarded him the top shop tip prize for this issue. Thanks for the tip, Walter!

If you've solved a particular woodworking problem, your idea may be worth \$40 or a tool prize. To be considered, send a letter with a photo or drawing of your idea to:

**Tips from Your Shop
(And Ours)**

WOOD® Magazine
1912 Grand Ave.
Des Moines, IA 50309-3379

We try to publish original shop tips, so please send your idea only to *WOOD* magazine. Also note that we cannot return submissions. Thanks!

Kerry Gibson

GENERAL-INTEREST EDITOR

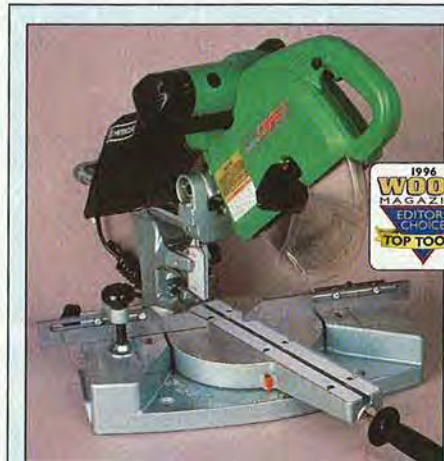
Clamping table puts pressure where you need it

I don't own a European-style workbench with bench dogs and holdfasts, so clamping workpieces near the center of my bench posed a challenge. My solution was to build a temporary raised top for my bench that permits me to anchor my clamps from below.

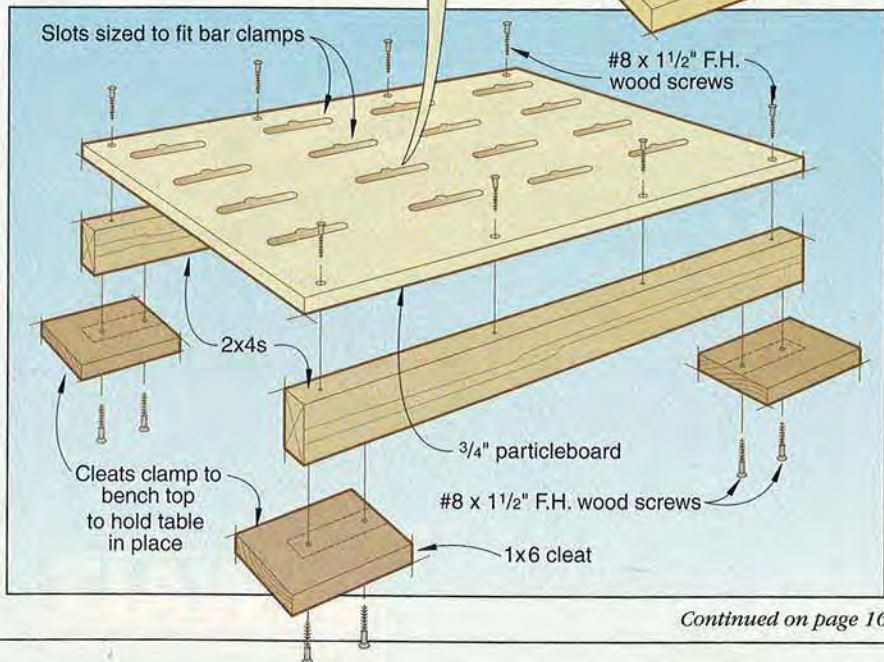
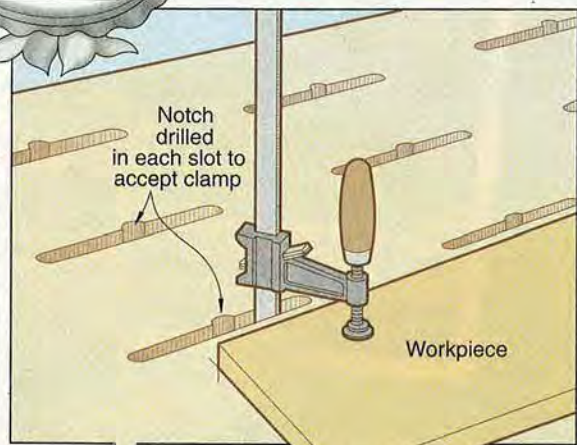
I started with a sheet of 3/4" particleboard slightly smaller than my benchtop. Next, I cut out a series of slots and notches in the particleboard just wide enough to allow the fixed jaws of my bar clamps to slip through, as shown in the drawing below.

I elevated the particleboard with two 2x4s glued and screwed to the bottom, as shown. To keep the clamping table in place, I attached 1x6 cleats to the four corners with screws. I clamp the cleats to my regular benchtop, but you can also use screws to hold the clamping table firmly in place.

—Walter Koldan,
Streamwood, Ill.



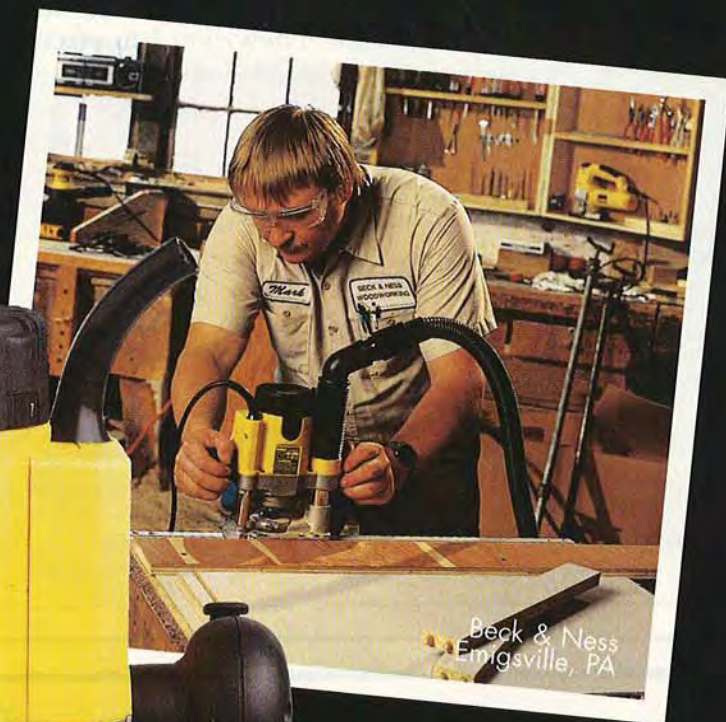
For sending in the top shop tip of this issue, Walter receives a Hitachi C10FS sliding compound miter saw. Way to go, Walter!



Continued on page 16

Works Of Art Should Never Collect Dust,
Especially While They're Being Created.

Built-in dust collection system allows dust extraction through the router's plunge column.



When it comes to routers, we'd like to clear the air. Introducing DeWalt's new electronic variable speed 2 HP plunge router which features the industry's only integral dust collection system. Now dust can be pulled through the router's plunge column and efficiently removed by a standard shop vacuum. It also offers the broadest range of speeds in the industry, 8,000 to 24,000 RPM. Plus, this router features accurate, easy to use rack and pinion height adjustment and newly

designed round handles with a plunge lock on one side and an on-off trigger on the other for optimum user control. All in all, it's the perfect tool for those who fill their woodshops with talent, sweat and a lot of sawdust. For the distributor nearest you, call 1-800-4-DEWALT.



Dedicated To Perfection.

Continued from page 14

Handscrew clamp makes handy, stand-in bench vise

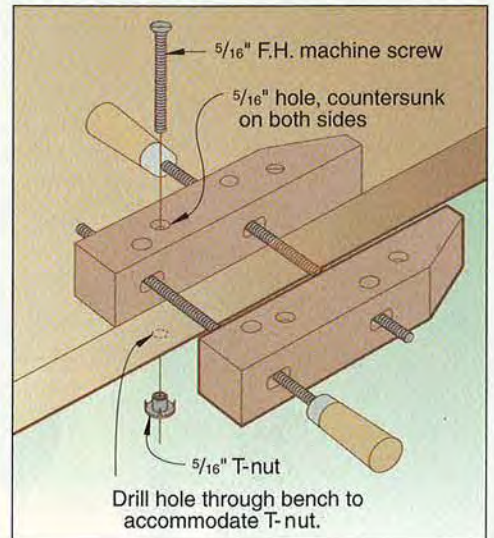
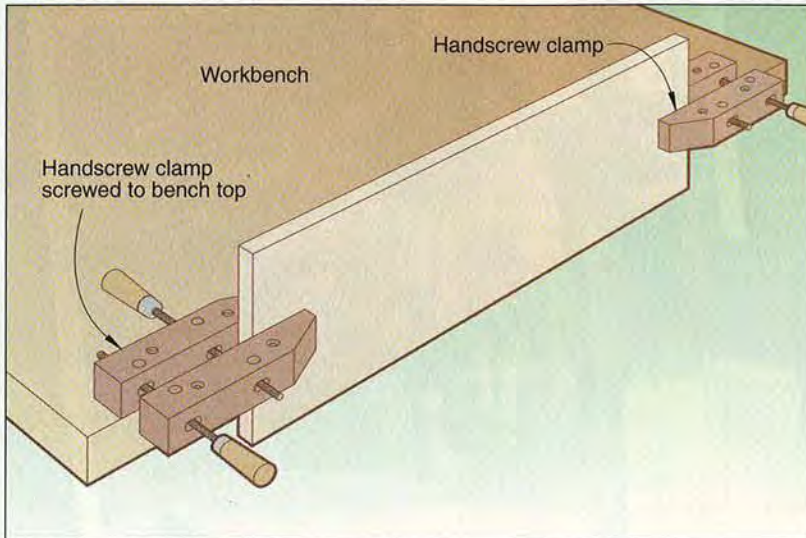
I occasionally need an extra bench vise to gain more holding power. For a quick and easy solution, I position and clamp a handscrew clamp along the edge of my bench top, then drill two $\frac{5}{16}$ "

countersunk holes through the clamp and the bench top.

Then, I install T-nuts on the underside of the bench top. Flathead machine screws hold my new "vise" in place. By counter-

sinking the holes on both sides of the clamp, I can flip it over so the jaws open in the opposite direction. With a pair of them mounted, I can clamp long workpieces.

—Mike Reed, Woodbury, Tenn.



\$50 REBATE.

Contractor's Saw® with any Unifence®, Biesemeyer® Fence or Precision Saw Guide. (Shown here with Biesemeyer Homeshop Fence and accessory table board and legs.)



\$50 REBATE.

14" Band Saw with $\frac{3}{4}$ hp Model #28-275
14" Band Saw with 1 hp Model #28-280



\$100 REBATE.

DJ-20 8" Jointer with any motor configuration.



\$75 REBATE.

DJ-15 6" Jointer with any motor configuration.

\$50 REBATE.

Cabinet Shaper Model #43-355

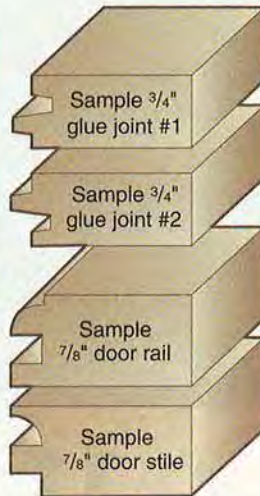
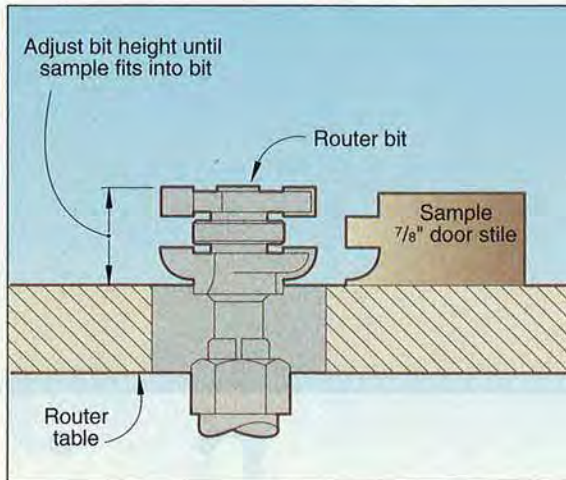
Templates speed router-bit setup

Setting up router bit sets to cut cabinet rails and stiles or glue joints requires making cuts that are exact opposites in order for the boards' surfaces to be flush. I found that getting flush cuts was easy once I created templates.

To do this, I adjusted the bits to make flush cuts on a particular thickness of stock, then cut an extra piece, labeled it as shown, and saved it as a template. Anytime I need to make that cut, I just slide the template block next

to the bit and move the router up or down in the table until the bit profile matches the template. ♣

—Patrick Grashorn, Gilcrest, Colo.



A FEW MORE TIPS FROM OUR WOODWORKING PROS

- To drill equally spaced holes around a cylinder, you need an indexing jig. See how we constructed a simple one from scrapwood. It's on *page 59*.
- When toggle clamps didn't quite meet our expectations on our tablesaw jig, we designed and built our own wooden holddowns. We liked them so well, we used them on several of our other jigs. See how we constructed ours on *page 74*.

\$25 REBATE.

12" Variable Speed Lathe
Models #46-700/701 with
or without stand.



\$50 REBATE.

15" Planer
with stand
Model #22-675



TODAY, YOU'LL APPRECIATE THE REBATES. LATER ON, YOU'LL APPRECIATE THE QUALITY.

Here's a chance that doesn't come along every day. A chance to put Delta Quality in your shop and get a check in the mail from Delta to boot. But only from September 1-December 31, 1996.

Granted, that rebate check will probably be spent by the time you get around to cashing it. But that new Delta machine will become more valuable each time you flip the switch. And you can take that to the bank.

Call for the name of your nearest participating Delta dealer. Delta International Machinery Corp., 800-438-2486.

THE
POWER
OF THE
PROS

DELTA
WOODWORKING MACHINERY
A Pentair Company

Delta is proud to nationally fund these two PBS programs for woodworkers. *The New Yankee Workshop* hosted by Norm Abram and *The American Woodshop* with Scott Phillips.





A wide stance does more than just make the all-new Dodge Dakota look athletic. It increases stability.

We gave the new Dodge Dakota quick-ratio, variable-assist power steering, for speedy response and a solid feel.



The recline of civi



We stand behind the name Dakota, with our Customer One Care™ 3-year or 36,000-mile bumper-to-bumper warranty and 3/36 Roadside Assistance.¹

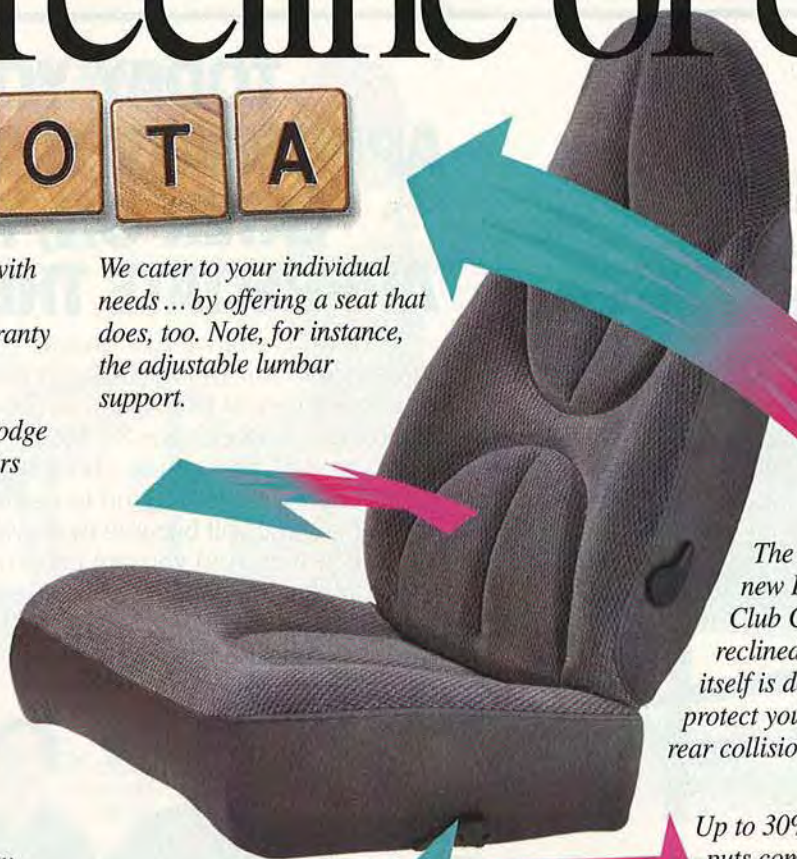
We cater to your individual needs ... by offering a seat that does, too. Note, for instance, the adjustable lumbar support.

Once again, Dodge opens new doors for Dakota owners. This time, with available remote keyless entry.



CDs, cell phones and other everyday necessities can be conveniently stowed away in the all-new Dakota's optional mini business console.

There are up to five cupholders in all. Hey, you never know when some thirsty friends are going to need a ride.



The all-new Dakota Club Cab's seats can be reclined 27°. And the seat itself is designed to help protect you in the event of a rear collision.

Up to 30% more seat travel puts comfort within easy reach. For added comfort and convenience, the seat belt moves with the seat.



We code many of the new Dakota's plastic parts for the day they can be recycled. Because, like you, we think the world of the environment.

The front shoulder belts feature five different height adjustments. It's a little convenience that turns into a very big convenience on long trips.



You can opt for a premium Infinity® stereo system with cassette and CD player in the new Dodge Dakota. Eight speakers in six locations kick out some real concert-quality sound.

lization.



The new Dakota is the roomiest truck in its class. There's even a forward-facing rear seat in Dakota Club Cab, with enough hip room to seat three across. Your passengers will be beside themselves with comfort.

The all-new Dakota is the first truck in its class with standard dual airbags.² That's one thing that shouldn't surprise you.



We designed the buttons and switches in the new Dodge Dakota to push your buttons, so to speak. It's those little touches, after all, that make driving more enjoyable.



For more surprising facts, call 1-800-4-A-DODGE, or visit our Web site at <http://www.4adodge.com>

¹See limited warranty & restrictions at dealer. Excludes normal maintenance & wear items. ²Always wear your seat belt for a fully effective airbag. Rearward-facing child seats cannot be used in standard cab models.



Club Cab Sport 4x4

The New Dodge Dakota
It's full of surprises.



Jig makes quick work of cutting pen case grooves

I make wooden pens and pencils on my lathe, and now want to make matching cases for them. These cases need a stopped groove cut into them to hold the pen. What procedure do you recommend to cut this groove?

—Ed Cheskie, Camano Island, Wash.

Ed, first make the auxiliary fence shown in the drawing below. Then, use it in conjunction with a 1/2" roundnose bit in your table-mounted router to cut the grooves.

Find the location for the left-hand stop on the auxiliary fence by measuring from the left end of the pen case (A) to the right end of the groove (C). Then, measuring from the right side of the router bit, mark the stop location on the fence. Fasten the stop to the fence so that its inside edge is aligned with this mark. Repeat the procedure to locate the right-hand stop at the distance BD from the left side of the router bit.

Fasten the auxiliary fence to your router table with clamps. Adjust the fence assembly so the distance from the edge of the auxiliary fence to the center of the router bit equals 1/2 the width of your pen case. (If you're making a pen and pencil case, this distance will equal the measurement from the case edge to the cen-

Have a question for our woodworking experts? Here's how to reach us.

No matter how simple or perplexing a woodworking problem you're faced with, we would love to hear from you. We'll do our level best to solve your mystery, and you might even find your question and our reply on this page. You can reach us by one of several ways:

• **Via mail.** Send your letter to Ask WOOD®, 1912 Grand Ave., Des Moines, IA 50309-3379.

• **Via computer.** Connect to us through our internet site on the world wide web at: <http://woodmagazine.com>

Or, send your e-mail to these addresses:

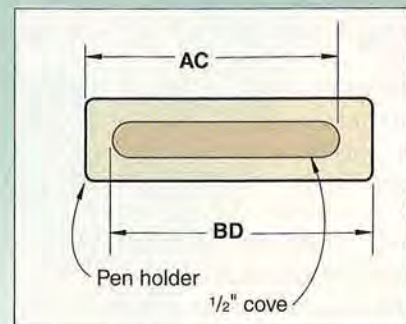
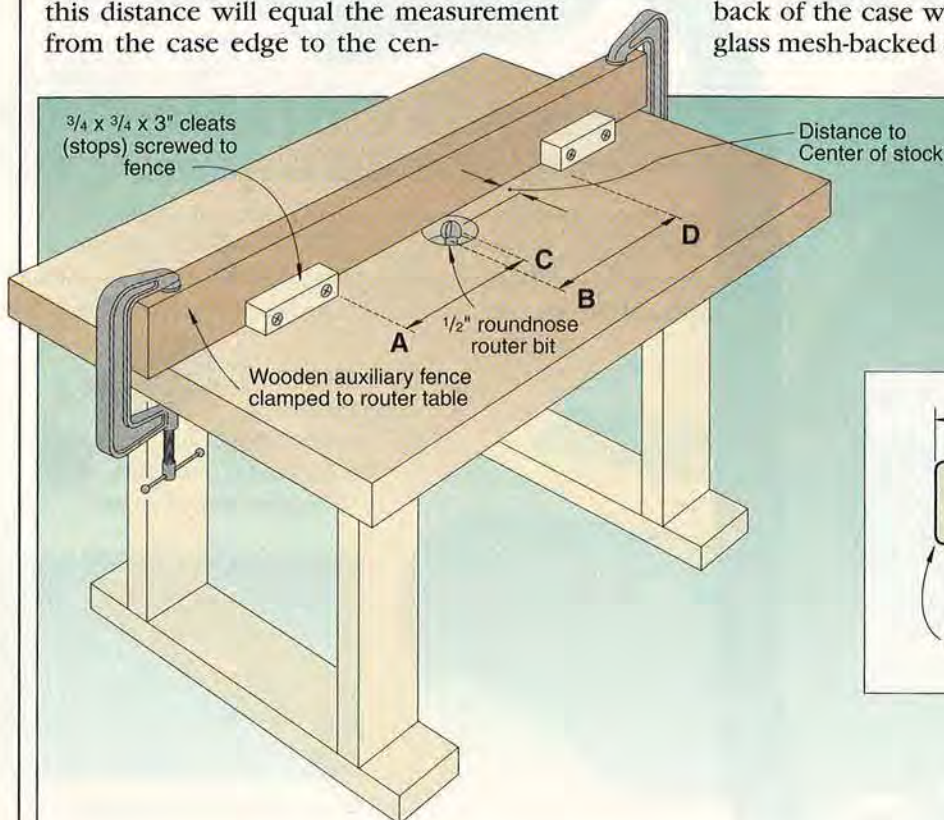
CompuServe: 74404,3516

Internet: 74404.3516@compuserve.com

ter of the groove.) Raise the router bit to take no more than a 1/4"-deep cut. Start the router, and allow it to reach full speed.

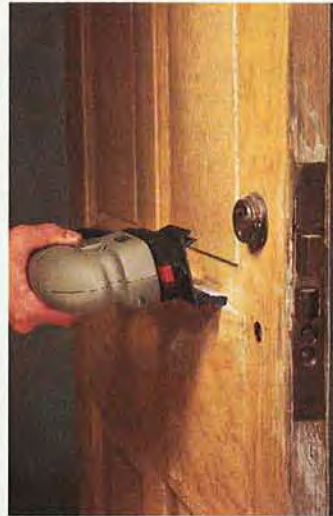
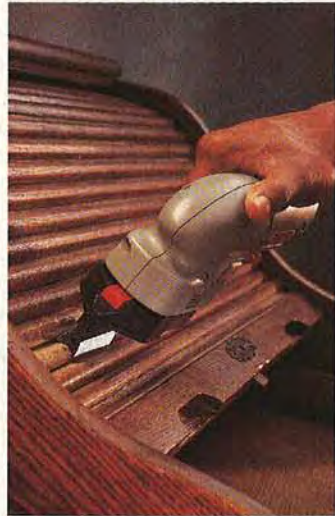
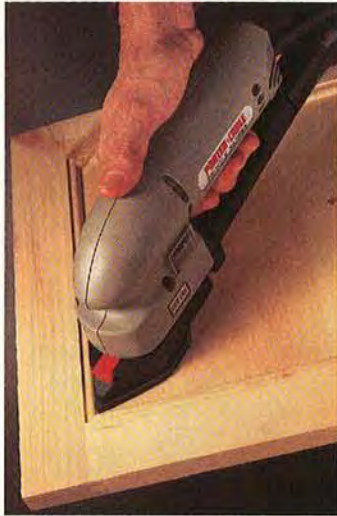
Place one end of the case against the right-hand block, with the edge in contact with the fence. Then, lower the other end of the case into the turning router bit. Advance the case across the bit until it contacts the left-hand block. Stop the router and remove the case.

We recommend that you cut the groove before routing the outside of the case because a square-cornered block will provide more of a handhold than will a round-cornered one. For an even better grip on the case, fasten a piece of scrapwood to the back of the case with a good-quality fabric or fiberglass mesh-backed double-faced tape.



Continued on page 22

No More Hand Sanding.



Introducing The Profile Sander™ From Porter-Cable.

Our revolutionary Profile Sander gets you into all the tricky, hard-to-reach corners of your work. But unlike "detail" sanders, it gets you out of the corner. And over curves. Through the grooves. Around the intricate carvings of your workpiece. Plus it does it faster and easier than you could ever dream of doing by hand.

If you'd like to eliminate hand sanding from your work, visit your local Porter-Cable dealer. Or call 1-800-487-8665 (519-836-2840 in Canada) for the retailer nearest you and a free brochure. Visit our web site at <http://www.porter-cable.com>.



Choose from 17 different profiles to tackle every shape you encounter.

**PORTER
CABLE**

Professional Power Tools Since 1906



Porter-Cable is proud to be a co-underwriter of The New Yankee Workshop and The American Woodshop on public television.

Continued from page 20

How do I square up a door frame?

I am building two kitchen-cabinet door frames of 1x3" oak. These frames have a rabbet on the back for holding a pane of glass. They will be assembled using a floating tenon that fits into a mortise on both the stile and rail. However, when I put the frames together and clamp them, they are out of square. How can I fix this?

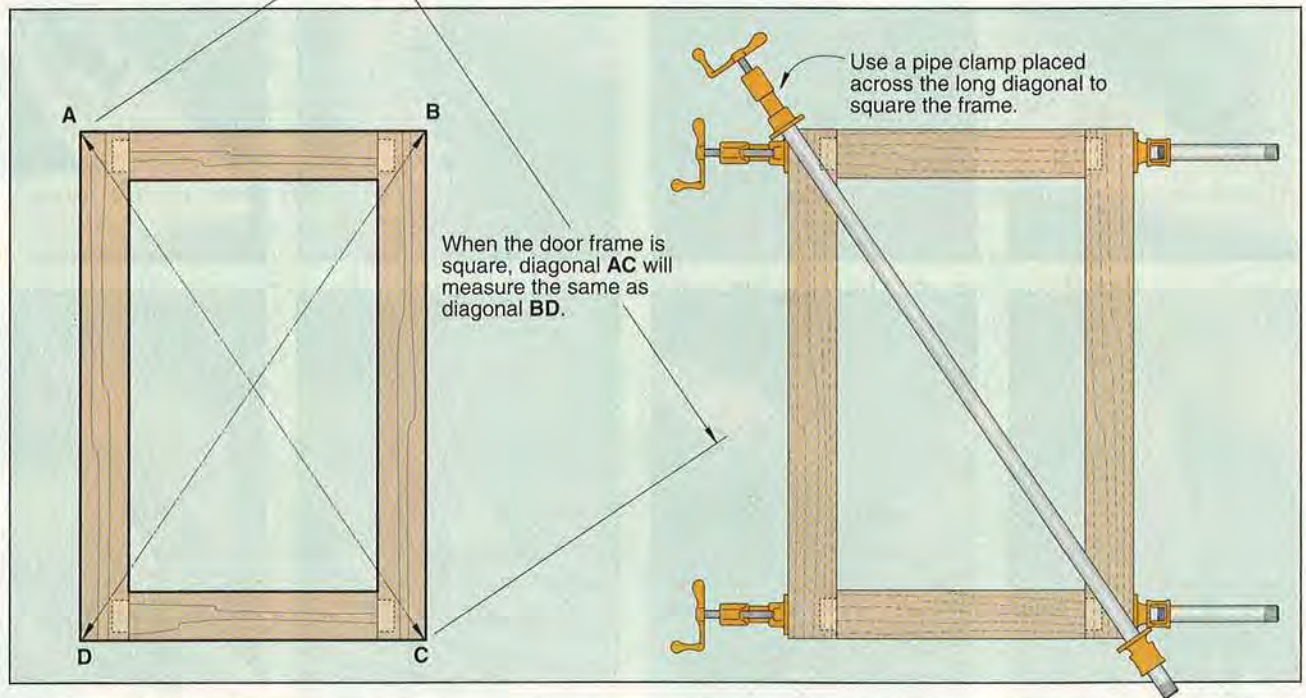
—Laurie McDougall, Vancouver, B.C.

Laurie, first check that both stiles of the door measure the same length, and then do the same for the rails. Any variation in the length of two parallel pieces in a door will throw the frame out of square. (A suggestion: If you use stops on a jig while cutting these pieces to length, you have a

better chance of the pieces measuring the same.) Then check that the shoulder cuts on the rail ends are square.

Next, dry-assemble and clamp the door, with bar clamps positioned directly over the joints. Measure the diagonals of the door, as shown in the drawing below left. Divide any difference in the measurements by two, and add this sum to the length of the short diagonal. The door will be square when both diagonals meet this measurement.

To square up a door when gluing, place a pipe or bar clamp along the long diagonal as shown below right. Measure the short diagonal as you tighten the clamp. When the measurement reaches the square diagonal measurement, place the frame aside and let the glue dry.



How to finish a shellac-sealed surface

I have used shellac to seal knots in some pine that I'm working with to prevent the sap from oozing out and destroying the finish. I would like to use a polyurethane-based final finish on this project. Will this combination work?

—William Carey, Hamilton, Ohio

You can use polyurethane over the shellac sealer if you first sand the shellac with medium-grit sandpaper. This gives the sealer some “tooth” for the polyurethane finish to grab, creating a mechanical bond. You need to do this because these two finishes have different drying properties and will not bond to each other chemically.

The root of this adhesion problem lies in the very nature of these finishes. Shellac releases a solvent as it dries, leaving a film behind. No chemical changes take place in this drying process, and a shellac finish can be redissolved with its original solvent.

Conversely, polyurethane finishes react with air and the wood as they dry. These chemically altered finishes dry hard and tough, but an application of the solvent will not reliquefy or soften the finish.

We've found it's best when sealing and finishing a project to stay with similar-drying finishes. To finish a piece with shellac-sealed knots, we would use shellac (an excellent but often ignored finish) or another solvent-release finish such as lacquer.

Continued on page 24

100% SATISFACTION GUARANTEED!
*** FREE SHIPPING!**
FOR ALL ITEMS SHOWN BELOW!

HARBOR FREIGHT TOOLS

VISIT OUR WEB SITE

<http://www.harborfreight.com>

Pittsburgh

2 PC. 3/4" HEAVY DUTY PIPE CLAMP SET
 Constructed from heat-treated cast iron, these durable clamps keep your work rock steady. Just screw the handle side onto a 3/4" threaded pipe and slide the spring loaded end on. You're ready to go! Pipe not included.
 • Handle screw operating range: 2-1/8"
 • 1-1/2" throat depth
 • Weight: 2-7/16 lbs.
ITEM 31255-4SJA \$2⁹⁹

CENTRAL MACHINERY

10" PLANER
 • 2 HP, 110V, 1 phase, 11 amp, 8000 RPM
 • 5-1/8" working distance
 • 10-1/8" x 9-1/8" feed table
 • 19" x 16-5/8" x 16" overall dimensions
 • 10-1/8" blade size
 • 2-blade cutter head
 • 61 lbs. ship. wt. • Stand sold separately
SAVE 25% FROM OUR SUMMER '96 CATALOG
ITEM 32377-3SJA \$199⁹⁹

CENTRAL MACHINERY

1/3 HP MOTOR
5 SPEED BENCH DRILL PRESS
 • 620 to 3100 RPM
 • 8-1/4" maximum distance spindle to table
 • 1/2" chuck
 • 2" stroke, 8-1/4" swing
 • 1/3 HP motor
 • 22-1/2" high, 47 lbs.
ITEM 05901-6SJA \$49⁹⁹
DRILL PRESS WITH KEYLESS CHUCK
ITEM 34231-3SJA \$54⁹⁹

CENTRAL PNEUMATIC CONTRACTOR SERIES

BUY NOW AND SAVE!
18 GAUGE AIR BRAD NAILER
 This unit has the features you need: safety trigger, adjustable nailing depth, durable aluminum magazine, and easy jam clearance.
 • 55-95 operating PSI
 • 1/4" NPT inlet
 • 3/8" to 1-1/4" brad length capacity
 • 100 brad maximum capacity
 • Stainless steel driver & cylinder
 • Tool weight 2-3/4 lbs.
 • 18 gauge brads
ITEM 31308-3SJA \$39⁹⁹

Pittsburgh

BAR CLAMPS
 Multiple clutch plates permit instant adjustment. Simply depress plates to slide handle against workpiece. Includes heat-treated steel bars with cast iron jaws, plated steel screws, and hardwood handles.
 • All clamps have 3/4" pads and throat depth of 2-3/4"

LENGTH	ITEM	PRICE
6"	34387-1SJA	\$3 ⁹⁵
12"	05975-4SJA	\$4 ⁹⁵
18"	31264-3SJA	\$5 ⁹⁵
24"	05976-5SJA	\$6 ⁹⁵
30"	34389-1SJA	\$7 ⁴⁵
36"	34388-1SJA	\$7 ⁹⁵

CENTRAL MACHINERY

16" SCROLL SAW
 • Precision milled 14-1/2" x 8" table tilts 0° to 45°
 • 7/8" blade stroke
 • Use pin end blades, 5-1/2" long
 • 1750 SPM blade speed
 • Heavy duty cast iron frame and base reduces vibration
 • 1/8 HP, 110V, .83 amps
 • 5-1/2" blade length
ITEM 34618-0SJA \$59⁹⁹
5 PC. 5-1/2" SAW BLADES
 • Pin end type
ITEM 35024-0SJA \$4⁹⁹

DELTA
NEW!

10" BENCH SAW Delta 36-510
 Big saw capacity in a portable unit. Easy and safe to use with up-front controls and removable on/off switch. Front and rear locking rip fence and miter gauge maintain accuracy.
 • Motor: 13 amps, 115V, 4700 RPM
 • 5/8" arbor
 • Capacity: 3" max. depth, 2-1/2" max. depth at 45°
 • Dimensions: 15" x 26" x 19"
 • 40 lbs. tool weight
ITEM 35734-2SJA \$119⁹⁹
10" 40 TOOTH CARBIDE TIP SAW BLADE
 • Resharpenable precision ground tips
 • 5/8" arbor
ITEM 00529-4SJA \$9⁹⁹

CENTRAL MACHINERY

COMBINATION 4" BELT & 6" DISC SANDER
 Table (die cast aluminum): 7-1/2" x 5"
 Belt speed: 2168 feet per minute, 4" x 36"
 Disc speed: 3400 RPM, 6" diameter disc
 Motor: 1/3 HP, 115 volt, 60 Hz, single phase; Table adjusts from 0° to 45°
ITEM 06847-3SJA \$69⁹⁹
4" x 36" SANDING BELTS/6" DISCS

TYPE	GRIT	QTY.	ITEM	PRICE
Belt	120	5	03839-5SJA	\$19 ⁹⁹
Disc	120	50	03842-1SJA	\$9 ⁹⁹

CHICAGO Electric Power Tools

14.4 VOLT 3/8" CORDLESS DRILL KIT W/KEYLESS CHUCK
 High voltage, heavy duty battery gives long run times between charges.
 • Variable speed, reversible; 0 to 600 RPM
 • 6 torque settings
 • Includes 6 pc. drill bit set, 6 pc. screwdriver bit set, magnetic extension bit, charger, battery, Jacobs® keyless chuck, and carrying case
ITEM 34793-4SJA \$59⁹⁹
14.4V BATTERY
ITEM 34794-2SJA \$27⁹⁹
29 PC. HIGH SPEED STEEL DRILL BIT SET
 Sizes: from 1/16" to 1/2" by 64ths.
ITEM 02642-5SJA \$9⁹⁹

SAVE \$20

15 PC. TUNGSTEN CARBIDE TIPPED ROUTER BIT SET
 With long life tungsten carbide tips and the most used routing shapes, this is the set all serious woodworkers need. Ground to ultra close tolerances for the best finish available. Includes individually organized storage case.
 • 1/4" shanks
 Includes: 1-1/4" rabbeting♦, 1-3/8" cove♦, 1-1/16" roman ogee♦, 1-1/4" rounding over♦, 1/2" flush trimming♦, 1-3/16" 45° chamfer♦, 1/2" dovetail, 3/4" straight, 1/2" straight, 3/8" V-groove, 1/4" combination panel, 1/4" straight, 1/2" mortising, 1/4" self-piloting flush trim, 3/16" self-piloting 7° bevel trim
 ♦ Includes pilot bearing
ITEM 31164-2SJA \$49⁹⁹

RYOBI

 Ryobi BT3000
PRECISION 10" BENCH TOP CUTTING SYSTEM LIMITED QUANTITIES
 Get big saw capacity and performance from a bench top.
 • 15 amps @ 120 volts, 4800 RPM, 2 HP motor
 • Max. cut @ 90° 3-9/16"; @ 45° 2-1/2"
 • Rugged die cast aluminum table
ITEM 50450-4SJA \$329⁹⁵
STAND • 30" height
 Ryobi 4010300
ITEM 06906-1SJA \$73⁹⁹

CENTRAL MACHINERY

SAVE 31% FROM OUR SUMMER '96 CATALOG
6" INDUSTRIAL RABBETING JOINTER INCLUDES STAND
 • Infeed table size: 22-1/2"
 • Outfeed table size: 19-1/2"
 • Motor: 1 HP, 110V, 4 amp, 4900 to 5900 RPM cutter head speed
 • Maximum depth of cut: 3/8"
ITEM 30289-5SJA \$199⁹⁹
REPLACEMENT BLADE SET
ITEM 33271-2SJA \$15⁹⁹

* Within the 48 States / \$2.95 handling on all orders
 Call To Order or Ask for Free Catalog:
 Order 24 Hours a Day/7 Days a Week
 Most Phone Orders Shipped in 48 Hours

FAX TOLL FREE: 1-800-905-5220

1-800-423-2567

CHARGE IT!

 Or Send Check or Money Order to: Harbor Freight Tools, 3491 Mission Oaks Blvd. Box 6010, Camarillo, CA 93011

ASK WOOD

Continued from page 22

Paw prints on table

My dining room table has paw prints on it from my cat. I've used several different polishes to get them out, but so far none of these have worked. Can you help me?

—Jack Busser, Cincinnati

For an answer to your question, Jack, we talked with Jonathan Kemp of H. Behlen & Son, a finish manufacturing company. Jonathan told us, "The paw prints are probably set into the layers of wax and polish on the table, and using more polish just covers over the prints rather than removing them.

To get rid of the paw prints, you will need to remove the built-up layers of polish and wax from the tabletop.

"With mineral spirits, or a mixture of a non-perfumed dish soap, a few drops of ammonia, and warm water, wash the tabletop to remove the polish. Don't flood the surface with either the mineral spirits or the water and soap mixture. Instead, apply them with a damp rag, and wipe down the tabletop until no more wax or polish shows on your rag. Then, reapply a coat of wax to protect the finish."

A bit less off the middle, please

For years I have edge-joined boards with near-perfect results. But recently, every time I joint boards, I end up with a gap in the center section of the joint. I have checked all the adjustments on my tablesaw and jointer. What am I overlooking?

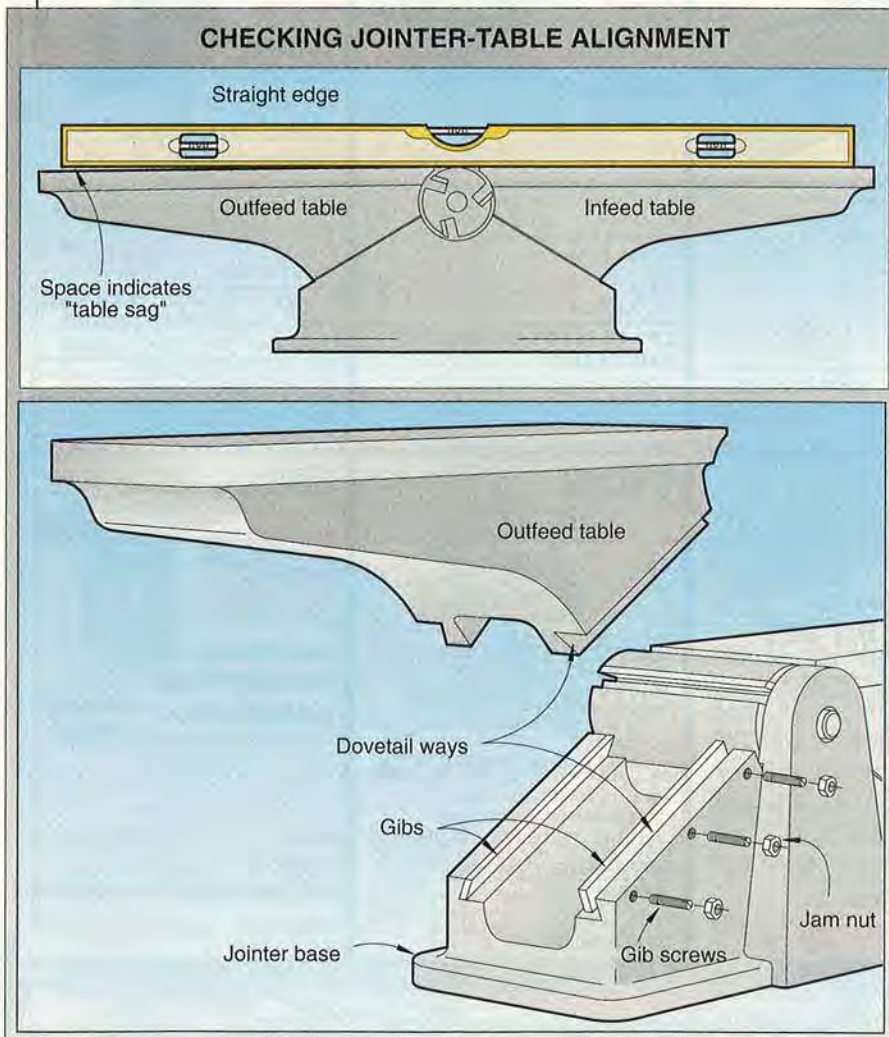
—Robert T. Osgood, St. Louis

We suggest you check two adjustments on your jointer, Bob. First, check the height of the outfeed table in relation to the knife height. If the knives are slightly higher than the top of the outfeed table, you will get a curved edge on your jointed boards.

To correct this on jointers with an adjustable outfeed table, raise the table slightly until the knife height and table height are the same. Then, test this setting by jointing two boards. Lower the knives on jointers with a fixed outfeed table to solve this problem.

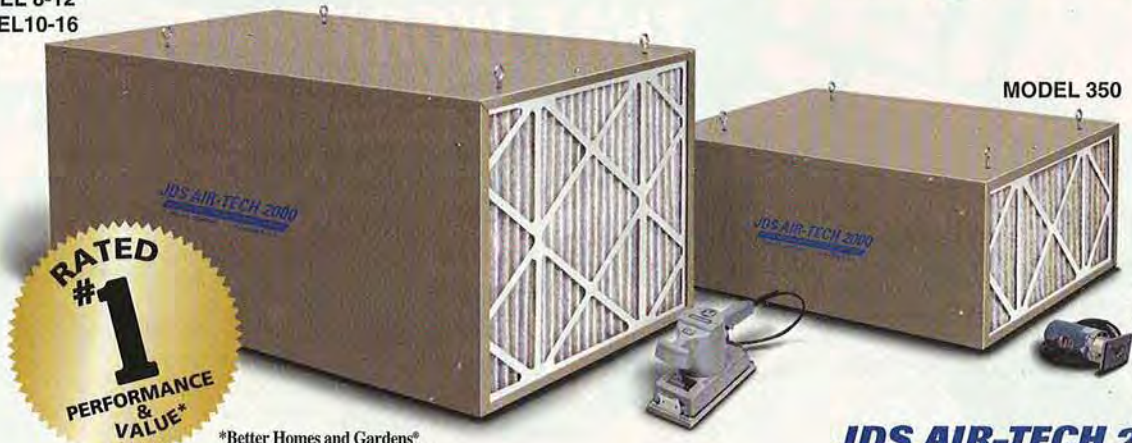
So-called table sag, often due to a loosening of the gib screws on the jointer ways, also will result in a jointer making a hollow cut. To check for this problem, raise the infeed table above the cutterhead knives. Lay a straightedge along the infeed table, and raise the outfeed table until it contacts the straightedge. A gap between the straightedge and the outer end of the outfeed table indicates table sag, as shown in the drawing *upper left*.

To correct this problem, first loosen, and then tighten evenly, the gib screws on the dovetail ways of the outfeed table (see drawing *left*). Place a straightedge lengthwise across both jointer tables, and you will see the outer end of the outfeed table move up as the gib screws are tightened. When the outfeed table becomes parallel with the straightedge, lock the gib screws in place with the jam nuts. Then, cut a test joint to check the results of your adjustment. 🐾



Give Yourself Some Breathing Room.

MODEL 8-12
MODEL 10-16



RATED #1 PERFORMANCE & VALUE*

*Better Homes and Gardens®
WOOD® Magazine (Nov. 95)

JDS AIR-TECH 2000™

Recent medical studies show that breathing wood dust can be hazardous to your health. The JDS AIR-TECH 2000 will dramatically improve the quality of the air in your workshop.

Our model 350 delivers 350 CFM of filtered air. This will clean the air in a 20 x 20 x 8 foot shop six and a half times per hour. For larger areas, our dual speed model 8-12 will deliver 800 or 1,250 CFM of filtered air for only \$495. Our model 10-16 will deliver 1,000 or 1,600 CFM of filtered air for \$695.

The JDS AIR-TECH 2000 systems will remove 99% of dust particles as small as five micron and 80% of the particles as small as one micron.

Our unique design makes both ceiling installation and filter changing quick and easy.

- All components UL Listed
- Lifetime Warranty
- 95% ASHRAE Tested Main Filter
- 30 Day Money Back Guarantee.

\$259.00
Model 350

Another quality product from
Manufactured in the U.S.A.

JDS COMPANY
1-800-382-2637

To place an order or for the dealer nearest you call us toll-free.

And give yourself some breathing room.

Z-SERIES

The New Grizzly G1067Z

Our new G1067Z 7" x 40" Swivel-Head Wood Lathe beats the competition hands-down when it comes to quality and value. Can be used for spindle turning or the headstock and tool rest can be rotated for convenient bowl turning. Automatic speed control has six settings. No more changing belts!

- Cast iron bed and headstock housing
- 13 3/4" swing over bed
- 40" gap between centers
- 1" x 12 T.P.I. RH spindle
- 1 3/32" bore through spindle
- M.T. #2 spindle taper
- 1/2 H.P. TEFC motor, 1725 R.P.M.
- Dual voltage: 110/220v, 12/6 amps
- 6 speeds: 600, 950, 1300, 1700, 1900, and 2100 R.P.M.
- Ball bearings in motor and spindle assemblies
- Push-button ON/OFF switch
- Headstock can be locked at any location on bed
- Approx. shipping weight: 200 lbs.

Headstock swivels 90° & 180° for outboard turning

Spindle indexes every 15°

Reinforced stand will not flex!

Quick release levers on both head and tail-stock



G1067Z
INTRODUCTORY PRICE
\$449.00!

F.O.B. BELLINGHAM, WA
or WILLIAMSPORT, PA



IMPORTS, INC.
Purveyors of Fine Machinery.

West of the Mississippi
1 · 800 · 541 · 5537
FAX: 1 · 800 · 225 · 0021

Call TOLL FREE 24 hours a day!
Ask for your FREE 1996 catalog!
Ask for Department # 65G

East of the Mississippi
1 · 800 · 523 · 4777
FAX: 1 · 800 · 438 · 5901

PORTER CABLE

90 YEARS OF IDEAS THAT WORK™

OUR PRICES
PRICE GUARANTEE
WON'T BE BEAT



90690K

More on next page....

9737PK



\$164.95

VARIABLE SPEED ALL PURPOSE TIGER™ SAW KIT with Quick Change Blade Clamp.

Includes 5 Pc. Blade Set \$10.00 Value



\$159.95

1-1/2 HP 90TH ANNIVERSARY ROUTER Includes 42160 Edge Guide \$18.95 Value



333P

\$79.95

RANDOM ORBIT HOOK & LOOP FINISHING SANDER With Dust Pickup



\$174.95

12V 3/8 DRILL KIT w/2 Batteries



9862

352VS



\$164.95

3" X 21" VARIABLE SPEED BELT SANDER With Dust Bag

BN200

\$149.95

18 GA. 3/4" - 2" BRAD NAILER KIT



743K

\$129.95

7-1/4" FRAMER'S SAW with carbide tipped blade, high impact carrying case,



Call today for our FREE full color 100 page catalog, featuring our most popular selling tools at the lowest prices. 1-800-582-6704



Make quick work of all your hard-to-reach sanding chores. Sand corners, curved surfaces, angles and more!

9444PK

\$114.95

PROFILE SANDER KIT Includes #14447 Extended Shutter Pad \$7.50 Value

TOOL CRIB

OF THE NORTH

1-800-358-3096

Or Fax Your Order 24 Hours A Day 1-800-343-4205

FREE SHIPPING on most orders over \$75.00!

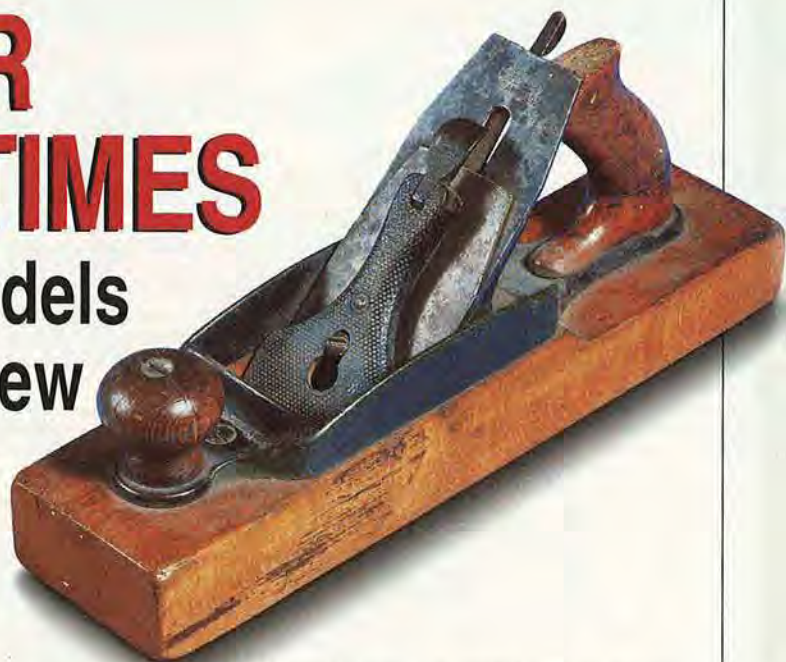


Wood/ Dec. '96

PLANES FOR CHANGING TIMES

Wood-and-metal models combined old and new

All-metal planes—precise, long-wearing, and easy to adjust—were fast gaining popularity a century ago. But another style tempered the movement toward metal for many woodworkers who still favored traditional wooden plane bodies.



The typical woodworking plane of the early 19th century featured a wooden stock, or body, mortised through for the cutting iron, a basic design little changed since Roman times. A wooden wedge commonly secured the iron. Inevitably, the iron would shift a bit in use, no matter how firmly it was wedged in. Adjusting the iron with any degree of precision took patience.

Then, in the summer of 1827, Hazard Knowles of Colchester, Connecticut, received a patent for a cast iron plane stock. Though the iron was still wedged in place, his invention started a revolution in plane making.

Iron was better, but . . .

Later refinements, including some pivotal ideas patented by Leonard Bailey in the 1850s and '60s, led to a practical iron plane. Chief among Bailey's improvements were his use of a thinner iron with a cap iron attached to it, a lever cap to retain the iron, and a screw mechanism for adjusting cutting depth (all features still found in today's planes). These innovations made it easy to sharpen and accurately adjust plane irons. In addition, the iron sole was less prone to wear.

Even so, many a woodworker still preferred the older planes. Some liked the smooth, easy way a wooden stock slid over the workpiece. Coupled with the wooden plane's lighter weight, this made long planing jobs less tiring. Plus, the newfangled metallic models cost more. And some joiners simply couldn't ignore tradition, which said planes were made of wood, period.

Old planes with a new twist

Those who liked wooden planes, yet appreciated the ease of adjusting the iron in metallic ones, quickly embraced another style—transitional planes. These hybrid models combined a wooden stock with a cast iron superstructure incorporating the adjustment features of the metallic planes.

In 1869, Stanley Rule and Level Co. introduced a full line of adjustable planes incorporating the Bailey patents. Of the 28 models, 17 were transitional planes.

One of the most unusual was the No. 37 Jenny smooth plane, *above*. At 13", it was the longest of three transitional smooth planes in the lineup, closer in length, really, to jack planes. (Smooth planes were ordinarily no longer than 12".) And it carried

a big 2½"-wide iron, a size otherwise found only in the transitional jointer planes 26-30" long. Some tool historians believe the Jenny was designed for fast finishing work on soft woods.

And the name? One theory (from the days before sensitive guys and political correctness) holds that Jenny is the feminine of Jack, making it an obvious name for a plane slightly shorter than a jack plane but a bit broader across the beam.

Despite the appeal of the hybrids, metallic planes ultimately ruled the market. By the mid-1930s, Stanley listed only half a dozen transitional models, then dropped those in the early 1940s. (The Jenny lasted until 1923.)

Transitional planes are popular today with tool collectors, according to John Walter of The Tool Merchant in Marietta, Ohio. Walter, the author and publisher of *Antique & Collectible Stanley Tools*, says a Jenny in complete, usable condition could bring \$150-\$350, with the top price reserved for a virtually new plane. Those made before 1884 could be worth even more. ♣

Written by Larry Johnston
 Photograph: John Hetherington
 Plane from the collection of F. E. Hanson,
 Cheyenne, Wyoming.



HOLIDAY SALE

STAR TOOLS, LLC.

1-888-678-8777

MON. - FRI. 7:00AM - 5:00PM (Pacific Time)

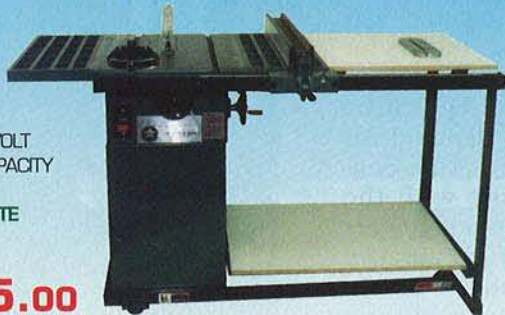


10" CONTRACTOR SAW

- 2 H.P.
- 110/220 VOLT
- 36" RIP CAPACITY
- BUILT IN DUST CHUTE

S3205
\$485.00

* TABLE BOARD NOT INCLUDED



HEAVY DUTY CABINET SAW

S3202
SPECIAL
HOLIDAY PRICE
\$950.00

Including:

- S3221 MOTOR COVER
- S3226 MICRO ADJUSTER
- S3857 DUST HOOD & FREE FREUD

LU82 10" BLADE

\$850.00
(SAW ONLY)



1-1/2 H.P. SHAPER

- 1/2" & 3/4" SPINDLES
- 2 SPEEDS /REVERSIBLE
- FREE DUST HOOD

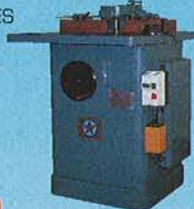
S3302
\$455.00



3 H.P. SHAPER

- 1/2" , 3/4" & 1" SPINDLES
- 2 SPEEDS /REVERSIBLE
- FREE DUST HOOD

S3303
\$795.00



OSCILLATING SPINDLE SANDER

- 1H.P. 110 /220 VOLT
- 1725 RPM
- 24" X 24" TABLE TILTS 45°

S3407
\$465.00



COMBINATION SANDER

- 6" BELT W/ 9" DISC
- QUICK RELEASE ON BELT
- 4" DUST PORT

S3401
\$185.00



14-1/2" BANDSAW

- 3/4 H.P. 110/220 VOLT
- 6" RESAW CAPACITY
- 1/8" - 1" BLADE

S3501
\$325.00



20" BAND SAW

- 3 H.P. 220 VOLT
- 12" RESAW CAPACITY
- ROLLER GUIDES

S3506
\$1,195.00



EDGE SANDER

- 1-1/2 H.P. 110/220 VOLT
- 6" X 30" BELT SIZE
- SANDS VERTICALLY & HORIZONTALLY

S3406
\$465.00



25" DUAL DRUM SANDER

- 5 H.P. 220 VOLT
- 2 SPEEDS 11 & 17 FPM /REVERSIBLE
- CAST IRON WORK TABLE

S3409
\$1,150.00



2 H.P. DUST COLLECTOR

- 1182 CFM
- 2 INTAKES @ 4" or 1 @ 5"
- STEEL IMPELLER

S3820
\$270.00



POWER FEEDER



S3702
\$650.00

- 1H.P. , 220 VOLT
- 4 SPEEDS
- REVERSIBLE

8" JOINTER

- 1-1/2 H.P. 220 VOLT
- 3 KNIFE CUTTERHEAD
- 8" X 65" BED LENGTH

S3102
\$665.00



6" JOINTER

- 1H.P. , 110/220 VOLT

- 3 KNIFE CUTTERHEAD
- 47" BED LENGTH

S3101KD
\$360.00



MAIN OFFICE SHOW ROOM

9825 PIONEER BLVD.,
SANTA FE SPRINGS, CA 90670
TEL: 310-654-3065
FAX: 310-654-3066



SHIPPING WAREHOUSE SHOWROOM

12 ARMORY ROAD.,
CLARKSBURG, WV 26301
(TECH SUPPORT ONLY) TEL: 304-624-6685
FAX: 304-624-6928

* PRICES & SPECS. ARE SUBJECT TO CHANGES WITHOUT NOTICE.

SWEET GUM

The chewing tree

In the old days, youngsters throughout the rural South went to the woods, not the grocery store, for their chewing gum. There, they sought out a tree with unusual star-shaped leaves and bark resembling alligator skin. From it they pried off, then popped into their mouths, yellowish brown balls of a fragrant, resinous substance with a licorice-like taste. Their treat was the sap of the native sweet gum tree (*Liquidambar styraciflua*). Little did they know that this natural confection, called liquidambar, had been in demand for centuries.

As reported by historians traveling with the explorer Cortés in 16th-century Mexico, the Aztec emperor Montezuma relaxed by puffing a cane stuffed with a mix-

ture of tobacco and a flavoring of liquidambar from a tropical variety of sweet gum. But even before that, in Europe, liquidambar was obtained through Asian traders for use in perfume, incense, and for treating diphtheria and flatulence.

Despite the world demand for liquidambar through the centuries, little was done with the yield of the North American sweet gum tree. It did serve as a curative for Confederate soldiers' dysentery, and was harvested during the Second World War when Asian supplies were cut off.

Sweet gum wood, though, has been another story. The often beautifully figured stock can resemble walnut. And when quartersawn, it passes as the costly Circassian walnut fancied for fine furniture and gunstocks. ♣



The sweet gum tree was to pioneer youth the rustic equivalent of a gum-ball machine.

Illustration: Jim Stevenson

HOT NEW PRODUCT RELEASE!

The 14.4v Cordless Drill You've Been Waiting For!

Why pay over \$200 for a quality Cordless Drill?

As part of a nationwide campaign, you can get our "top-of-the-line" full feature, dual range 14.4 Volt Cordless Drill with advanced L.E.D. Battery Readout for an industry shocking \$79⁹⁵. This is not a misprint. It's truly an incredible value. Plus, wait till you see the TWO FREE BONUS!

You'll get speed. You'll get power. And, at just \$79.95, you'll get the nation's best bargain on a 14.4v dual-range, variable speed cordless drill.

REVOLUTIONARY L.E.D. BATTERY

No more guessing games. Just touch a button

FREE!



If you're among the first 3,000 to take advantage of this exclusive direct offer, you will receive a 21-Piece Accessory Kit (a \$19⁹⁵ value) FREE!

And, if you're one of the first 1,000 people to respond, you will get the Accessory Kit PLUS a 9" Magnetic Torpedo Level (a \$29⁹⁰ combined value)!

These bonuses are yours to keep - even if you return the drill set. You're guaranteed to come out ahead no matter what. Call 1-800-925-2005 now!

Visit our web site: <http://www.greattools.com>

"Your 100% Satisfaction is Guaranteed!"

SIXTEEN Precision Clutch Settings

Low Speed: 0-550 RPM
High Speed: 0-1200 RPM

Powerful fan-cooled motor delivers 180 in. lbs. of torque.

Heavy Duty 3/8" Jacobs® Keyless Chuck



Superb power-to-weight ratio.

Variable speed, reversible switch.

UL Listed.

Perfectly balanced T-handle design stands on its own.

14.4-volt Battery with 10 L.E.D. Charge Indicator

Now Just \$79⁹⁵

and the battery's advanced L.E.D. readout shows you the current charge level. This is state-of-the-art cordless technology.

TRY IT YOURSELF RISK-FREE

Go ahead. Feel the balance. Feel the power. If this drill doesn't exceed your expectations, we insist you return it within 30 days for a no-questions-asked refund of the full merchandise price.

To order your Dual-Range, Variable Speed 14.4-Volt Cordless Drill with ABS carry case, battery charger and advanced L.E.D. battery, call toll-free, 1-800-925-2005 or send your check for just \$79⁹⁵ (\$7⁹⁵ S&H). Item No. 50-1W.

Extra L.E.D. batteries are just \$39⁹⁵ each (\$3⁹⁵ S&H). Item No. 55-0W. CA res add sales tax.

Call Toll-FREE 1-800-925-2005 • Great Tools Direct! 587F Ventu Park Rd. - Dept. 801 Thousand Oaks, CA 91320



One Stop Wood Shop

- Plywood & Veneer made to order (no min.)
- 30 species
- Custom Cutting
- Competitive Pricing
- We bundle & ship to U.S. & Canada
- Over 65 years of personal service

For catalog & quote: (617) 666-1340

Boulter Plywood Corp.

24-WD Broadway, Somerville, MA 02145

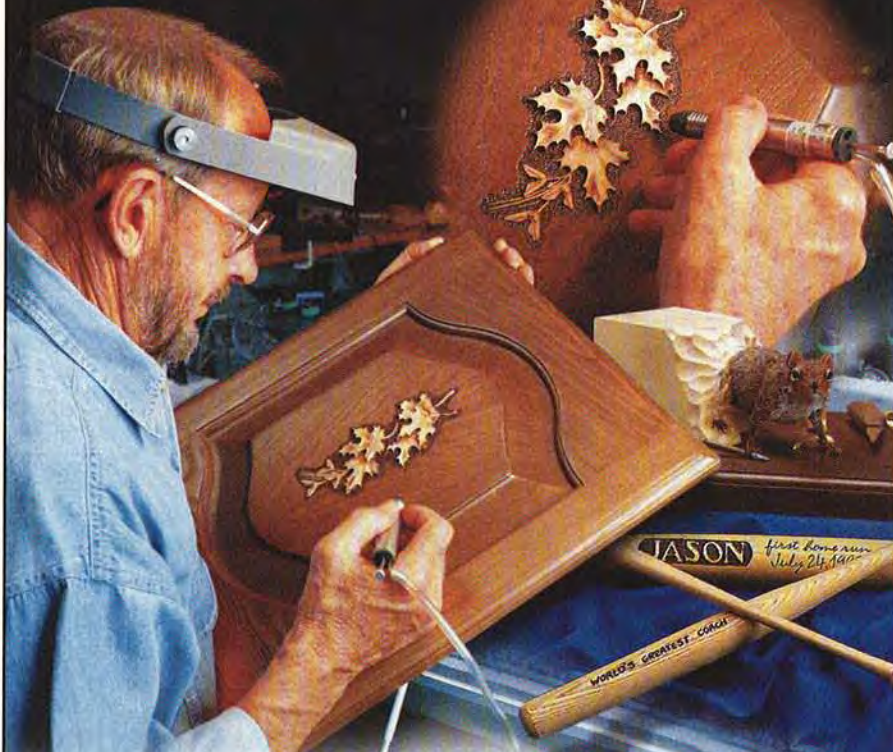
Where the finest cabinetmakers select & blend domestic & exotic hardwood in plywood, veneer & lumber.

WOOD

Circle No. 512

Having Fun Making Money...

A Dream Come True for Woodworkers.



For Keith Hone, a Utah native, making money and having fun go hand in hand. Using the new ultra high speed engraving technology developed by the Paragraphics Corporation, Keith can engrave beautiful designs on virtually any surface. The demand for this type of work is tremendous!

It's fast... and easier than you might think!

With an easy-to-use stencil system, you can transfer any design, artwork, or logo to any hard surface. By simply tracing lines using the Paragrave handpiece spinning at speeds of over 300,000 rpm, you can create beautiful carvings and engravings and the system does the work for you. It's that simple!



Call 1-800-624-7415 and get your demonstration video today to learn more about how you can make money and have fun too!

Paragraphics
CORPORATION

1-800-624-7415

1455 W. Center Orem, Ut 84057

Circle No. 2160

NEW!

PERMATRAK

Full Function Drill Press



5 Rotating Spindle Speeds
5 Oscillating Speeds
8-in. Swing / 1/3 HP
Quick Changeovers & more!

Unprecedented versatility!

Our patent pending design functions as a standard drill press. Engage the power oscillation and its an oscillating drum sander, a power filing machine, an oscillating grinder or shaping power rasp. The rotation along with oscillation makes it possible to perform all these functions. Changing functions is simple and fast. Our precision gear drive insures smooth, even operation.



AMT Shaping Your World Since 1928.

\$129.50 Price good thru 1996

Plus Freight. PA residents add 6% Sales Tax

ORDER NOW TOLL FREE
1-800-435-8665



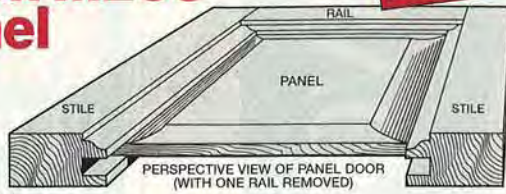
ACCEPTED

American Machine & Tool Co., Inc.
400 Spring Street, Royersford, PA 19468

Save 55% on MLCS Raised Panel Door Sets

FREE

Router Bit Poster With Purchase!
WOOD Magazine's "Guide to Router Bits" Poster Size Reference Chart



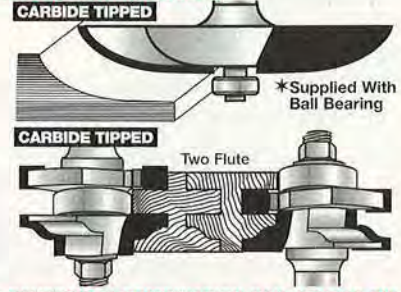
Make Beautiful Raised Panel Doors with your 1/4" or 1/2" Router, or with your 1/2" or 3/4" Shaper.

Our carbide tipped, professional production quality router bits and shaper cutter make it quick and easy to produce attractive raised panel doors. Our reversible combination bit makes a matching rail and stile frame. The panel raising bit with ball bearing guide makes a perfect raised panel every time!

Regular Price Over \$150!

Raised Panel Door Sets			
SET#	BIT STYLE	RAISED PANEL LRG. DIAMETER	SET PRICE
#1301	1/4" Shank Router	* 2"	\$69.95
#1302	1/2" Shank Router	* 3-1/2"	\$79.95
#1303	1/2" Shaper	4-5/8"	\$99.95

RAISED PANEL ROUTER BIT



*REVERSIBLE COMBINATION RAIL & STILE BIT
Works with stock from 11/16" to 7/8".

QUANTITY DISCOUNT
When ordering 3 or more router bits deduct \$1.00 each!

1/4" SHANK CARBIDE TIPPED ROUTER BITS

PROFESSIONAL PRODUCTION QUALITY GUARANTEED!

OGEE RAISED PANEL

#1423 \$29.95
2" Large Diameter

BULL NOSE

#1330 \$16.00
1/2" Dia. of Circle

#1331 \$21.00
3/4" Dia. of Circle

TONGUE & GROOVE

#1333 \$29.00
Straight

#1335 \$29.00
Wedge

PATTERN/FLUSH TRIM

#1340 \$15.00
1/2" Diameter, 1" Cutting Length

#1341 \$17.00
3/4" Diameter, 1" Cutting Length

FLUSH TRIM

#1337 \$8.50
3/8" Diameter, 1" Cutting Length

#1338 \$9.50
1/2" Diameter, 1" Cutting Length

ROUND OVER

#1314 \$11.00
(1/8" Radius)

#1315 \$11.00
(3/16" Radius)

#1394 \$13.00
(1/4" Radius)

#1316 \$14.00
(5/16" Radius)

#1369 \$15.00
(3/8" Radius)

#1370 \$17.00
(1/2" Radius)

RABBETING KIT

By changing the ball bearing guides you will be able to select 4 different depth of cuts. Set consists of a 1/4" shank rabbeting bit, 4 bearings (3/8", 1/2", 5/8", 3/4") and a hex key.

Depth of cuts: 3/8", 7/16", 5/16", 1/4"
Large diameter: 1-1/2"

KIT #1425 Regular Price \$37.50
SALE \$25.00

25 PC BRAD POINT DRILL BIT SET

Drill accurate holes in wood, plastics & composites. Bit sizes from 1/8" to 1/2" by 1/64" increments. Bits are deep fluted to clear chips quickly.

Item #1413
Reg. \$34.95
SALE \$18.95

METAL CASE & BIT HOLDER INCLUDED!

All bits also available in 1/2" shank.

FREE SHIPPING
IN CONTIGUOUS USA FOR ALL ITEMS

SOLID BRASS ROUTER INLAY SET

Make perfect fitting recesses and inlays!

This easy to use inlay kit follows a 1/4" thick pattern template of almost any shape to produce the recess. Create precisely matched inlays by simply removing the bushing. Will fit your Porter Cable®, Black & Decker® or any router with a manufacturer supplied adaptor for Porter Cable bushings. Includes a 1/8" solid carbide downcut spiral bit, brass bushing, brass template guide, brass retainer nut plus instructions.

*Order Set #1427 for all other brands of routers. Includes Set #1426 plus adaptor bushing and router template guide kit.

SET #1427 **SALE \$37.95**

SET #1426 Regular Price \$29.95
SALE \$21.95

BISCUIT JOINING SET

5/32" Slot Cutter-1/4" Shank and 250 #20 Biscuits

Special "Biscuit Joining with your Router", Instructional sheet included.

ITEM #1385
Regular Price \$35.00
FAST & EASY SALE . . \$29.95

MERLE The ADJUSTABLE CORNER CLAMP

- Almost NO capacity limitation
- Forces a Frame into a perfect square
- Even jointing force at ALL corners
- Adjustable, uniform clamping pressure
- Great for wide cabinet frames (for center or edges)
- Aluminum & Steel construction

ITEM #1420 Reg Price \$39.95
SALE . . . \$24.95

ROUTER SPEED CONTROL

CONTROLS THE SPEED OF YOUR ROUTER! Gets the best results with the wood and bit you are using!

- Works with all routers 3-1/4" HP or LESS - 120V 15 Amp
- Full horsepower and torque at all speeds
- Gives your router a feature only available on routers costing hundreds of dollars!

ITEM #1304 Regular Price \$49.95
SALE \$34.95

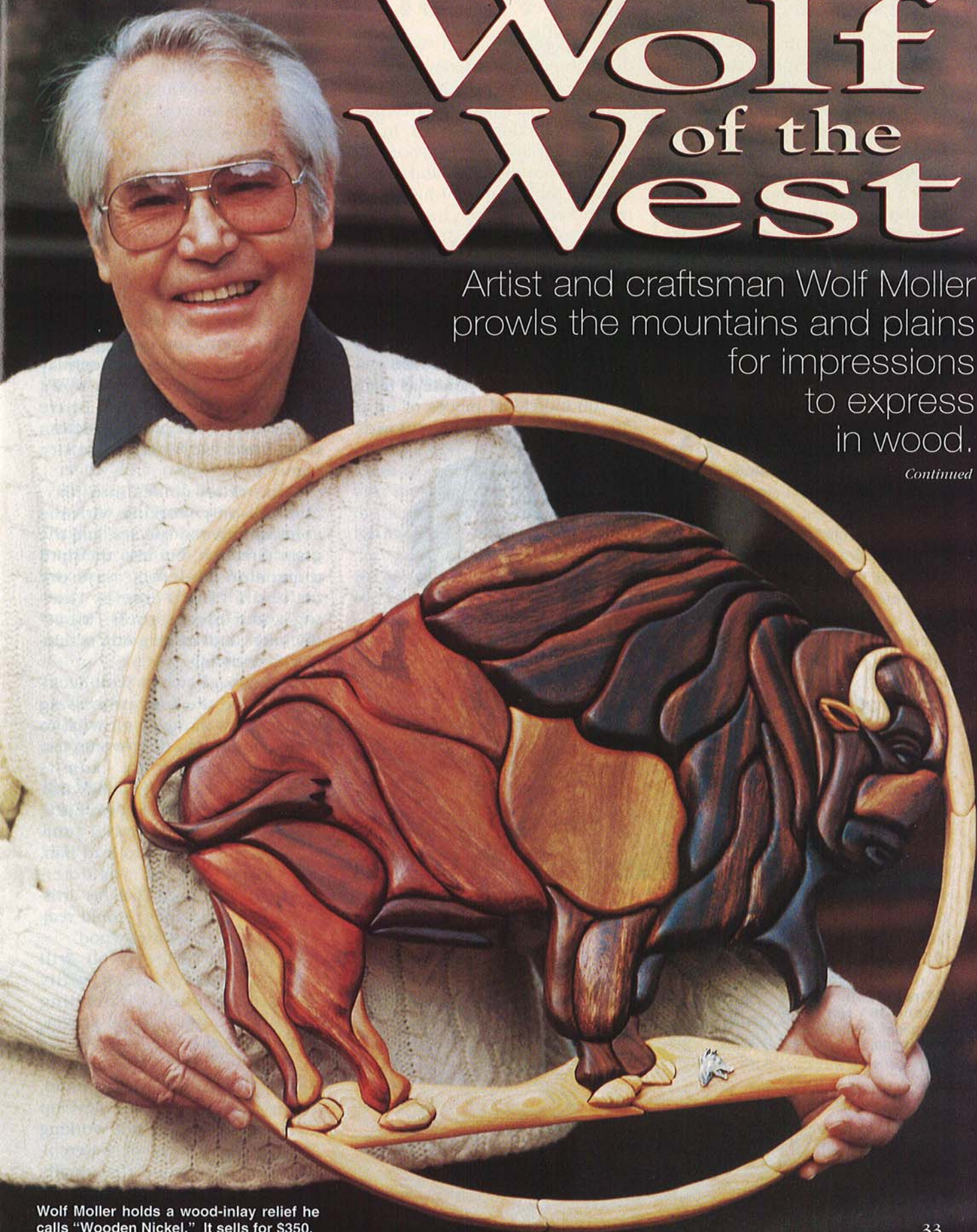
To Order By MasterCard, VISA, Discover, or American Express
CALL TOLL-FREE, 7 DAY - 24 HOUR ORDER SERVICE
Or Send Check To: MLCS, Ltd., P.O. Box 4053 DF, Rydal, PA 19046

MLCS 1-800-533-9298
©1996 Professional Woodworking Products

Wolf of the West

Artist and craftsman Wolf Moller
prowls the mountains and plains
for impressions
to express
in wood.

Continued




Wolf Moller holds a wood-inlay relief he calls "Wooden Nickel." It sells for \$350.

Wolf of the West

Argentina. Bolivia. Brazil. Chile. Colombia. Germany. Mexico. Switzerland. Wolf Moller rattles off the names of countries where he's lived and worked as if he were a train conductor announcing stops.

As a mechanical engineer in the food-processing industry, Wolf was in worldwide demand. He and his wife, Hildy, moved from country to country. On weekends and holidays, they explored, and got to know each land and its people intimately. From peasant farmers and plantation workers to woodcarvers, potters, and silversmiths, the couple learned the dialects, traditions, skills, and folk arts that surrounded them.

 [Print this article](#)

Now actively retired, Wolf, 66, draws on those experiences from days gone by, and the impressions of the American West, for his new career—working in wood. In his Payson, Arizona, workshop, he skillfully portrays the landscapes, wildlife, and people of his travels in pieced-together native and exotic woods. Wolf calls his expressive style “wood-inlay relief” because unlike marquetry or intarsia, it features the twist of a novel third dimension.

A full palette of species

Wolf's works incorporate as many as 700 individual pieces of up to 30 different wood species.

There's bubinga, baldcypress, Eastern red cedar, ponderosa pine, imbuya, monkeypod, zebra-wood, peroba rosa, and koa, to name just a few. And he selects each piece of wood for not only its color but also its grain.

“I know my woods, and the colors of them as they should be in the picture,” Wolf explains. “But for each one, I also must decide how dramatic I want to make it. If I want to make the animal or scene a little bit more lively, I put brighter, more contrasting woods into it. At first glance, they may appear to be woods that don't belong together. But once I have manipulated the grain direction [see photo *left*], the picture comes to life.”

Then, relief comes into play. “I'm not only working with the contrast in wood species, and the grain direction, but also the third dimension of depth,” says the craftsman. “That's done by leaving some pieces their full $\frac{3}{4}$ " thickness, and making others thinner by resawing.”

Six years ago, when Wolf decided to leave the food-processing industry, his thoughts on what to do and how to do it weren't so perfected. He admits approaching woodworking like an apprentice, but without a journeyman to lead him. Yet, he was determined that his artistic ability could realize itself in wood.

Today, Wolf still doesn't feel really comfortable calling himself a woodworker.

But because he creates, he does believe that he's an artist. “I start with an image in my mind, then put it to paper and develop it,” he says. “But I'm not working with oils, pastels, or watercolors. It is wood that finally



“Tired Hunter” is about 36" tall. The poignant scene sells for \$1,800.



Wolf cuts each piece for a picture to rough shape on a bandsaw, then contours it with an inflatable drum sander.



After the first pass by the sander with 40-grit, the assorted wooden pieces go back down on the pattern for a final inspection.

enables me to portray what I see much more strikingly than I could possibly do in paint."

Although Wolf has found that some wood species work better than others for certain aspects of a picture, he doesn't have a favorite wood. "I just look to see what woods will work best for what I intend to portray," he notes. "I have learned, though, not to use ebony. It's so dark that I can't see my marks on it when I'm laying out the work! For very dark areas, I put in tropical walnut or wenge."

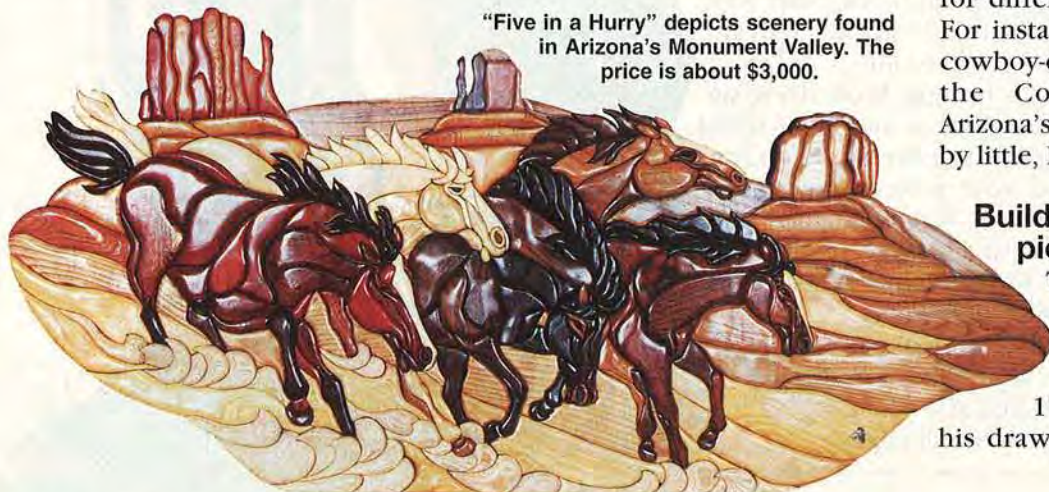
He builds a portfolio of the West

From their hilltop home Wolf and Hildy can see the distant

Mogollon Rim, a steep rock wall nearly 2,000' high that separates them from the high desert. Quail visit their backyard. Coyotes howl in the wilds of the adjacent Tonto National Forest. And in the summers when Phoenix broils, the forested rimrock country surrounding them remains pleasant.

"We lived for a while in Austin, Texas, but most of my sales were at shows in New Mexico," recalls Wolf, "so we then moved to Albuquerque. Soon, I was selling in Arizona, too. When we finally decided that we would sell my work on the show circuit," he continues, "it appeared that home and shop could be anywhere, so why not in God's country, Payson, Arizona?"

"Five in a Hurry" depicts scenery found in Arizona's Monument Valley. The price is about \$3,000.



Going on the road means loading up the van and trailer for excursions to Phoenix, Scottsdale, Santa Fe, Las Vegas, Denver, and venues in California. It also means living in motels, eating restaurant meals, and setting up and taking down the booth display. On the plus side, there's exposure to new vistas and new ideas.

"I'm influenced by what I see throughout the West, and the people I meet expand my horizons, too," says the graying artisan. "I've had them describe the pheasants on the plains where they live. So I started creating colorful pheasants. Others told me their love for wolves, and I began making wolves. I change backgrounds, too, such as mountains, for different geographical areas. For instance, I've made the same cowboy-on-horseback scene with the Colorado Rockies and Arizona's Monument Valley. Little by little, I build up my portfolio."

Building images piece by piece

The images for Wolf's pictures begin in his mind's eye, but he soon transfers them to 1"-grid paper. Standing at his drawing table, he pencils in

Continued

Wolf of the West

line after line, square by square until the design is complete. Only then will he decide on the wood.

"When I shop for wood, I look for color, beauty of grain, and variety," he comments. "And I buy as much as I can afford so that I'll have a wide selection on hand to choose from later."

Selecting the wood involves first transferring the newly created design onto tracing paper. With a pencil, Wolf then marks the grain direction of each piece in the design and notes the color he wants it to be. "I don't write down the wood species because I'm only concerned with what it should look like," he notes.

Now, he can scout his stock. With the traced design in one hand and a sheet of carbon paper in the other, Wolf scans the boards and remnants of boards leaning against the shop wall. As he finds likely candidates, he puts the carbon paper on the wood, lays the design over it, and transfers the outline of the section to it. Board by board, the selection process goes on until all the wood has been assigned and checked off on the pattern.

If the board chosen happens to be too large to fit the throat of his bandsaw for the rough cutting, Wolf saws out the wanted portion with his portable jigsaw. Then, he

takes it to the bandsaw with all the other wood to be sawn.

After he has cut out all of the pieces, he lays them down on the pattern to check for shape and to calculate contours before sanding. "I may see that I have chosen the wrong wood for a piece when they are all together," he laughs. If his selections meet his expectations, Wolf moves the pieces to his 2"-diameter inflatable drum sander. There, using 40-grit paper, he rough-sands them, creating round-overs, angles, and hollows.

When he's finished, the assembled pieces have the look and feel of a three-dimensional contour map. "After rough-sanding, I lay

Boots not made for walkin'

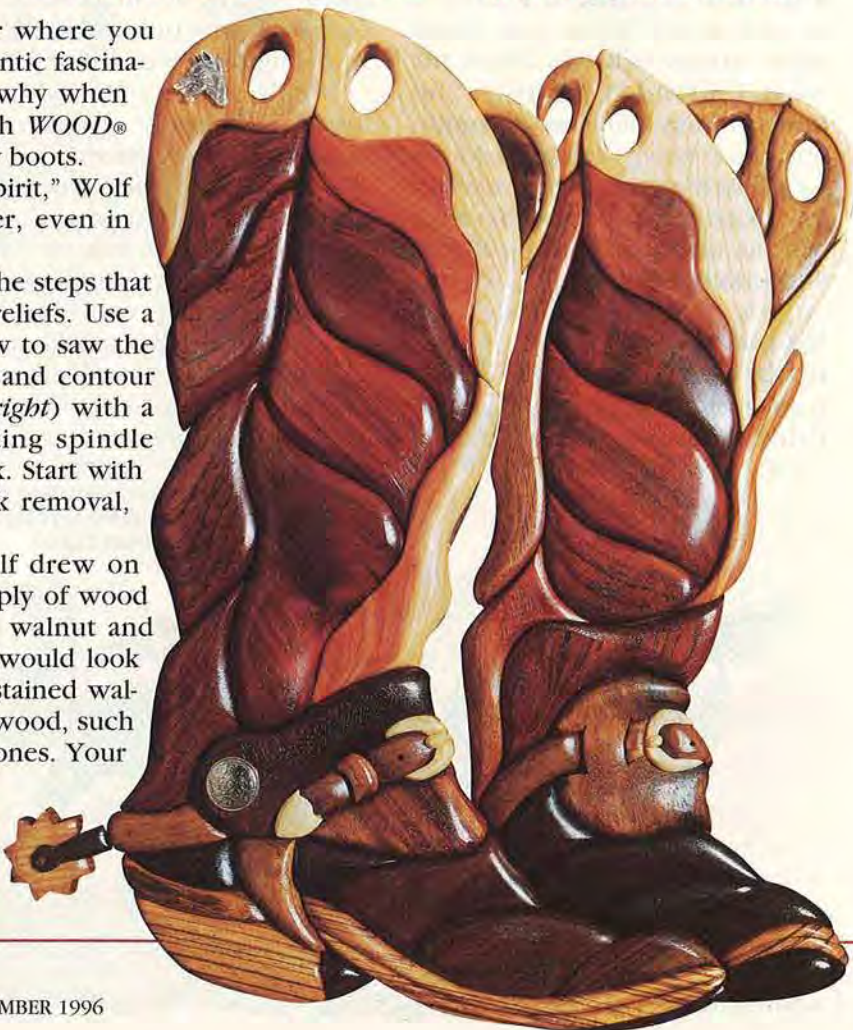
Wolf Moller believes that no matter where you live, you probably have at least a romantic fascination with the American West. That's why when we asked him to share a design with *WOOD*® readers, he offered this pair of cowboy boots.

"They're a symbol of the Western spirit," Wolf says. "You see cowboy boots all over, even in Boston and New York."

Refer to the preceding pages to see the steps that Wolf takes to create his wood-inlay reliefs. Use a bandsaw, scrollsaw, or portable jigsaw to saw the wood to shape. You can round over and contour the pieces (as shown in the photo *right*) with a rasp, random-orbit sander, oscillating spindle sander, drum sander, or sanding block. Start with a coarse-grit abrasive for rough stock removal, then progress to 120-grit for finishing.

Note: In creating this design, Wolf drew on stock from his virtual candy-store supply of wood species—from bubinga and cedar to walnut and zebrawood. We believe your project would look great simply done in natural walnut, stained walnut for the darkest areas, and a white wood, such as maple, ash, or pine, for the lighter ones. Your scrapwood box may offer alternatives.

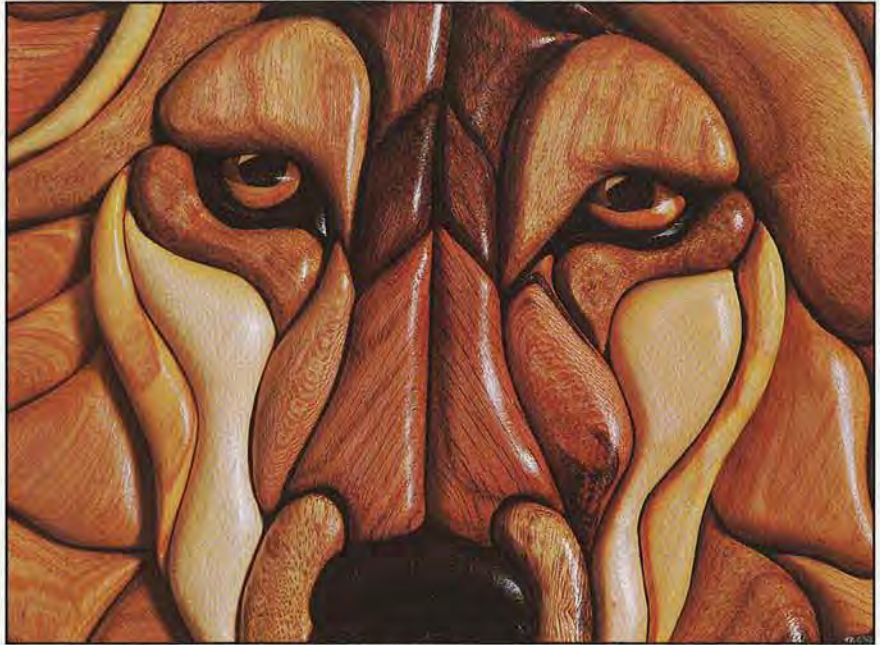
You also might choose to make a smaller version. If so, reproduce the pattern *right* to the desired size, then scale down the materials accordingly.



them all down again to inspect their overall shape," he says, making a pencil mark here and there on the wood. "For the final sanding, I use 120-grit. Then, the pieces are ready to fasten down."

With yellow glue, Wolf adheres each piece to the 1/4" tempered hardboard backing sawn to the design's outline. When the glue has cured, he seals the wood with Moser's Danish Oil Finish. In two days, the work will get a couple coats of Bartley's gel varnish.

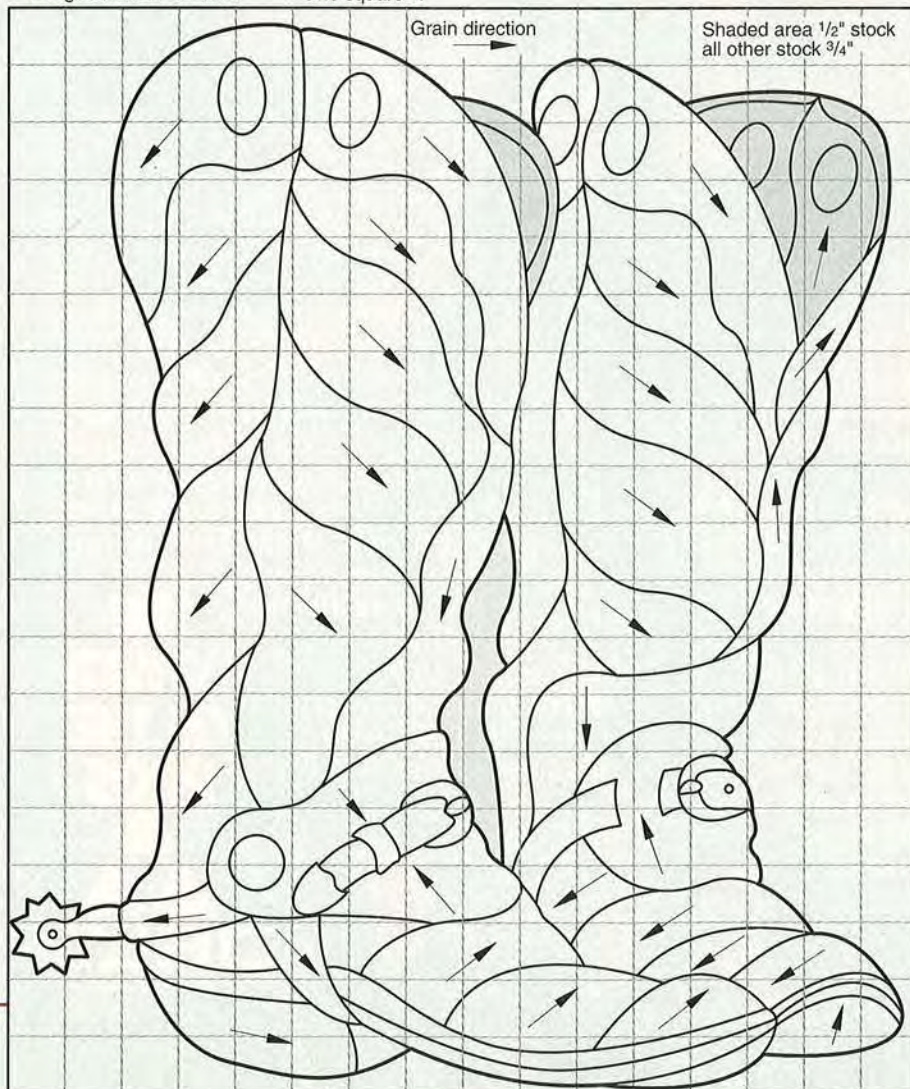
For a final touch, Wolf adds the sterling silver wolf head. "It's more effective than a signature," he says. And, it's in keeping with the West he has grown to love. ♣



This close-up of a wolf's head shows Wolf's use of wood grain and the detail he puts into features such as eyes.

Enlarge 300% for full size

One square=1"



To order a full-sized pattern, send a SASE and \$2 (U.S.) to:
BOOTS, WOOD® Magazine,
 1912 Grand Ave.,
 Des Moines, IA
 50309-3379. ♣

To make Wolf's 15½×18" cowboy-boot plaque, you'll need the following:

- A 16×20" piece of tracing paper for the pattern
- Carbon paper
- A selection of 3/4"-thick dark- and light-colored hardwood (or softwood) scraps. See article *left*.
- A 1/4×16×18½" piece of tempered hardboard for backing
- Yellow or white woodworker's glue
- A silver or pewter blazer button
- Stain and clear finishing material

Written by Peter J. Stephano
 Photographs: Tom Brownold
 Drawing: Roxanne LeMoine
 Design: Wolf Moller © 1996

THE DELTA Q-3. LIKE A FORMULA RACE CAR WITH A BLADE.



We're talking pleasure here. Precision. Power. Wait 'til you get your hands on this high-performance machine. It just gets better and better around every turn. The Delta Q-3 18" Variable Speed Scroll Saw. A scroller's dream machine.

Its Quickset™ II Blade Changing System is the second generation of a Delta exclusive. The fastest in the industry. No wrenches, no aggravation, no wasted time while threading or changing blades. You'll find it on no other saw.

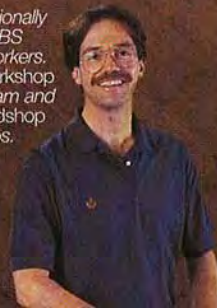
The arched, graphite composite arm eliminates vibration. So smooth and quiet you can listen to the sweet sound of your blade cutting wood, instead of your saw breaking the sound barrier. And at the very tip of that graphite arm you'll find the control switches. Right under your nose, instead of having to fumble around below the table.

As you'd expect, the cast iron table tilts to allow bevel cutting. But what you might not expect is the fact that the adjustable steel stand also tilts forward to give you a better view of the job, and just the right angle for comfortable operation.

This one's ready to test drive right now at your Delta dealer. If you're ready to cut circles around the rest, call us for the dealer

nearest you. Delta International Machinery Corp., 800-438-2486. In Canada, 519-836-2840.

Delta is proud to nationally fund these two PBS programs for woodworkers. The New Yankee Workshop hosted by Norm Abram and The American Woodshop with Scott Phillips.



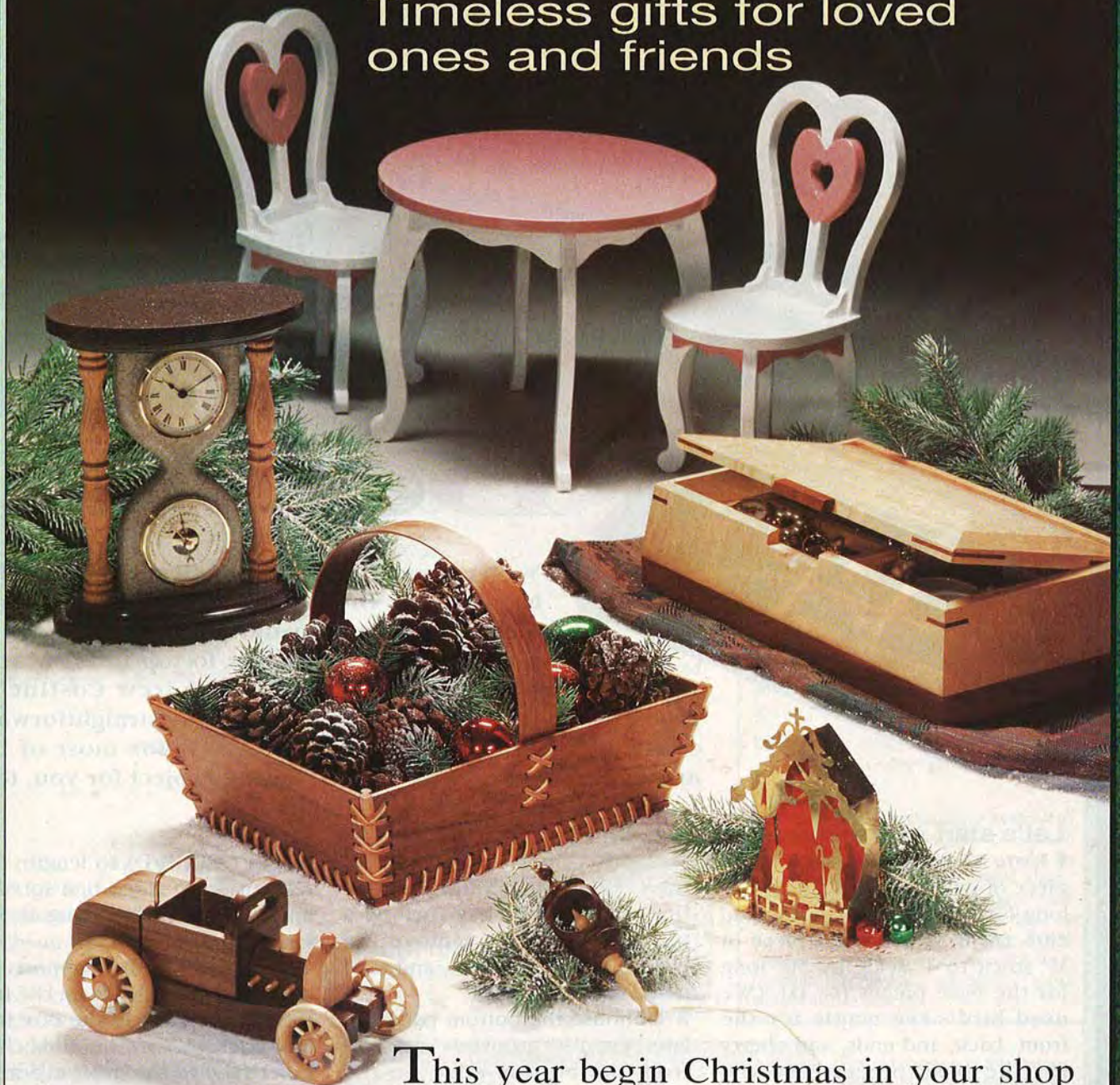
Visit us on the WEB:
<http://www.deltawoodworking.com/delta>

**THE
POWER
OF THE
PROS**

DELTA
WOODWORKING MACHINERY
A Pentair Company

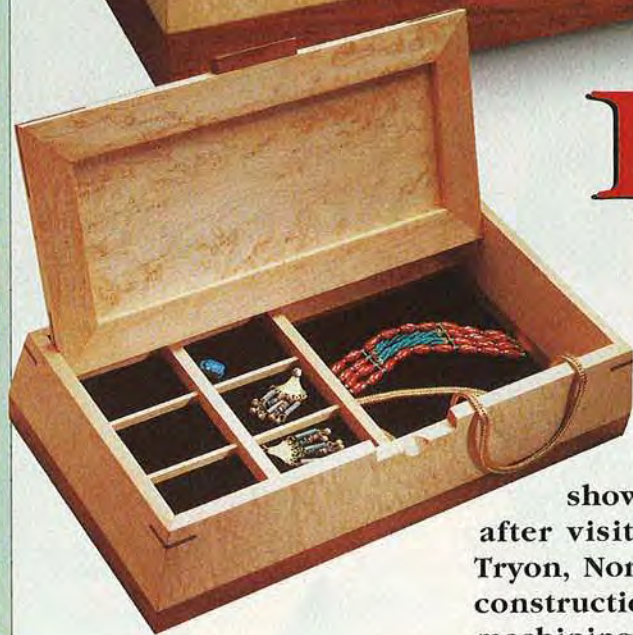
Holiday Treasures

Timeless gifts for loved ones and friends



This year begin Christmas in your shop by making one or more of the seven gifts and decorations featured here.

Projects begin on page 40



Jewelry storage
that's a sight to behold

Beveled Beauty

We've seen hundreds of beautiful jewelry boxes over the years, but when we came across this one at a national arts-and-crafts show, we knew we'd found one to top the list. And, after visiting with designer/builder Andrew Costine of Tryon, North Carolina, and listening to his straightforward construction procedure using a tablesaw for most of the machining, we knew we had a winning project for you, too.



Let's start with the basic box assembly

1 From $\frac{3}{4}$ " hardwood stock, cut a piece of wood to $2\frac{1}{2}$ " wide by 50" long for the box front, back, and ends (A, B). Next, cut a piece of $\frac{3}{4}$ " stock to 1" wide by 50" long for the base pieces (C, D). (We used bird's-eye maple for the front, back, and ends, and cherry for the base pieces. See the Buying Guide for our source of a hardwood kit for this project.)

2 With the surfaces and ends flush, glue and clamp the

$\frac{3}{4} \times 2\frac{1}{2} \times 50$ " cherry to one edge of the $\frac{3}{4} \times 2\frac{1}{2} \times 50$ " maple. Remove the glue once it has formed a tough skin. Later, remove the clamps and excess glue, and sand both surfaces smooth.

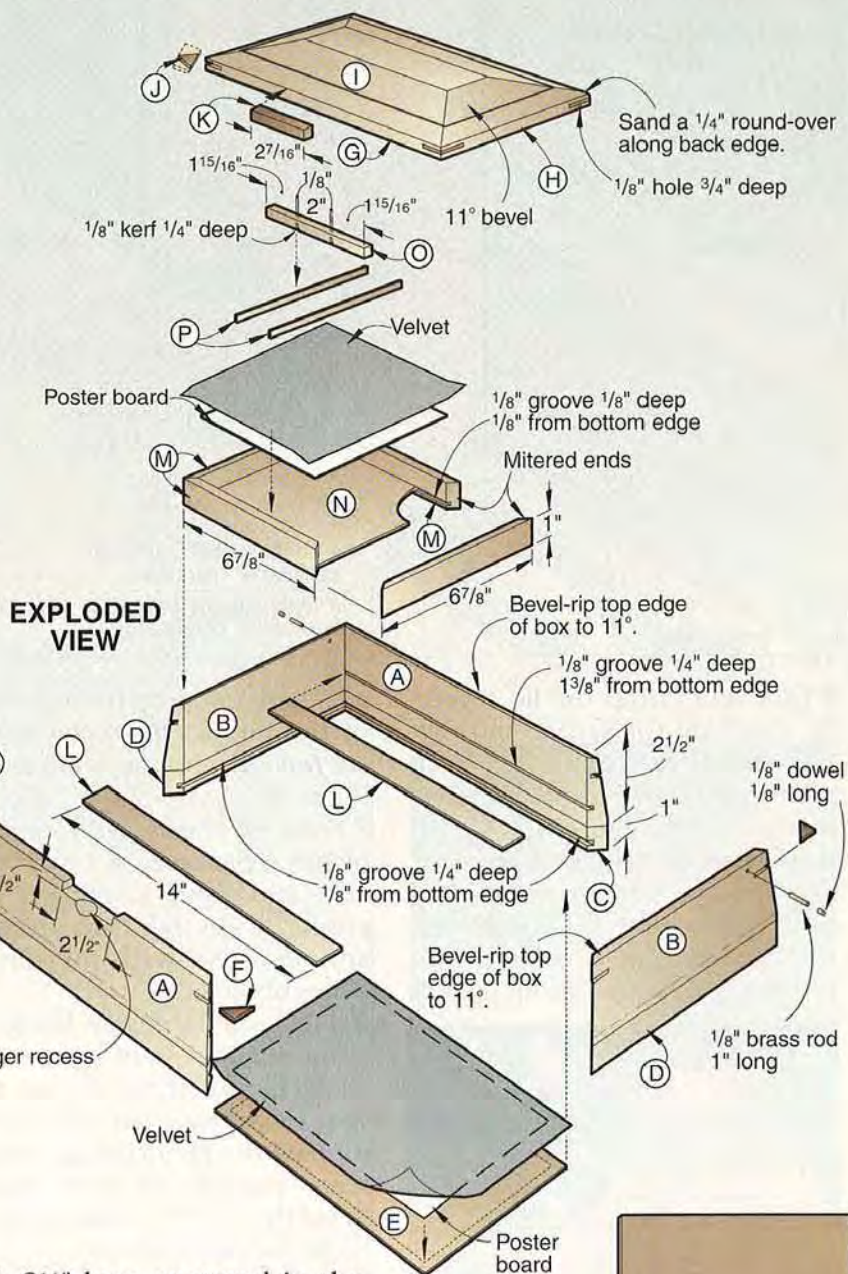
3 To house the bottom panel (E) later, cut a $\frac{1}{8}$ " groove $\frac{1}{4}$ " deep $\frac{1}{8}$ " from the bottom edge (in the cherry) on the inside surface in the 50"-long edge-joined strip.

4 Using a stop for consistent lengths, miter-cut the four box

pieces (A/C, B/D) to length. (We test-cut scrap stock first to verify an accurate 45° setting before cutting the box pieces.)

5 To house the tray supports (L), cut a $\frac{1}{8}$ " groove $\frac{1}{4}$ " deep $1\frac{3}{8}$ " from the bottom edge in the box front and back (A/C). The ends (B/D) don't receive the groove. See the End Section View for reference.

6 Fit your tablesaw with a dado blade and your miter gauge with a wooden extension. Now, cut a $\frac{1}{2}$ "

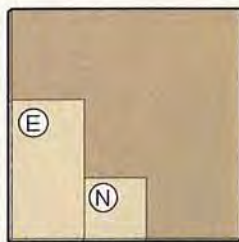


EXPLODED VIEW

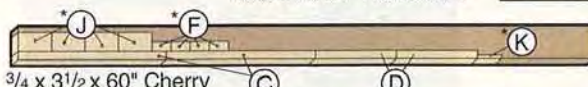
- notch 2½" long centered in the top edge of the box front (A).
- 7** To form the finger recess at the notch, mount a ¾" drum sander in your drill press, and sand a recess centered and angled in the notch where shown on the Exploded View drawing.
- 8** Cut the box bottom (E) to size from ¼" hardboard.
- 9** Finish-sand the *inside* surface of the box pieces with 220-grit sand-

Continued

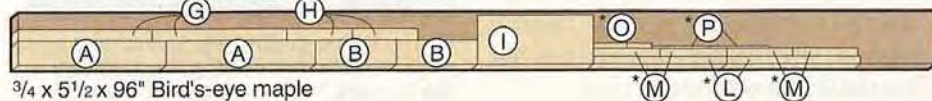
CUTTING DIAGRAM



1/8 x 24 x 24" Hardboard



3/4 x 3 1/2 x 60" Cherry



3/4 x 5 1/2 x 96" Bird's-eye maple

Bill of Materials

Part	Finished Size			Mtrl.	Qty.
	T	W	L		
A* front & back	¾"	2½"	15½"	BM	2
B* ends	¾"	2½"	8½"	BM	2
C* base front & back	¾"	1"	15½"	C	2
D* base ends	¾"	1"	8½"	C	2
E bottom	¼"	7 7/16"	14 7/16"	H	1
F spline blanks	¼"	1"	2"	C	4

LID

G* front & back frame members	¾"	1¼"	13 15/16"	BM	2
H* end frame members	¾"	1¼"	6 7/8"	BM	2
I panel	¾"	5 5/16"	12 1/8"	BM	1
J spline blanks	¼"	1¼"	3"	C	4
K handle	7/16"	1 7/32"	2 7/16"	C	1

TRAY

L supports	¼"	¾"	14"	BM	2
M* front back & ends	¾"	1"	6 7/8"	BM	4
N bottom	¼"	6 5/16"	6 5/16"	H	1

DIVIDER

O center	¾"	½"	6 1/8"	BM	1
P strips	¼"	¼"	6 1/8"	BM	2

*Initially cut parts oversized. Then, trim each to finished size according to the how-to instructions.

Supplies: ¼" dowel stock, ¼" brass rod, poster board, velvet, clear finish.

Materials Key: BM—bird's-eye maple, C—cherry, H—hardboard

Buying Guide

Hardwood kit. All the individual pieces shown on the Cutting Diagram cut slightly oversized in length and width from the thicknesses listed in the Bill of Materials from bird's-eye maple, cherry, and hardboard. Plus, ¼" brass rod and ¼" dowel stock for hinge assembly. And, enough fabric for the box bottom and tray. Kit no. W931, \$39.95 ppd. Heritage Building Specialties, 205 North Cascade, Fergus Falls, MN 56537. Or call 800/524-4184 to order.

*Plane or resaw to thickness listed in the Bill of Materials.

paper (we used a sanding block).

10 Using band clamps, glue and clamp the box together, checking for tight miter joints and square.

11 Tilt your tablesaw blade 11° from center, position the tablesaw fence, and with the bottom of the box riding against the fence, bevel-rip the top edges (not sides) of the box. See the Exploded View for reference.

Add the decorative corner splines next

1 Build a jig like that shown on the Spline-Cutting Jig drawing.

2 Cut a 1/8" kerf 1 1/8" deep and 2 7/8" from the bottom edge at each corner of the box as shown in Photo A. (We used a large spring clamp to hold the box tightly against the jig.)

3 From 1/8" cherry (we resawed thicker stock), cut four corner splines (F) to 1x2". Glue one into each 1/8" corner kerf. Lightly tap the splines into the kerfs so there will be no glue line evident later. Later, trim and sand the splines flush with the outside of the box.

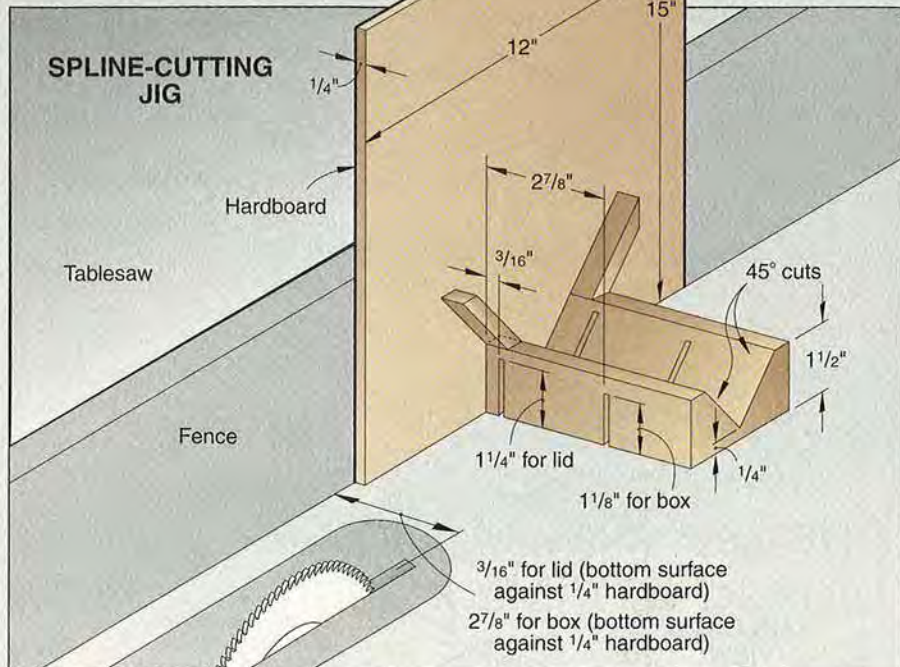
Construct the shapely lid next

1 Cut a piece of 3/4" maple to 1 1/4"x46" for lid frame (G, H).

2 Cut a 1/4" groove 3/8" deep centered along one edge of the 46"-long maple strip. This groove will house the lid panel (I) later. See the Lid drawing for reference.

3 Miter-cut the lid frame members (G, H) for a frame that will fit tightly into the box opening.

4 Cut the lid panel (I) to size. Cut 3/8" rabbets 1/2" deep along the top surface of each edge of the panel so the panel fits into the grooves cut in the lid frame pieces (G, H). As shown on the Reveal detail accompanying the Lid drawing, the panel should not fit tightly inside the frame, allowing for expansion and contraction.



5 Glue and clamp the lid together, checking for square and that an equal reveal exists between the panel and lid frame. To allow for wood movement, the lid panel should be glued in place only on the center portion of each end where shown on the Lid drawing.

6 Using the spline-cutting jig, cut

a 1/8" kerf 1 1/4" deep in each corner of the lid 3/16" from the bottom surface of the lid as shown in Photo B.

7 From 1/8" cherry, cut four spline blanks (J) measuring 1 1/4"x3" each. Glue and clamp a spline in each corner of the lid. Later, trim the splines flush with the outside edges of the lid.

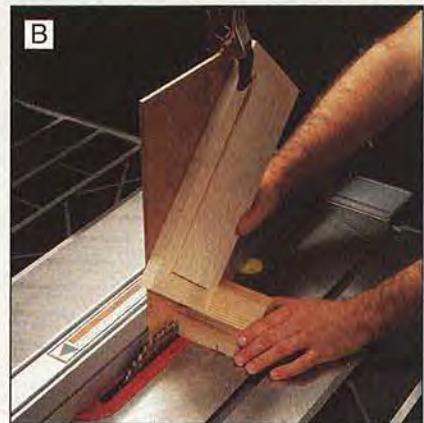
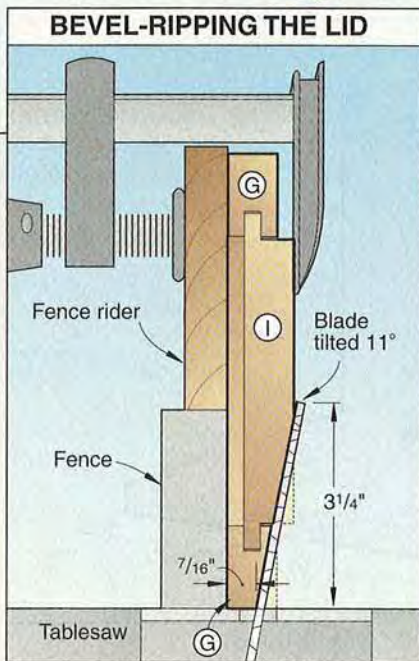
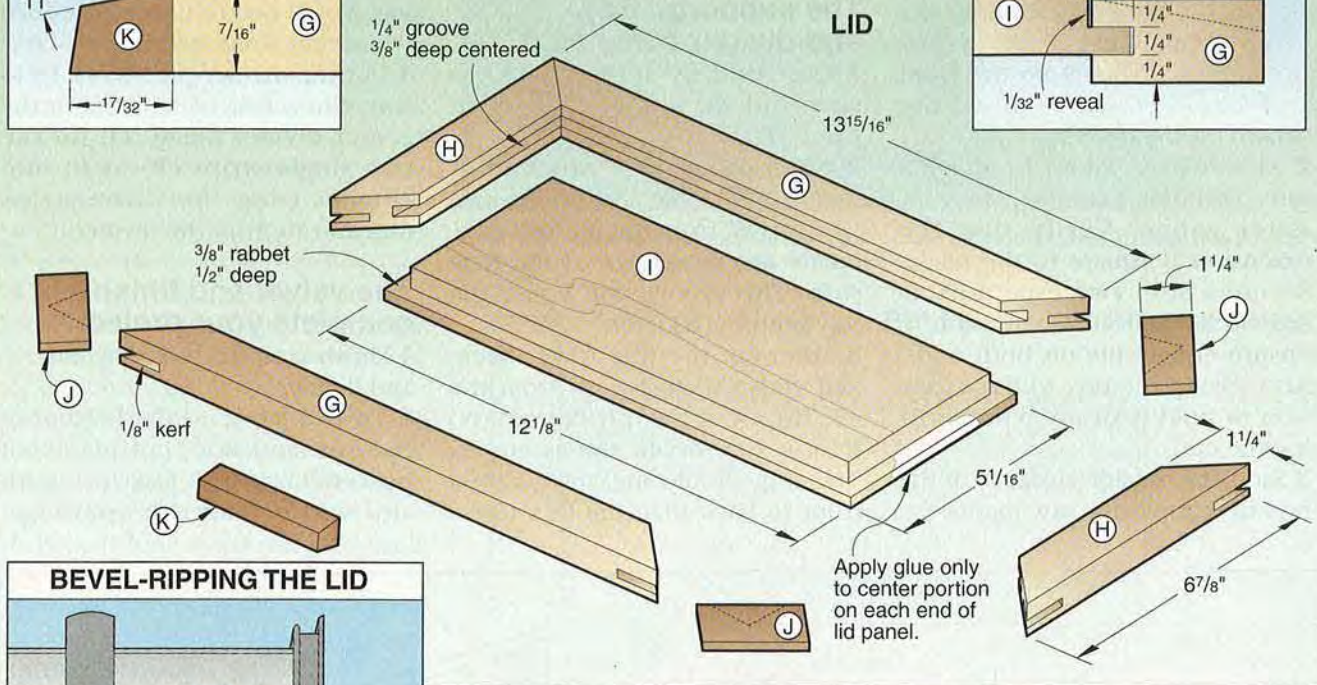
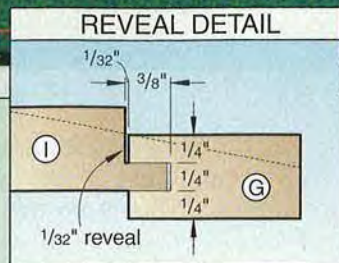
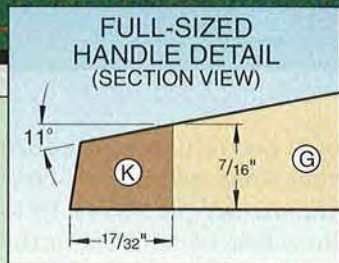
8 Tilt your tablesaw blade 11° from vertical, and raise it 3 1/4" above the surface of the saw table where shown on the Bevel-Ripping the Lid drawing. Clamp a fence rider to the lid as shown. Bevel-rip the top surfaces of the lid as shown in Photo C.

9 Sand a 1/4" round-over along the top back edge of the lid where shown on the End Section View and Exploded View drawings.

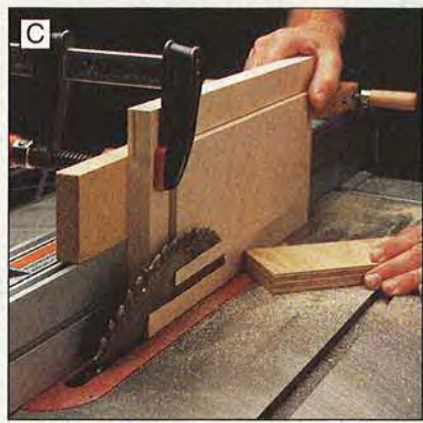
10 Cut the handle (K) to size, and sand an 11° angle on its top surface. See the Handle detail accompanying the Lid drawing for reference. Glue and clamp the handle centered to the front edge of the lid. Sand the top and bottom surfaces of the handle flush with those of the lid.



Use a spline-cutting jig to support and angle the box for cutting the 1/8" kerfs in the corners.



B Use the spline-cutting jig to support the lid when cutting a kerf in each corner of the lid.



C With the blade tilted at 11°, bevel-rip the top surfaces of the lid. A fence rider helps to support the piece.

It's time to drill a pair of hinge-pin holes

1 Cut the pieces for the jig as dimensioned on the Hinge-Pin Hole Jig drawing. Carefully mark the centerpoint, and use a brad-point bit in your drill press to drill a 1/8" hole through the center piece. Assemble the jig.
2 As shown on the Drilling the Hinge-Pin Holes drawing, use spacers on the inside of the box

to support the lid so the 11° bevels on the top surface of the lid are flush with the top beveled edges of the box. Use 1/16" spacers to center the lid in the box opening. Using a brad-point bit to eliminate bit wander, drill 1/8" holes through the box ends (B) and 3/4" into the rear lid corners.
3 Temporarily slide a 2"-long brass pin into each guide hole. Open and close the lid to check

the fit of the pins. Remove the pins, and crosscut the pins to 1" long each.

Bevel-rip the outside surfaces of the box

1 Tilt your carbide-tipped table-saw blade 9° from center, and carefully position the fence so you'll leave a 3/8"-thick wall thickness after making the cut where

Continued

shown on the Bevel-Ripping the Box Sides drawing. With the box *upside down*, bevel-rip the front and back of the box where shown on the drawing.

2 As shown in Photo D, attach a long wooden extension to your miter gauge. Verify that the extension is square to the blade. Secure a stop (we used a hand-screw clamp) to the extension to ensure equal cuts on both ends. Also, clamp the box to the extension to hold it steady when making the cut.

3 Sand the outside surfaces of the box to remove any saw marks.

The supports, tray, and divider come next

1 Cut the tray supports (L) to size, but *do not* glue them in place yet.

2 Cut a piece of $\frac{3}{8}$ " stock to 1" wide by 32" long. Cut a $\frac{1}{8}$ " groove $\frac{1}{8}$ " deep $\frac{1}{8}$ " from the bottom edge on the inside surface of the long strip. This groove will house the tray bottom (N) later.

3 Miter-cut the tray front, back, and ends (M) to length from the 32" strip. Cut the tray bottom (N) to size, and dry-fit the assembly. The tray should measure $\frac{1}{8}$ " less front to back than the box open-

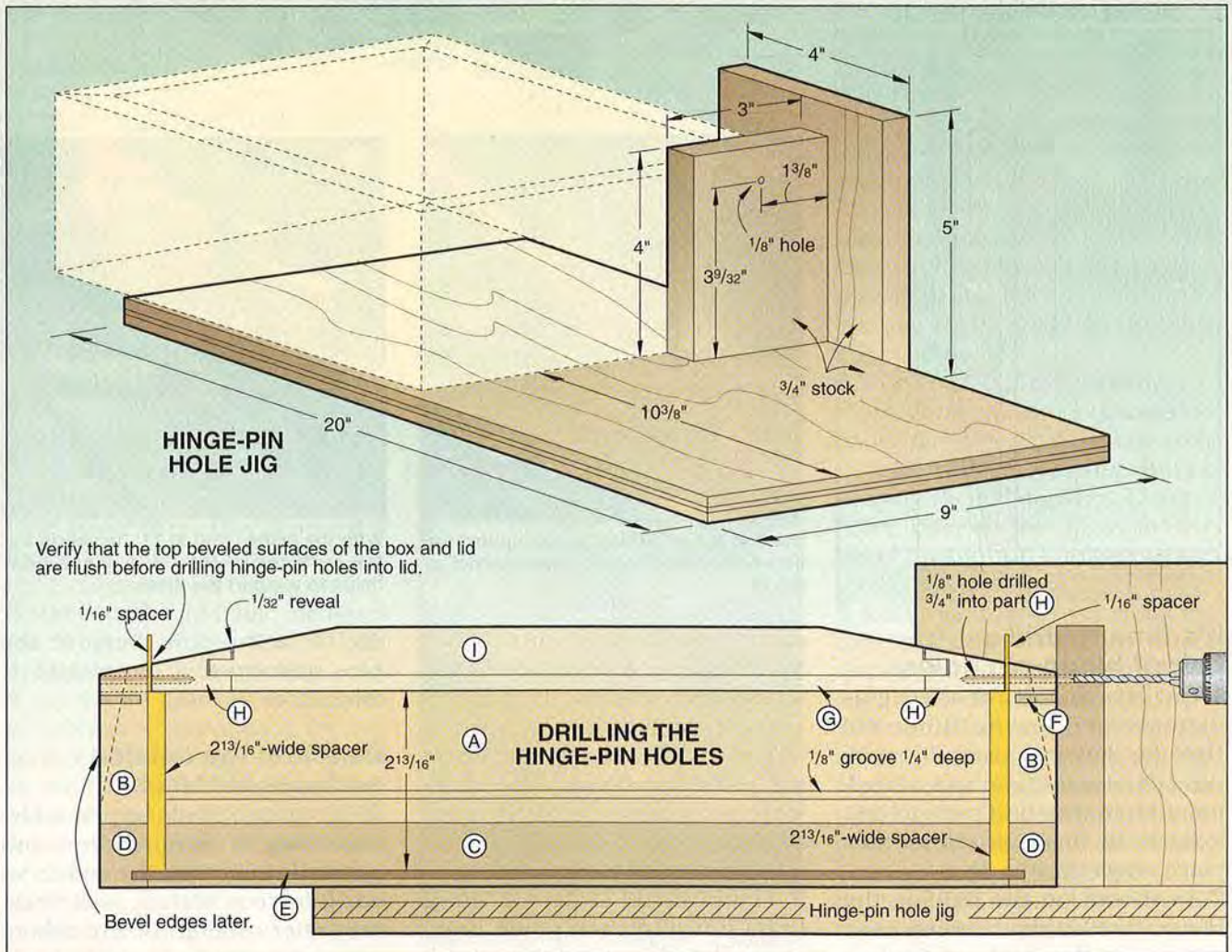
ing. You'll need this for clearance when removing the tray.

4 Cut the divider pieces (O, P) to size. Cut a pair of $\frac{1}{8}$ " kerfs in the center divider piece (O) for the two single strips (P) to fit into snugly. Glue the three strips together to form the divider.

The velvet and finish complete your project

1 Finish-sand the box, tray, lid, and divider.

2 To add fabric to the bottom of the box and tray, cut pieces of poster board $\frac{1}{16}$ " less in length and width than the openings.



Adhere double-faced tape along the edges to what will be the bottom side of the poster board. See the Box Liner detail for reference.

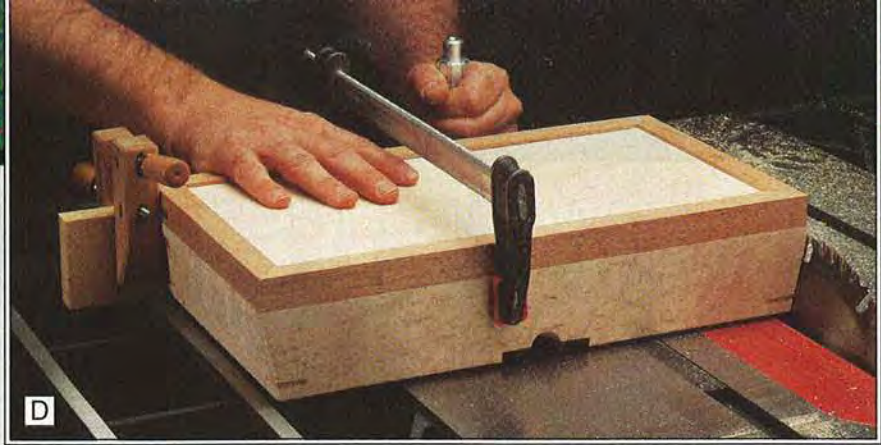
3 Cut black velvet to the size of the poster board plus 1" in each direction. Using spray adhesive secure the fabric centered onto the top side of the poster board.

4 Remove the backing from the double-faced tape, and wrap the velvet around the poster board and secure against the tape. Leave enough of the tape exposed to stick to the bottom of the box and tray later. See the Box Liner detail for reference.

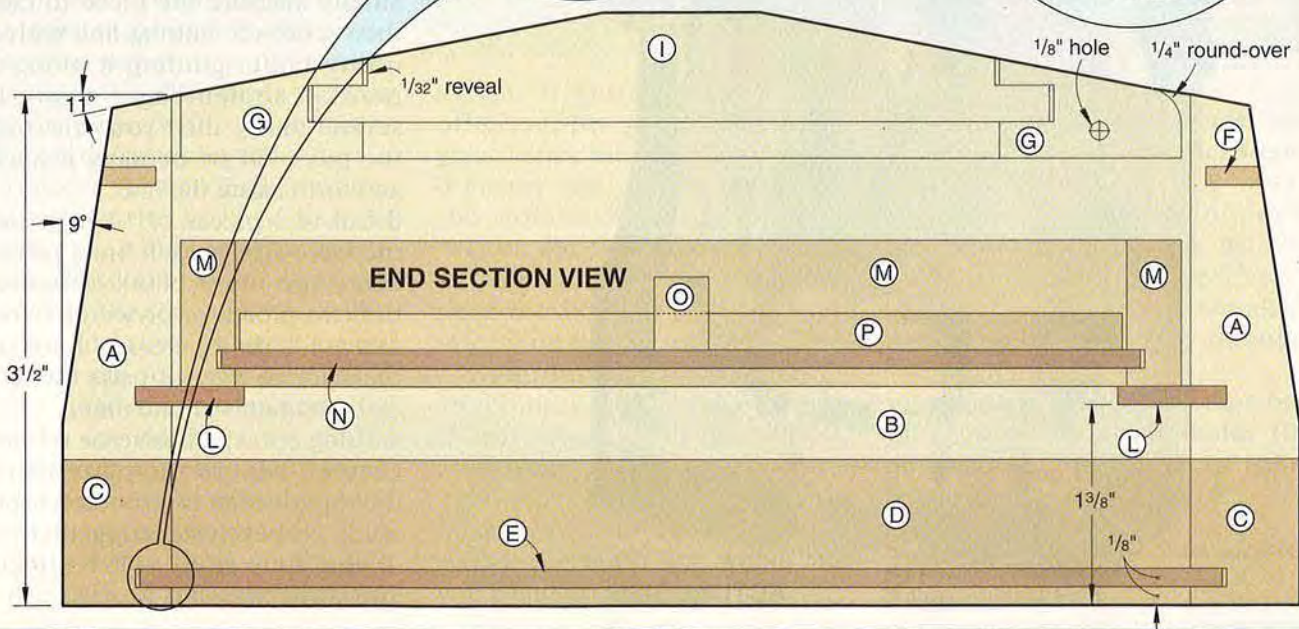
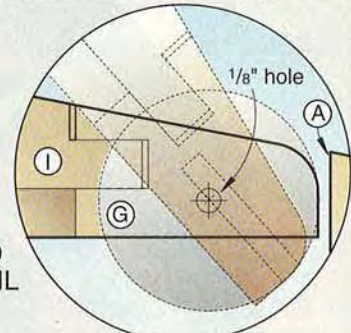
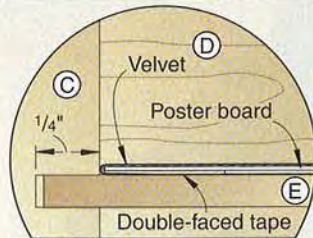
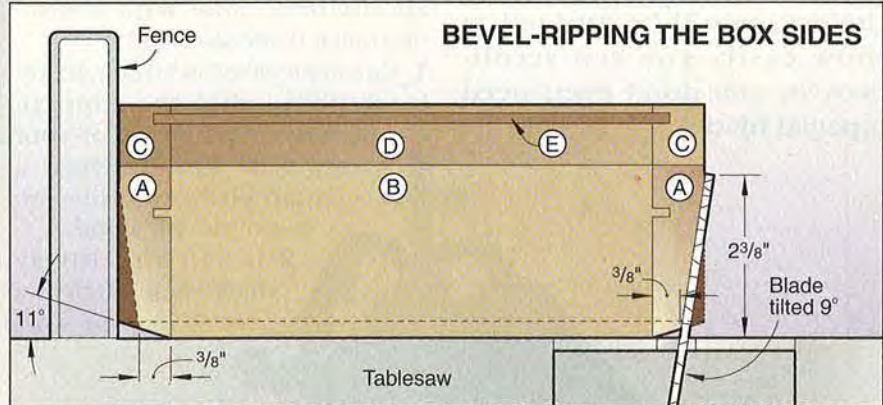
5 Fit a 1"-long brass pin into each guide hole. Drive the pins in all the way, and plug the hole with a piece of 1/8" dowel. Sand the end of the protruding dowel flush.

6 Apply the finish. (We used Minwax Antique Oil Finish.) Fit the fabric bottoms in place. Glue the tray supports (L) in place. ♣

Written by Marlen Kemmet
 Project Design: ©Andy Costine,
 Tryon, North Carolina
 Illustrations: Roxanne LeMoine; Lorna Johnson
 Photographs: William Hopkins



Attach a wooden extension to your miter gauge, and square it with the tablesaw blade. Then, bevel-rip the ends of the box.



Scrollsaw this brass ornamental nativity **A Bright**

Here's a beautiful brass nativity scene that's sure to be a highlight among your holiday decorations. If you haven't worked with brass before, you'll be amazed at how easily you can scrollsaw it; you don't even need special blades.

Start with a saw table

You'll make the small scrollsaw cuts in this project more easily on a saw with a zero-clearance blade slot. Here's an easy way to make an auxiliary table with a zero-clearance blade slot:

1 Cut a piece of $\frac{3}{8}$ "-thick Baltic birch plywood to the approximate size and shape of your scrollsaw's table. Draw a lengthwise centerline on top of the plywood.

2 Install a relatively thick blade, such as a no. 9, in your saw.

Then, saw along the centerline, starting from the back edge of the plywood. Stop when the front edge of the plywood lines up with the front of the saw table.

3 Secure the plywood auxiliary table to the scrollsaw table with double-faced tape. The auxiliary table supports the workpiece right up to the blade.

Make brass sandwiches

1 Photocopy the full-sized patterns in the *WOOD PATTERNS*® insert in the middle of the magazine. Cut out the patterns and group them to fit on conveniently sized pieces of material. (We put part A on a $1\frac{3}{4}\times 12$ " piece and B on a $3\frac{1}{2}\times 5\frac{1}{2}$ " one. Then, we grouped parts C, F, and G on a $4\frac{1}{2}\times 6$ " blank and placed parts D and E on a $3\frac{1}{2}\times 5$ " piece.)

2 Cut pieces of 30-gauge brass (or other nonferrous metal about .010" thick) to accommodate the patterns. You can cut the brass to size easily with a utility knife. Simply measure the piece to cut, then score the cutting line with a utility knife, guiding it along a nonskid straightedge. Score it several times, then you can snap the piece off by bending it back and forth along the line.

3 Cut two pieces of $\frac{3}{8}$ " plywood the same size as each brass piece. Place the brass blank between the two pieces of plywood. (You can put several pieces of brass in the stack to cut out parts for several ornaments at one time.)

4 Using spray adhesive or rubber cement, adhere the patterns to the top piece of plywood on each stack. Nail each stack together by driving four or so #17 $\times\frac{3}{8}$ " brads into waste areas.



ACTUAL SIZE

and Shining Scene

Cut out and assemble

1 Drill $\frac{1}{8}$ " blade start holes for the inside cutouts. On the pattern lines for the assembly slots, drill $\frac{1}{16}$ " blade start holes adjacent to the lines where shown. (If you have a $\frac{3}{4}$ " drill bit, drill these holes with it.) With the holes positioned like this, you can bend the tabs down to hide them when you assemble the ornament. Employ a drill press for accuracy.

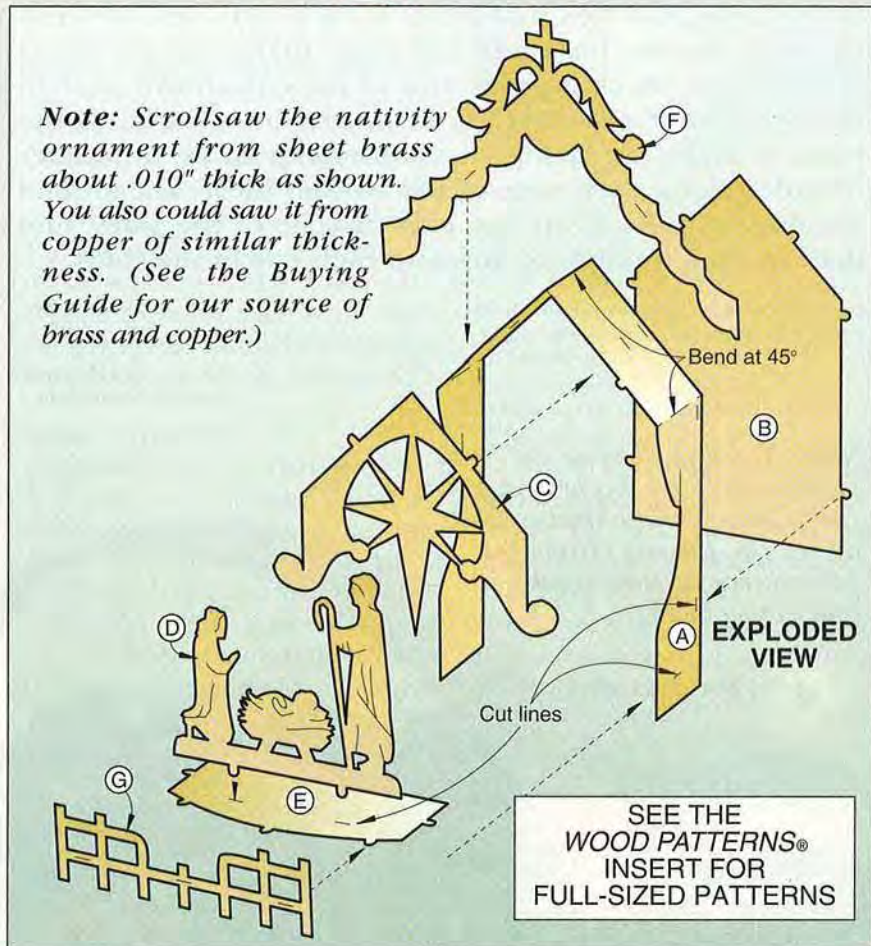
2 Saw out the parts. (We found that an ordinary wood-cutting scrollsaw blade did a fine job on the thin brass. We used a #4 blade, .035x.014" with 18 teeth per inch.) On each part, start with the smallest inside cutouts. Saw the stopped cuts on parts A and D as you cut out the outside pattern line. Just saw into each stopped line as you come to it, then back out and continue cutting the outside line.

3 Separate the parts, and sand or file off any burrs left along the edges. For a spot of color in the assembled nativity scene, trace the outline of part B onto construction paper of your favorite yuletide color. (We used red.) Cut out the paper with scissors, snipping off the assembly tabs.

4 Transfer the fold lines from the pattern to the back of part A. Scribe each line with a utility knife. Fold the piece approximately to the shape shown in the Exploded View drawing. Insert the tabs on one edge of parts B and C into the corresponding slots on one side of part A. Finish folding part A around parts B and C, fitting the tabs into the slots. Then, bend the tabs back.

5 Apply a few spots of adhesive to the back of the colored paper

Note: Scrollsaw the nativity ornament from sheet brass about .010" thick as shown. You also could saw it from copper of similar thickness. (See the Buying Guide for our source of brass and copper.)



insert, if you made one. (An office-supply glue stick works great.) Stick the insert in place.

6 Fit the tabs on part D through the slots in E, and bend them over on the bottom. Insert the tab at each side of E into the slots near the bottom of A on each side. Bend them down.

7 Complete the assembly by attaching parts F and G where shown. Wipe off any fingerprints, then spray the ornament with a light coat of lacquer. Don't put on a heavy coat—the brass won't absorb the finish like wood, and you'll end up with sags.

Buying Guide


Brass and copper. Brass, 30 gauge, 12x12" sheet, order item W114, \$8.37 ppd. in U.S. Also available: Copper, 8 ounce, 12x12" sheet, order item W112, \$8.45 ppd. in U.S. The Berry Basket, P.O. Box 925, Centralia, WA 98531. To order by phone, call 800/206-9009.

Video. Berry Basket videotape on scrollsawing metals, includes 10 patterns. \$13.95 ppd. in U.S. Order from address above. ♣

Project Design: Rick Longabaugh, The Berry Basket
Photograph: John Hetherington
Illustrations: Lorna Johnson

Laced Wooden

Here's a project idea that lends itself to all sorts of variations. A smaller base and tall sides makes an excellent wastebasket. Or change the size of the one shown here to surround your glass baking dish. Just be mindful of the rules to make the lacing work out: Keep an even number of holes along each edge of the bottom piece, use an odd number of holes along the bottom edge of the sides, and drill an even number of holes up each end of the sides.

 Print this article

Jan Hale Svec

Jan Hale Svec
Assistant Design Editor

Note: You'll need some 1/16"- and 1/8"-thick stock for this project. You can plane or resaw thicker stock, or see the Buying Guide for our source of thin stock and leather lacing.

First, cut the pieces, and drill the holes

1 From 1/8"-thick stock (we used cherry), cut the sides (A), ends (B), and bottom (C) to the shapes shown on the Parts View drawing on the *WOOD PATTERNS*® insert in the center of the magazine. Next, cut the handle (D) to shape from 1/16"-thick stock.

2 Using double-faced tape, glue the two sides (A) and then the two ends (B) face-to-face, with the edges and ends flush. Taping the pieces together allows you to stack-drill two pieces at one time.

3 Mark the centerpoints for the 3/16" holes on parts A, B, and C where dimensioned on the Parts View drawing. Chuck a 3/16" brad-point bit into your drill press, and drill the holes where marked. (We used a fence on our



Basket

drill press to ensure all the holes were centered $\frac{3}{8}$ " from the edges of the pieces where dimensioned on the drawing. We also used a backing board to minimize chip-out.) To minimize the risk of splitting the handle (D), do not drill the holes just yet.

4 Separate the two side pieces (A) and the two end pieces (B). Remove the tape, and sand each piece smooth.

Next, bend the handle, and drill its holes

1 Cut a piece of $\frac{3}{4}$ "-thick stock to the shape shown on the Handle Form drawing.

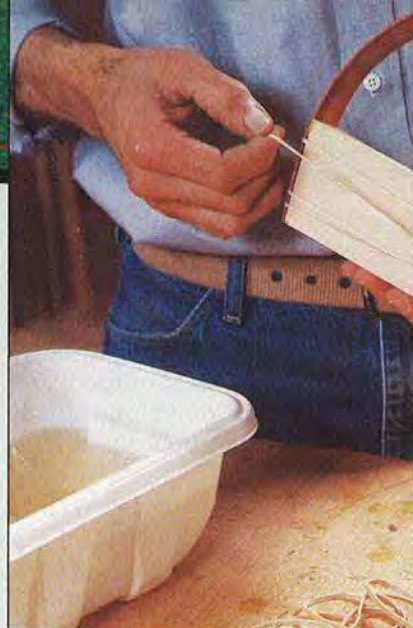
2 Fill a container large enough to hold the handle (D) with hot water (we used a plastic wallpapering tray). Soak the handle in hot water for about 20–30 minutes. Remove the handle from the

tray, and use rubber bands to secure it to the form as shown in the photo *at right*. Let dry on the form overnight.

3 Mark the hole centerpoints on each end of the bent handle where dimensioned on the Parts View drawing. Before drilling, make sure the marked holes on the handle ends align with those already drilled in the basket sides. Drill the holes where marked.

Now, form the grooved corner dowels

1 Install a $\frac{3}{8}$ " roundnose bit in your table-mounted router, and adjust it to cut $\frac{3}{8}$ " deep. Attach a wooden fence to your router table, and adjust it so the router bit just grazes the outside surface of the fence where shown on

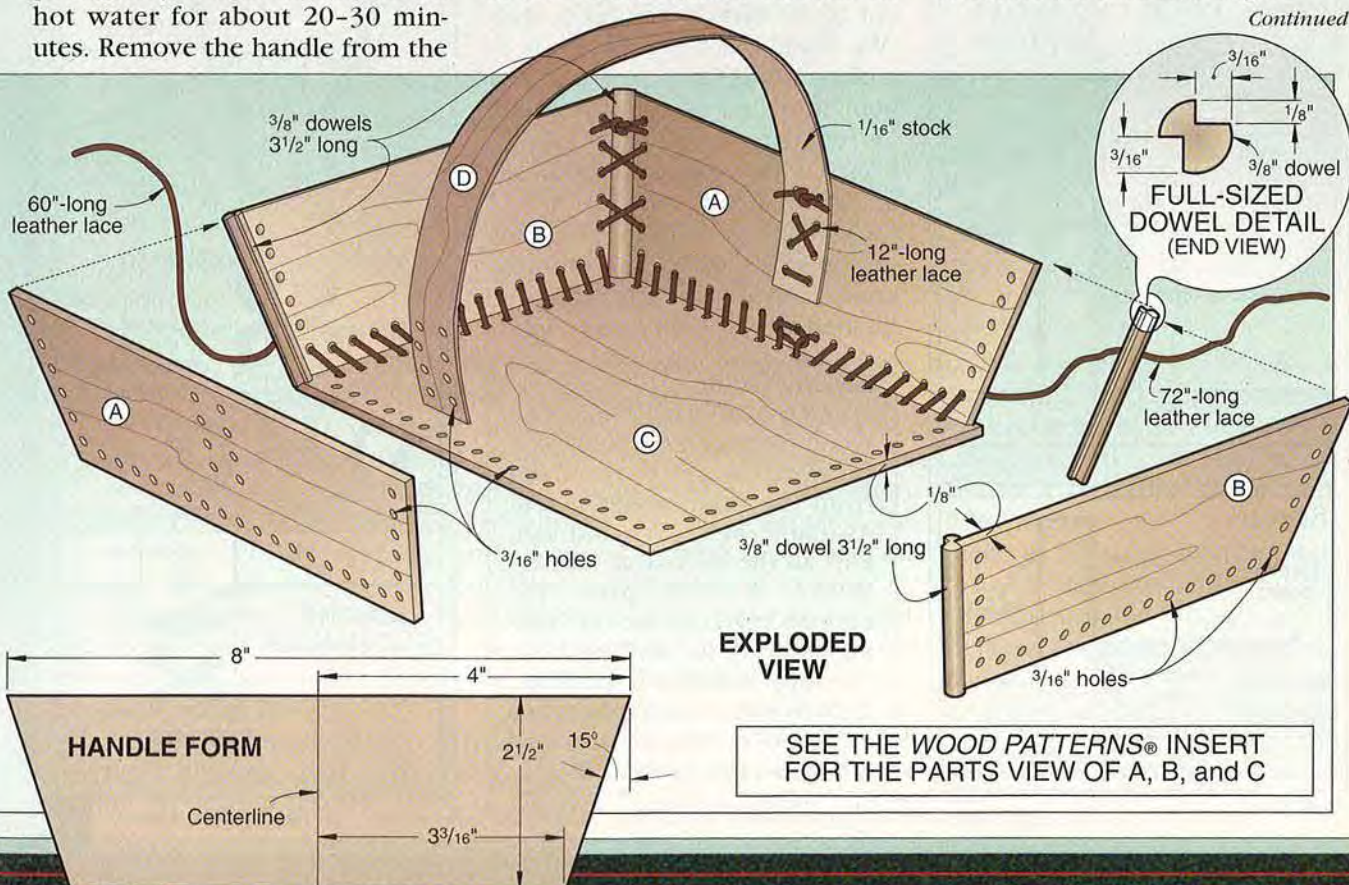


Soak the handle in hot water for about 30 minutes. Then, secure it to the form and let dry.

Step 1 of the Dowel Shaping drawing on the next page.

2 To form the dowel-cutting carrier board, cut a piece of stock to $\frac{3}{4} \times 3\frac{1}{2} \times 16$ ". Run the stock over the router bit with the stock lying flat (Pass 1) and then with the stock on edge (Pass 2) where shown on Step 1 of the drawing to create the rabbeted edge.

Continued



3 As shown in Step 2 of the drawing *below*, raise the blade $\frac{3}{16}$ " above the surface of the saw table, and position the fence $\frac{1}{4}$ " from the *inside* edge of the blade. Secure a $\frac{3}{8}$ "x16" dowel in the corner of the carrier board with double-faced tape.

4 Cut grooves in the dowel, as shown in Steps 2 and 3 of the drawing. The dowel will have a cross section as shown on the Dowel detail accompanying the Exploded View drawing. Crosscut the dowel into four $3\frac{1}{2}$ " lengths.

Finishing and final assembly

1 Sand all the parts with 120-, 220-, and 320-grit sandpaper. A flap sander chucked into your

drill press will make sanding the handle and dowels easier. Then, apply several coats of clear finish.

2 Cut two lengths of $\frac{5}{32}$ "-wide leather lacing (we used Tandy, #5013, $\frac{5}{32}$ " rust-colored, suede lace) to 72" for the sides, two at 60" for the ends, and two at 12" for the handle. Flat leather boot laces from a grocery store will work fine, or get flat suede lacing from a fabric or craft store. See the Buying Guide for our source.

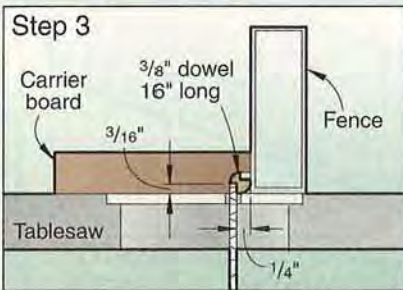
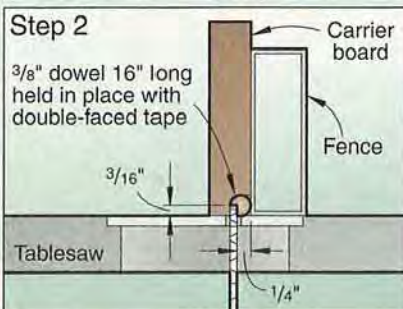
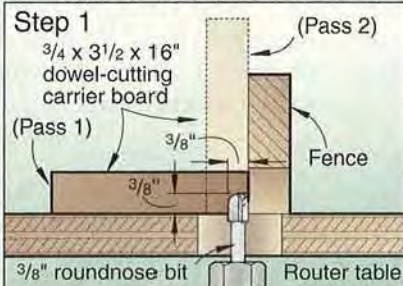
3 Lace the sides (A) and ends (B) to the bottom (C) as shown in Steps 1, 2, and 3 on the Lacing Sides and Ends to the Bottom drawing *at right*.

4 Pull the mating corners together, lace the corners, and fit a corner dowel in each corner as noted in Steps 4-6 on the Lacing the Corners drawing.

5 Starting at the center of each side (A) and end (B) and working toward the corners, pull the slack out of the lacing, making it snug. (We found that a crochet hook or a piece of stiff wire with a hook bent into one end worked well for removing the slack.)

6 Tie the laces in a square knot at each top inside corner where shown in Step 7 *at right*. Trim the excess lacing extending from the knots. Finally, lace the handle to the basket as shown *below right*.

DOWEL SHAPING STEPS



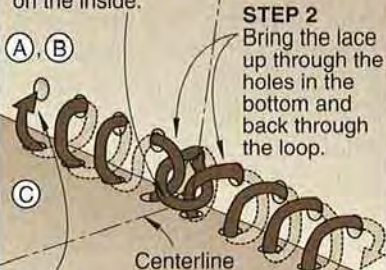
Buying Guide

Hardwood kit. All of the wood pieces on the Exploded View cut slightly oversized from the thicknesses listed. Available in cherry and ash. Plus all the necessary leather. W932, \$19.95 ppd. for enough material for one basket, \$79.95 for five baskets. Heritage Building Specialties, 205 North Cascade, Fergus Falls, MN 56537. Or call 800/524-4184 to order. 🌲

LACING DIAGRAMS

LACING SIDES AND ENDS TO THE BOTTOM

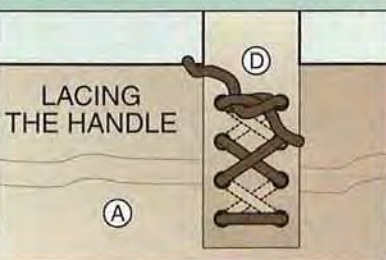
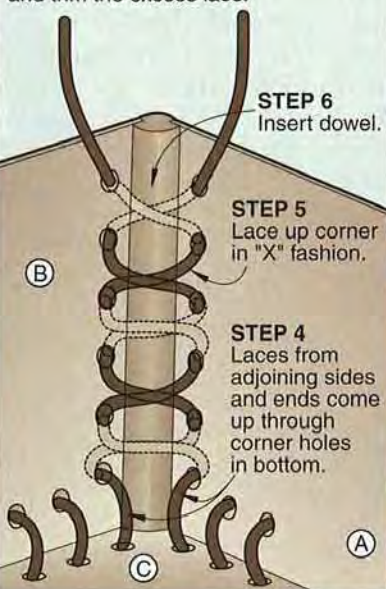
STEP 1
 Fold the lace in half and feed it through the sides and ends, leaving a loop on the inside.



STEP 3
 Lace the sides and ends to the bottom in a spiral fashion, working from the center to the corners.

LACING THE CORNERS

STEP 7
 Work slack out of lacing, starting from centers of sides and ends. Tie a square knot at the tops of the corners and trim the excess lace.



TEDDY'S TABLE AND CHAIRS

Doll furniture for two



Capture a young heart's fancy with this delightful dining set. With our full-sized patterns, the pieces are a snap to make and even easier to paint. Start now and you just may be done by teatime.

Let's start with the table

1 Transfer the full-sized table leg (A) and apron (B) patterns from the *WOOD PATTERNS*® insert in the center of the magazine to $\frac{1}{2}$ " stock (we used Baltic birch plywood). Using a bandsaw or scrollsaw, cut the four legs and four aprons to shape, miter-cutting the ends of the aprons. Sand the curved edges smooth. To save time, you could also stack-cut identical parts.

2 Using a fence on your drill press for alignment, drill a pair of $\frac{3}{64}$ " countersunk holes in

each apron where shown on the full-sized pattern.

3 Cut a piece of $\frac{3}{4}$ "-thick stock to 2" wide by 12" long. Mark a 20° cutline on the piece where shown on the Forming the Wedges drawing. Cut along the line to form a pair of wedges.

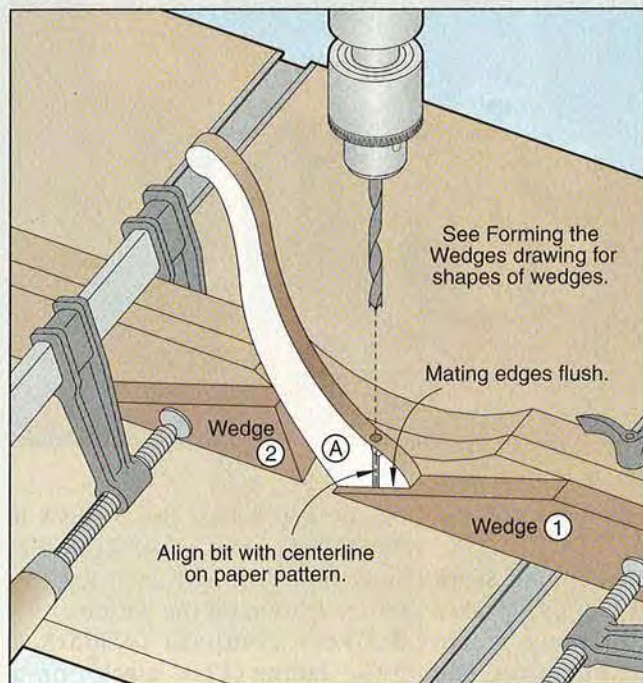
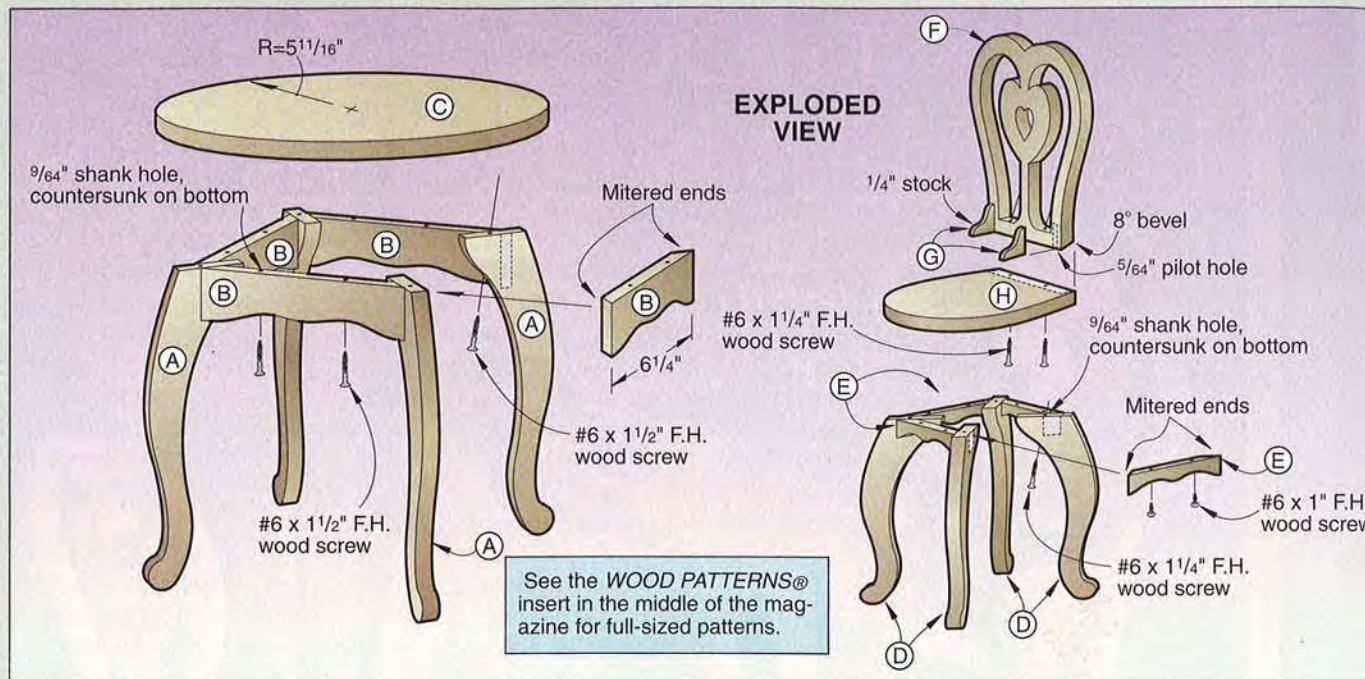
4 Clamp the wedges to the drill-press fence where shown on Drilling the Holes in the Table Legs drawing. Position a leg against the wedges, and verify that the bit aligns with the marked centerline on the pattern

on the leg. Adjust the wedges if necessary. Drill a $\frac{3}{64}$ " countersunk hole through each leg (A) where shown on the pattern.

5 Use a compass to mark a $5\frac{11}{16}$ " radius ($11\frac{3}{8}$ " circle) on a piece of $\frac{1}{2}$ " stock for the tabletop (C). Bandsaw and sand the tabletop to shape.

6 Place the tabletop facedown, and mark layout lines for the location for the legs (A) and aprons (B) where shown on the Tabletop Layout drawing.

Continued



DRILLING THE HOLES IN THE TABLE LEGS



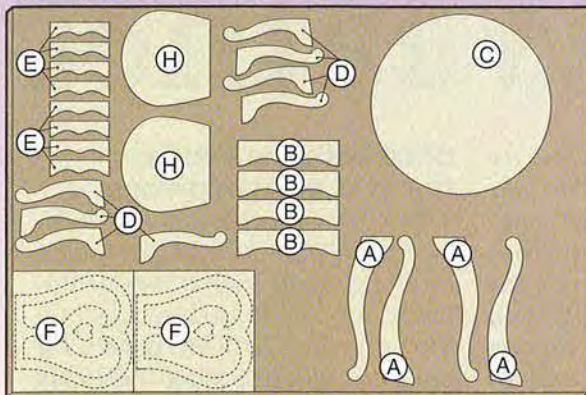
Use the marked layout lines on the bottom surface of the tabletop to position the legs and aprons.

7 Glue and screw one apron and two adjacent legs in place. Then, continue gluing and screwing the aprons and legs in place as shown in the photo *above right*.
8 Finish-sand the assembly, and set it aside. We'll paint later.

A set of chairs comes next
1 Transfer the patterns, and cut the chair legs (D) and aprons (E) to shape, miter-cutting the ends of the aprons. Using the same setup on your drill press you used earlier, adjust the wedges so the bit

aligns with the centerline on the pattern on a chair leg, and drill a mounting hole in each leg.
2 Remove the wedges, and drill the holes in the aprons.
3 Cut two pieces of 1/2" stock to 7 1/2" square for the chairback

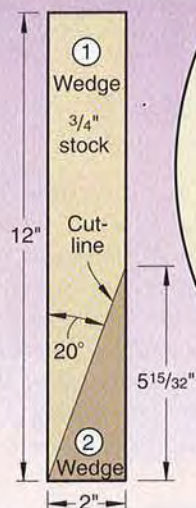
CUTTING DIAGRAM



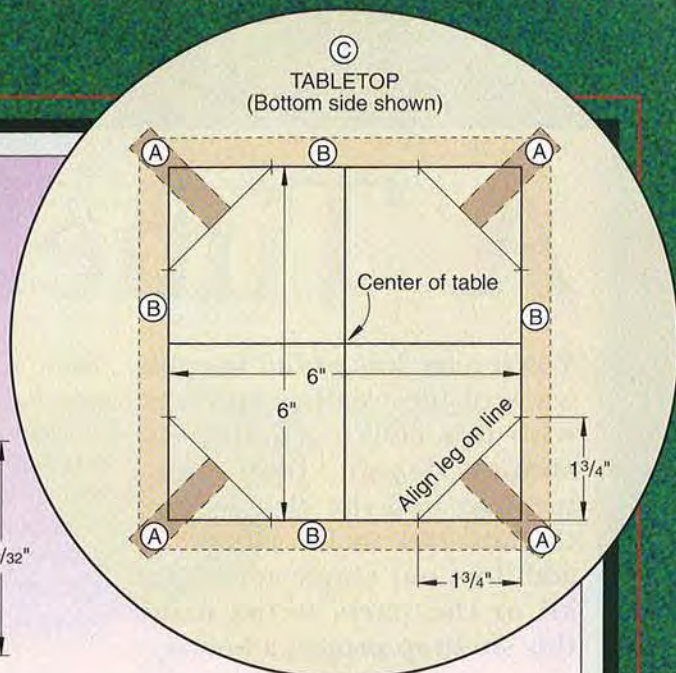
1/2 x 24 x 36" Baltic birch plywood



1/4 x 6 x 6" Baltic birch plywood



FORMING THE WEDGES



TABLETOP LAYOUT

blanks. Tilt your tablesaw blade 8° from horizontal and away from the fence. Bevel-cut the bottom end of each chairback blank.

4 Transfer the chairback (F) pattern to each blank so the bottom end of the pattern aligns with the bottom beveled end of the blank. Cut the chairbacks to shape (we used a scrollsaw with a #5 blade).

5 Cut the braces (G) and seats (H) to shape.

6 Clamp a back (F) to a seat (H) where shown in the photo *at right*. Then, drill a pair of countersunk mounting holes through each seat and into the beveled bottom end of the back. Now, drive a #6x1 1/4" wood screw through each hole as shown in the photo.

7 Using the layout lines on the full-sized seat pattern for reference, glue and screw the legs and aprons to the seat bottom in the same manner as you did with the table earlier.

8 Hold the braces (G) in place between the seat and back to check the angle. Sand the mating angled edges slightly for a tight fit



Clamp the chairback to the seat, drill mounting holes at a slight angle, and use a pair of wood screws to secure the chairbacks to the seats.

if necessary. Then, glue and clamp the pieces in place.

9 Finish-sand the chairs. Prime the chairs and table. Then, paint as shown in the opening photo or as desired—there is no wrong way to paint doll furniture. (We used

Krylon #1315 white primer, #1501 glossy white, and #2415 rose on our pieces.)

Written by Marlen Kemmet
Project Design: Angie Medici
Illustrations: Roxanne LeMoine, Lorna Johnson
Photographs: King Au, John Hetherington

A Timely Weather

You'll have lots of fun keeping track of the weather and time with this striking hourglass-shaped design. Decorative turnings and the rich look of Corian add to its allure. In addition, our single source for all of the parts helps make this shelftop project a breeze.

Note: For a change of pace, we decided to use Corian® for our project. You can pick up scrap pieces from many cabinet shops or see our source for Corian and the clock and barometer listed in the Buying Guide. Or, use ½" stock in place of the Corian.

Start with the inside top and bottom pieces

1 Cut two pieces of ½" Corian (we used garnet) and one piece of ½" plywood to 4¼×7¼" for the inside top and bottom pieces (A). The plywood will be used as a template when drilling the holes in parts A later.

2 Using double-faced tape, adhere the two pieces of ½" Corian and the piece of plywood, with the edges and ends flush.

3 From the *WOOD PATTERNS*® insert in the center of the magazine, cut the pattern with part A on it to a rectangular shape of 4¼×7¼" (don't cut it to an oval shape). Use spray adhesive to attach the paper pattern to the exposed piece of Corian.

4 Using a ¼" brad-point bit in your drill press, drill a pair of ¼" holes through the two pieces of Corian and plywood where marked on the paper pattern.

5 Remove the plywood from the two pieces of Corian. Then, drill a pair of ⅝" holes through the two pieces of Corian. Use a backing board to prevent chipout on the bottom piece of Corian.

6 Bandsaw (we used a ⅜" blade) and then sand the two A pieces to shape. Remove the paper pattern, but leave the two pieces taped together.

7 Rout a ¼" cove along the outside edge of each A piece. Separate the two pieces and remove the tape.

8 Finish-sand the covens and surfaces smooth. For a matte finish 220-grit sandpaper will do. For a semigloss finish, use 220- and 400-grit; and for high gloss, use 220-, 400-, 600-, followed by 700-



Watcher

Most definitely a great gift idea

grit sandpaper. For an even higher luster, buff the pieces with an automotive polishing compound and a low-speed polisher equipped with a wool pad.

The top and bottom pieces come next

1 Cut two pieces of $\frac{1}{2}$ " garnet Corian to 5×8 " for the top and bottom pieces (B), and double-face tape them together. Make photocopies, and apply one paper pattern to *each* exposed face of the taped-together pieces.

2 Place one part A on the taped-together part Bs, aligning part A with the dashed oval on the paper pattern adhered to one of the Bs. Using part A as a guide, use your drill press to drill $\frac{1}{4}$ " holes $\frac{1}{4}$ " deep into one of the Bs. If part A tends to slip on the paper pattern, use tape or spray adhesive to hold it in place until after the holes are drilled. Flip the assembly over, and repeat the procedure to drill the same sized holes into the other B.

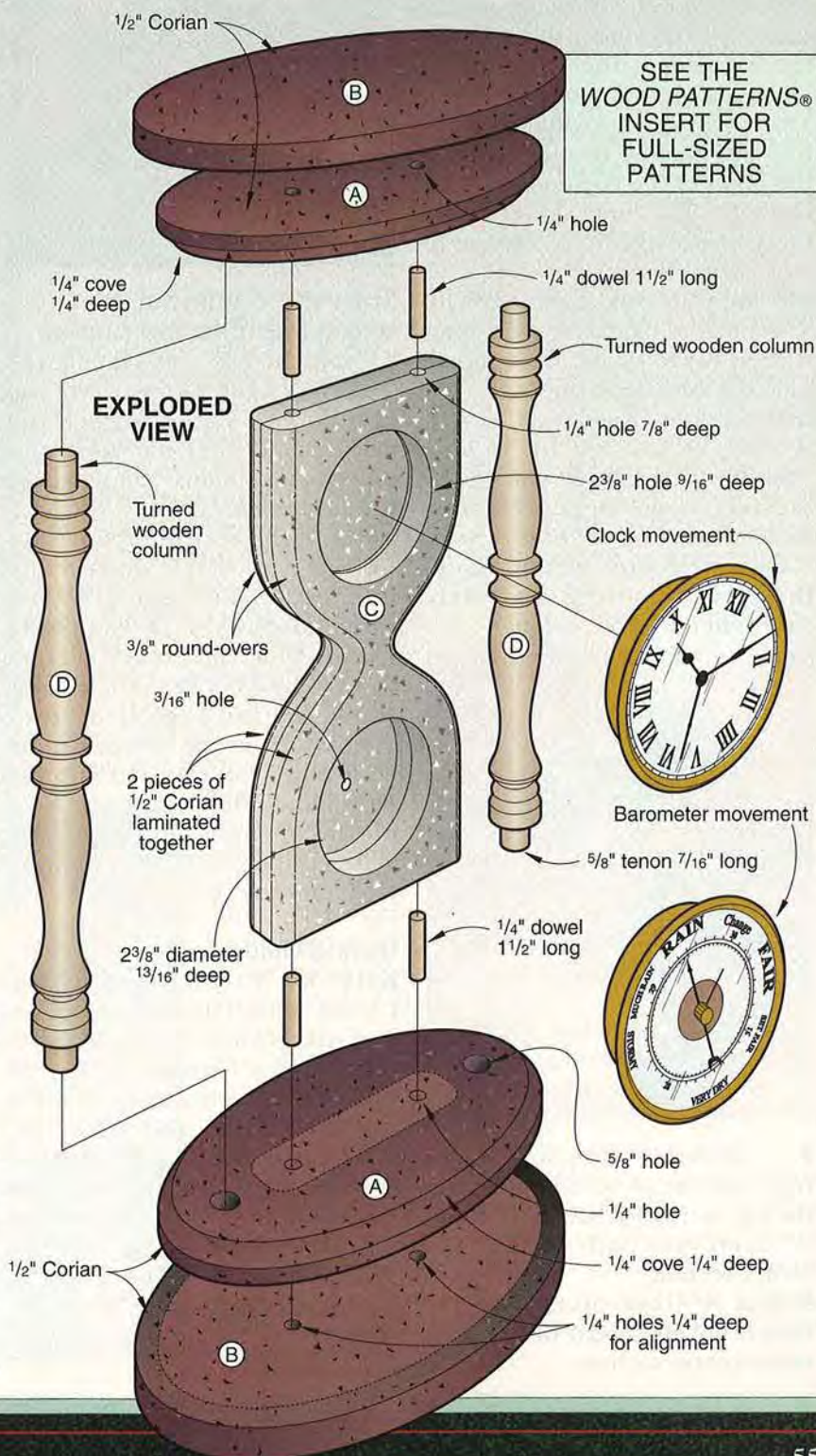
3 Bandsaw and sand the two Bs to shape. Separate the Bs and remove the tape and patterns.

Forming the hourglass-shaped center section

1 Cut two pieces of $\frac{1}{2}$ " Corian (we used sandstone) to $3\frac{7}{8} \times 8$ " for the center pieces (C).

2 Using Corian adhesive, laminate the two center pieces (C) face-to-face, *with the edges and ends flush*. (We used pieces of masking tape to hold the Corian pieces together and to keep them from shifting until the adhesive set.) Remove any excess adhesive (especially from the ends).

Continued

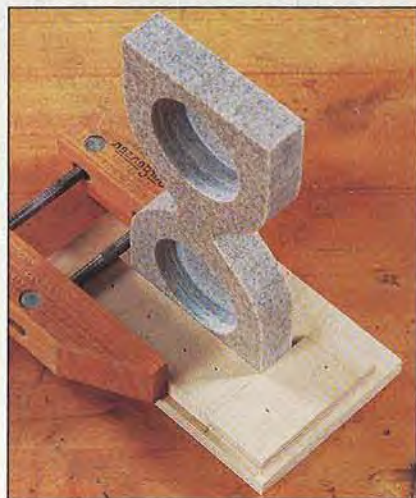


3 Later, remove the tape, and adhere the paper pattern to the 1"-thick center portion (C).

4 Using a $2\frac{3}{8}$ " Forstner bit in your drill press, drill the hole for the clock movement $\frac{1}{16}$ " deep, and the hole for the barometer $1\frac{3}{16}$ " deep. When drilling the hole for the barometer, the point of the Forstner bit will bore through. That's OK. Now, switch to a $\frac{3}{16}$ " bit, and enlarge the hole where the point of the Forstner bit went through. This hole is necessary for the barometer to receive air to work properly.

5 Using your bandsaw fitted with a $\frac{3}{16}$ " blade, bandsaw the center section (C) to shape. Then, drum-sand the cut edges smooth.

6 Attach two cleats to the $\frac{1}{2}$ " plywood cut to size in *Step 1*. Position the cleats so the center section (C) will be perfectly centered under the $\frac{1}{4}$ " holes. Now, clamp the center section (C) to the plywood drill guide where shown in the photo *below*.



7 As shown in the photo *above right*, use the plywood jig to align the bit, and drill a pair of $\frac{1}{4}$ " holes $\frac{7}{8}$ " deep into both ends of the center section.

8 Rout $\frac{3}{8}$ " round-overs along the edges (not the ends) of the laminated center section.



Turn the columns, and assemble the pieces

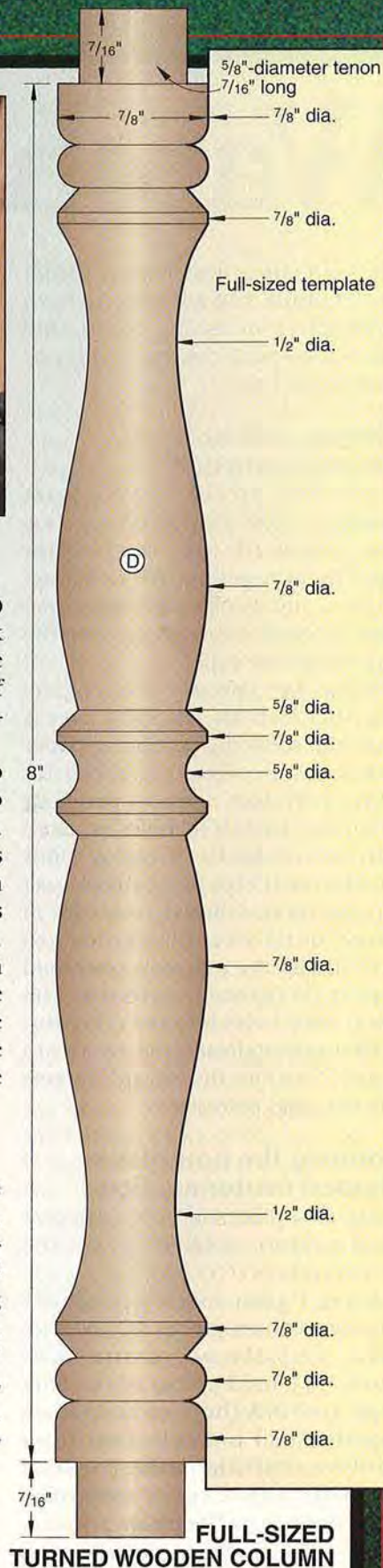
1 Using the full-sized column (D) pattern *at right*, turn a pair of oak columns to shape, or see the Buying Guide for our source of pre-turned columns. Sand and finish the columns.

2 Cut four pieces of $\frac{1}{4}$ " dowel to $1\frac{1}{2}$ " long. Glue two dowels into each end of the center section. Apply adhesive to the end pieces (A, B). Glue the center section and columns between the ends as shown on the Exploded View. The dowels in the center section go through both As and into the Bs, aligning the endpieces. Note on the opening photo how we adjusted the columns so the face grain on each faces forward.

Buying Guide

Kits. Kit #1 includes all the Corian materials and adhesive, two oak columns, a clock movement, and a barometer. \$84.95 ppd. Kit #2 contains everything but the Corian and adhesive, \$39.95 ppd. Add \$21.95 for a $2\frac{3}{8}$ " Forstner bit. Schlabaugh and Sons Woodworking, 720 14th Street, Kalona, IA 52247 or call 800/346-9663 to order. 🌲

Written by Marlen Kemmet
Project Design: Bill Wright
Illustrations: Kim Downing
Photographs: John Hetherington



FULL-SIZED TURNED WOODEN COLUMN

A Light Turning

Turning

An open-center lantern to brighten your tree

Airy, open ornaments created by architect/designer Ken Schaefer caught our eye at a recent woodturning workshop in St. Louis. Here's how to turn a lovely lantern for your tree, employing Ken's technique.

These instructions describe how to turn a lantern like the one shown left. At the end of the project instructions, we'll tell you how project designer Ken Schaefer turns unique styles like the one below.

Build the blank

Mark the center on one end of a 2×2×4" block. Drill a hole there 1½" deep, sized to accept a ½" dowel. The dowel must fit snugly—it serves as the mandrel for turning the body.

Insert an 8" length of ½" dowel rod into the hole. Push it in until it bottoms in the hole, but do not glue it. You need to be able to remove this dowel later.

Mark the center on the other end of the block. Grip the free end of the dowel in a jaw-type chuck on the lathe's headstock. Bring up the tailstock with a revolving tail center installed, and position the point at the center marked on the block.

(If you don't have a jaw chuck, attach a scrapwood block about 1½" thick to your 3" lathe faceplate. Mount the faceplate, and round down the block. True the face, and bore straight into the center about 1" deep to receive the dowel.)

Turn the block to the largest cylinder possible. Keep the sides straight and true. To check the sides, gauge the diameter at both ends and in the middle with calipers. The diameter must, of course, be the same at all points.

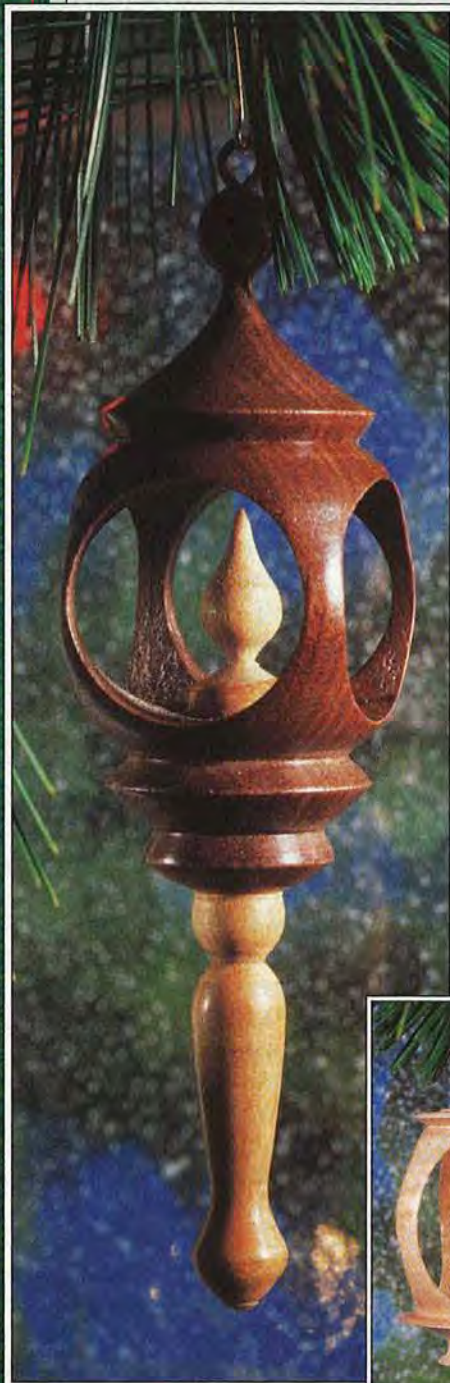
With the lathe running, draw a line around the blank by holding a pencil point against the workpiece 1½" from the headstock end of the cylinder. Dismount the workpiece, marking the dowel and the chuck so you can remount the turning in the same position.

Bore holes in the sides

Now, bore four side holes in the blank. These holes will form the windows and the cavity in the ornament body.

Hole diameter depends on the cylinder's diameter. Ken recommends the sizes listed in the chart on *the last page of this article* to achieve balance between the ribs and the holes.

Continued



With one less rib and larger openings, Ken's three-hole ornament *right* takes on an even lighter look.

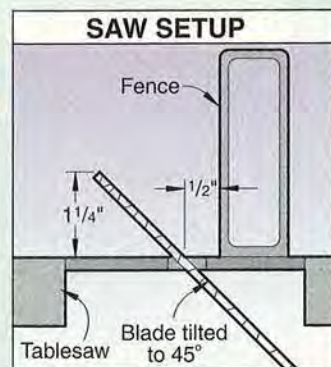
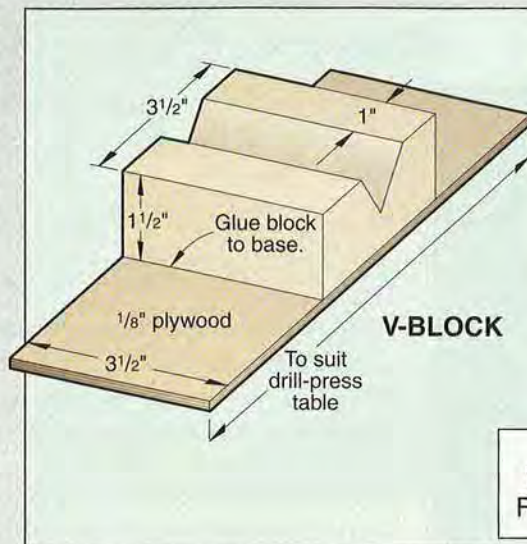


Each hole must run straight to the center of the blank. You can bore the holes accurately with a V-block and your drill press. Saw the V-block from $1\frac{1}{2} \times 3\frac{1}{2} \times 3\frac{1}{2}$ " stock, employing the tablesaw adjustments shown in the Saw Setup illustration.

Attach the V-block to a suitable base, as shown in the V-block drawing, and position it on the drill-press table. To align it, chuck a twist drill— $\frac{1}{8}$ " or so would be fine—in the drill press. Then place the V-block so the tip of the bit goes into the bottom of the V when you extend the quill. Clamp the block to the table.

Next, you will need a method to index the blank so you can rotate the cylinder exactly 90° for each hole. One way is to draw index marks right on the blank. To do this, draw a diameter across the end of the cylinder, then, using a drafting triangle or protractor, draw another diameter at 90° to the first one.

If you plan to make several ornaments, a simple indexing jig may prove easier and quicker to use. To make one, photocopy the Indexing Wheel illustration, and glue the copy to $\frac{1}{2}$ " Baltic birch plywood. Drill a $\frac{1}{2}$ " hole (or a size



SEE THE
WOOD PATTERNS® INSERT
FOR FULL-SIZED PATTERNS

to fit snugly over the dowel in the blank) through the center. Then scrollsaw the wheel. Color the arrow points as indicated.

Press the wheel onto the end of the blank's dowel. With a Forstner bit of appropriate size chucked in the drill press, lay the cylindrical blank in the V-block. Rotate it until the black point on the indexing wheel (or one of the lines on the end of the blank) points straight down.

Line up the bit over the line drawn around the cylinder, shown *opposite page, top left*. Bore a little more than halfway into the blank. (Clamping the blank to the V-block increases accuracy; the Forstner bit can turn the blank slightly as it bores in.) Rotate the blank 90° . Bore the second hole at that position. Then, bore the third and fourth holes at the remaining positions. Remove the indexing wheel and pull the dowel out of the blank. (You may have to resort to pliers, twisting the dowel back and forth as you pull.) Sand the inside of the holes, as necessary. Sandpaper rolled around a dowel helps a lot. Set the blank aside for the time being.

Put a flame in the lantern

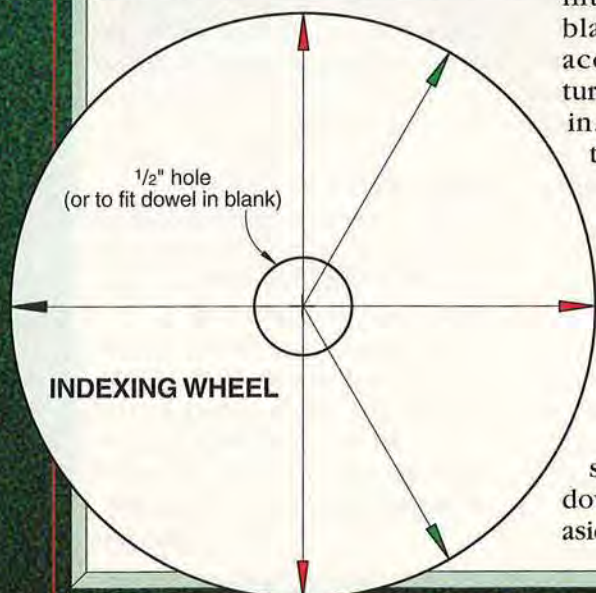
Grip the dowel (or, if you damaged the old dowel removing it, a new piece 6-7" long) in your lathe chuck. Leave about $4\frac{1}{2}$ " protruding from the chuck.

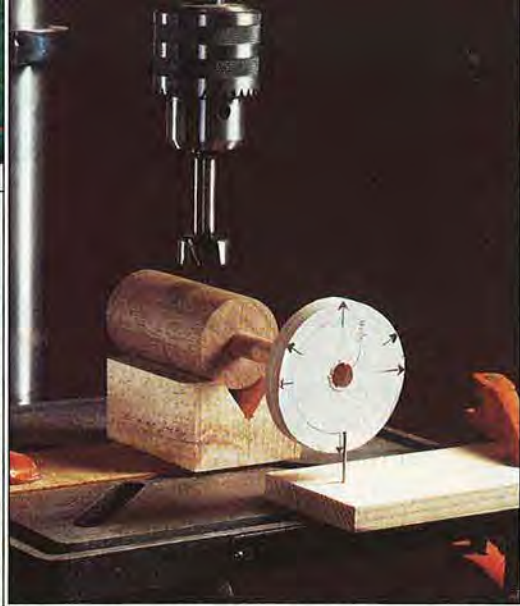
Form a flame at the free end, referring to the Flame and Handle pattern. Slope the shoulder slightly down from the base of the flame. Sand the turned end.

Fit the body over the chucked dowel. Locate the flame in the windows where shown in the Side View drawing. Shorten the tip, if necessary, by sanding. When it looks right, remove the body. Apply a few drops of cyanoacrylate adhesive (instant glue) to the dowel just below the sloped shoulders. Then, push the body onto the dowel. Allow a few moments for the glue to cure.

Turn the lantern body

Bring up the tailstock to help stabilize the turning. Shape the central portion of the body with a gouge. Starting at the middle of the bored-out section, roll down and in toward each end to create a spherical form, shown *opposite page, top right*. The phantom image of the holes will guide you toward the right shape.





The V-block centers the body cylinder under the bit. As an indicator for the indexing wheel, we drove a small finishing nail into a piece of scrap-wood, which we clamped to the drill-press table.



Run the lathe at 1100–1500 rpm when turning the bored-out center. Slower speed increases the risk of breakage.

Start with a lathe speed in the range of 1100–1500 rpm. If you run the lathe too slowly, the chance of shoving the tool into an opening and breaking a rib increases. Keep the bevel of the gouge riding on the workpiece. This enables you to control your cut precisely, preventing the sure disaster of jamming the tool tip straight into the side. As always in turning, careful tool control will keep you out of trouble.

As you shape the center, pare down the ends of the body to about 1¼" diameter. Shape the top and bottom of the lantern, cutting the features with a skew (we used a ½" one). Maintain a supporting tenon at the top (the tailstock end) for now.

Sand the body with 100-, 150-, and 220-grit abrasive. Sand the open portion of the body with the lathe turned off, sanding along the turning's axis. You can sand the top and bottom with the lathe running.

Finish up your lantern

Turn the handle on the lower part of the dowel to shape. Alternately turn the end of the handle to shape and form the top of the body. Dismount the turn-

ing, and cut off the waste ends. Sand the ends to shape.

Drill a ¼" hole ¼" deep into the top of the ornament. Screw in a #217½ brass screw eye. Hang the ornament from a piece of wire, and spray on several coats of semi-gloss clear lacquer. Spray from several angles to ensure coverage of the inside cavity and the flame. When dry, attach a wire ornament hook to the screw eye.

Going to the next level

When Ken turns ornaments like the ones shown *on the opening page of this article*, he maximizes the openings in the body by boring three holes in the blank instead of four. (He's also turned ornaments with five or six holes, and some with vertically stacked holes of diminishing sizes.)

Hole sizes Ken recommends for various blank diameters when turning three-hole ornaments are shown in the chart *right*. To space the three holes 120° apart around the blank, bore at the black point and both green ones on the indexing wheel.

Take care when turning three-hole ornaments; the ribs will be farther apart and somewhat narrower, thus easier to break.

FOUR-HOLE ORNAMENT

CYLINDER DIA.	HOLE DIA.
1¾"	7/8"
17/8"	1"
2"	1 1/8"
2¼"	1¼"
2½"	1½"
2¾"	1 5/8"

THREE-HOLE ORNAMENT

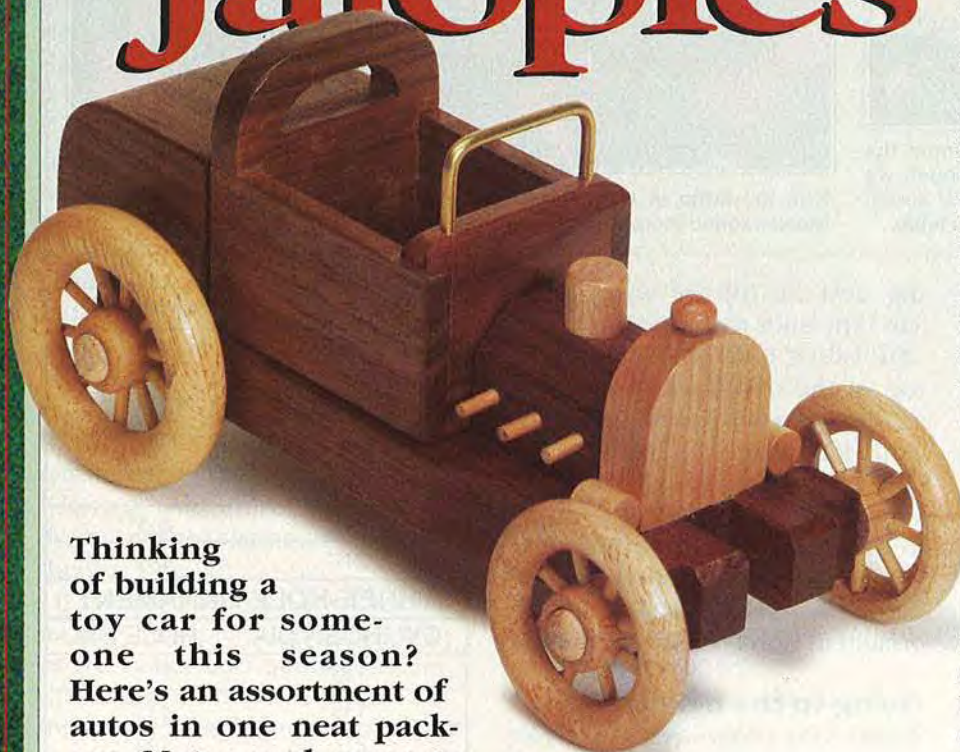
CYLINDER DIA.	HOLE DIA.
1½"	1"
1¾"	1¼"
2"	1 3/8"
2¼"	1 5/8"
2½"	1 7/8"
2¾"	2"

Ken power disc-sands the center portion of his open ornaments with the lathe running. This imparts a slightly different shape to the supports, and narrows them somewhat, too.

For a centerpiece, Ken often turns a Christmas tree on the dowel, like the one shown in the photo *on the opening page*. Sometimes, he showcases a found object, such as a shell, there. 🌲

Project Design: Kenneth M. Schaefer
Photographs: Studio Au, John Hetherington
Illustrations: Roxanne LeMoine

Junior Interchangeable Jalopies



Thinking of building a toy car for someone this season? Here's an assortment of autos in one neat package. Motor-mad moppets are sure to get revved up over this set.



The chassis comes first

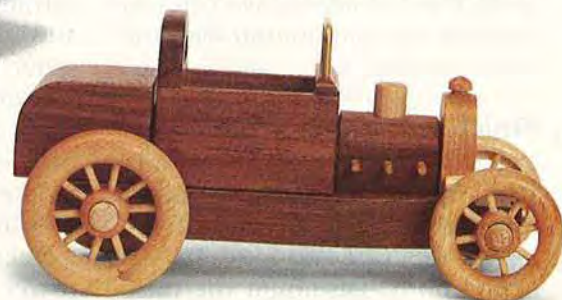
1 Photocopy the Full Sized Pattern for the chassis (A), and attach it to a $\frac{3}{4} \times 2\frac{3}{8} \times 7$ " piece of stock. (This pattern and others are in the WOOD PATTERNS® insert in the middle of the magazine.) Spray adhesive or rubber cement will hold the pattern in place for cutting.

2 Mark the centers for the four $\frac{1}{4}$ " holes in the edges of the stock. Drill the holes with a drill press.

3 Bandsaw or scrollsaw the side and front chassis cutouts. Remove the paper pattern, then sand the chamfers on the chassis front edge where indicated in the Exploded View drawing.

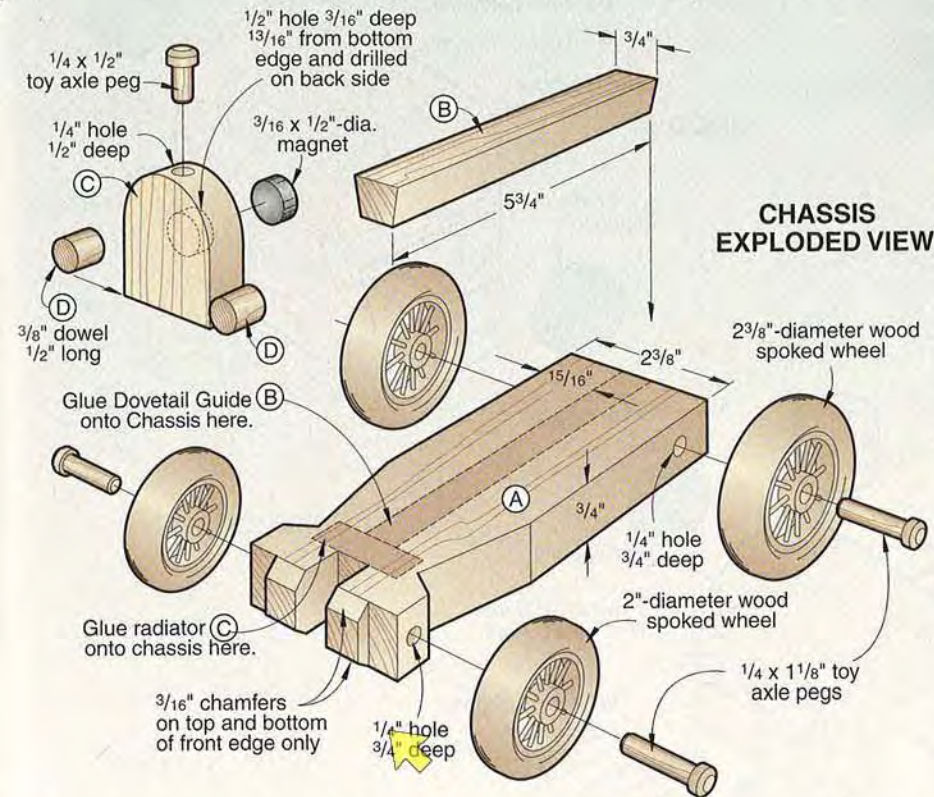
4 To make the dovetail guide (B), start with a piece of $\frac{1}{2}$ "-thick stock about 3" wide and 12" long for safety. Tilt your tablesaw blade 14° from vertical (tilt it away from the fence), and bevel-rip one edge of the stock. Compare the sawn edge to the part B Full-Sized Pattern to verify the accuracy of the angle.

5 Then, flip the stock end-for-end, placing the face that was up for the first cut against the table. Move the fence $\frac{3}{4}$ " closer to the blade, and, with the unbeveled edge against the fence, bevel-rip part B to $\frac{3}{4}$ " wide on the outside of the blade. (Stock thickness,



Print this article

parts make many models



Part	Finished Size			Mati.	Qty.
	T	W	L		
A chassis	3/4"	2 3/8"	7"	W	1
B* dovetail guide	1/2"	3/4"	5 3/4"	W	1
C radiator	1/2"	1 3/8"	1 1/2"	B	1
D headlight	3/8" dia.	dowel	1/2"	B	2
E* engine block	1 1/8"	1 1/4"	1 1/2"	W	1
F air cleaner	1/2" dia.	dowel	1/2"	B	1
G* hood	1 3/8"	1 1/4"	1 1/2"	W	1
H body front	3/8"	1 3/4"	2 1/4"	W	1
I body back	3/8"	2 1/2"	2 1/4"	W	1
J body side	1/4"	1 1/2"	2 3/4"	W	2
K* trunk	2 1/4"	1 1/2"	2"	W	1
L end panel	3/8"	1 1/2"	1 3/4"	W	8
M pickup side	1/4"	2 5/8"	2 5/8"	W	2
N pickup top	3/8"	1 3/4"	2 5/8"	W	1
O* box bottom	3/4"	1 3/4"	1 3/4"	W	1
P box side	1/4"	1 1/2"	2 1/2"	W	2
Q sedan side	1/4"	2 5/8"	3 1/2"	W	2
R sedan top	3/8"	1 3/4"	3 1/2"	W	1
S* sedan trunk	2 1/4"	1 1/4"	1 1/8"	W	1
T woody side	1/4"	2 5/8"	1 1/8"	W	2
U woody top	3/8"	1 3/4"	1 1/8"	W	1

* Make larger initially, then cut to finished size in accordance with how-to instructions.

Materials Key: B—birch, W—walnut

Supplies: 2" wheels, 2 3/8" wheels, toy axle pegs, 1/2"-dia. magnets 3/16" thick, 1/8" brass rod, 1/8" dowel rod, woodworker's glue, epoxy glue, clear finish.

bevel angle, and blade thickness combine here to make the fence adjustment equal to the finished width. Such is not always the case.) Rip about 1" into the stock, then verify that the wide side measures 3/4". Rip the guide and cross-cut a piece 5 3/4" long.

6 Bandsaw or scrollsaw the radiator (C). Drill the 1/4" hole in the top. Bore the 1/2" hole in the back of the radiator where indicated.

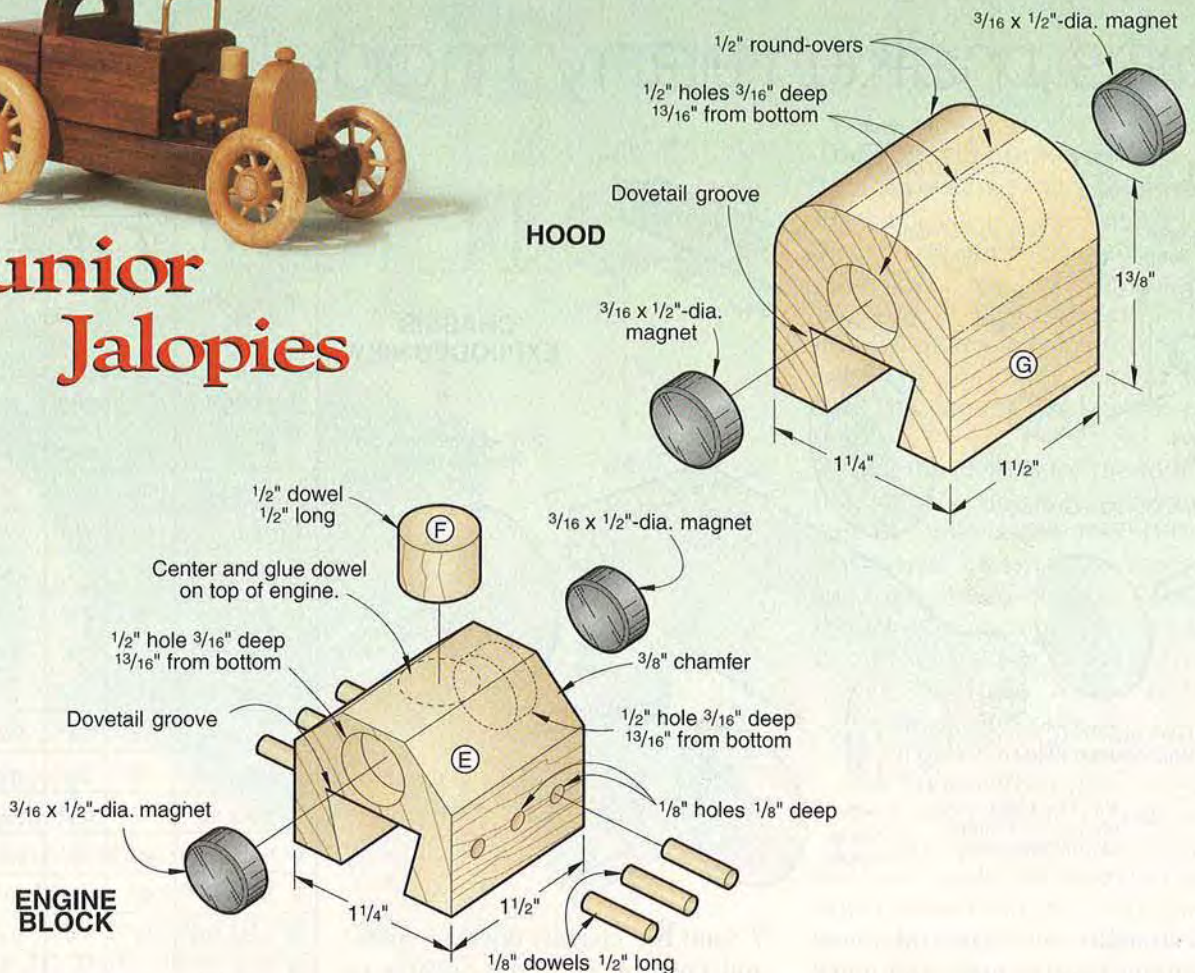
7 Sand the chassis, dovetail guide, and radiator. Glue the radiator to the chassis where shown. Then, glue the dovetail guide along the middle of the chassis, butting it up to the back of the radiator.

8 Cut two 1/2" lengths of 3/8" dowel for the headlights, and glue them on where shown. Glue a 1/4" axle peg into the hole in the radiator to resemble a radiator cap. Install 2 3/8"





Junior Jalopies



wheels at the rear and 2" ones at the front. (See the Buying Guide for our source for the wheels shown.) For greater durability, reinforce the wheels with dabs of epoxy glue where the spokes meet the wheel rims.

Now, build an engine

1 To make stock for the engine and hood, laminate two $\frac{3}{4} \times 1\frac{1}{4} \times 6$ "

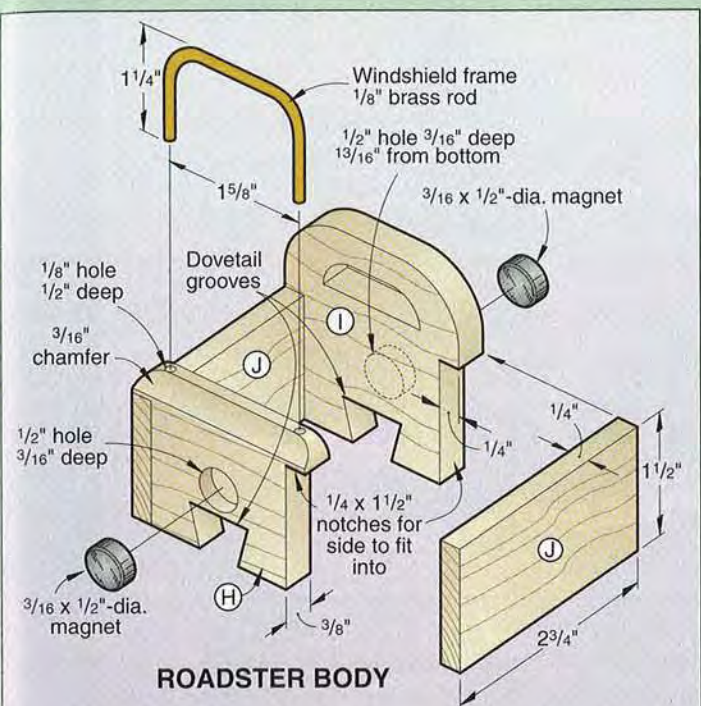
pieces of stock into a $1\frac{1}{2} \times 1\frac{1}{4} \times 6$ " blank. Cut a 14° dovetail $\frac{3}{4}$ " wide and $\frac{1}{2}$ " deep in the bottom. To do this, first saw a $\frac{3}{8}$ " groove $\frac{1}{2}$ " deep with a tablesaw and dado blade. Then complete the job with a $\frac{3}{4}$ " dovetail bit chucked in a table-mounted router. Slide the blank onto the guide to check its fit.

2 For the engine block (E), cut a $1\frac{1}{2}$ "-long piece from the dovetailed blank.

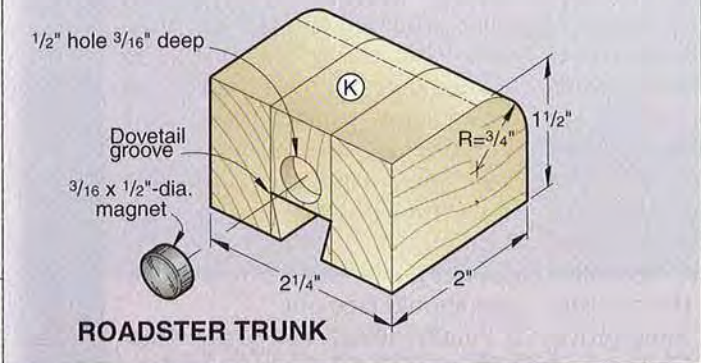
Drill a $\frac{1}{2}$ " hole in each end and three $\frac{1}{8}$ " holes on each side where shown. Bandsaw, plane, or sand $\frac{3}{8}$ " from the top of the drilled blank. Plane, sand, or rout a $\frac{3}{8}$ " chamfer on each side where shown. Finish-sand.

3 Cut a $\frac{1}{2}$ " length of $\frac{1}{2}$ " dowel rod and six $\frac{1}{2}$ " lengths of $\frac{1}{8}$ " dowel





ROADSTER BODY



ROADSTER TRUNK

rod. Sand smooth, and glue the 1/2" dowel to the top of the engine where shown. Glue the 1/8" pieces into the side of the engine.

4 For the closed hood (G), transfer the pattern's curved top line to the

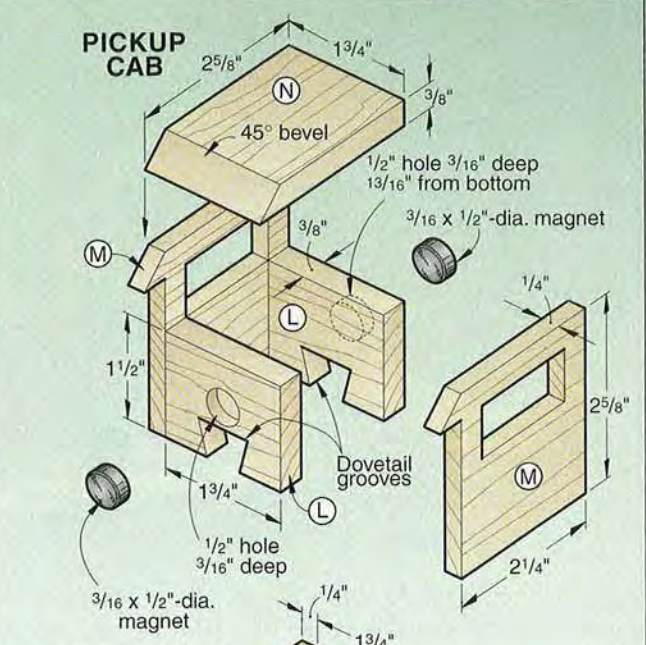


line, then sand to shape. Bore a 1/2" hole in each end where shown.

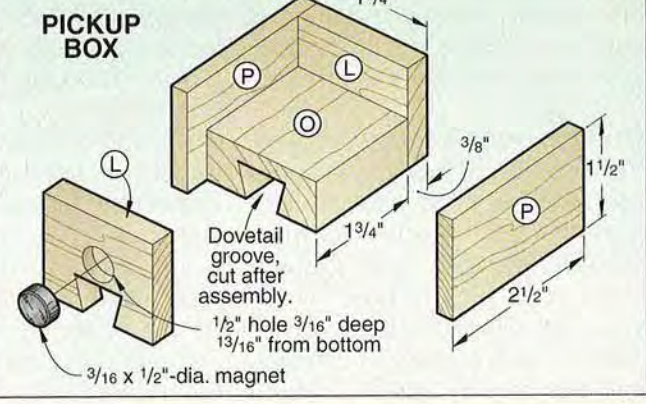
Add the roadster body

1 Apply the Full Sized Patterns for the body front (H) and back (I) to 3/8"-thick stock. Bore the 1/2" hole where shown in each. Bandsaw or scrollsaw the parts. Sand a chamfer on the front where shown.

2 Cut the two body sides (J) to the size shown in the Bill of Materials. Glue the front, back, and sides together, following the Roadster Body drawing.



PICKUP CAB



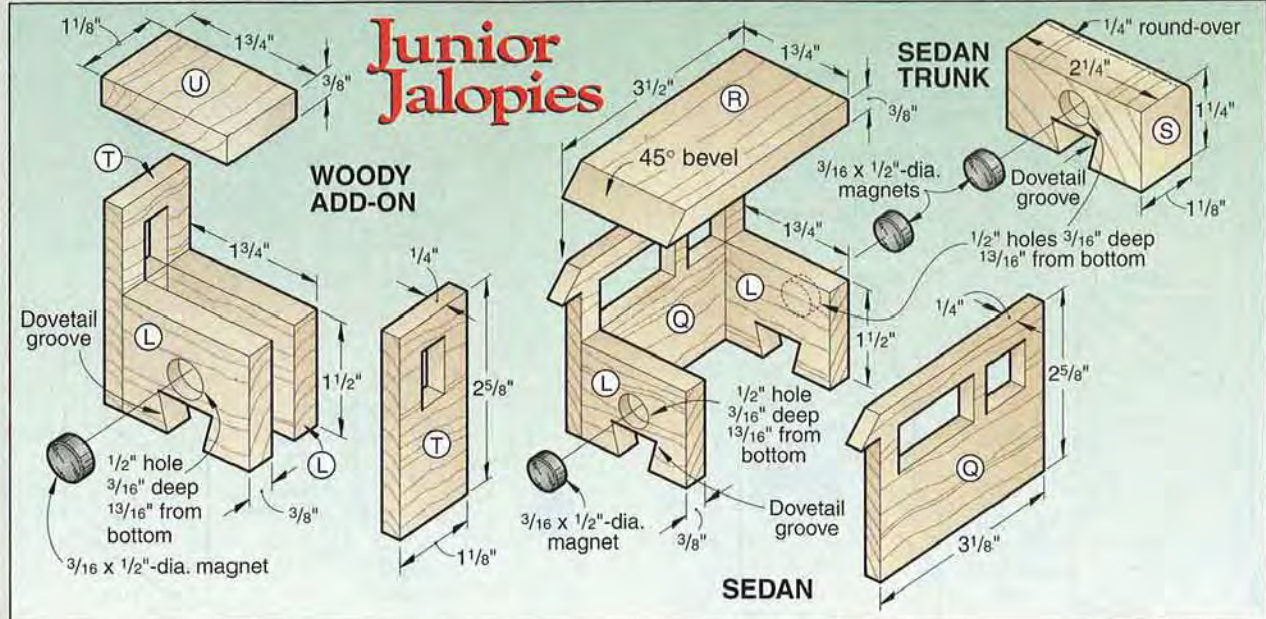
PICKUP BOX

3 Bend the windshield frame from 1/8"-diameter brass rod, following the dimensions on the drawing. Hold the frame on top of the body front (H), and mark the locations for two 1/8" holes to receive the frame. Drill the holes 1/2" deep, using a drill press. Sand the body.

4 Laminate three pieces of 3/4x1 1/2x6" stock into a 2 1/4x1 1/2x6" blank. Cut a dovetail groove along the center of one edge, following the procedure you used to groove the engine block and hood blank.

5 Crosscut a 2" length of the dovetailed stock. (Save the remainder for later.) Bore a 1/2" hole where shown in one end to make the

Continued



trunk (K). Lay out the curve on one side of the piece. Bandsaw slightly outside the line, then sand down to it. Sand the trunk.

Build a bunch more bodies

The full set of bodies includes the roadster body and trunk, a pickup cab, which combines with the roadster trunk to make a coupe, a pickup box, which you can use with the roadster body, a sedan body and trunk, and the woody add-on, which replaces the sedan trunk to create a station wagon.

1 Cut eight end panels (L) from $\frac{3}{8}$ " stock. In six of them, bore a $\frac{1}{2}$ " hole where shown. These will be the front panels for the pickup, pickup box, sedan, and woody add-on as well as back panels for the pickup and sedan. The two without holes are the rear of the pickup box and woody add-on.

2 To build the pickup, cut out two sides (M). Cut the pickup top to the size shown in the Bill of Materials. Glue the parts together, following the Pickup Cab drawing. Finish-sand.

3 Cut a dovetail groove in a

piece of stock $\frac{3}{4} \times 1\frac{3}{4} \times 12$ " (longer length for safety) following the previous procedure. Cut a piece $1\frac{3}{4}$ " long for the pickup box bottom (O). Cut the sides (P) to the dimensions shown in the Bill of Materials. Glue together per the Pickup Box drawing, and sand.

4 For the sedan, cut out two sides (pattern Q) and the roof (R, Bill of Materials). Follow the Sedan drawing for assembly. Cut the trunk (S) from the dovetailed stock left over from the roadster trunk, following the same procedure. Sand.

5 Cut out the woody add-on's sides (T) and top (U). Assemble, and sand.

Put it all together

1 Finish the chassis and the body parts with a clear finish of your choice. Be careful not to build up too much finish on the dovetailed guide and in the dovetail grooves.

2 Epoxy-glue $\frac{1}{2}$ " magnets $\frac{3}{16}$ " thick into the holes in the parts. So that the magnets hold the parts together rather than pushing them apart, determine polar-

ity first. To do so, hold one magnet faceup (either face) on your bench. Bring the others to it. If they attract, they're opposite.

On six magnets, mark the face that's attracted to your test magnet. Glue these six, with the marked face out, into the back of the radiator, engine, hood, roadster body, pickup, and sedan. Now, glue magnets into the nine remaining holes. In each case, the side that's attracted to the magnet glued into the rear of any part should face out.

3 Finally, install the brass windshield frame on the roadster body. Put a dab of epoxy into each hole, then push the legs of the frame into the holes. ♣

Buying Guide

Auto parts. Four wheels, axle pegs, $\frac{1}{8}$ " brass rod, and 20 magnets, kit no. 1406, \$9.99 plus \$3.25 shipping and handling in U.S. (Call 612/471-8550 or Canadian rate.) MN residents add 65¢ tax. Meisel Hardware Specialties, Box 70W, Mound, MN 55364-0070. For credit card orders, call 800/441-9870, enter key code 807 when asked.

**FOR THOSE OF YOU WHO KNOW BETTER
THAN TO CONSIDER AN IMITATION.**



Limited Edition Unisaw® includes 52" Unifence®, 50-tooth ATB combination blade, chrome handles and personalized insignia plaque.

Your choice of Unifence or Biesemeyer® Fence available on all models other than Limited Edition.

A HUNDRED DOLLAR REWARD FROM DELTA.

Old-timers will tell you that you're not just buying that Unisaw for right now. You're buying it for what it'll be doing for you ten, fifteen—maybe twenty years down the road. That's when you'll be glad you didn't try to save a couple hundred bucks way back in 1996—by settling for a saw that was touted to be as good as the Unisaw.

Feature for feature, the Unisaw stands unmatched, period. Equally important to consider, are parts and service. (Truth is, we can still provide parts and service today, for a 1937 Unisaw.)

All that said, we know how tempting it can be to save a few bucks by buying a knock-off from overseas. (Meanwhile—the Unisaw you've always wished for could be coming off our production line in Tupelo, Mississippi, as we speak.) This calls for a special deal.

Okay, here goes: Buy any Delta Unisaw between July 1 and December 31, 1996 and we'll send you a rebate check for \$100. Even on this Limited



Edition Unisaw, as seen on *The New Yankee Workshop*—a saw that'll be offered this one time only.

Call for the name of the Delta dealer nearest you where you can take advantage of this one-time offer. Delta International Machinery Corp., 800-438-2486.

**THE
POWER
OF THE
PROS**



DELTA
WOODWORKING MACHINERY
A Pentair Company

Delta is proud to nationally fund *The New Yankee Workshop* hosted by Norm Abram on PBS.



Visit us on the web:
<http://www.deltawoodworking.com/delta>

In search of the perfect Miter

What's the best clamp for picture-perfect miter joints? That depends on how fast you want to work, your budget, and how many frames you intend to build.

You need two things to make a good-looking miter joint: exact 45° cuts and a clamp that effectively pulls joint members together.

To get exact 45° cuts you need to carefully adjust your saw and use a high-quality saw blade. To help you find the right clamp we tested 17 products in five categories: bench-mounted miter vises, portable miter vises, high-pressure miter vises, threaded-rod clamps, and band clamps. These clamps range in price from \$9 to \$140. To discover what clamps best suit your needs and pocket-book, take a look at our results.

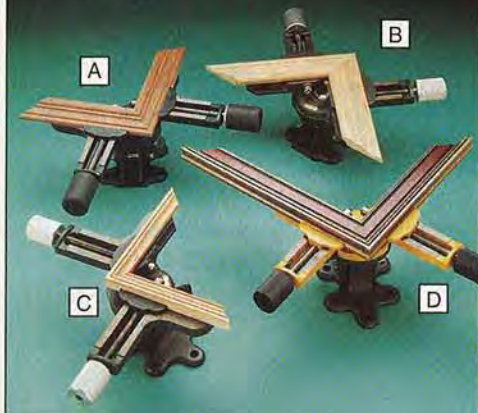


BENCH-MOUNTED MITER VISES

They turn, tilt, and are milled for exact 90° corners

These cast-iron vises have two 90° wings mounted to a 4"-tall base that bolts to your workbench. The jaws open up to 4", and tighten by turning two knurled knobs.

- A. Highland Hardware Professional Miter Vise
- B. Trend-Lines Professional Miter Vise
- C. Woodworker's Supply Miter Vise
- D. AMT Cast-Iron Miter Vise



If you build a lot of frames with corners reinforced with fasteners such as brads, you'll find plenty to like about these sturdy vises. The clamping wings rotate 360° and tilt up to 90°. The 1/4"-high fixed jaws fit inside the rabbeted edges of picture frame moldings so that the molding stays flush under clamping pressure. If you want to drive a brad into the edge of the molding, the tip of the joint protrudes well past the jaws.

One drawback: With stock thicker than 3/4", the low clamping pressure causes the workpiece to ride up slightly. And, you can clamp only one corner at a time. (These clamps do not exert pressure on the joint itself, so fasteners also help bring the joint together.)

The four vises we tested are nearly identical. The model from



With a bench-mounted miter vise, if a joint in a frame doesn't fit, you can saw through the joint and reclamp it for a perfect fit.

Highland Hardware is slightly heavier and has comfortable, rubber-covered lead-screw knobs.

What they cost:

- (A) Highland Hardware Professional Miter Vise, \$80
- (B) Trend-Lines Professional Miter Vise, \$40
- (C) Woodworker's Supply Miter Vise, \$60
- (D) AMT Cast-Iron Miter Vise, \$39

Clamp

PORTABLE MITER VISES

Simple clamps that prove effective

Like their heavier bench-mounted brothers, portable miter vises fea-

ture two movable jaws to push the frame pieces against two stationary jaws. You also can mount these vises to your bench, but

they don't tilt, swivel, or give you much working clearance above the benchtop.

Pony has two entries in this field. Style #9166 (A) has a fixed 90° angle, and Style #9100 (C) adjusts from 0° to 180°. The jaws on both open to 3".

The Wolfcraft Quick-Jaw 90° Clamp (B) will take workpieces up to 2½" wide, and features padded jaws and a little more heft. The movable jaws operate off lead screws with quick-release levers for faster positioning.



A. Pony Style #9166
B. Wolfcraft Quick-Jaw 90° Clamp
C. Pony Style #9100

What they cost:

- (A) Pony Style #9166, \$10
- (B) Wolfcraft Quick-Jaw 90° Clamp, \$40
- (C) Pony Style #9100, \$11

HIGH-PRESSURE MITER VISES

High-end helpers that really put on the squeeze

Both clamps in this category force miter joints together under pressure. This helps create a strong glue joint. And, you can clamp at multiple angles. On the other hand, these vises are expensive, and only do one joint at a time.

On the Gross Stabil Multi-Angle Clamp MGS (A), a lead screw pulls the two halves of the steel base together after you've locked the workpieces against the fixed jaws. It will clamp workpieces up to 4" wide and features fixed stops for angles of 30°, 60°, 90°, and 120°.

When you turn the lead screw on the Bessey Miter Clamp GS11 (B), the two swiveling jaws draw together and force the workpieces against the backstop block. This block gives you three angles to clamp against (60°, 90°, and



A. Gross Stabil Multi-Angle Clamp MGS
B. Bessey Miter Clamp GS11

120°). But you only need two contact points on the backstop, so you also can clamp any odd-size angle from 60° to 120°.

What they cost:

- (A) Gross Stabil Multi-Angle Clamp MGS, \$140
- (B) Bessey Miter Clamp GS11, \$125

Continued

Miter Clamp

THREADED-ROD CLAMPS

These do all four corners of a frame at once

These clamps come with eight 24"-long threaded rods, four corner brackets, four nuts, and four couplers. The couplers join the rods for clamping large frames.

With the corners of a frame in the brackets, the nuts squeeze the miters together and square the frame. In our tests, we found that all three threaded-rod clamps worked equally well in clamping a mitered frame. You can't drive brads or nails into the frame corners until after the glue dries.

The Veritas model (C) uses a brass "speed nut" that you tilt and quickly slide up the length of the rod. With the Leichtung (B) and the Pony (A), you have to tediously spin each nut by hand.

What they cost:

- (A) Pony 4-Corner Framing Clamp, \$14
- (B) Leichtung 4x4 Framing Clamp, \$13
- (C) Veritas 4-Way Speed Frame Clamp, \$30



A. Pony 4-Corner Framing Clamp
B. Leichtung 4x4 Framing Clamp
C. Veritas 4-Way Speed Frame Clamp

BAND CLAMPS SECURE MULTIPLE CORNERS AT ONCE

Wrap your frame with a strap, and pull tight

Band clamps work well on mitered frames and taller workpieces like drawers or boxes. You also can remove the corner blocks and clamp round projects.

The Wolfcraft (A) has three plastic corner blocks and a lead screw with a handle for tightening the 1"×23' nylon band. This unit has the largest corner blocks, making it well suited for big frames, boxes, and thicker stock.

Bessey's Poly Angle Strap Clamp (B) comes with seven Y-shaped

corner blocks that fit square, hexagonal, or octagonal assemblies. To tighten the 1"×21' nylon band, you turn the knob on top of the container. When you're done, the band winds inside the container for easy storage.

Unlike the nylon bands, the 3/8"×22' steel band on The Merle Clamp from MLCS never twists around itself. But this springy band made it hard to position the blocks on the frame corners.

The Pony Style #1200 Band Clamp comes with four steel brackets that are held in place by

the tension on the band. (On the others, the band is threaded through a slot on the blocks.) Positioning these brackets is quick, but the band twists easily without a slot to align it. To tighten the 1"×15' band, you turn a locking cam with a screwdriver.

What they cost:

- (A) Wolfcraft Quick-Adjust Band Clamp, \$35
- (B) Bessey Poly Angle Strap Clamp, \$50
- (C) The Merle Clamp, \$25
- (D) Pony Style #1200 Band Clamp, \$9

SPRING MITER CLAMPS

At first glance, these Ulmia Spring Miter Clamps look like they couldn't possibly do much. But you need only clamp one joint to find out how simple, reliable, and effective they are.

These heavy-gauge wire clamps are made of tempered spring steel. To use one, you spread its points apart with a special pliers, position the clamp, and release the pliers. The sharp points hold the clamp to the wood, and the released tension in the spring steel closes up the joint.

The points leave small indentations on the sides of the frame. But these are smaller than the hole created by a brad and can be filled just as easily.

A complete set sells for about \$165 and includes the pliers and 60 spring clamps (10 each in six sizes). You also can buy the pliers separately for \$44, and sets of individual clamps (10 clamps per set) for \$20-\$30. Clamp sizes, as measured in the width between the points, range from $\frac{3}{8}$ " to $3\frac{1}{2}$ ".



Spring clamps work simply and effectively. They leave small indentations in the frame edges that fill as easily as brad holes.

For speed and convenience, we found the Ulmia clamps hard to beat. Given the price, however, these clamps make the most sense for professional framers or home woodworkers who do a lot of framing. To order, call Woodcraft Supply at 800/225-1153. For technical advice call 304/464-1074.

WHICH CLAMP IS BEST FOR YOU?

If you want to join your frames with brads, buy a bench-mounted miter vise. These are so much alike we suggest you shop for price. AMT and Trend-Lines offer the bargains here.

For most woodworkers, we recommend the threaded-rod clamps. The speed nuts on the Veritas model will cost you extra, but we think the convenience is worth the money unless you're on a tight budget.

Consider a band clamp if you also need a clamp for round or multisided projects. The Bessey Poly Angle Strap Clamp won hands down here. It's versatile, convenient, and easy to store.

Choose one of the Pony miter vises if you're on a tight budget and need an all-purpose, light-duty miter clamp for small workpieces. The Wolfcraft Quick-Jaw 90° Clamp costs more, but will earn its keep if you also use it to square up boxes, cabinets, and other big projects.

Of the high-pressure clamps, we liked the Bessey best. Both it and the Gross Stabil do a good job, but clamping with the Bessey is faster and simpler. ♣

Who to call for more information

AMT: 800/435-8665
 Bessey (American Clamping Corp.): 800/828-1004
 Gross Stabil: 800/671-0838
 Highland Hardware: 800/241-6748
 Leichtung: 800/321-6840
 MLCS: 800/533-9298
 Pony (Adjustable Clamp Co.): 312/666-2723
 Trend-Lines: 800/767-9999
 Veritas: 800/667-2986
 Wolfcraft: 708/773-4777
 Woodworker's Supply: 800/645-9292

- A. Wolfcraft Quick-Adjust Band Clamp
- B. Bessey Poly Angle Strap Clamp
- C. The Merle Clamp
- D. Pony Style #1200 Band Clamp



Print this article

A
WOOD
MAGAZINE
EXCLUSIVE

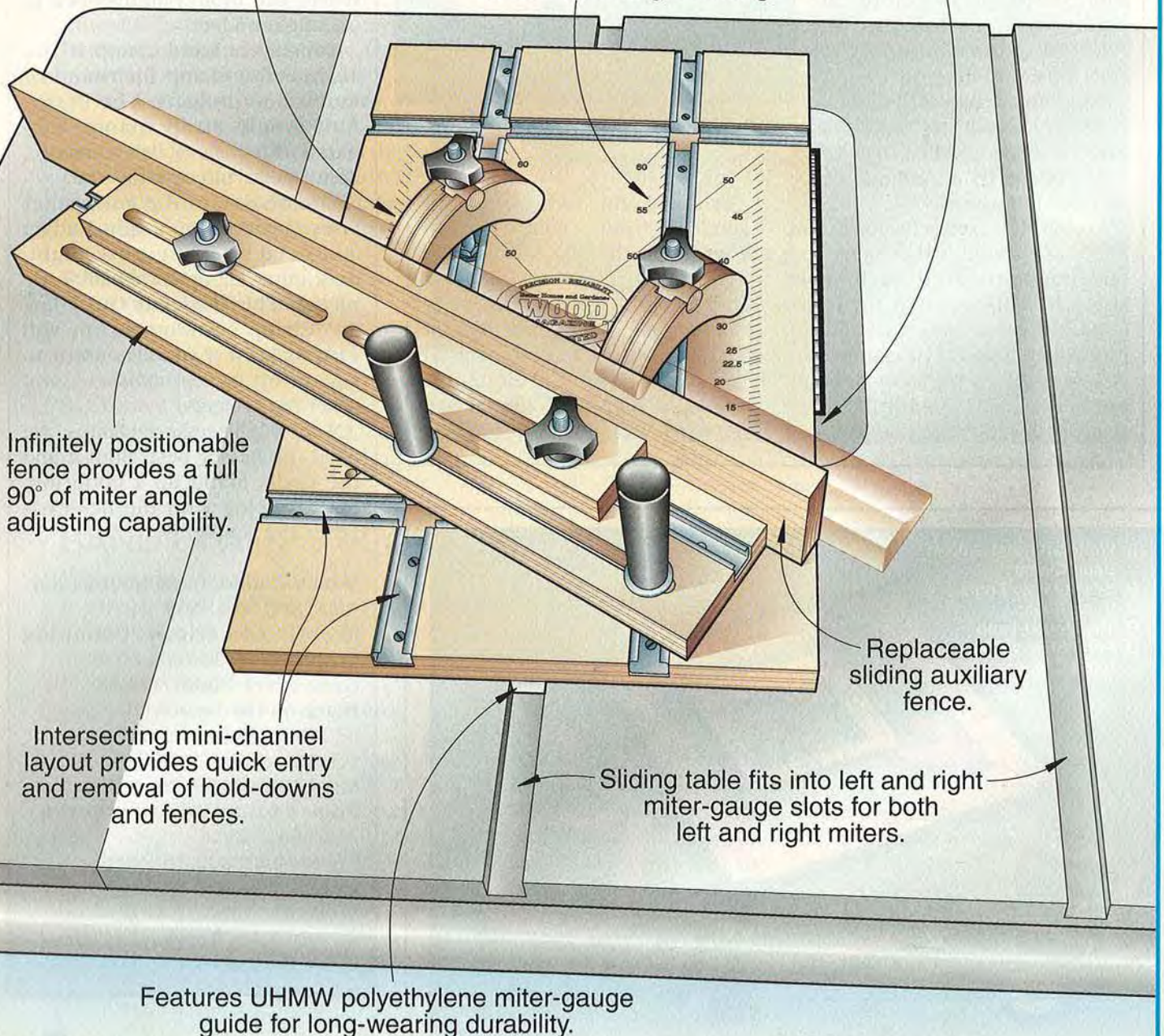
Universal Tablesaw

With Laser Accuracy

Easy-to-adjust hold-downs ensure safe handling of the workpiece. Additional hold-down sizes are provided on *page 102* for those difficult-to-hold parts, including small moldings.

Edge of table aligns flush with blade for easy cutoff reference. Especially useful when cutting odd-shaped parts and taper-cutting.

Laser-engraved angle scale for accurate angle-cutting.



Jig

Laser-engraved angle scales on this sliding-table jig help guide you to right-on-the-money mitercuts, tapercuts, crosscuts, and angle-cuts. Time and time again, this jig has proved its worth here in the *WOOD*® magazine shop where it was conceived, designed, and tested. Now, you can build one for your own shop and raise your woodworking to a new level of accuracy. See pages 75 and 100 for just a few of the jig's many uses.

Okay, let's start with the jig table

1 Cut the jig table (A) to the size listed in the Bill of Materials. For an accurate cutting jig later, make sure the rectangular table you cut has perfectly square corners. (Due to its stability and strength, we used $\frac{3}{4}$ " [18mm actual] Baltic birch plywood.)

2 To customize the jig table for your particular tablesaw, you'll need to properly locate the miter-gauge groove on the bottom side of the table (A). To do this, follow the 3 steps on Locating the Guide-Bar Slot drawing below. Since one miter-gauge groove in a tablesaw is located farther from the blade on one side than the other, the slot in the jig's table (A) will not be centered.

3 Using a dado blade in your tablesaw, cut a $\frac{1}{16}$ "-deep dado on the *bottom side* of the table (A) to the same width as your tablesaw's miter-gauge groove centered between the lines where marked in Steps 1 and 2 on the drawing Locating the Guide-Bar Slot.

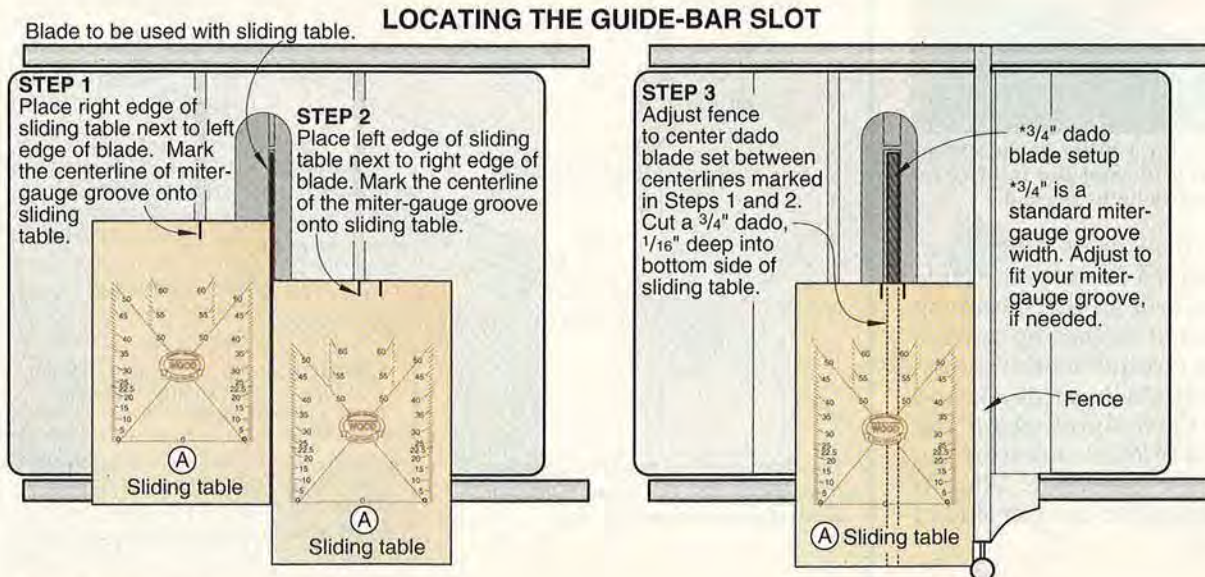
4 Cut the miter-gauge guide bar (B) to size. Use solid birch if you're using your own stock, or, if you use our hardware kit, cut the UHMW (ultra-high molecular weight) polyethylene slides easier in the groove than wood. Plus, polyethylene will not change in size with seasonal humidity changes.) Drill mounting holes in the guide where shown on the Table Exploded View drawing. Screw the guide in place, making sure the screw heads don't protrude below the bottom surface of the guide.

5 Fit your tablesaw with a $1\frac{3}{16}$ " dado blade that's set to cut $\frac{7}{16}$ " deep ($\frac{1}{16}$ " deeper than the thickness of the metal mini channel). Set the fence on your tablesaw 3" from the edge of the dado blade. With a different edge against the fence for each pass, cut four dados in the *top surface* of the table (A) where indicated on the Table Exploded View drawing.

Note: Please see the Buying Guide at the end of the Bill of Materials for our source of hardware and Baltic birch plywood for this jig. To save you the time and effort of having to use an adjustable triangle to position the fence to cut miters, we've had the jig table (A) laser-engraved with angle scales. This, too, is available through the Buying Guide. If you'd rather save a few dollars and use your own plywood for the jig table, use an adjustable triangle to set the angle of cut. To do this, see Photo G at the end of the article for our method.

6 Replace the dado set with the blade you normally use in your tablesaw. Place the jig in one of the miter-gauge slots and trim one edge of the jig with the blade. Mark the front end of the jig top. Transfer the jig into the other miter-gauge slot, and with the marked end forward, trim the opposite edge of the jig.

Continued



Tablesaw Jig

Next, cut and add the metal mini channel

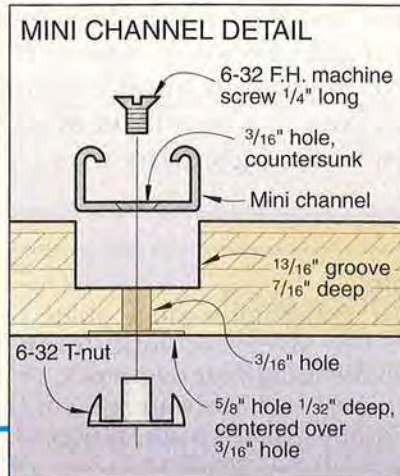
1 Measure the lengths, and use a hacksaw or bandsaw fitted with a metal-cutting blade to cut the 12 pieces of metal mini channel to length plus $\frac{1}{8}$ ". (We used B-Line System B72 mini channel, available at most electrical supply outlets. Or, see the Buying Guide for our mail-order source.)

2 To square the ends and make sure the corresponding pieces are identical in length, screw a wooden extension to your disc sander miter gauge where shown in the photo below. Then, mark three lines on the fence to indicate the three lengths of mini channel needed. Using a disc sander, sand one end of each piece of channel square. Then, sand the opposite end of each, pushing lightly on the already sanded end until it is flush with the previously marked lines. Finally, sand the four short side pieces so they will be positioned $\frac{1}{16}$ " in from the edge of the table side where noted on the Table Exploded View at right. This prevents your tablesaw blade from coming in contact with the mini channel.



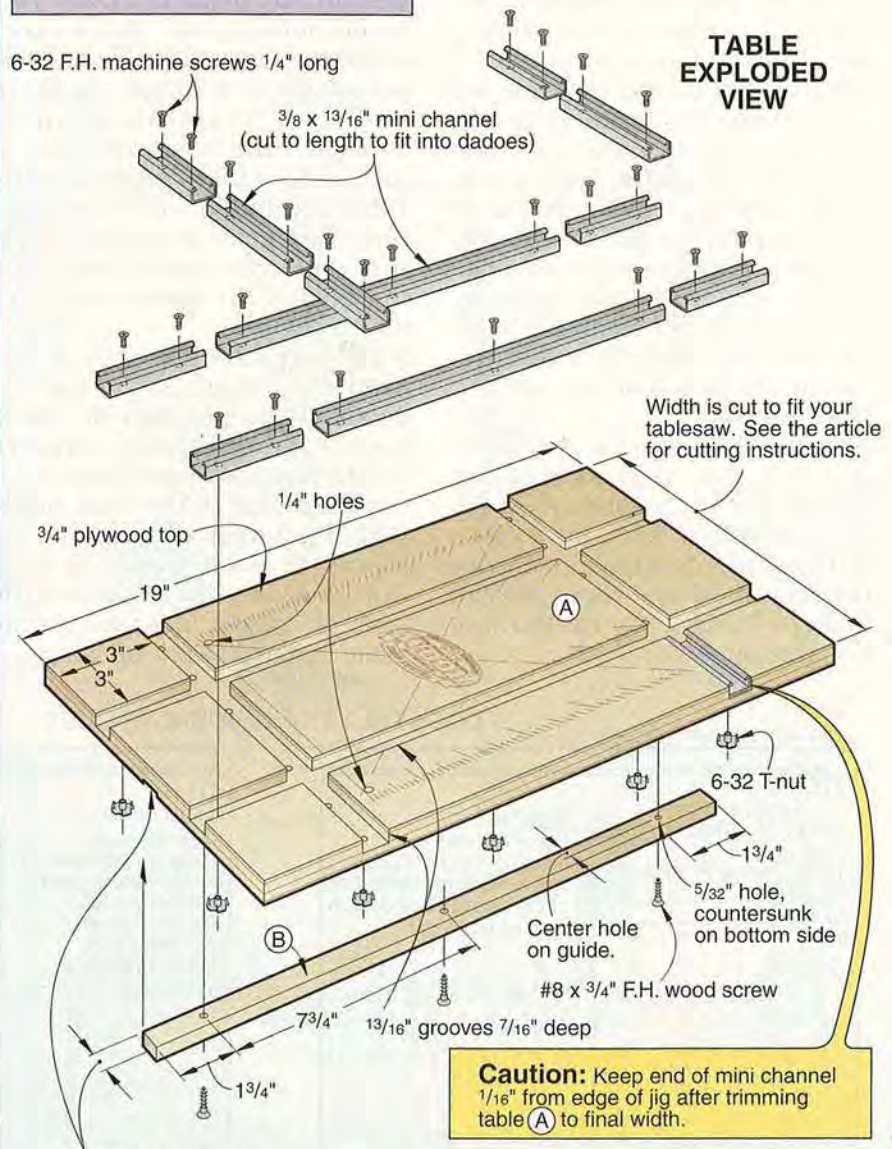
Marked lines on a miter-gauge extension allow you to sand the mini channel to the exact lengths needed.

3 Fit your drill press with a $\frac{3}{16}$ " bit, and attach a fence to the table so you can drill all the mounting holes centered in the top surface of the mini channel where shown on the Mini Channel detail and the Parts View drawing on the WOOD PATTERNS® insert in the center of the magazine. File off any burrs from the bottom side of the channel.



4 Remove the guide (B) from the bottom side of the table (A). Then, using double-faced tape, stick each piece of mini channel in its mating location. Using the same $\frac{3}{16}$ " bit in your drill press, use the holes in the mini channel as guides to drill $\frac{3}{16}$ " holes through the table (A).

5 Working from the bottom side of the jig table, drill a $\frac{5}{8}$ " counter-bore $\frac{1}{32}$ " deep for each T-nut. Test the fit; the T-nuts must not



$\frac{1}{16}$ " deep dado cut to same width as miter-gauge slot. Cut guide (B) to match width of your miter-gauge slot.

Caution: Keep end of mini channel $\frac{1}{16}$ " from edge of jig after trimming table (A) to final width.

SEE THE WOOD PATTERNS® INSERT FOR THE PARTS VIEW DRAWINGS

come in contact with the metal top of your tablesaw when the jig slides back and forth.

6 One at a time, remove the channel, and attach a piece of masking tape to the bottom side of each piece. For ease in relocating the channel later, number the tape on the channel and mark the mating number on the dado from where the channel was removed.

7 Lightly sand the table and apply

a couple of light coats of finish (we used polyurethane).

8 Tap all the T-nuts into place in the bottom of the table (A).

9 Using the numbers as guides, reposition the mini channel in their mating locations in the jig table. Fit a countersink bit (we used a Weldon $\frac{3}{8}$ "-diameter countersink bit) into your drill press, and countersink each hole in the mini channel so the top surface of a 6-32 flathead machine screw

will seat in the countersink and the top of the screw will be flush with the top of the channel. For the stops and fences to slide smoothly in the channel later, the tops of the screws must not protrude. The countersink bit will also machine the tops of the T-nuts so they don't protrude through the mini channel.

10 Remove the pieces of mini chan-

Continued

Bill of Materials					
Part	Finished Size			Mati.	Qty.
	T	W	L		
A table	$\frac{3}{4}$ "	12"	19"	BP	1
B guide	$\frac{3}{8}$ "	**	19"	B	1
C fence	$\frac{3}{4}$ "	$3\frac{1}{8}$ "	$19\frac{1}{2}$ "	BP	1
D base	$\frac{3}{4}$ "	$1\frac{7}{8}$ "	$15\frac{1}{2}$ "	BP	1
E upright	$\frac{3}{4}$ "	$2\frac{1}{2}$ "	24"	B	1
F stopblock	$\frac{3}{4}$ "	$1\frac{5}{8}$ "	$1\frac{5}{8}$ "	BP	1
G stop block	$\frac{1}{2}$ "	$1\frac{5}{16}$ "	$1\frac{5}{8}$ "	B	1
H hold-down blanks	$\frac{3}{4}$ "	3"	$5\frac{3}{4}$ "	BP	4
I holder	$1\frac{1}{2}$ "	2"	3"	P	1

**Width depends on the width of your particular tablesaw's miter-gauge groove.

Materials Key: BP-Baltic birch plywood, B-birch, P-pine or fir.

Supplies: $\frac{3}{8} \times \frac{13}{16}$ " mini channel, 31 6-32 T-nuts and mating 6-32 flathead machine screws $\frac{1}{4}$ " long, 3 #8 $\times\frac{3}{4}$ " flathead wood screws, 2 $\frac{3}{8}$ -16 oval-tapered knobs $3\frac{7}{8}$ " long, 5 $\frac{3}{8}$ " flat washers, 5 $\frac{3}{8}$ " squarehead bolts $1\frac{1}{2}$ " long, 5 $\frac{3}{8}$ -16 3-pronged plastic knobs $1\frac{3}{4}$ " diameter, 3 #8 $\times 2$ " panhead sheet metal screws, 2 #8 $\times 1$ " flathead brass wood screws, $\frac{3}{4}$ " dowel stock, 2 $\frac{3}{8}$ " carriage bolts $4\frac{1}{2}$ " long, 4 $\frac{1}{2}$ "-diameter magnets $\frac{1}{4}$ " thick, 2 pieces of $\frac{1}{4}$ " steel rod 5" long, clear finish.

Buying Guide

Hardware kit. Thirteen pieces of $\frac{3}{8} \times \frac{13}{16}$ " mini channel cut slightly long (12 for the table and one for the fence), one piece of UHMW polyethylene cut slightly oversized for the table guide (B), plus all the hardware listed in the Supplies listing except for the finish. WOOD KIT TSJ1, \$49.95 plus \$3.75 shipping. Add \$8.75 for a $\frac{3}{8}$ " Weldon countersink bit. Schlabaugh and Sons Woodworking, 720 14th Street, Kalona, IA 52247 or call 800/346-9663 to order.

Ready-to-assemble kit. All the pieces listed in the hardware kit above, plus all the Baltic birch plywood and solid-birch pieces listed in the Bill of Materials cut to size and shape with the dados and miter-gauge slot pre-cut. The table (A) also has the angle markings laser-cut into the top surface. WOOD KIT TSJ2, \$119.95 plus shipping (call for shipping charges). Schlabaugh and Sons Woodworking, address and phone number above. Add \$8.75 for a $\frac{3}{8}$ " Weldon countersink bit.

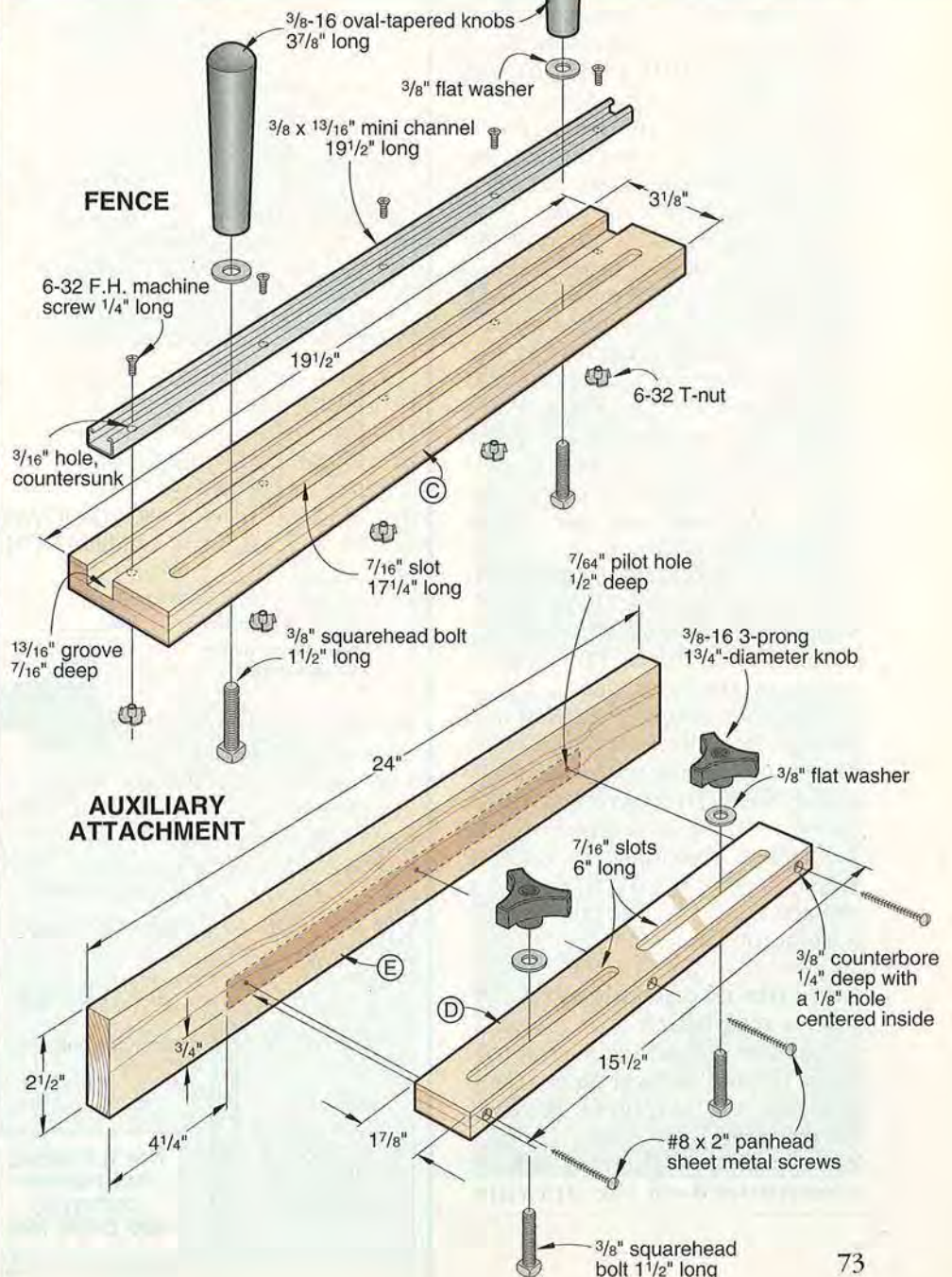


Table saw Jig

nel from the table. Use the countersink bit to slightly machine the tops of the T-nuts a bit more. This creates a slight gap between the T-nuts and mini channel so the T-nut will be pulled tightly into the bottom of the table when securing the mini channel in place. Screw the channel in place.

11 Reattach the guide bar (B) to the bottom of the table.

Next, make the fence and the auxiliary attachment

1 Cut the fence (C) to the size listed in the Bill of Materials and shown on the pattern insert.

2 Mark and drill a pair of $\frac{7}{16}$ " holes through the fence (C) where shown on the pattern insert. Draw lines to connect the holes, and cut the waste between the holes to form a $\frac{7}{16}$ " slot.

3 Cut a $1\frac{3}{16}$ " dado $\frac{7}{16}$ " deep in the top surface of the fence where dimensioned on the pattern insert and shown on the Fence drawing.

4 Cut the mini channel for the fence (C) to length, and drill and countersink the mounting holes as you did earlier for the table (A). Finish-sand the fence, and screw the channel in place. See the Buying Guide for our source of knobs for the fence.

5 Cut the auxiliary attachment base (D) and upright (E) to size.

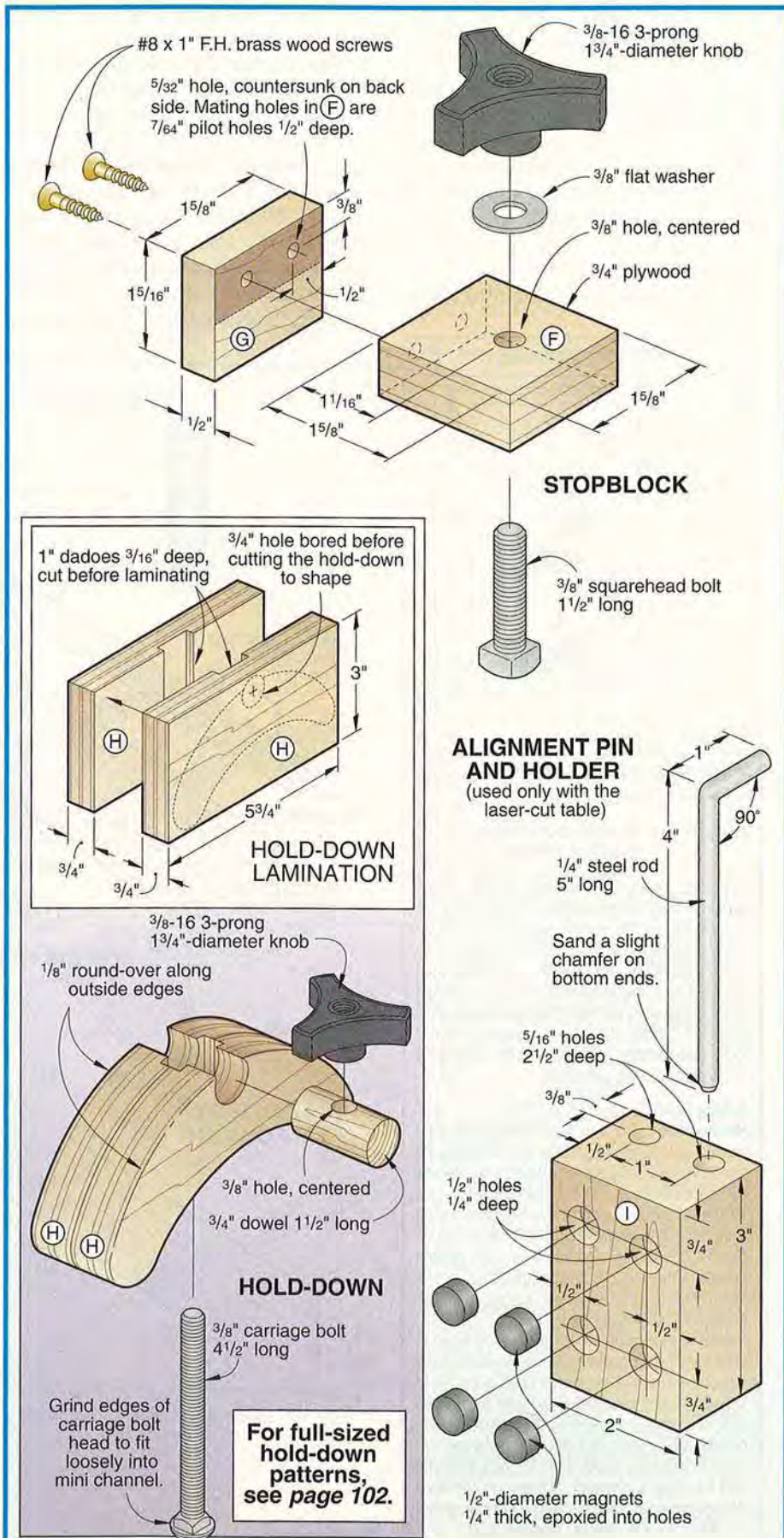
6 Mark the locations and form $\frac{7}{16}$ " slots in the base (D) where shown on the Parts View.

7 Mark the centerpoints, and drill three $\frac{1}{8}$ " counterbored mounting holes, and screw the upright (E) to the base (D) where shown on the Auxiliary Attachment and Parts View drawings. Do not glue D to E, since you'll need to replace E after you've cut through it numerous times.

For cuts of equal length, add a stopblock

1 Cut the stopblock horizontal piece (F) and vertical piece (G) to size. See the Stopblock drawing for reference.

2 Drill a $\frac{3}{8}$ " hole in F where dimensioned on the drawing.



Then, drill a pair of countersunk mounting holes through G and into F. Screw the pieces together.

3 Attach a knob to F where shown in the drawing.

Finally, add a pair of hold-downs and pivot pins

1 Cut four hold-down blanks (H) to $3 \times 5 \frac{3}{4}$ " from $\frac{3}{4}$ " plywood. Cut a 1" dado $\frac{3}{16}$ " deep in each piece where shown on the Hold-Down Lamination drawing. With the edges and ends aligned, glue and clamp two pieces together to form each hold-down. Later, transfer the paper pattern(s) shown on *page 102*, bore a $\frac{3}{4}$ " hole where indicated, and band-saw the hold-downs to shape.

2 Drill and cut a pair of the $\frac{3}{4}$ " dowels shown on the Hold-Down drawing, and assemble the hold-downs in the configuration shown on the drawing.

3 If you don't plan to buy the laser-engraved table (A), skip to the next section. Crosscut and bend two pieces of $\frac{1}{4}$ " steel rod 5" long to the shape shown on the Alignment Pin and Holder drawing. You'll use the alignment pins for aligning the fence on the laser-engraved table later.

4 Build the alignment-pin holder shown on the drawing. To keep the holder close at hand, drill counterbores, and epoxy four magnets in place for sticking the holder to your tablesaw cabinet.

Sand and apply a finish

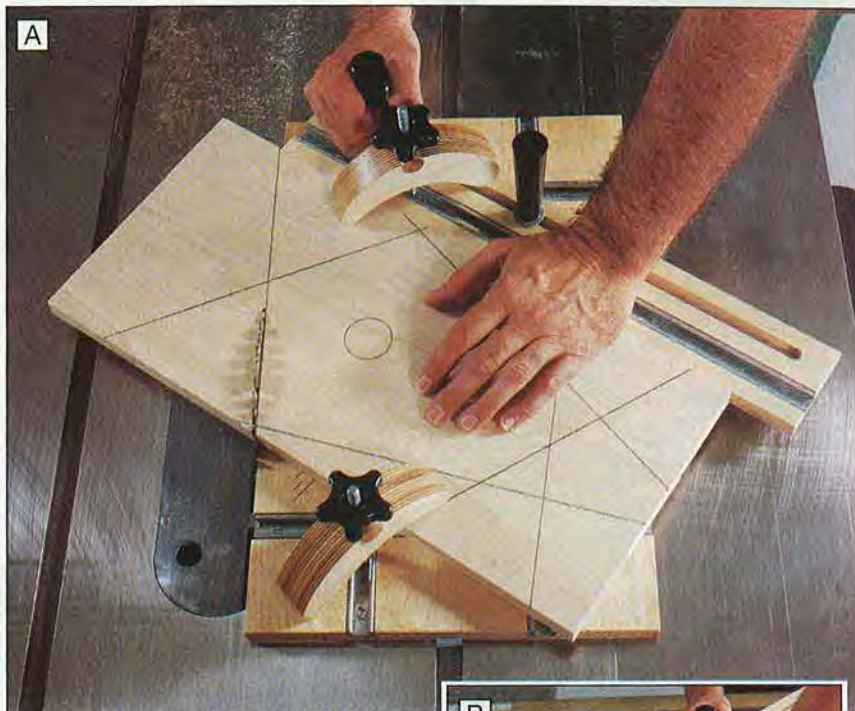
1 Finish-sand the fence, auxiliary attachment, stop, hold-downs, and alignment-pin holder.

2 If you use your own plywood for the table (A), consider marking commonly used angles on the top surface of the plywood table. Find the angles with an adjustable triangle as shown in Photo G.

3 Add a clear finish too all wood parts. (To prevent the working surfaces from becoming too slick, we prefer a polyurethane finish.)

4 If you used solid stock for your guide (B), apply a bit of paraffin to the guide for easier sliding in the tablesaw groove.

How to use your tablesaw jig



To cut angled pieces to shape, mark the cutlines on the wood. Align a marked cutline with the edge of the jig table. Position the fence and hold-downs to hold the piece steady. Make the cut as shown in Photo A. The fence adjusts easily for making the adjoining angle cut as shown in Photo B.



You can taper-cut table legs and other projects by marking the cutline on the workpiece and aligning the marked cutline with the outside edge of the jig table. Then, as shown in Photo C, position the fence against the workpiece, add the stop and hold-downs, and make the cut. With this setup, you can cut numerous pieces exactly the same.



Continued on page 100



Pacific Northwest loggers chop a Douglas fir with double-bit axes in the era before chainsaws. The springboards they perch on enabled them to cut above the tree's flared lower portion.

In the lumber industry, what was once wood waste has become a variety of products. And because they now use more of every tree, it means that the wood you work costs less than it might have otherwise.

Turn-of-the-century loggers thought nothing of leaving 18"-high stumps in the woods. After all, two men felling trees with a crosscut saw could bend only so low.

Then, in the 1920's, along came a super invention—a handheld saw with a continuous sharpened chain powered by an air-cooled gasoline engine. The chainsaw was a boon to logging: One man could cut faster with it than two with a handsaw. And the chainsaw allowed the cutter to saw closer to the ground for longer logs. It was the beginning of a trend to get more of the tree.

They use everything but the shade

In the western part of the nation and in the forested lands of the South, where softwood species prevail, the forest products industry has made great strides in efficiency. Timm Locke, a spokesman for the Portland-based Western Wood Products Association, describes wood processing as it's done out West. According to him, they use everything but the shade.

"After a logger fells a tree, he trims it of its limbs, branches, and thin, tapered top. Next, a worker saws [bucks] the trunk into manageable logs of a size determined by the sawmill's needs," explains Timm. "Cut-off branches and other leave-behinds replenish the soil with nutrients as they decay."

At the sawmill, logs move through the debarker, a machine that chips or shaves off the bark.

Waste Not, Want Not

A *WOOD*® magazine special report on forest efficiency



A Pennsylvania logger fells a black cherry tree, leaving a minimal stump. Before chainsaws, the higher stumps left behind might contain many board feet of recoverable lumber. Today, loggers don't leave money in the woods.

Timm points out that the resulting loose bark gets bagged as landscape mulch destined for sale at home-and-garden centers. Or the bark is ground for fuel and burned to run generators that produce electricity for the mill's needs. Bark might also fuel boilers for heat and kiln-drying green wood.

"At the mill's saw, a thin-kerf blade transforms the round log into lumber as determined by a computer scan," he continues. "Short parts of the log and other cutoffs as tiny as 1×1×6" can

become finger-jointed stock at one mill. At another, this wood might be chipped and sent away for making paper. At yet another mill, it could be sold to a hard-board or fiberboard manufacturer. This all depends on the wood species and the market.

"The residual sawdust also can end up as some form of sheet goods, such as particleboard, or a molded product, or even paper," Timm adds. "Some places it's used for fuel, too. You see, it costs so darn much to get logs out of the woods and to the mill that the industry has to make really good use of every piece of fiber."

A tree full of products, thanks to new technology

In Coeur d'Alene, Idaho, Dick Costin heads up board lumber manufacturing for Idaho Forest Industries, Inc. He's spent his entire career watching the technology improve.

"Many years ago, loggers would still leave the flared butt of a tree behind because they knew the mill couldn't saw it. That 4-5' or more [see photo *opposite page*] would go to waste for lack of processing ability," Dick explains. "Today, we cut to 3-4" above the ground because the mill can taper saw. The log carriage can be positioned so taper can follow the saw line. And computers scan logs to give us the cutting solution for the product we want to produce."

Dick also points to the dramatic increase in recovery—the percentage of lumber obtained from a log—made possible by thin-kerf blades. "In the old days, they used to saw lumber with a blade that had a kerf of .300" ($\frac{3}{128}$ "), then plane it. They'd get low recovery. Now, our dimension mill uses bandsaw blades with an .080" ($\frac{1}{128}$ ") kerf, while the board mill runs a thicker blade of about .140" ($\frac{1}{4}$ ") kerf. And recovery has near-

Continued

Waste Not, Want Not

ly doubled from what it was." (See box *below right*.)

Jim Scharnhorst, Idaho Forest Industries' vice president of marketing, notes how the new sawing capabilities utilize even the smallest logs. "Even a 5"-diameter top is sawn to get a 2x4," he says. Jim describes a new product that saves trees, too. "We're producing a stud that's 1¼" thick instead of 1½"—nearly a 20 percent savings. Yet, it's graded No. 2 instead of stud grade, so it's just as strong."

In Longview, Washington, Del Berg manages a Weyerhaeuser sawmill that produces 250 million board feet of dimension lumber a year. He speaks of the industry changes he's witnessed.

"Here on the West Coast, we've gone from an old-growth regime of large-dimensioned trees to second- and even third-growth timber," says Del. "Most of our timber comes from our own tree farms, and a log's average diameter here is about 11-11½", with a minimum of 5". When I was in college, you didn't inventory a tree under 12" in diameter."

At Del's mill, computerized scanners also read each log for the optimum sawing sequence. "Scanners collect a whole lot more data all along the length of the piece, and to an accuracy within thousandths of an inch [see photo *above right*]. The better you can manage the sawing variations, the closer you'll get to the finished product size and the more we'll get out of the log."

While the softwood industry has made giant strides to get the most from every tree, the hardwood industry runs a few steps behind, partly due to product.

Hardwoods: A different product, a different story

"Basically, there's not much out of the raw log that goes to waste

here," states Dale Slate, manager of Collins Hardwood in Kane, Pennsylvania. "A part of a log may have nails, making it unwise to saw, but other than that, there's not much we don't use."

Similar to what's happening with softwoods, Collins makes full use of log residues. The by-products are practically the same, except for one thing: In



Computer-guided lasers (the orange lines) help determine the best position for maximum lumber recovery on the gang saw at Weyerhaeuser's Green Mountain, Washington, sawmill.

Thin-kerf blades mean more boards per tree

In the 1920s, a 16' softwood log with a 30" diameter would yield about 695 board feet of lumber when sawn with a thick-kerf blade of .300". Today's thin-kerf blades of .080" thickness will recover about 1,200 board feet of lumber from the same sized log.



At Pacific Lumber Company's Scotia, California, plant, short redwood cutoffs from the sawmill that were once waste are finger-jointed into vertical-grain siding and other premium architectural products.

their cherry and red oak production, you'll never see a finger-jointed item. "We've got to provide what the customer wants," says Dale. "They won't buy finger-jointed oak or cherry."

In hardwoods, recovery generally runs 50-55 percent compared to the 40 percent of the 1920s (yet behind the 70 percent of the softwood industry). "That's mainly due to the widespread use of thinner-kerf blades," points out Steve Bratkovich, a hardwood marketing specialist with the U.S. Forest Service in St. Paul, Minnesota. "We've actually recovered 80 percent in experiments." (Each reduction of 1/32" in saw kerf increases recovery from a hardwood log by 2.5 percent, according to the Forest Service.)

Steve notes that the recovery gap between the softwood and hardwood industries is due to many factors, including product. "In softwoods, they're primarily sawing the end product, dimension lumber. The hardwood industry looks to get long, clear boards. Yet, that's not the end product. It's often furniture and cabinets. So those boards are sawn again into shorter pieces. That results in waste. Ideally, if you cut down a tree and knew what product was coming from it, you could buck it into logs the proper length for the end product right in the woods. That would increase recovery." ♣

Written by Peter J. Stephano

Photographs: Forest History Society, Durham, N.C.; Jim Kascoutas; Courtesy of Weyerhaeuser; Dan Sullivan

FREE Shipping thru 12/31/96
For INFO OR ORDER CALL 1-800-733-7111

10% to 20% OFF (Listed Items)

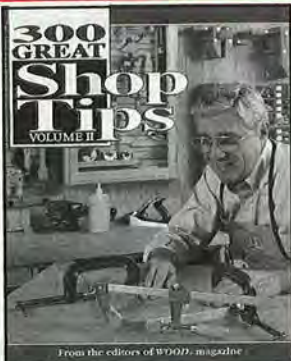
SUPER HOLIDAY COMBO SALE

FREE \$45 IN SHARPENING COUPONS

GOOD ON ALL FORREST OR OTHER MAKES OF CARBIDE BLADES OR DADO SETS. Coupons expire 12/31/98.

Must mention *WOOD* magazine for discounts & coupons with purchase.

FREE OFFER



From the editors of *WOOD* magazine

Free with any saw blade or Dado listed & purchased from this ad. You must mention you saw this offer in *WOOD* Magazine, when ordering.

Offer Expires December 31, 1996.
One book per order.

ORDER NOW SUPPLIES ARE LIMITED.

BUY 1 BLADE OR DADO AT **10% OFF** SALE PRICE, OR
BUY 2ND BLADE AT **20% OFF** (EQUAL OR LESSER VALUE)
15% OFF DADO AS SECOND CHOICE.

WOODWORKER II — 6" — 7 1/4" — 14"
ALL PURPOSE RIP & CROSSCUT

WOODWORKER II	LIST	SALE	10%	20%
12"X40TX1"	\$183	\$129	\$116	\$103
10"X40TX1/8" or 3/32"	\$156	\$119	\$107	\$95
8-1/4"X40TX 3/32"	\$136	\$99	\$89	\$79
8"X40T 3/32"	\$136	\$99	\$89	\$79
7-1/4"X30T	\$112	\$69	\$62	\$55

OTHER SIZES AVAILABLE — 30T LINE ALSO



THE ONE BLADE THAT LEAVES A SMOOTH-AS-SANDED SURFACE!

BUY OUR BEST SELLER 10" X 40T FOR ONLY \$107 OR \$95 ON SECOND BLADE.

RECEIVE WITH EVERY FORREST BLADE OR DADO LISTED, 9 SHARPENING COUPONS WORTH \$5.00 EACH!

TRY A FORREST CARBIDE BLADE TODAY!
Outperformed 36 other premium blades, both foreign and domestic!
WOOD Magazine test, Sept. '93, pg. 45

ONLY **\$62 or \$50**
NET COST TO YOU AFTER USING SHARPENING COUPONS

WOODWORKER I — CROSSCUT — 7 1/4" — 14"
For TABLE and RADIAL SAW — 10% to 20%

	LIST	SALE
14"X60Tx1"	\$224	\$159
12"X60Tx1" or 5/8" 1/8"K	\$198	\$139
10"X60Tx5/8" 3/32"K	\$162	\$129
8-1/4"X60T	\$150	\$109
8"X60T	\$150	\$109
7-1/4"X60T	\$150	\$109

OTHER SIZES AVAILABLE — 7 1/4" — 14"



Standard C-2 Carbide (below, left) and FORREST still sharp Oxidation and Corrosion Resistant Sub-Micron C-4 Carbide (below, right). Each shown after cutting 3,500 feet of MDF. Similar results obtained cutting particle board, melamine, and plywood.



STILL SHARP
AFTER 3,500 FEET OF CUTTING!

CHOPMASTER FOR SLIDING COMPOUNDS & MITER SAWS

New specs, 5° Neg. Pts. & flat, runs out less than .002 for perfect, tight, smooth, splinter-free miter joints.

TAKE EXTRA **10% - 20% OFF** COMBO SALE!

NEW SIZES AVAILABLE	LIST	SALE
Delta Sidekick 6-1/2"X40Tx5/8"	\$149	\$89
Sears 8-1/4" & Delta 8-1/4"X60Tx5/8"	\$170	\$99
Hitachi 8-1/2"X60Tx5/8"	\$179	\$109
DeWalt 8-1/2" & Ryobi 8-1/2"X60Tx5/8"	\$179	\$109
Delta 9"X80Tx5/8"	\$204	\$119
Ryobi-Makita & all 10"X80Tx5/8"	\$207	\$129
DeWalt, Makita, B&D, Hitachi 12"X80Tx1"	\$229	\$139
Ryobi-Makita 14"X100Tx1"	\$266	\$179
Hitachi 15"X100Tx1"	\$277	\$189

For good general purpose cuts use Woodworker II 30T & 40T or Woodworker I. Use small stiffener where possible.



DURALINE HI-A/T FOR TABLE & RADIAL SAWS
ALL FLAT FACE

5/8" HOLES. Boring up to 1-1/4" \$7.50 extra.
Larger holes—time basis. Shipping \$4.50.

Faster feed rates & absolute splinter control. Stops splintering on OAK/ BIRCH PLY VENEERS & MELAMINE.

SIZES AVAILABLE	LIST	SALE
7-1/4"X60Tx3/32" K	\$149	\$129
8"X80Tx1/8" & 3/32" K	\$202	\$169
9"X80Tx1/8" & 3/32" K	\$207	\$179
10"X80Tx1/8" & 3/32" K	\$207	\$159
Other sizes available	12"X80Tx1-1/8"K	\$212 \$181



SPECIAL COMBO SALE
EXTRA **10%-20% OFF**

Above 1" bore standard.
CARBIDE IS THE HARDEST OF THE C-4 GRADES AND 40% STRONGER, NOT WEAKER!
FOR 50% TO 300% LONGER LIFE.

BLADE DAMPENERS-STIFFENERS

FOR BETTER CUTS on all brands of blades, use our large 1/8" DAMPENERS-STIFFENERS against one side.

4"	\$21
5"	\$24
6"	\$25

7" AND LARGER AVAILABLE

REDUCES NOISE 50%-75%

WE RECOMMEND OUR FACTORY SHARPENING as some local sharpening creates problems with MICRO-CHIPPED EDGES reducing blade life & cutting quality. 3-5 DAYS ON THESE AND ALL MAKES OF FLAT FACE & CONCAVE CARBIDE TIP SAWS. Ship via UPS. Typical 10x40T \$17.00, 60T \$19.00. Add return UPS \$5.00, \$1.00 each additional blade.

FOR SPECIAL PRICE COUPONS MENTION *WOOD* MAGAZINE.

PHONE TOLL FREE! 1 (800) 733-7111
(In NJ: 201-473-5236) FAX: 201-471-3333

Fine American saw making & sharpening since 1946.
DEALER INQUIRIES WELCOME

Quality is why we're different!

FORREST

(800) 733-7111 or (201) 473-5236

BUSINESS OPEN ACCOUNTS AVAILABLE



FL, NJ, NY Residents Please Add Sales Tax
Shipping Charges with book:
Sawblades \$9; Dado \$10; Stiffener \$2
SATISFACTION GUARANTEED OR FULL CASH REFUND.

FORREST MANUFACTURING COMPANY, INC. • 461 RIVER ROAD, CLIFTON, NJ 07014 • FAX (201) 471-3333



Planer quickly converts to crank out custom molding

Not long ago, finding a reasonably priced, high-quality, floor-standing planer that also holds molding knives was nearly impossible. Now, I'm pleased to announce that just such a tool exists. I tried

the JET JPM 13" Planer/Molder and found that this \$800 machine can produce both precisely planed surfaces and more than 40 types of molding.

Most multipurpose tools require a time-consuming process to switch from one application to the other. But with the JPM 13, you can install molding cutters under 2" without removing the 13"-long planing knives. And to change the feed speed from 20 feet per minute for planing to 10 feet per minute for molding, you simply remove a small sheet-metal cover and reverse two gears on the side of the machine. JET even includes a special gauge to assist you in properly installing any of the more than 40 molding cutters.

I also was impressed with the fit and finish of this tool. Out of the box, the cutterhead was parallel to the bed with less than 0.0005" variance over its length, and the knives were set nearly perfectly.

The machine produces less than .002" of snipe on the ends of planed boards.

Weighing in at 202 pounds, this machine proved extremely stable, smooth, and low in vibration. Its 1½-hp motor provides ample power to plane any stock.

I highly recommend buying and using the optional dust-collection hood with 4" outlet. Without it, the cutterhead will quickly spray large volumes of wood chips throughout your shop.

—Tested by Bob McFarlin



PRODUCT SCORECARD

JET JPM 13 Planer/Molder

Performance	★ ★ ★ ★ ★
Price	\$799 (molding knives and dust-collection hood are extra)
Value	★ ★ ★ ★ ☆
Available at JET dealers nationwide. For more information, contact JET Equipment and Tools, P.O. Box 1349, Auburn, WA 98071-1349. Call 206/351-6000.	

All-in-one router table pushshoe provides firm, safe grip

Routing small pieces on a router table can be hazardous if your fingers get too close to the router bit. To improve the safety of this procedure, Sears has introduced a pushshoe and matching pushstick that proved handy in a number of clever ways.

What makes the Sears pushshoe so versatile is its base. It holds

pieces as small as 3/16x3/16", as well as pieces up to 7" long. I safely routed longer pieces by using the shoe to guide the piece and the pushstick to hold it tight against the router-table fence. An adjustable fence on the bottom of the shoe accommodates workpieces of various widths. During all operations, the shoe and pushstick kept my hands well away from the router bit.

The shoe also functions as a setup tool. One side features a rule for setting the bit-to-fence distance, while the other side contains a handy bit height gauge. You also can set up the cuts for a sliding dovetail joint. By attaching a 3/4"-wide runner to its bottom,

the pushshoe converts into a miter gauge.

The comfortable handle attaches to the shoe at a compound angle, allowing me to exert pressure against both the table and fence.

The pushshoe and pushstick, both made from durable, rigid plastic, won't damage your router bit if the two accidentally come into contact. The pushstick comes equipped with a nonslip, soft-plastic tip and a secure, comfortable grip.

—Tested by Dave Henderson



PRODUCT SCORECARD

Sears Craftsman Guidemaster Router Table Pushshoe, item no. 25468

Performance	★ ★ ★ ★ ☆
Price	\$19.95
Value	★ ★ ★ ★ ☆
Available at Sears stores nationwide. Call 800/377-7414.	

Continued on page 88

Woodworker's Marketplace

This section features advertisers offering products by mail. Additional information can be found in the Woodworker's Resource section. Please contact the advertiser directly or use the Circle No. to the right of each ad to request information through the Woodworker's Resource envelope.

FREE BROCHURE!

★THE WOODWORKING SHOWS★
tools • supplies • education

VISIT THE SHOW NEAR YOU!

•Atlanta	•Dallas	•Milwaukee
•Baltimore	•Detroit	•North Jersey
•Buffalo	•Harrisburg	•Phoenix
•Charlotte	•Indianapolis	•St. Louis
•Chicago	•Kansas City	•Tampa
•Columbus	•Massachusetts	•plus others!

Call 1-800/826-8257 for free brochure
Monday - Friday 8:30 am - 5 pm Pacific Time
e-mail: woodshow@earthlink.net

Circle No. 2800

All-In-One

Drum Sander
A Drum Sander Using Recycled Variable Size Containers™
SodaSander™ 1-800-422-5048

Circle No. 79

AMAZING SCROLLSAW FRETWORK PATTERNS
Easy to advanced designs

Clocks
Photo frames
Jewelry boxes
Candle holders
Furniture

Silhouettes on Christmas religion farming western nature transportation & more.

Books
Saw blades
Hardwoods

FREE catalog
1-800-470-9090

WILDWOOD DESIGNS
P.O. Box 676-WD
Richland Center
WI 53581

Circle No. 475

"Cuts project time in half, eliminates the need for an expensive arsenal of clamps and is simple to use. The Kreg Jig outperformed its competition by a wide margin. It's worth the investment."
Wood Magazine, Jan. 1995

The Kreg Jig

DISCOVER THE POCKET HOLE ADVANTAGE

THE POCKET HOLE PROFESSIONAL
Discover the pocket hole secret for yourself. 30 day trial. Order today! Free catalog!
800-447-8638

Circle No. 877

THE WOODTURNERS CATALOG

Features:
Woodfast Lathes
Vicmarc Mini Lathes
Artisan™ Pen and Project Kits
Henry Taylor Tools
McNaughton System
Dale Nish Workshops and much more....

Craft Supplies USA is the **Number One** source for the finest woodturning supplies, tools, and workshops with unsurpassed prices and service.

CALL TOLL FREE 1-800-551-8876 TO ORDER
a **FREE 88-page color copy of The Woodturners Catalog**

CRAFT SUPPLIES USA 1287 EAST 1128 SOUTH PROVO, UT 84606

Circle No. 830

Print this article

Be a Furniture Restoration Specialist

Discover Minuteman

Complete Shop Concept Strip • Repair
Touch-Up • Fake Grain
Marbelize • Resilver • Refinish
Duplicate Parts • Repair Frames • Veneer

Why Minuteman?

- Proven, Low-Risk, Cash Return
- Low Start-Up Costs; Expert Training
- Environmentally Friendly System
- Wholesale Supplies
- Handy Sample Kits Available
- Systems From \$1,500-\$11,000
- 28 Years Experience; 3,000+ Shops

No Experience Necessary
♦ Part-Time, Full-Time ♦
Ideal for Men & Women

FREE 2-Day Business Exploration Seminar
No Obligation to buy!
Register Now - Limited Seating!

Call For FREE Catalog
MINUTEMAN, INC.
Ste. 17, P.O. Box 8, Waterloo, WI 53594
1-800-733-1776

Circle No. 1661

STEVE WALL LUMBER CO.
Quality Hardwoods and Woodworking machinery For The Craftsman and Educational Institutions

Ash	4/4	Select	2.15	\$ 71.00
Basswood	4/4	Select	1.80	\$ 61.00
Birch	4/4	Select	2.25	\$ 73.00
Butternut	4/4	1C	2.00	\$ 63.00
Cherry	4/4	Select	3.40	\$ 87.00
Hickory - Pecan	4/4	Select	1.85	\$ 65.00
Mahogany (Genuine) ..	4/4	Select	3.40	\$ 90.00
Maple (Hard)	4/4	Select	2.40	\$ 75.00
Maple (Soft)	4/4	Select	1.80	\$ 63.00
Poplar	4/4	Select	1.55	\$ 58.00
Red Oak	4/4	Select	2.35	\$ 74.00
Walnut	4/4	Select	3.25	\$ 89.00
White Oak	4/4	Select	2.30	\$ 73.00
Cedar (Aromatic Red) ..	4/4	1C+Btr.	1.55	\$ 60.00
Cypress	4/4	Select	2.15	\$ 68.00
White Pine	4/4	F.G.	1.10	\$ 49.00
Yellow Pine	4/4	Clear	1.60	\$ 59.00

Above prices are for 100' quantities of kilndried rough lumber sold by the Bd. Ft. FOB Mayodan, NC. Call for quantity discounts. Other sizes and grades available.

Above prices are 20 bd. ft. bundles of clear kilndried lumber 3"-10" wide • 3'-7' long (Random widths & lengths) Surfaced 2 sides or rough. Delivered UPS prepaid in the Continental U.S.

UPS Specials

LOG RUN SPECIALS
100 bd. ft. Bundle
4/4 Cherry \$120
4/4 Walnut \$140
Add \$20 for S2S
Motor Freight Only
FOB Mayodan

STEVE H. WALL LUMBER CO.
BOX 287
MAYODAN, N.C. 27027
910-427-0637
1-800-633-4062
FAX 910-427-7588

Send \$1.00 For Lumber Catalog

Circle No. 552

A TOOL YOU CAN'T LIVE WITHOUT!

Cordless, Precision Craft and Hobby Tool Model KD-1 with patented reciprocating action.

- Use on wood & plastic
- 0.20 inch stroke
 - 2400 strokes per minute
 - Completely portable
 - Compact size—1.35 lbs., 10.75" L x 2.125" H
 - Supplements rotary tools

- Includes:
- Rechargeable power unit
 - 4-hour charger
 - 4 saw blades for precision cuts
 - 4 needle files for detail work
 - Paddle for sanding
 - 20 sanding strips in 2 grits
- Rasps available separately.



\$59.95 US Patent No. 5,099,705

To Order, Send Check Or Money Order To:
 KD Engineering, Inc.
 P.O. Box 195
 Hubertus WI
 53033-9799
 (414) 628-9666

Add \$5.60 for Shipping & Handling in contiguous U.S.A. For C.O.D. orders add \$4.75. 0269618

Circle No. 125

**BUY FACTORY DIRECT
 SAVE THOUSANDS!**

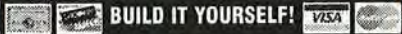
SHOPS • GARAGES • STORAGE

FINANCE/LOW MONTHLY/Made in U.S.A



Steel Buildings

VARIOUS SIZES AVAILABLE



**Call Now 1-800-585-4058
 American Steel Span**

Circle No. 1780

**WOOD
 TOY**

- ★ Patterns
- ★ Parts
- ★ Wheels
- ★ Many New Patterns to Choose from.
- ★ Executive toys



SEND \$1.00 FOR NEW CATALOG

toys and joys

Box 628 w Lynden, Wash. 98264

Circle No. 465

TURNING TOOLS & SUPPLIES
 Largest & Best Selection - ANYWHERE

PENS/PENCILS

Best Selection & Program - ANYWHERE

TURNING BLOCKS & SQUARES

Best Selection - ANYWHERE

PEN BLANKS

Biggest & Best Selection - ANYWHERE

WOODCRAFTERS

OF OKLAHOMA

5700 S. Western - Oklahoma City, OK 73109
 TOLL FREE 1-888-333-7513

Circle No. 2195

Quality Kiln Drying

It's Easy and Affordable with a Nyle DH Kiln!

Call today for FREE FACTS on our L-Series dehumidification kilns.



EASY PAYMENTS AVAILABLE

Free Booklet!

Compact, easy to use kilns for 300 BF and up!

Filled with facts. To learn more about drying your own lumber, call for a FREE copy.

800-777-NYLE



PO Box 1107 Bangor ME 04402-1107

Circle No. 1250

FURNITURE & CABINETMAKING

MAGAZINE

100% FURNITURE AND CABINETMAKING - techniques, projects, new tools list, books, new products, everything for the dedicated furniture and cabinetmaker.

Send for details of this new magazine and a unique range of books and videos.

GMC Publications
 166 High Street, Lewes,
 East Sussex BN7 1XU England
 Tel: Freephone 1 800 225 9262
 Fax: 01144 1273 478606 WD1



FREE TOOL CATALOG!



Your Best Work Starts With Us!

With over 4,000 of the finest woodworking tools in the world, Woodcraft can help you work more efficiently and skillfully than ever. Call for your Free copy today.

1-800-542-9115
WOODCRAFT

http://www.woodcraft.com
 210 Wood County Industrial Park Dept. 96W12S
 PO Box 1686, Parkersburg, WV 26102-1686

Circle No. 955

RIPSAW

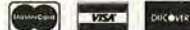
The Portable Sawmill.

The "affordable portable" one man band sawmill. Weighs only 45 lbs. Cuts 20" diameter logs into lumber. Minimum 1/8" to maximum 9" thickness. 14"W x 9"H throat capacity. Write or call for free brochure. Videos also available.



Better Built CORPORATION

(508) 657-5636
 789 Woburn St., Dept. W12, Wilmington, MA 01887



Circle No. 354

FREE Woodworking Catalog

BIG savings on wide selection of:

- Band Saw Blades - hard edge, bi-metal and wood band
- Fret/Scroll Saw Blades - 5" plain and pin end
- Sanding Belts and Discs
- Books, Lettering Guides, etc.

Walnut Creek Woodworking Supplies
 3601 W. Harry, Dept. WM, Wichita, KS 67213
800-942-0553

Attention: Woodworkers



FREE WOODWORKING PLANS

3 FREE Project Plans

*Send \$2.00 for our catalog and we will include a FREE project plan featuring FULL SIZE patterns for the coat rack, birdhouse and hanging pot holder projects illustrated above. (Reg. Price \$7.99) Our 84 page full color catalog offers over 800 woodworking plans you can purchase. We have plans for wind chimes, birdhouses, furniture, scroll saw projects, toys, lamps, whirligigs and many other award winning projects.

I am enclosing \$2.00. Please send catalog and plan for three projects.

Name _____
 Address _____
 City _____ State _____ Zip _____

Meisel Hardware Specialties
 P.O. Box 70 W
 Mound, MN 55364-0070

Circle No. 401

Woodworkers Wanted!

The Smithy 3-in-1 lathe-mill-drill gives you all 3 basic machine tools for working metal, plastic, or wood in one easy-to-use benchtop machine. Smithy can help you do it yourself. Call for your FREE Info Pak & video.



FREE Machining Basics video

1-800-345-6342

Dept. WOOD12 PO Box 1517
Ann Arbor, MI 48106-1517



Circle No. 95

Scroll Saw Projects



The Hottest new patterns, techniques, tips and ideas!

Patrick Spielman's full-color, 16-page, bi-monthly newsletter. Order your 1-year subscription for only \$19.95 or a sample issue and book catalog for \$1.00.

Send to: Spielman Publishing Co.,
PO Box 867-W, Fish Creek, WI 54212-0867

Circle No. 1142

Supergrit® SANDPAPER HOOK & LOOP

4 1/2"	8 Hole	\$10.00/50
5"	5 or 8 Hole	\$12.50/50
6"	6 Hole	\$17.50/50
5"	Solid "E"	\$15.00/50
6"	Solid "E"	\$18.00/50
12"	Solid "E"	\$12.00/6

BLUE ZIRCONIA Best in the World

DISCS (P.S.A.)	BELTS
5" 35¢	1" x 42" \$1.75
6" 40¢	3" x 21" \$1.50
8" 85¢	6" x 48" \$5.50

PC PROFILE SANDER SUPPLIES

H & L Diamonds	\$17.50/50
2 1/2" x 5 yd. P.S.A.	\$5.00

RED HILL CORP.
P.O. BOX 4234
GETTYSBURG, PA 17325

FREE 28 PAGE CATALOG & incredible close-out sheets.
800-822-4003

Circle No. 1267

ONE-MAN SAWMILL

Turns Your Timber Into **CASH!**



30-Day Free Trial!

Call NOW for FREE FACTS!

1-800-942-4406 ext. SW39
TIMBERKING, INC. Dept. SW39
1431 N. TOPPING, KANSAS CITY, MO 64120

Circle No. 95

Quality MECHANISMS For Making WOODEN BARREL

- ✦ Pens
- ✦ Pencils
- ✦ Roller Balls
- ✦ Fountain Pens

plus other related items.

Wholesale/Retail

Call or Write:

Berea Hard Woods Co.
6367 Eastland Rd. Brookpark, Ohio 44142
216-234-7949 Master Card/Visa

Circle No. 510, 1900

Hand-Tooled Carving Look PROFESSIONAL CARVERS' CHOICE



AUTO MACH.
Rugged, lightweight aluminum housing. Pressure-activated head controls cut depth, speeds to 10,000 VPM. Makes carving easy! Convertible to rotary use. Heavy-duty 80W motor operates on household current. Includes instruction booklet and 5 steel blades. Specialized blades available. Don't be fooled by cheap imitation detail carvers!

Prices **\$178.00** start at
Visa and Mastercard accepted.

(847) 397-9401
1700 Penny Lane
Schaumburg, IL 60173

Sugino Corp.

Circle No. 1270

SK-28SP TILTING SPINDLE SHAPER

3HP, 1 or 3PH, 1" or 1/2" spindle, overload protection, forward and reverse switch, 30° spindle tilt, 3 speeds, optional sliding tables and 1/2" spindle, 340 lbs.



SECO INVESTMENTS COMPANY
WOODWORKING DIVISION
145 W. Hillcrest Ave., San Bernardino, CA 92408
Tel: (909) 889-1799 Fax: (909) 885-1799

Circle No. 91

FREE TOOL CATALOG

Helping You Become a Better Woodworker



highland hardware
Our giant tool catalog gives more than just manufacturer's specs. We provide detailed tool descriptions, useful techniques, as well as a schedule of educational seminars.

Call toll free for FREE catalog
1-888-500-4466

Visit us on the Internet at <http://www.highland-hardware.com>

Circle No. 510, 1900

WOODTURNING PROJECTS 100's OF SUPPLIES & ACCESSORIES



ONLY... **\$269.95**

• Variable Speed Motor
• Professional Quality

Penn State Industries
2850 COMLY RD., PHILADELPHIA, PA 19154
1-800-377-7297



Circle No. 75

The Japan Woodworker's Catalog is...

loaded with the best tools you can get your hands on. In our catalog you will find a huge selection of Japanese saws, waterstones, chisels, planes, carving tools, cutlery and books. Send \$2.00 for our catalog and supplements during the next two years.

THE JAPAN WOODWORKER
1731 Clement E-32, Alameda, CA 94501
Phone 1-800-537-7820

Circle No. 190

CLARK'S BENCH TABLE®



INNOVATIVE NEW PROJECT!
EASY to build • EASY to use & move • Super sturdy design
NO SHIPPING & HANDLING FEE!

Full size pattern - \$12.00
Complete galvanized hardware (for one table) - \$10.00
Also available as easy-to-assemble kits in various widths (please call for prices)
For color picture and information please SASE plus \$1.00, which will apply to your order

(800) 265-5797
Clark's Bench Table, VISA
1870 Palmera Ct., Laughlin, NV 89029

Circle No. 1510

Make Your Own Lumber!

WITH A WOOD-MIZER PORTABLE SAWMILL

Sawing your own lumber lowers costs and improves quality. LT25 mills without trailer from:

\$7205!

All-products mill, kiln, and edger catalog: \$2.00; Video and profitability booklet: \$10.00.



Over 15,000 Sawmills World-Wide!
1-800-553-0219
EIGHT BRANCHES IN CANADA AND THE U.S.A.

Wood-Mizer Products, Inc. 8180 W. 10th St., Dept. 00102, Indpls., IN 46214-2400

SCROLL SAWING

Call or write TODAY for your FREE full-color catalog featuring the easy-to-follow video program and pattern book that will reveal to you the secrets of scroll sawing success for fun or profit. Learn all the tips, techniques, and short cuts from a professional scroller!

THE BERRY BASKET
P O BOX 925-W18
CENTRALIA, WA 98531
360-736-7020
FAX 360-736-7336



FREE WOODWORKER'S CATALOG



Over 5000 products to **BUILD, REPAIR, RESTORE, REFINISH** anything made of wood!

It's the catalog woodworkers rely on—jam-packed with fine woods, veneers, tools, finishing supplies, and much more—all top quality, all reasonably priced, all with our 60-day no-questions-asked guarantee.



CONSTANTINE
Serving Woodworkers since 1812

2050 Eastchester Rd., Dpt. 35612, Bronx NY 10461

Call TOLL FREE 1-800-223-8087

EMPEROR Grandfather Clocks Fine Furniture



- ✓ **DO-IT-YOURSELF KITS** for those who love to work with wood.
- ✓ **FURNITURE AND CLOCK KITS** 3/4" Solid Oak, Cherry and Walnut
- ✓ **FINISHED CLOCKS** Superbly finished in solid hardwoods at HUGE savings

FACTORY DIRECT

FREE CATALOG
334-928-2316

World's Largest Manufacturer of Grandfather Clock Kits

Emperor Clock Company
PO Box 1089, Dept. 5914
Fairhope, Alabama 36533
www.emperorclock.com



BEST CARVING SUPPLIES!



1000s of quality hand & power carving tools, books, kits, plus more. Fast friendly service, lowest price & satisfaction guaranteed. Join 1000's of happy customers, send \$2 for our 76 pg. color catalog.

Wood Carvers Supply, Inc.
SERVING CARVERS SINCE 1955
P.O. Box 7500-G,
Englewood, FL 34295-7500

Buckboard Bench Kit (Real Springs)

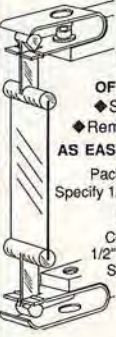


Kit Includes:
Authentically designed steel springs that give a little, steel arms and backrails, complete hardware and full-size plans with detailed instructions. 42"Lx22"W, 18"H to Seat, 30"H to Back
Price: \$49⁰⁰ (Quantity discounts available)
Pre-cut & drilled oak: \$70⁰⁰ Additional

The Roudebush Company
PO Box 348A, Star City, IN 46985

800-847-4947
Visa, MC accepted. Price includes shipping UPS

Patent Pending. Made in the USA



SCROLL SANDER

ELIMINATES HAND SANDING OF EDGES ON SCROLL SAW PROJECTS
◆ Sands Edges, Curves, Internal Cuts
◆ Removes Feathering, Bumps, Burn Marks
AS EASY TO ATTACH & REMOVE AS A BLADE

Package of 4 Sanders, Specify Pin or Pinless
Specify 1/2" or 1/4" width, Grit Size 80,120,180,220,320

\$6.95/pkg (+\$1.95 S&H per order)
Combo Packages Available: 1 of each grit
1/2": 80,120,180,220 1/4": 120,180,220,320
SPECIFY SCROLL SAW MODEL WHEN ORDERING

Wildlife of Our National Parks
NATIONAL PARKS & GALLERIES HAVE SOLD THOUSANDS OF THESE FIGURES
SCROLL SAW PATTERN BOOK \$8.95 (+\$2.95 S&H)

ScrollSander™ & The NATURE of the BEAST
Box 1086 Dept. W, Verdi Nevada 89439 (702)345-1660

GREAT ENCOURAGEMENT FOR SHIPWRIGHTS!

All gentlemen shipwrights and able bodied modelists who have a mind to provide for themselves amusement and satisfaction through the traditional craft of ship modeling, an opportunity now offers to acquire, through the minimal cost of one Colonial Dollar (\$1.00), a catalog of fine and unique ship model kits, plans, books and fittings from the renowned company of Model Expo located in Mt. Pocono in the state of Pennsylvania.

Send \$1.00 for a catalog to:
MODEL EXPO, INC.
Dept. WDF6, PO Box 1000, Mt. Pocono, PA 18344

Name _____
Address _____
City _____
State _____ Zip _____

For All Your Woodcarving & Sign Carving Needs

Terrco provides a full line of machine carving and sign carving equipment. Beginning models are the T-110 single spindle bench carver and our CM614 single spindle sign carver.

Intermediate models include the K-Star, a two-spindle heavy duty bench model, and the Northstar, a heavy duty floor model available in one to eight spindles.

Our advanced model is our Master Carver series, which is an extremely heavy duty floor model with from eight to forty spindles.

Write or call for more information.

Terrco, Inc.
222 1st Ave. NW
Watertown, SD 57201
USA
(605) 882-3888
Fax (605) 882-0778



Model T-110 Dupli-Carver



Model CM614 Sign Carver



Multi-Spindle Carving Machine

Circle No. 1030 Circle No. 1213 Circle No. 2150 Circle No. 2190 Circle No. 323 Circle No. 1075

Heavy Glass Table Tops

FACTORY DIRECT DISCOUNT PRICING



- Table Tops
 - Shelves
 - Doors
 - Display Cases
 - Entertainment Centers
 - Tempered Glass
- WGB GLASS ■ SHAPES ■ THICKNESSES ■ EDGE DESIGNS**

TABLE TOPS BY PHONE

SATISFACTION GUARANTEED!

FOR FREE IDEA CATALOG AND PRICE LIST SEND POST CARD TO:

WGB GLASS 19785 W. 12 MILE RD., STE. 357
SOUTHFIELD, MI 48076

TO PLACE ORDERS: CALL 1-800-288-6854

Circle No. 2079

Put some Uncommon tools to work for you and achieve Uncommon results!

Our tools are uncommon, and unmatched, in quality, variety and value. Over 60 pages of woodworking tools provide you with the largest selection of router tables and accessories available in the U.S., as well as, many other unique and useful tools. More than a catalog, it's also a wealth of information that will enlighten and inform anyone who works with wood.



WOODHAVEN

Call Today!
800-344-6657

5323 W. Kimberly
Davenport, IA
52806-7126

Circle No. 1290

PHARAOHS®

Plans for a New and Unique Game of Strategy
Build • Play • Win and Win Again...

Each Plan • Pak Includes:

- Plans for Building the Board Game
- Templates for Etch or Inlay
- Rules and Que Cards for 2, 3, or 4 Players



- \$29.95 per Plan • Pak
- 3.00 Shipping and Handling
- 12.50 for Christmas RUSH (order by Dec. 15)

Mail your order with personal check or money order, to **Thought Publishing** along with your postal address:

Thought Publishing, Inc.

Route 4, Box 635
Hazlehurst, Georgia 31539

For Questions call
912-375-5390

Please allow six to eight weeks for standard delivery

Full-Size Professional Plan MORRIS CHAIR

Build this comfortable chair with wide bow arms and adjustable 3-position back. An excellent example for the Arts & Crafts Style. Dimensions: 33" wide, 38½" high and 38½" deep.



- Plan #724 (postpaid) \$19.50
- Catalog (free with order) 3.00

Fine Furniture Plans Since 1968
FURNITURE DESIGNS, INC., Dept. BC-126
1827 Eimdale Ave., Glenview, IL 60025
1-800-657-7692



Circle No. 345



TURN PENS IN 2 MINUTES!
The WoodWrite Microlathe — a revolution in pen and pencil turning. Call, write or fax for details & prices.

WoodWrite Ltd

2121 Abell Lane, #44
Sparks, MD 21152 USA
Phone: 410-771-4444
Fax: 410-771-4879
Toll Free: 1-888-WoodWrite

Circle No. 2098

Classic Heirloom Cradle

You can easily build this classic cradle which will become a cherished family heirloom to pass from generation to generation. Two sizes available... Baby or Doll.



Full Size Plans

- Baby size Plan (21 x 35) \$14.95 ppd.
- Doll size Plan (10 x 18) \$8.95 ppd.

Spindles available in Oak or Maple. See our catalog which is sent free with your order.

M/C VISA orders call toll-free 1-800-292-8296

ARMOR Box 445 A, East Northport, NY 11731

Circle No. 315

Like Having A Lumberyard Right In Your Shop!



30-Day Free Trial!

NOW!
Plane, Mold, Sand and Saw with Infinitely Variable Power-Feed!

Put this versatile power-feed tool to work in your own shop. See how fast it pays for itself! Quickly converts low-cost rough lumber into valuable finished stock, quarter-round, casing, base mold, tongue & groove... all popular patterns... even custom designs!

NEW! Variable Feed Rate - Now, just a twist of the dial adjusts your planer from 70 to over 1000 cuts-per-inch! Produces a glass-smooth finish on tricky grain patterns no other planer can handle. Easy Terms. Made in U.S.A.

Phone **TOLL-FREE**

1-800-821-6651 ext. PW14

WOODMASTER TOOLS, INC., DEPT. PW14
1431 N. TOPPING, KANSAS CITY, MO 64120

SHAKER PEGS CANDLE CUPS MUG PEGS

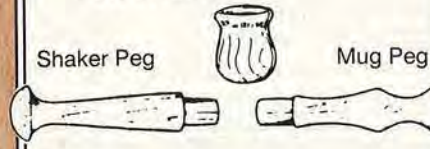
\$15.95 per 100, prepaid.
Wide selection of other wood products.

Catalog \$1.00 or free with order.

Benny's Woodworks

P.O. Box 840, Dept. WD89
Shelbyville, TN 37160

1-615-684-8995 • 1-800-255-1335



Shaker Peg

Mug Peg

Circle No. 810

MAKE IT MOBILE

WITH HTC MOBILE MACHINE BASES

For a **FREE** Full-Color Catalog of HTC's Complete Product Line Call:
1-800-624-2027



Circle No. 1245

Secure the contents of your truck bed with the **ROLL-TOP-COVER™**



- Padded Leather-grain Top
- All Aluminum Undercarriage
- Key Lock Security • Fingertip Access
- Affordably Priced

PACE EDWARDS

For the dealer nearest you Call Toll Free!

1-888-ROLL-TOP
PACE-EDWARDS CO.
2400 Commercial Blvd.
Centralia, WA 98531

Circle No. 1885

Your Handcrafted Clocks Make Treasured Gifts.

Your complete source for clock-making supplies. Classic wall, mantel and grandfather designs in kits or easy-to-follow plans. Clock movements, dials, pendulums, inserts and more.

Kits are easy as 1-2-3. Just sand, assemble and stain. It's that simple.



Call today for your **FREE** catalog...
1-800-556-2548
 Dept. WD126



EVOLUTION

THE WORLD'S BEST SAW FENCE

- *Welded steel construction (not bolted up aluminum that can be knocked out of accuracy)
- *Machine ground front rail—super accurate
- *18" T-SECTION, the widest in the world
- *Exclusive DUAL SCALE READOUT 1/16" & 3X Magnified 1/64" scales. (Our "poor man's" digital readout")
- *MICRO ADJUSTMENT for precise control
- *Super slick UHMW side panels, (wood glides thru the cut)
- *Hydral glides give you ball bearing easy movement left or right
- *Fits all brands, **NO HOLES TO DRILL**
- *Money back guarantee, lifetime guarantee



3109 N. Cascade Ave. #204 Colo. Spgs., CO 80907 fax 719-635-2544
 IWF Booth 2W27
 Credit Cards Accepted
800-386-5883
VOSS
 TECHNOLOGIES



BIRD FEEDER BIRD HOUSE
 FEEDER: 12" x 30" (KITS AVAILABLE) BIRD HOUSE: 16" x 40"
 PLANS \$23.95 ea. including S&H. Send check or money order or call
800-421-8221 Visa, Mastercard accepted
GOOSE POND MILL
 P.O. Box 632, Occoquan, VA 22125-0632

CRAFT PATTERNS™ 70% OFF SALE!

Limited Time Offer **ALL FOUR FULL-SIZE PLANS** REG. PRICE \$31.80



NOW ONLY **\$9.95** PLUS \$3.75 S & H
 ITEM #36 BACHELOR'S CHAIR
1-800-747-1429
 24-HOUR ORDER LINE
 CATALOG \$4.00 OR FREE WITH ORDER
 CRAFT — DEPT. WM PATTERNS, 3545 STERN AVE., ST. CHARLES, IL 60174

Van Dyke's

Presents a **Catalog** with supplies for upholstery, antique restoration, wood working, caning, brass hardware, carvings and many related trades!



46 Years in Creative Arts & Trades
 Many Hard-To-Find Items!
 SEND \$1.00 FOR CATALOG TO:
VAN DYKE'S RESTORERS
 Dept. RD559J6, P.O. Box 278
 Woonsocket, SD 57385

SQUARE DRIVE SCREWS

Simply the Best
 Square Drive Beats Driver Slippage
 Deep Thread for Super Grip
 Hardened Steel for Superior Strength
 Made in the US or Canada!

Send \$5 for Samples, Catalog, & \$5 Off Coupon
McFEELY'S PD Box 11169 • Dept WD
 SQUARE DRIVE SCREWS Lynchburg • VA • 24506-1169
 Call Toll Free: **1-800-443-7937**

Wood Moisture Meter

Professionals and hobbyists can choose from 8 different Mini-Ligno moisture meters:



Versatile Affordable Sturdy! Over 100,000 units sold.

Also introducing **New Mini-Ligno XL**
 For brochure contact:
Lignomat USA, Ltd. PO Box 30145
 503/257-8957 800/227-2105 Portland, OR 97230

S. LaRose, Inc.



If you're building the outsides, we've got the insides! Call or write for our **FREE** clock parts catalog, #W2
S. LaRose, Inc.
 P.O. Box 21208
 3223 Yanceyville St.
 Greensboro, NC 27420
 (910) 621-1936

FREE! CherryTree



Woodcrafting Catalog
 Check Out Our NEW Christmas Projects!
 Hundreds of hard to find Wood Parts plus Tools, Plans, Clock Movements, Toys, Whirligigs, Paints, Brushes and more, at affordable prices with guaranteed quality & Fast delivery!

NAME: _____
 ADDRESS: _____
 CITY: _____
 STATE: _____ ZIP: _____

Cherry Tree • Box 369-12W6
 Belmont, OH. 43718
 or call **TOLL FREE**
1-800-848-4363 ext. 12W6

Lathe HUT Specials Pen Blanks

The Sherline is the most versatile mini machinist lathe on the market. Perfect for production pen turning. Packages start at \$455. Purchase now and receive \$50 in free HUT merchandise.

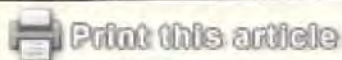


- Cocobolo/Bocote 20 - 1/2 x 6 blanks for \$9.95
- Stabilized Burl Blanks
- Cellulose Acetate Blanks
- Dymondwood
- Pen Mechanisms
- Turning Squares
- Bowl Blanks
- HUT Finishes

HUT Products for Wood for free catalog **1-800-547-5461**

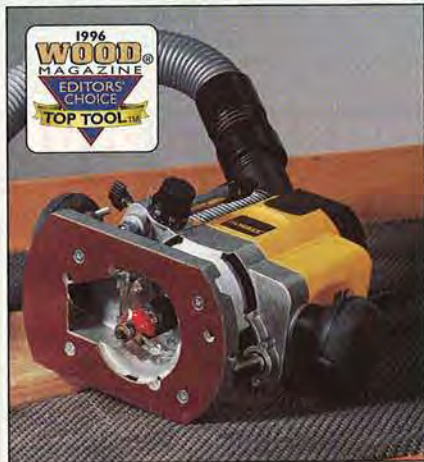


Continued from page 80



Dewalt plunge router features integral dust collection

Built-in dust collection is just one of several user-friendly features that DeWalt designed into its new DW621 2-hp plunge router. The folks at DeWalt also integrated the plunge lock and switch into the round, comfortable handles to make the DW621 easy to control and operate.



To collect dust and chips, the DW621 has a hollow, 1½"-diameter tube as the left side guide post. A hollow cavity in the base (see photo) allows debris to be sucked up the guide tube and out through a swiveling elbow vacuum adaptor.

A small acrylic shroud provides good visibility of the bit while containing the dust, but it must be removed for bits over 1" in diameter. The 2½" opening in the base won't accommodate large-diameter panel-raising bits, but this router isn't designed for use in a router table.

In tests, the dust collection system worked well, even when edge routing. The plunge action was smooth, due in part to the larger plunge guide tube. Depth controls include a macro adjustment with ¼" increments and a micro adjustment with 1/256"

settings. I did find the fingertip-sized micro knob too small for my fingers to grip comfortably.

The DW621 operated smoothly throughout its 8,000 to 24,000 rpm speed range. The spindle-lock button made changing ½" or ¼" bits fairly easy.

Overall, I found it to be a good hand-held router and an excellent choice for sign makers or anyone else who doesn't want to stop routing to clean up chips.

—Tested by Dave Henderson

PRODUCT SCORECARD

DeWalt 2-hp Plunge Router, Model DW621

Performance	★ ★ ★ ★ ★
Price	About \$225
Value	★ ★ ★ ★ ☆

DeWalt Industrial Tool Co., P.O. Box 158, 626 Hanover Pike, Hampstead, MD 21074. Call 800/433-9258.

Continued on page 90

Do All Scroll Saws Look Alike to You?

Many HEGNER owners are very surprised when they first experience the considerable differences between their new Hegner and their old scroll saw. Try a HEGNER yourself, and you'll soon realize just what you've been missing:

- clean, accurate cuts in virtually any material with **no sanding**
- easy blade change
- smooth, quiet operation
- long blade life
- 6 year warranty



This is just part of what makes HEGNER the most respected scroll saw in the world. Call or write for your free catalog today and see how HEGNER makes it better!

There is a difference... HEGNER is consistently rated the best by independent sources. HEGNER makes it better! Call for a FREE catalog

1-800-322-2226

(tell your operator your code is 753)

ADVANCED MACHINERY

P.O. Box 312, Dept. 753 • New Castle, DE 19720 • <http://www.advmachinery.com>

Circle No. 3

For that "SPECIAL" project



IN STOCK
NO
MINIMUM
VARIOUS
WOODS

FREE
COLOR
CATALOGUE



Kits Ready to Assemble & Finish



Adams Wood Products, L.L.C. L.P.

974 Forest Dr., Dept. M 35

Morristown, TN 37814 • Phone (423) 587-2942

Circle No. 1002

DEFT'S REVOLUTIONARY WAY TO STAIN AND FINISH,
IN ONE EASY, CLEAN STEP



Join the **APPLICAN** Revolution

Now, the fastest way to stain and finish is also the easiest—total project time, 60 MINUTES or less! Super easy to use—just press, stain and finish over sixty square feet with no over spray, drips or mess. Step Saver Plus™ in Deft's New Applican™ is available in 6 fabulous colors.



America's Wood Finish Family

Irvine, CA (800) 544-DEFT
Alliance, OH (800) 458-DEFT
<http://www.deftfinishes.com>

A M E R I C A ' S FINEST SCROLL SAW



The rbindustries Hawk Ultra scroll saws have become the finest and most advanced saws in the woodworking industry. Why? because we listened to our customers and geared the Hawk Ultras to fit their woodworking needs. With having sold over 40,000+ scroll saws to date, it's really simple...

"The best is just getting better!"

Call 1-800-487-2623 for **FREE** Catalog

rbindustries
The American Tool Manufacturer

© 1995 rbindustries. All rights reserved.

F112

INTERNATIONAL TOOL Celebrates **PORTER-CABLE**'s 90th Anniversary with a Holiday Festival of Savings!

Model 9444
PROFILESANDER KIT
with accessories & case
•6,000 strokes per minute
OUR PRICE \$108.00



Model 9341
FINISHING SANDER KIT
Hook & loop 1/4 sheet palm sander with case • 2.0 amp motor
•Includes dust canister
OUR PRICE \$58.00



The International Tool Woodworkers Special
Model 906901K
Includes 90690 commemorative router with case, 6931 plunge base, 42160 edge guide, 42000 template guide kit, 39993 routing pad
OUR PRICE \$284.00

FREE OFFER Purchase any one of these tools and receive either "THE WORLD OF PORTER CABLE ROUTERS" or "THE WORLD OF PORTER CABLE SANDERS" video tape absolutely free! You will also receive a **COUPON GOOD FOR \$5.00 OFF** of any Porter Cable accessory purchased from INTERNATIONAL TOOL. Call for details! Offer expires 12.31/96 or while supplies last.

FREE OFFER


Model 90690
90TH ANNIVERSARY Special edition
1 1/2 hp router. 10 amp, 23,000 rpm motor with 1/4" & 1/2" collets & steel case
OUR PRICE \$158.00



Model 332K
5" Quicksand sander kit with 100 shts PSA paper & carrying case
OUR PRICE \$99.00



Model 333K
5" Quicksand hook & loop dustless sander kit with 50 shts paper & case
OUR PRICE \$106.00



Model 334K
5" Quicksand PSA dustless sander kit with 100 shts paper & case
OUR PRICE \$106.00



Model 697
NEW ROUTER TABLE WITH 1 1/2 HP MOTOR
•19 3/4" x 16 3/4" aluminum table
•Includes miter gauge •Quick Adjust fence •Large 3 5/8" table hole •2 1/2" dust collection port •Now for use with all Porter Cable routers!
OUR PRICE \$228.00
Model 698 - router table only \$134.00



Take a look at these additional **HOT NEW TOOLS** by **PORTER-CABLE**

Model NS150
NARROW CROWN STAPLER KIT
18 ga., 1/4" narrow crown stapler kit •Shoots from 1/2" to 1 1/2" staples •Includes 1,000 staples & case
OUR PRICE \$158.00



Model BN200
BRAD NAILER KIT
18 ga., 2" brad nailer kit
•Shoots from 3/4" to 2" brads
•Includes 1,000 2" brads & case
OUR PRICE \$139.00



Model 97549
BAYONET SAW KIT
Variable speed, orbital, top handle, 4.8 amp motor •Includes 7549 saw, plastic case & 3 blades
OUR PRICE \$144.00



Model 9862
CORDLESS DRILL KIT
12V 3/8" cds drill w/ky/s chuck & 2 batteries •288 in/lbs torque •Variable speed, reversing, adjustable clutch
OUR PRICE \$178.00



VISIT OUR WEB SITE AT [HTTP://WWW.INTERNATIONALTOOL.COM](http://WWW.INTERNATIONALTOOL.COM)

INTERNATIONAL TOOL CORPORATION

1-800-338-3384

•2590 DAVIE RD., DAVIE
FLORIDA 33317

QUANTITIES LIMITED - NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS PRICES SUBJECT TO CHANGE WITHOUT NOTICE
FAX US YOUR ORDER AT
1-954-792-3560

WE ACCEPT VISA, MASTERCARD, DISCOVER, & AMERICAN EXPRESS
ALL CHECKS WILL BE HELD 10 BUSINESS DAYS
OUR PRICES WILL NOT BE BEAT

•FREE FREIGHT & SAME DAY SHIPPING ON MOST UPS ORDERS OVER \$50 MINIMUM PURCHASE WITHIN THE CONTIGUOUS U.S.A.

Circle No. 49



Continued from page 88

Tenoning jig delivers precise results

In the past, if you wanted to cut tenons on your tablesaw, you had two choices: build a jig, or buy one that costs up to \$300 like the old Delta model 34-172. Now, you've got another option. Delta's new lighter-weight tenoning jig, model 34-182, costs a third as much as the old model, handles larger stock, and (with one modification) cuts tenons just as well.

Designed to fit tablesaws with 3/4" miter-gauge grooves, this 22-pound, cast-iron jig has a 5x6" vertical fence that adjusts parallel with the blade by means of a threaded screw. To clamp the workpiece, you simply turn the large stainless-steel hand crank on the clamp arm. The fence tilts 16°, and the backstop tilts 45° for angled and compound-angled tenons, as well as tenons on mitered pieces.

I found this jig a pleasure to use. It's got a lot of heft, the handles are large and comfortable, and the width-of-cut adjustments are accurate and easy to make. One problem I encountered, however, was that the cast-iron base of the jig I tested rocked a bit on the top of my tablesaw. This may not even be noticeable to the operator, but it is sufficient to cause some variations in the final tenon width. To solve the problem, I applied two strips of low-friction UHMW (ultra-high molecular weight) tape lengthwise on the bottom of the plate. (I bought my tape from Woodcraft, P.O. Box 1686, Parkersburg, WV 26102-1686. Call 800/225-1153.)

Given this jig's versatility, low cost, and usefulness, I consider it



PRODUCT SCORECARD

Delta Tenoning Jig, model 34-182

Performance	★ ★ ★ ★ ☆
Price	About \$95
Value	★ ★ ★ ★ ★

Delta International Machinery Corp.,
246 Alpha Dr., Pittsburgh, PA 15238.
Call 800/438-2486.

a good addition to any workshop, and the kind of accessory that will encourage you to do more mortise-and-tenon joinery.

—Tested by Bob McFarlin

Continued on page 92

Econ-Abrasives

WE MAKE ABRASIVE BELTS ANY SIZE, ANY GRIT!

Standard Abrasive Sheets

CABINET PAPER

	50/pk	100/pk
60D	\$16.70	\$30.00C
80D	15.60	27.80C
100 thru 150C	14.50	25.60C

FINISHING PAPER

80A	\$ 11.15	\$18.90C
100 thru 280A	10.00	16.70C

NO LOAD PAPER(white)

100 thru 400A	\$12.25	\$21.25C
---------------	---------	----------

"C" = 100 SHEETS

Velcro® Vacuum Discs

8 Hole pattern for Bosch sanders

Dia.	Grit	Price
5"	60	\$.48ea
5"	80	.46
5"	100 thru 320	.45

* Available in 5 hole pattern *

- *Wide Belts*Rolls*Flap Wheels
- *Pump Sleeves*PSA Discs
- *Router & Wood Bits*Wood Glue

- *MasterCard, VISA, C.O.D. or Check
- *SATISFACTION GUARANTEED!!!
- *CALL FOR FREE CATALOG
- TX & NV add appropriate sales tax
- Continental U. S. shipping add \$5.50

ABRASIVE BELTS

Belts are resin bond cloth with a bi-directional splice, specify grits.

1X30	\$.81 ea	3X24	\$.93 ea
1X42	.81 ea	3X27	.96 ea
1X44	.81 ea	4X21 3/4	1.06 ea
2 1/2X16	.85 ea	4X24	1.10 ea
3X18	.86 ea	4X36	1.35 ea
3X21	.90 ea	6X48	3.50 ea
3X23 3/4	.93 ea	6x89	6.24 ea

OTHER SIZES ON REQUEST

HEAVY DUTY SPRING CLAMPS

Clamps come w/PVC tips and grips.



Size	Price
4"	\$1.75 ea
6"	2.25
8"	3.50

JUMBO ROUTER PAD(24" x 36")

It will not allow small blocks of wood to slip out under router or sanding applications. ROUTER PAD ONLY \$8.95ea.

JUMBO BELT CLEANING STICK ONLY \$8.80

Econ-Abrasives



P. O. Box W865021
Plano, TX 75086
(214)377-9779

TOLL-FREE ORDERING LINE (800)367-4101

NOW'S THE TIME...



Receive FREE TENSION ROLLERS (\$50 value) with the purchase of our sander that made history, the 22-44 DRUM ASSEMBLY.

Receive a FREE Metal Stand (\$100 value) with the purchase of our newest sander, the 16-32 Plus.

For 10 years Performax has continued to lead the industry with high quality drum sanders. If you haven't tried a Performax drum sander, now's the time. Join in our 10 year anniversary celebration and benefit from these special offers.



These are limited time offers and subject to dealer participation.

Call now for the dealer nearest you and a brochure of the complete line of Performax products.

Offer expires December 31, 1996

(612) 895-9922 1-800-334-4910
12257 Nicollet Ave. So. Burnsville, MN 55337

PORTER+CABLE

PROFESSIONAL POWER TOOLS



ITEM#	DESCRIPTION	PRICE
352VS	3" X 21" Belt Sander, V/S, dust bag	\$169
362	4" X 24" HD Belt Sander, dust bag	\$229
410	Bethery™ Underscribe Trimmer	\$156
447	7 1/4" Saw - 15 amp w/electric brake	\$144
843	*New #447 Saw w/blade on left side	\$144
505	1/2 Sheet Sander	\$130
550	Popout Cutter Kit w/steel case	\$165
656	Plate Joiner Kit, tilt fence, case	\$138
697	*New Router Table with 1 1/2 HP motor	\$232
698	*New Router Table, less motor	\$132
7116	24" OMNIJIG® Dovetail Machine	\$305
7800	*New Drywall Sanding Unit	\$327
7810	*New Professional Vacuum System	\$249
9125	*New 3 1/4" Power Plane Kit, 6 amp	\$139
9444	*New Profile Sander Kit	\$119
9737	*New V/S Recip. Saw Quick Change Clamp	\$165
8862	*New 12V Cordless Drill Kit, 2 batt.	\$179
8872	*New 14.4V Cordless Drill Kit, 2 batt.	\$207
90580	Limited Edition 1 1/2 HP 690 Router, w/Inse case	\$154
97310	Trim Kit, case and 3 base	\$187
97549	7549 Bayonet Saw Kit, w/case-limited quantity	\$141
97751	1/2" Hammer Drill Kit, 2 spd., w/case	\$152
NS100	*New 18GA. Narrow Crown Stapler Kit	\$ 99
BN125	*New 18GA. Brad Nailer Kit	\$ 99
BN200	*New 18 Ga. Brad Nailer Kit-3/4" to 2" cap.	\$145
FN200	*New 16GA. Finish Nailer Kit	\$165
FN200A	*New 16 Ga. Finish Nailer Kit-3/4" to 2 1/2" cap.	\$199
DA250A	*New 15 Ga. Angle Finish Nailer Kit	\$249

DEWALT

ITEM#	MODEL	DESCRIPTION	PRICE
1660	DW421	5" Palm R.O. Sander w/dust	\$ 79.
1610	DW431	3" x 21" V/S Belt Sander	\$184.
1826	DW321K	*New Jigsaw Kit w/case	\$164.
1827	DW304K	Recip. Saw w/case, V/S	\$139.
1550	DW610	1 1/2 HP Router	\$149.
1552	DW615	1 1/4 HP V/S Plunge Router	\$165.
1554	DW621	*New 2 HP Plunge Router-V/S	\$223.
1555	DW625	3 HP V/S Plunge Router	\$274.
1425	DW675K	3 1/8" Planer w/case	\$159.
1264	DW682K	Biscuit Joiner Kit	\$219.
1085	DW922K-2	9.8V Cordless V/S Kit, 2 batt.	\$179.
1088	DW972K-2	12V Cordless V/S Kit, 2 batt.	\$189.
1091	DW991K-2	14.4V Cordless V/S Kit, 2 batt.	\$224.
1093	DW995K	*New 18V Cordless Kit, 1batt.	\$239.
1548	DW673K	Trim Kit w/case-5 bases	\$199.

OTHER TOOLS AVAILABLE FROM STOCK

FREE SHIPPING TO THE 48 STATES ON PORTER-CABLE AND DEWALT TOOLS

WILKE'S TOOLBOX



BUY RIGHT THE FIRST TIME: BUY... BRIDGEWOOD BANDSAWS

WILKE MACHINERY COMPANY

MACHINERY POWER TOOLS

We invite you to compare these features with Bandsaws selling for much more!

Rugged ... Dependable ... European Built ... Smooth and Quiet-Running ...

There's One Just Right for Every Budget and Every Size Shop!

Model	Size	List Price	Your Price
PBS320	13"	\$ 995.	\$ 659.
PBS440B	18"	\$2,195.	\$1,695.
PBS540	22"	\$2,795.	\$2,195.
PBS740	30"	\$4,105.	\$3,495.
PBS940	36"	\$6,995.	\$5,395.

Shipped FOB, York, PA
Prices subject to change without notice.



PBS440B Tested and Selected Best Heavy Duty Bandsaw

BS 9/86

TO ORDER, PHONE TOLL FREE:
1-800-235-2100

VISIT OUR SHOWROOM: One block west of I-83 Exit 11. Hours: Monday-Thursday 8 am to 5 pm, Friday 8 am to 7 pm, Saturday 9 am to noon. Circle No. 93

- Slotted Table
- Rubber-tired, dynamically balanced cast iron wheels (narrow 3/16" wide blades or wide re-saw blades track with ease)
- Blade tensioning handwheel and visual gage indicates proper blade tensioning adjustment
- Professional blade guide system (top and bottom)
- Blade guards built to EEC safety standards
- Magnetic starter with overload protection
- Rip fence
- Ground cast iron table tilts 0 to 45° on cast double trunnions
- Heavy duty 220V 1 phase or 3 phase motors as standard equipment
- Dust collection outlet
- Foot-operated brake.

Compare these special direct-to-you prices!



BW-002A BRIDGEWOOD DUST COLLECTOR 2 BAG UNIT

Only \$279 additional

- 1059 CFM
- 2 HP 1 PH 220 VAC
- Dolly cart base
- One 5" or two 4" dust collection hose inlets.

TO RECEIVE A CATALOG FAST, SEND \$2.00 TO:

WILKE MACHINERY COMPANY

3230 Susquehanna Trail, York, PA 17402

FOR TECHNICAL SERVICE CALL: 1-717-764-5000

Look Familiar ?



- Original design
- Original products
- Original manufacturer

SOMMERMILLE DESIGN

20 Years of quality, dependability and service

300 Pearl Street, Buffalo, New York, 14202
940 Brock Road., Pickering, Ontario, L1W 2A1

For your nearest factory authorized dealer

Call 1-800-357-4118.

CUSTOM MADE WOODPLANERS

Design your own...

- Planer
- Molder
- Sander
- Gang Saw

30-Day Money Back Guarantee

Full 5 Year Commercial Non-Prorated Warranty

The 812B Planer rated ★★★★★ for overall performance! WOOD® Magazine Sept. 1995

Call 1-800-487-2623 for FREE Catalog

r b i n d u s t r i e s
The American Tool Manufacturer

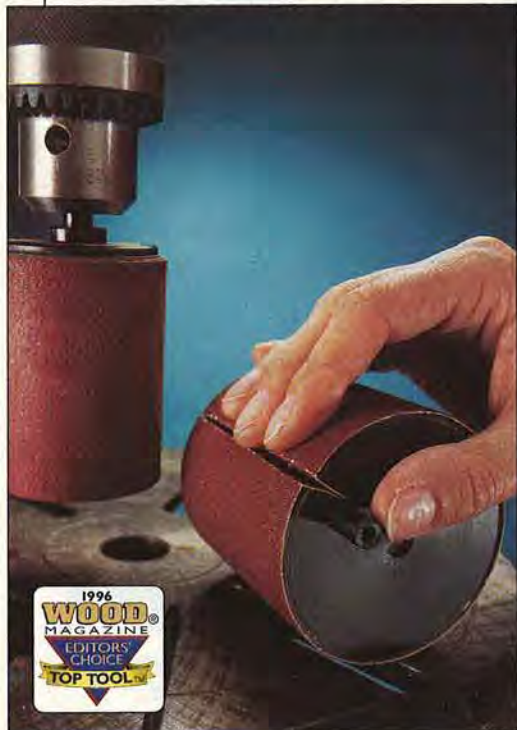
© 1995 rbindustries. All rights reserved.

F114



Continued from page 90

New sanding drums feature quick-change spindles



Drill press sanding drums have been around for years. But recently, I came across an improved line called Carroll Quick-Change Sanding Drums.

The spindles on these drums unscrew from the drum so you can leave them in the drill-press chuck. So, changing drums, or removing a drum to change the sandpaper, takes only a few seconds. The drums take standard sandpaper cut from sheets.

The 3"-long drums come in four diameters: 1", 1 7/8", 2 3/8", and 3". Machined from solid aluminum stock, the drums I checked were perfectly round and balanced. Around the circumference of each drum, a thin layer of foam rubber cushions the paper and reduces heat build-up.

To pull the sandpaper tight on the drum, you insert a cam-

shaped key along with the ends of the paper into a slot milled in the side of the drum. Then, turn the key with the allen wrench supplied. Excellent instructions for sizing and cutting the paper are included with each drum, but I'd like to see the paper sizes stamped on each drum since instructions are easy to lose in a crowded shop.

—Tested by Dave Henderson

PRODUCT SCORECARD

Carroll Quick-Change Sanding Drums

Performance	★ ★ ★ ★ ★
Price	1x3", \$25; 1 7/8x3", \$26; 2 3/8x3", \$28; 3x3", \$30; or \$100 for all four.
Value	★ ★ ★ ☆ ☆

Farris Machinery, Inc., 1206 Pavilion Dr., Grain Valley, MO 64029. Call 800/872-5489.

Continued on page 99

Work smarter, safer and cleaner

DESIGN BREAKTHROUGH

All wood workers now know that air filtration is essential. WoodMark's new ceiling-mounted air filtration system has been created for maximum efficiency in air movement for filtration. This innovative design directs the dust inlets at an 8° angle toward the working area of your shop where dust is created.

By placing these inlets on all sides of the unit you are provided with a unique and highly effective 360° collection of air, allowing your shop to be filtered from every direction at the same time.



"You can either buy a filter or you can be a filter."

Introductory Offer
\$499.95 + S&H
LIMITED TIME ONLY

We've also added fluorescent lighting to help you see how clean your shop really is.

- 1100 CFM
- 360° Air Collection
- 12' Power Cord
- Fluorescent Light
- Unique filter-lock system (insures dust will be captured in the filter)

It's the ultimate workbench. It's a downdraft table. It's a complete air filtration system.



Deluxe • 30" x 69" x 2"
Has a larger, thicker work surface and includes twin screw vice

Remove the dust before it can pass your face. The Dust Eliminator Workbench collects dust at its source (from sanding)... and air-borne particles created by other shop tools.

A generous select and better grade hard maple work surface sits atop a powder-coated, heavy gauge steel cabinet.



Original • 30" x 54" x 1 3/4"
Only \$889.00 + S&H
Workbenches shown with some options.



Powerful motor (930 CFM) • Optional 1600 CFM motor
Locking casters • GFI convenience outlet • 20' power cord

Other Sizes & Options Available

WOODMARK Call toll-free for our FREE Color Brochure
1-800-845-4400

P. O. Box 211434 • Bedford, TX 76095

Circle No. 1295

NEW The best shelving jig value on the market!

ONLY \$29.95* FOR THE JIG & BIT

Guaranteed perfectly spaced shelf bores.

Call 1-800-279-4441 to place your order today!

Or call for a **FREE** catalog featuring over 4000 products for the woodworker, including the finest hardware, wood & tools.

Ask for item number 22658
Department 63115

*Plus shipping & state tax where applicable.

<http://woodworkerstore.com>

Since 1954

The Woodworkers' Store

Hardware, Wood, Tools & Know How

BOSCH

BUY ANY 3 SKIL OR BOSCH TOOLS & RECEIVE A FREE SKIL CORNER DETAIL SANDER



ALL CHECKS WILL BE HELD 10 BUSINESS DAYS
WE ACCEPT VISA, MASTERCARD, DISCOVER, & AMERICAN EXPRESS

INTERNATIONAL TOOL CORPORATION

BUSINESS HOURS:
MON-FRI 8-5 PM EST
SATURDAY: 9-12 EST

2590 DAVIE RD., DAVIE, FLORIDA 33317

FREE FREIGHT & SAME DAY SHIPPING

FAX US YOUR ORDER AT
1-954-792-3560

ON MOST UPS ORDERS OVER \$50 MINIMUM PURCHASE WITHIN THE CONTIGUOUS U.S.A.

1-800-338-3384

VISIT OUR WEB SITE AT [HTTP://WWW.INTERNATIONALTOOL.COM](http://WWW.INTERNATIONALTOOL.COM)

GIFT CERTIFICATES AVAILABLE - QUANTITIES LIMITED - NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS - PRICES SUBJECT TO CHANGE WITHOUT NOTICE

PORTER-CABLE Purchase any tool with an asterisk (*) and receive a free 30 minute video & \$5.00 off coupon... call for complete details!

Table listing various power tools and accessories from Porter-Cable, including Brad Nailers, Finish Nailers, Framers, and Sanders. Includes item numbers, descriptions, and prices.

The International Tool Woodworkers Special
Model 906901K Includes 90690 commemorative router with case, 6931 plunge base, 42160 edge guide, 42000 template guide kit, 39993 routing pad, The World of Porter Cable Routers video, and a \$5.00 coupon towards future Porter Cable accessory purchase. **OUR PRICE \$284.00**

This is the Season for International Tool Holiday Specials!

Special offers for Bosch, DeWalt, Freud, and Skil tools. Includes details for Model 1613EVSK router, Model DW682K biscuit jointer, Model JS100 biscuit jointer, and Model HD2745-04 drill kit.

Special offers for Hitachi, Senco, Powermatic, and Alprz tools. Includes details for Hitachi compound miter saws, Senco narrow crown staplers, Powermatic edge sander, and Alprz Brad Nailers.

OUR PRICES WILL NOT BE BEAT!

Makita

Table listing Makita power tools such as CDLS Drill Kit, Angle Drill Kit, and Compound Miter, with their respective prices.

Emqlo AM78HC4V 1/2 HP COMPRESSOR **\$298.00**

DELTA tools including Hollow Chisel Mortiser, Bench Top Planer, and various Sanders. Includes item numbers and prices.

DEWALT

Table listing DeWalt power tools including 3/8" Amp. Var. Sp. Drill, Handmade Jig Saw Kit, and various Sanders and Routers.

Panasonic FREE 12V LANTERN!

EY6100EQW 12V PREDATOR CORDLESS KIT W/KEYLESS CHUCK, 2 IRONMAN BATTERIES, 15 MIN. CHARGER & CASE, VSR 194

MIRKA Abrasives, Inc.

Table listing Mirka abrasive products like Hook & Loop Paper for Porter Cable, DeWalt, and Skil tools.

RYOBI

Table listing Ryobi power tools including Portable Planer, Detail Carver Kit, and various Sanders.

freud

Table listing Freud power tools including Compound Saw After Rebate, Biscuit Joiner, and various Sanders and Routers.

Table listing Bosch power tools including VSR Drill, Hammer Drill, Dustless Sander, and various Sanders and Routers.

PURCHASE ANY OF THE FOLLOWING SANDERS & RECEIVE A FREE SANDBELT/DISC CLEANER WITH EACH!

HOLIDAY SUPER SAVINGS SPECIAL
TAKE AN ADDITIONAL \$10.00 OFF OF ANY SKIL OR BOSCH POWER TOOL PURCHASED... OFFER GOOD THRU 12/31/96

SKIL

Table listing Skil power tools including Worm Drive Circular Saw, Magnesium Worm Drive Saw, and Biscuit Joiner.

BESSEY

Table listing Bessey K body clamps for various sizes and throat widths.

SUPER SPECIAL \$198
636 OSCILLATING TRIANGULAR SANDER INCLUDES CASE & PAPER ASSORTMENT

Jorgensen

Table listing Jorgensen adjustable hand screws in various sizes and lengths.

Table listing Milwaukee Pony Clamp Fixtures for various pipe sizes.

Table listing Milwaukee Pony Spring Clamps and Spring Clamps in various sizes.

Table listing Milwaukee power tools including 12V Kyles CDLS Drill Kit, Miter Saw, and Compound Miter Saw.

Woodworkers Resource

You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below. Each company mails the catalogs or information directly to you.

POWER TOOLS

SCROLL SAW, CRAFT & WOODWORKING CATALOG—Our '96 catalog features the 7 models of HEGNER Precision Scroll Saws, the consistent choice of the experts. Complete information on scroll saw blades and accessories is included. Also ZYLISS Portable Vice, ACCURA Benchtop Combination Machine, HEGNER Lathes and Duplicators, METABO Hand Tools and PLANO Vertical Glue Press information. **ADVANCED MACHINERY**. Free. Circle No. 3.

FREE WOODWORKING TOOL CATALOG—It may be your most valuable tool! Tool Crib of the North's 96-page catalog features the finest and most requested woodworking and construction tools available. Our knowledgeable sales staff, fast and efficient service, and guaranteed competitive pricing make Tool Crib of the North the place to start for your next project. **TOOL CRIB OF THE NORTH**. Free. Circle No. 6.

TRANSPOWER, CP TOOLS INC.—A fine line of quality woodworking machinery, saws, shapers, planers and more. Send for free catalog. **CP TOOLS INC.** Free. Circle No. 15.

TOOLS AND ACCESSORIES—120 page color catalog features Porter-Cable routers, sanders, pocket hole cutters, and biscuit joiners. Tormek grinders, Vega lathe duplicators and saw fences, Vacu-Presses plus a huge selection of power tool accessories. Best quality, fairly priced, every tool backed by our 184 years' experience and 60-day money-back guarantee. **CONSTANTINE'S**. Free. Circle No. 20.

AT LAST! AN AFFORDABLE 14.4V CORDLESS DRILL—Forget paying \$200 or more for a quality 14.4-volt cordless drill. As part of a nationwide media campaign, the world's largest cordless drill manufacturer has authorized us to introduce their industrial 14.4V powerhouse at an unheard of \$69.95! Satisfaction guaranteed. **GREAT TOOLS DIRECT!** \$1.00. Circle No. 43.

HARBOR FREIGHT TOOLS CATALOG—The finest professional quality tools and equipment at the lowest prices...**GUARANTEED!** Our NEW Woodworking catalog has been expanded to contain hundreds of additional brand name woodworking tools & supplies. See why millions of woodworking professionals and Do-It-Yourselfers have shopped at Harbor Freight Tools for over 27 years. **HARBOR FREIGHT TOOLS**. Free. Circle No. 46.

INTERNATIONAL TOOL CORPORATION CATALOG—features the finest tools & accessories at the absolute lowest prices anywhere! Whether you're a home woodworker or an industrial user, you will find an incredible selection featuring Porter Cable, Bosch, Skil, Freud, Delta, Powermatic, Milwaukee, Makita, Hitachi, and many, many more. We offer same day shipping, the most knowledgeable sales staff and free shipping on most UPS orders in the contiguous U.S. **INTERNATIONAL TOOL CORP.** \$2.00. Circle No. 49.

CATALOGUE OF UNIQUE PRODUCTS FOR THE WOODWORKER—Filled with products and projects you can't find anywhere else. The 36-page full-color catalog features our complete line of Dust Collectors and accessories, Air Cleaners, Air nailers, Scroll Saws, Planers, and the exclusive Carbatec II variable speed mini-lathe and more. Explore our full line of projects and supplies including—pen kits, letter openers, perfume kits, kaleidoscopes, glass candles, project wood, and featuring the new and exclusive penlight flashlight kit. **PENN STATE INDUSTRIES**. Free. Circle No. 75.

DUST COLLECTOR SYSTEMS—Keep your shop clean and safe from saw dust with one of our large capacity Commercial Style Dust Collection Systems. Catalog features our new DC-3 1-1/2 H.P. Portable

System. Free hose and adapters are supplied with any purchase. Full line of Dust Collection accessories is available from Penn State Industries. Catalog. **PENN STATE INDUSTRIES**. Free. Circle No. 75.

SURFACE PLANER—Information package available from Penn State Industries describing the specifications and applications of its super 12 1/2 inch surface planer. Special discount pricing available on current promotion. **PENN STATE INDUSTRIES**. Free. Circle No. 75.

NOW'S THE TIME TO EXPERIENCE THE PERFORMAX DIFFERENCE—Minimize your sanding time with a Performax Drum Sander and benefit from our ten year anniversary offer. Purchase a 16-32 Plus and receive a free MetalStand (a \$100 value) or select the 22-44 Drum Assembly and receive free Tension Rollers (a \$50 value). Nine models to choose from. **PERFORMAX PRODUCTS**. \$1.00. Circle No. 78.

DRUM SANDER: UNIQUE, COST SAVING—Using plastic soda bottle as drum and sheet sandpaper with your power drill. Brass seals, water-filled for weight, cooling, firmness. Sanding surface 23% greater, 100% faster SFPM than belt sander. Hand-held, vertical through-the-table, and horizontal mount. **SANDACO CORP.** \$1.00. Circle No. 79.

ROUTER MILLING CENTER—Turn your router into a precision wood milling machine with the innovative, patented Mill-Right from Ironwood Brand. Your router and the Mill-Right become a router table, panel raising machine, shaper, joint maker and more! Precision guides and precision lead screws let you mill wood with precision and repeatability. Cast iron construction. Use your plunge router for even great capability. **POSITIVE POSITION INC.** Free. Circle No. 83.

RBINDUSTRIES, WOODWORKING TOOLS & ACCESSORIES—100% Made in USA. The NEW 1996-1997 RBI catalog features the all new HAWK Precision ULTRA Scroll Saws, "4-in-1" and "3-in-1" Universal Woodplaner Systems, and 26" Variable Speed Drum Sander, 38" Drum Sander, the all NEW Panelmaster II Raised Panel Door Machine, Router Tables, Books, Accessories, Patterns, and Much More. When you buy from rbindustries, you're saving big money by buying factory-direct from one of America's premier woodworking tool manufacturers. We stand behind every piece of equipment we manufacturer with our exclusive 30-Day, Money Back Guarantee and 5-Year Warranty. Send today for your FREE catalog. **RBINDUSTRIES, INC.** Free. Circle No. 84.

THE ADVANTAGE—That's what you'll have over other woodworkers when you are using SECO MACHINERY. With choices of straight-line rip saws, wide belt sanders, dust collectors, power feeders, and lots...lots...more. Write today for a catalog of this woodworkers choice. Se habla español. Dealer inquiries welcome. Send for catalog. **SECO INVESTMENT CO.** Free. Circle No. 91.

TOOLS ON SALE™—A division of Seven Corners Ace Hardware, Inc. offers a catalog of over 400 pages of the most popular brands of power tools available anywhere, all at discounted prices. Included are saws, planers, sanders, routers, drills and more from manufacturers such as Milwaukee, Makita, Porter Cable, Black & Decker, Dewalt, Freud, Bosch, Delta, and many more. Now introducing a full range of Werner brand ladders. Tools on Sale™ division of **SEVEN CORNERS ACE HARDWARE, INC.** \$1.00. Circle No. 92.

WILLIAMS & HUSSEY—Thousands of professionals use our American-made molder/planers to produce curved or straight moldings. Over 40 years of experience with a 5-year warranty. In the shop or at the job site, W & H meets your needs every day with quick knife changeover and ultimate versatility with all kinds of wood. Send for catalog. **WILLIAMS & HUSSEY**. \$1.00. Circle No. 93.

THE LATEST SUNHILL MACHINERY CATALOG—If you're looking for quality woodworking machinery at affordable prices, Sunhill has what you need. Table saws, planers, jointers, sanders, shaper cutters and more. All machines carry one year warranty. Catalog. **SUNHILL MACHINERY**. Free. Circle No. 97.

WOODWORKERS WANTED!—The Smithy 3-in-1 lathe-mill-drill gives you all 3 basic machine tools for

working metal, plastic, or wood in one easy-to-use benchtop machine. Smithy can help you do it yourself. Free info pak & video. **SMITHY**. Free. Circle No. 99.

HAND TOOLS

TOOLS THAT MAKE IT EASY!—Turning tools, carving tools, planes, scrapers, clamps, bits, squares, saws, stones, mallets, jigs—every tool you can think of and then some, in Constantine's 120-page full color catalog. **CONSTANTINE'S**. Free. Circle No. 110.

ELECTRIC RECIPROCATING TOOL—Cordless tool for hobbyists, model and prototype makers. It saws, files, sands, shapes in applications unsuited to rotary tools—on flat surfaces, in the middle of the workpiece, in corners. Comes with accessories, including proprietary tools. Accepts needle files with round handles and blades with 1/4" flat shanks. **KD ENGINEERING, INC.** \$1.00. Circle No. 125.

IMPROVE YOUR WOODWORKING SKILLS!—Craftsmen around the world have discovered the secret of better quality work. The 72 page Japan Woodworker Catalog is loaded with a huge selection of Japanese saws, waterstones, chisels, gouges, carving tools, planes, cutlery and garden tools. Send for 1992 catalog and all supplements for two years. **THE JAPAN WOODWORKER**. \$1.50. Circle No. 190.

STAINS/FINISHES

SOLVENT AND WATER BASE FINISHES—Check Constantine's big 120-page catalog for the latest in finishing technology—stains, lacquers, polyurethanes, penetrating finishes, plus gloss and satin varnishes, milk paint, even hard-to-find specialty products like padding lacquer, shellac powder, and gold leaf. **CONSTANTINE'S**. Free. Circle No. 210.

PERFECT PEN POLISH—NEW Developed for pens but great for any small lathe turned object. Pen Turning Manual, everything you need to know from wood selection to marketing. A complete line of pen making supplies—many styles of mechanisms, unusual pen turning materials such as dyed stabilized burls and spalted woods. Send for catalog of wood turning and pen supplies. **HUT PRODUCTS FOR WOOD**. \$1.00. Circle No. 230.

PLANS

WOODWORKERS' PLANS AND SUPPLIES—Wood projects are simplified with the high quality plans, specialty hardware and other supplies offered by Armor Products. Over 100 plans are available for making toys, desks, clocks, pool tables, lamps, chests, and other furniture. Movements, dials, moldings, ornaments, dollhouse kits, door harp supplies and tuning pins are also available. **ARMOR PRODUCTS**. \$1.00. Circle No. 315.

FREE SCROLL SAW PATTERN CATALOG—A beautiful full-color catalog showcasing our full line of woodworking patterns and accessories: shelves, mirrors, videos, books, baskets, blades, clocks, finials, drill bits, doll furniture, footswitches, and much, much more. Too much to list here—you just gotta send for one today! **THE BERRY BASKET**. Free. Circle No. 323.

"YOU CAN MAKE IT" CATALOG—This comprehensive 60-page catalog is one of the best resource books any woodworker can have. It shows hundreds of project plan ideas for indoor and outdoor furniture, outdoor structures, play gyms and playhouses, rocking horses, toys, doll houses, home improvement and a variety of woodworking books. The catalog also includes handy reference information on fasteners and a \$4.00 catalog rebate coupon. Request #WM96. **CRAFT PATTERNS, INC.** \$4.00. Circle No. 326.

FULL-SIZE FURNITURE PLANS CATALOG—Illustrates and describes over 200 plans for making furniture of quality found in fine furniture stores. Plans include rollout desk, cradles, beds, dining tables, chairs, buffets, chests, dressers, gun cabinets, Queen Anne lowboy and highboy, children's furniture, rocking horse, spinning wheels, Morris chair, Adirondack and English garden furniture and more. Bill of materials and exploded drawings assist the woodworker. Fine furniture plans since 1968. **FURNITURE DESIGNS, INC.** \$3.00. Circle No. 345.

ALL NEW BIRD FEEDER CREATION—Now available. Build as one, two, or three tiers from one plan. Plans include Bill of Materials list, cutting diagram, step-by-step instructions and scaled drawings to ensure precise procedures and tips necessary to complete our projects. Send for information. **GOOSE POND MILL**. \$2.00. *Circle No. 365.*

PROJECT PLANS—Full-size patterns for over 850 easy-to-build woodworking projects. Nation's leading source for scroll saw patterns, cow projects, toy plans, yard ornaments, wood furniture, etc. Over 3000 hard-to-find specialty items. Send for big new 100-page full-color catalog. **MEISEL HARDWARE SPECIALTIES**. \$2.00. *Circle No. 401.*

WOOD TOY PATTERNS—Patterns for all ages including children's patterns and executive toys. New catalog has many new patterns to choose from including parts and wheels. Send for new catalog today. **TOYS AND JOYS**. \$1.00. *Circle No. 465.*

SCROLLSAW FRETWORK PATTERNS—& supplies catalog. From simple cutouts to 50" tall clocks. Over 300 patterns for the scroll saw enthusiast. Also clock movements, tools, books, plywood, hardwood, sawblades. Great projects for the hobbyist or for profit. Catalog. **WILDWOOD DESIGNS, INC.** Free. *Circle No. 475.*

LUMBER

QUALITY EXOTIC LUMBER/TURNING WOODS—We offer a comprehensive selection of fine quality exotic woods. Also available are mechanisms for making wooden barrel pens/pencils/roller balls/fountain pens. Ebony, Kingwood, Tulipwood, Snakewood, African Blackwood, Cocobolo, Bloodwood, Figured Maple, Spaulded Maple, Padauk, etc. Unique and unusual turning woods and burls are also available. Send for catalog. **BEREA HARDWOODS**. \$1.00. *Circle No. 510.*

ONE STOP WOOD SHOP—Domestic and exotic hardwood plywood and lumber, marine plywood, over 30 species in stock—all under one roof. Custom cutting services to your exact specifications with little or no waste at competitive prices! We specialize in bundling and shipping. Send for catalog. **BOULTER PLYWOOD CORP.** Free. *Circle No. 512.*

STEVE H. WALL LUMBER CO.—Quality hardwoods and woodworking machinery for the craftsman and educational institutions. 16-page catalog lists 17 species of popular hardwoods at wholesale prices. Also dealers for MiniMax, Freud and ProCut woodworking machines. **STEVE H. WALL LUMBER CO.** \$1.00. *Circle No. 592.*

VIDEOS

JOINTECH CABINET MAKER'S SYSTEM VIDEO—Watch Dr. Roger Cliffe and Dave Morgan demonstrate this patented System that can perform every operation in furniture and cabinet making. See how easy it is to make raised panel doors plus techniques in making dovetails, box joints, drawer construction and even an intricate double-inlay joint. All the operations which would normally require the use of a shaper, router and a jointer can now be accomplished with the JOINTECH CabinetMaker's System. **JOINTECH, INC.** \$5.00. *Circle No. 610.*

GENERAL WOODWORKING CATALOGS

WOODWORKING SUPPLIES—Blocks, pegs, cups, hearts, hardware, bandsaw blades, abrasives, toy parts, glue, clock parts, miniatures, balls, dowels, spindles, knobs, beads, picture hangers, cup hooks, finials, screw eyes, game pieces, novelty items, and much more. **BENNY'S WOODWORKS**. \$1.00. *Circle No. 810.*

THE WOODTURNERS CATALOG—48 color pages of the finest woodturning tools, machinery and supplies available. Featuring Henry Taylor, Sorby, Richard Raffan and Dale Nish workshops. Catalog price refunded with order. **CRAFT SUPPLIES USA**. \$2.00. *Circle No. 830.*

GRIZZLY IMPORTS, INC.—Celebrate 1996 with our 178-page full-color catalog packed with an incredible selection of quality machines, tools, and accessories at prices you can afford. We've added over 1,000 new items this year alone! Send for your free catalog today and start enjoying tremendous savings on all your woodworking needs. **GRIZZLY IMPORTS INC.** Free. *Circle No. 860.*

HARTVILLE TOOL—Get your hands on some of the best woodworking tools and supplies around. All at the lowest prices everyday. Hundreds of items only available from us. Send today to receive your FREE catalog

of over 900 unique woodworking tools. All guaranteed for life! **HARTVILLE TOOL & SUPPLY**. Free. *Circle No. 865.*

KREG TOOL CO.—Specializes in pocket hole tools, supplies and how-to videos for pocket hole joinery, including THE KREG JIG. Catalog also includes hinges, drawer slides, Crystalac water-based stains and finishes, KTC high quality router bits and more. **KREG TOOL COMPANY**. 50¢. *Circle No. 877.*

WOODWORKING BLADES AND SUPPLIES—Large selection of top quality band, scroll, and fret saw blades including the new Olson PGT precision ground tooth fret saw blade with reverse teeth. Also high quality coated abrasive belts, discs, and sheets, plus power carving accessories, book & more. **WALNUT CREEK WOODWORKERS SUPPLY CO.** Free. *Circle No. 954.*

COMPLIMENTARY TOOL CATALOG—Woodcraft offers over 4,000 of the finest quality woodworking tools, books, supplies, and cabinet hardware in our complete full color catalog. Craftsman, cabinetmakers, carvers, woodturners, and hobbyists have depended on Woodcraft since 1928. Backed by Woodcraft's unconditional guarantee. Free technical assistance. **WOODCRAFT SUPPLY CORP.** Free. *Circle No. 955.*

THE WOODWORKERS' STORE CATALOG—The catalog that helps woodworkers do it right! Discover over 200 new products, including exciting items for making computer desks, entertainment centers, kaledoscopes and humidors. Many exclusives and hard-to-find specialties like unique hardwoods, solid brass hardware, kitchen organizers, lighting systems and innovative tools—just to name a few! Toll-free ordering. Satisfaction guaranteed! **THE WOODWORKERS' STORE**. Free. *Circle No. 965.*

KITS

OUR QUEEN ANNE FURNITURE KITS—are ready to assemble and finish. They include dining room chairs, a variety of occasional tables, and a personal desk. All are made in solid cherry, oak, walnut, and mahogany. We also stock individual Queen Anne legs for every project. Complete information in our brochure packet. **ADAMS WOOD PRODUCTS**. Free. *Circle No. 1002.*

FACTORY DIRECT SAVINGS—From the world's largest grandfather clock kit company. Free 32-page catalog of clocks and furniture kits. Precision cut solid oak and cherry "Do It Yourself Kits" or fully assembled. Satisfaction guaranteed. **EMPEROR CLOCK CO.** Free. *Circle No. 1030.*

SHIP MODELING CATALOG—Historic Ship Models—Museum quality replicas you build yourself. Pre-cut wooden parts, metal and brass fittings, cloth sails, plans and instructions. Send for 80 page color catalog. **MODEL EXPO, INC.** \$1.00. *Circle No. 1075.*

BUCKBOARD BENCH KIT—Kit includes steel springs that give a little, metal arms and back rails, hardware, and full-size instructions. New matching trestle table kit. **THE ROUDEBUSH CO.** 50¢. *Circle No. 1085.*

PUBLICATIONS

HOTTEST NEW SCROLL SAW PATTERNS AND TECHNIQUES—Check out "Patrick Spielman's Home Workshop News" a full-color, bi-monthly featuring trend-setting tips and ideas plus new project designs for scrolling fun and profit. Send just \$1.00 for a sample issue and a woodworking/pattern book. Catalog. **SPIELMAN PUBLISHING**. \$1.00. *Circle No. 1142.*

SHOP ACCESSORIES

SCROLL SANDER™ ENDS HAND SANDING!—Unique tool sands edges and narrow internal cuts on your scroll saw. Removes feathering, bumps, burn marks. Corrects wandering from cutting line. As easy to attach and remove as a blade. Each Scroll Sander™ lasts many hours. Made in the USA. Send today for sample Scroll Sander™! Please specify your scroll saw. **SCROLL SANDER™**. \$1.00. *Circle No. 1213.*

ECON-ABRASIVES—Offers a complete line of sandpapers and woodworking related accessories. We custom make abrasive belts in any size and in any grit. Catalog. **ECON-ABRASIVES**. Free. *Circle No. 1229.*

EASY DOES IT—with HTC'S power tool accessories. Discover many unique items, designed only with you, the dedicated woodworker, in mind. Make your machinery safer, increase the working area of your shop and accomplish nearly impossible tasks easily, quickly, accurately. Full-line catalog and price list. **HTC PRODUCTS, INC.** Free. *Circle No. 1245.*

WOOD MOISTURE METER—Avoid moisture defects such as cracking, warping, splitting, delamination. The pin-type moisture meter "Mini-Ligno" can read surface or core moisture in any thickness of lumber, from veneer through heavy timbers. A flat surface is not necessarily required, thus the Mini works on rough sawn lumber and curved or round pieces. A most versatile instrument. Many hobbyists and professionals use the Mini-Ligno C or E/C with attachments to monitor lumber during air or kiln drying or use external electrode for depth readings. Catalogue describes complete line of moisture meters. **LIGNOMAT USA, LTD.** Free. *Circle No. 1250.*

ROUTER SPEED CONTROL—Reduces speed electronically without reducing torque. Route at the speed that gives best results with the wood and bit you are using. Speed adjustable from full speed to 0 RPM. Less tear out—stops burning—less wear on bits—easy to use. Send today for information. **MLCS LTD.** Free. *Circle No. 1251.*

LUMBER DRYING—Dry your own lumber using our equipment and your insulated chamber. Dehumidification systems from 300 BF to 45,000 BF. Easy to operate equipment offers high quality kiln-dried lumber for pennies per foot. These long-lasting made-in-the-USA units can pay for themselves in one month! Send for free catalog. **NYLE STANDARD DRYERS, INC.** Free. *Circle No. 1260.*

SUPERGRIT® SANDING/REFINISHING CATALOG CLOSE-OUT SHEET—Belts (aluminum oxide, silicone carbide zirconia), discs (plain, PSA, Hook & loop vacuum), sheets (cabinet, crocus, emery, non-loading, waterproof), rolls (cloth or hook & loop), bowl turning & lathe supplies, dust masks, scuff pads, tack cloths, tape. **RED HILL CORP.** Free. *Circle No. 1267.*

THE WORLD'S BEST TABLE SAW FENCE—Evolution & Pro-Rip manual saw fences for the hobbyist & professional user. Fits all table saws made. Welded steel, stress relieved construction, yet has all the features the other guys have ignored. Free catalog, 30 day money back guarantee. **VOSS TECHNOLOGIES, INC.** Free. *Circle No. 1283.*

"WOOD-FRIENDLY"™ L606 MOISTURE METER—uses advanced electromagnetic wave technology to accurately measure wood moisture content from 6% to 30% to a depth of 1/4". No pins to "abuse" wood and leave ugly holes. Check out boards from top to bottom in just seconds before you buy and avoid the headaches of splitting, warpage, delaminating and failed glue joints. The Wagner L606's convenient pocket size, easy-to-read analog meter, and low price make it a must for anyone working with wood. Literature. **WAGNER ELECTRONIC PRODUCTS, INC.** Free. *Circle No. 1285.*

UNCOMMON WOODWORKING TOOLS—American made quality router tables and fences, dovetail jigs, unique router biscuit joinery system, mortise machines, pin router, books, videos, commercial grade router bits and more. Buy from the manufacturer. Fast, friendly, knowledgeable service. **WOODHAVEN**. \$2.00. *Circle No. 1290.*

KEEP YOUR SHOP AND LUNGS CLEAN—Enjoy the benefits of a large yet mobile workbench. The Dust Eliminator Workbench removes dust from sanding before it becomes airborne. For dust created by other tools, common sense tells us that wood, even as dust, has weight and is affected by gravity making it more difficult to be collected above the woodworker's head. This is why it is much more efficient to collect dust particles at waist level. The workbench top is made of select and better grades of hard maple, the traditional choice of wood craftsmen. **WOODMARK**. \$1.00. *Circle No. 1295.*

BITS, BLADES, CUTTING TOOLS

PRODUCTION QUALITY CARBIDE TIPPED ROUTER BITS—Large discounts. New expanded catalog featuring a huge selection of Carbide Tipped Router Bits, Raised Panel Door Sets, Shaper Cutters, Solid Carbide Bits, The Router Speed Control, plus our unique line of clamps, tools and supplies. Save 50% to 70%. Value, quality, and prompt service guaranteed! **MLCS LTD.** Free. *Circle No. 1350.*

INDUSTRIAL-QUALITY CARBIDE TIPPED ROUTER BITS & SHAPER CUTTERS—Great selection at the best prices for anti-kickback design router bits and shaper cutters. Same day service. Ask about our specials and free catalog. **WOODLINE ARIZONA INC.** Free. *Circle No. 1395.*

HARDWARE/ WOOD PARTS

FREE WOODCRAFT CATALOG FROM CHERRY TREE!—68 full-color pages of plans, parts, kits and supplies for all skill levels. Clocks, whirrigigs, dollhouses, door harps, banks and many more attractive items—plus wooden dowels, pegs, wheels, knobs, & more. Tools, paint supplies, stencils, stamps and much more! Wholesale prices available. Catalog, **CHERRY TREE TOYS**. Free. Circle No. 1420.

INCOME OPPORTUNITIES

WOODWORKERS!—Have you created a plan or pattern? Would you like to see it in a catalog? Earning income! Your plan or pattern can be in our next catalog. Send for information on how to submit your plan for review. **CLARK'S BENCH TABLES**. \$2.00. Circle No. 1510.

SECURE FUTURE IN FURNITURE RESTORATION WITH MINUTEMAN—Earn \$200–\$1,000 per day stripping, repairing, refinishing, mirror resilvering, veneering and more at home or in shop; part- or full-time. We provide complete training; no experience necessary. FREE workshop teaches you latest in furniture restoration. Featuring Amity, the first complete line of water-based furniture restoration products. Catalog, **MINUTEMAN**. Free. Circle No. 1661.

MISCELLANEOUS

AMERICAN STEEL SPAN BUILDINGS—Designed with the do-it-yourselfer in mind. Our buildings are made in a heavy gauge steel with a 20-year warranty. Everything is pre-cut and pre-drilled, and just bolts together. A quality pre-engineered building with style and structural integrity at a price that everyone can afford. 3 models to choose from! **AMERICAN STEEL MARKETING CORP.** Free. Circle No. 1780.

MECHANISMS FOR MAKING WOODEN BARREL PENS—Pencils/Roller Ball Pens/Fountain Pens. High quality. Low prices. Wholesale/Retail. Plus other related items. **BEREA HARDWOODS CO.** \$1.00. Circle No. 1900.

DELPHI STAINED GLASS—100-page color catalog of stained glass and related supplies. Beveled glass, hard-to-find tools, hundreds of unique patterns, kits, books, videos, and lots more. Since 1972 we've supplied both hobbyists and professionals with quality products, friendly advice, and fast 24-hour shipping. All products guaranteed 100%. **DELPHI STAINED GLASS**. \$5.00. Circle No. 1920.

SAVE SPACE. BUY AN ORIGINAL MURPHY BED—Color catalog shows the five different types of Murphy Bed mechanisms available in twin to king size. You can use our ready-to-assemble cabinetry or make your own. The beds provide a comfortable night's sleep and disappear during the day into a cabinet or closet. **MURPHY BED CO. INC.** Free. Circle No. 1981.

TRUCK OWNERS, THE ROLL-TOP COVER™ IS QUICK AND EASY!—The Roll-Top Cover™ instantly rolls out to keep contents dry and secure. When not required it rolls into its small 9½" storage canister for carrying tall loads. The full length handle can be easily operated with one hand from either side of the truck. Send for brochure. **PACE-EDWARDS CO.** Free. Circle No. 1985.

STEELMASTER BUILDINGS—are available in almost any size for almost any use. From 10' to 100' wide and any length imaginable. Whether you need a back yard shop... an industrial shop... equipment storage building... whatever your requirements, you'll find a Steelmaster that's just the right size for the job. Our buildings are so easy to construct, most owners opt to construct their buildings themselves which adds up to even bigger savings. Send for information. **STEELMASTER**. \$1.00. Circle No. 2030.

IF YOU ARE INTERESTED IN RESTORING ANTIQUES—this 288-page catalog packed with unusual, hard-to-find items is just for you. Included are hundreds of essential items for antique restoration including top quality brass reproduction hardware, oil lamps and accessories, numerous wood component repair parts and kits, caning and basketry supplies, everything needed for wood refinishing, related tools, books, and a complete line of upholstery equipment and supplies. All at wholesale prices. Send for this informative catalog. **VAN DYKE'S RESTORERS**. \$1.00. Circle No. 2077.

WHOLESALE GLASS BROKERS—High quality glass shipped to your door directly from the finest manufacturers. Table tops; tempered glass; shelves; beveled glass; custom shapes; ¼" to ¾" thick; tinted glass; and much more! Your one-stop discount glass source. Idea catalog. **WHOLESALE GLASS BROKERS**. Free. Circle No. 2079.

PEN, PENCIL PRODUCTION SYSTEM—And equipment and supplies are detailed in free brochure. Anyone can produce high-quality pens and pencils from rare woods. The "WoodWrite" production system provides all equipment, supplies and consumables for your first 50 sets. Contact us for best prices on components and pre-cut, pre-drilled wood blanks. **WOODWRITE, LTD.** Free. Circle No. 2098.

CARVING SUPPLIES

WOOD CARVING MACHINES AND ACCESSORIES—make all types of wood carving easy, fun and profitable. The machines do the work. Whether for sign carving, flat 3-D, decoys, panels, gun stocks or furniture, we have the proper machine for the job. Professional woodcarving for the hobbyist and superior quality for the professional. Begin your hobby or full or part-time business by ordering our catalog and price list. **MARLIN INDUSTRIES**. \$1.00. Circle No. 2150.

PARAPHERNALIA—A sourcebook for everyone who loves to work with their hands. Consisting of ultra high speed engraving (315,000 RPM) carving equipment, training & supplies. We are the founders of ultra high speed engraving equipment & techniques. Serving & supporting since 1983. Free catalog available. Demo video available with refundable deposit. **PARAGRAPHICS**. Free. Circle No. 2160.

ELECTRIC WOOD CARVING TOOLS—Sugino Auto-Mach electric carving tool chisels wood up to 10,000 VPM. Safe, lightweight, easy-to-use, the pressure-activated head controls carving speed and depth, speeds carving faster than mallet and chisel methods. Professional quality suitable for novice and journeyman carver. Wide variety of hardened steel cutting blades. Operates on household current. **SUGINO CORP.** Free. Circle No. 2170.

WOOD CARVERS SUPPLY INC.—Serving with pride since 1955. Family owned & operated with superior customer service & a large selection of quality carving supplies. Each order is inspected 3 times before leaving our warehouse, delivered fast & backed by a 30 day money back guarantee. Discover the joy & relaxation of wood carving. Order our superb color 76 page catalog with over 2,000 items including hand & power carving tools, books, knives & much more. Join 1,000s of happy customers by sending \$2 for a two year catalog subscription. **WOOD CARVERS SUPPLY, INC.** \$2.00. Circle No. 2190.

WOODTURNING SUPPLIES!—Best selection of woodturning supplies anywhere. Greatest selection of pen kits, pencil kits, project kits, boxes, and display cases available. Slimlines, "Mont Blanc," "Parker," bottle stoppers, etc. Over 250 different pen blanks including exotics, figured, acrylics, celluloids, and dymondwoods. Carving supplies and books. **WOOD-CRAFTERS OF OKLAHOMA**. \$1.00. Circle No. 2195.

CLAMPS

MERLE ADJUSTABLE CORNER CLAMP—Quick & easy to use. It forces your work into square. Fully adjustable from 2¼" x 2¼" to 69" x 69" in. Perfect for clamping picture frames, cabinets, or anything that requires 90° corner clamping. The Merle Clamp is cast aluminum & steel construction, a true industrial quality tool. Send today for information. **MLCS LTD.** Free. Circle No. 2250.

CLOCKS

KLOCKIT—The leading supplier of clock-making supplies for over 25 years: Quartz and mechanical movements, clock inserts, dials, easy-to-follow plans and kits for all skill levels. **KLOCKIT**. Free. Circle No. 2335.

CLOCK PARTS CATALOG—For the hobbyist and clock enthusiast. Contains clock parts, quartz and mechanical clock movements. Tools for the hobbies and clock repair person. Gift ideas include complete clocks, watches and novelty items. Your satisfaction guaranteed. **S. LAROSE, INC.** Free. Circle No. 2375.

FASTENING PRODUCTS

SQUARE DRIVE SCREWS—Thousands agree—once you try them you will never want to use anything else! The square drive recess virtually eliminates work-damaging driver bit "cam-out," the deep threads result in exceptional holding power, and they are heat treated for strength. Sizes from #4 x ¾" to #12 x 4", with stainless steel, solid brass, brass plated, and zinc plated available. Quantity discounts. Send for literature. **McFEELY'S**. \$1.00. Circle No. 2450.

SHOWS & SEMINARS

THE WOODWORKING SHOWS* MACHINERY, TOOLS AND SUPPLIES**—Hundreds of products for the woodworker demonstrated and sold at discount prices at every "Woodworking Show". In-depth seminars and free workshops on a variety of woodworking topics. Shows are scheduled in 27 cities. Send for free brochure. ***THE WOODWORKING SHOWS. Free. Circle No. 2900.

Woodworker's Resource

TO ENSURE PROMPT HANDLING OF YOUR ORDER FOLLOW THESE INSTRUCTIONS:

- Circle your choice
- Enclose check or money order for cost of booklets plus \$2.00 service charge (no stamps accepted)
- Send coupon and remittance to address above
- ALLOW 4-6 WEEKS FOR DELIVERY
- Coupon expires January 12, 1998

WOOD SUBSCRIPTION

A 1 year WOOD subscription (9 issues) for \$25.00 (U.S. price)—a \$19.55 savings off newsstand rate (Circle No. 4000). Allow 6-8 weeks for first issue. Be sure to include payment with total below.

Circle numbers below corresponding to items in this issue. Please include \$2.00 for handling charge.

3.....Free	91.....Free	326.....\$4.00	860.....Free	1229.....Free	1420.....Free	2150.....\$1.00
6.....Free	92.....\$1.00	345.....\$3.00	865.....Free	1245.....Free	1510.....\$2.00	2160.....Free
15.....Free	93.....\$1.00	365.....\$2.00	877.....50c	1250.....Free	1661.....Free	2170.....Free
20.....Free	97.....Free	401.....\$2.00	954.....Free	1251.....Free	1780.....Free	2190.....\$2.00
43.....\$1.00	99.....Free	465.....\$1.00	955.....Free	1260.....Free	1900.....\$1.00	2195.....\$1.00
46.....Free	110.....Free	475.....Free	965.....Free	1267.....Free	1920.....\$5.00	2250.....Free
49.....\$2.00	125.....\$1.00	510.....\$1.00	1002.....Free	1283.....Free	1981.....Free	2335.....Free
75.....Free	190.....\$1.50	512.....Free	1030.....Free	1285.....Free	1985.....Free	2375.....Free
78.....\$1.00	210.....Free	592.....\$1.00	1075.....\$1.00	1290.....\$2.00	2030.....\$1.00	2450.....\$1.00
79.....\$1.00	230.....\$1.00	610.....\$5.00	1085.....50c	1295.....\$1.00	2077.....\$1.00	2900.....Free
83.....Free	315.....\$1.00	810.....\$1.00	1142.....\$1.00	1350.....Free	2079.....Free	4000.....\$25.00
84.....Free	323.....Free	830.....\$2.00	1213.....\$1.00	1395.....Free	2098.....Free	

Name (please print) _____ **I AM ENCLOSING:**
 Address _____ \$ _____ for priced items
 City _____ \$ 2.00 for handling
 State _____ Zip Code _____ \$ _____ total remittance
 Phone (Optional): _____ (US dollars only)

Supplement Your Income From Your Home With A Computer!



Pentium® Processor-based
Computer Included

Begin part time and still retain the security of your present position. This is a home-based business an individual or couple can run. If you purchase our software and business program, you will receive the computer and printer at no extra cost. If you already own a computer, you may receive a discount. You do not need to own, or know how to run, a computer—we will provide free, home office training. Financing available.

For free explanation cassettes and color literature, call:

1-800-343-8014, ext. 4554

Or Write:

Computer Business Services, Inc.
CBSI Plaza, Ste. 4554, Sheridan, IN 46069

Circle No. 1675

CHOICE OF PROS NOW AVAILABLE AT 40% LESS!

INTRODUCING THE **NEW**
WAGNER L609
MOISTURE METER...



L 4.5" x
W 2.75" x H 1.0"

WAGNER
ELECTRONICS

"The Choice of the Pros"
1-800-581-3301

326 Pine Grove Road
Rogue River, OR 97537
Phone: (541) 582-0541 Fax (541) 582-4138
Web: <http://www.wagner.com>

Circle No. 1285

ASK WOOD•KOTE™

POLYURETHANE MADE EASY

Q: My hobby is restoring old radios from the 1930's and 40's. I often use your *Jel'd Stain™* on the cabinets to match the original finish colors. Do you recommend that I use lacquer as the "top coat" after the wood is stained?

Harold Steiner, Phoenix, AZ

A: Lacquer certainly should be considered. However, Wood•Kote has recently introduced a new product, *Jel'd•Poly•Kote™*. This product has been well received by woodworkers and hobbyists for small projects. *Jel'd•Poly•Kote™* combines the protection of polyurethane with the wipe-on convenience of our stain. The finish is simply applied with a cloth. It



can be re-coated in 1 or 2 hours and no sanding is required between coats. Up to six coats can be applied in one day. People who live in condominiums or apartments will especially appreciate *Jel'd•Poly•Kote's* easy clean up.

Have a staining or finishing question? Ask Wood•Kote!
Please write to Dept. Q.
P.O. Box 17192
Portland, OR 97217
or Fax to (503) 285-8374



"The Professional
Woodworker's
Choice Since
1945"

ASK FOR WOOD•KOTE PRODUCTS
AT PAINT STORES, HARDWARE STORES AND HOME CENTERS.



ULTRA-PRECISION WOODWORKING SYSTEMS

IPM JOINERY SYSTEMS

This multi-patented system has been recognized by the experts as the *best* and the *easiest* to use to make dovetails and box joints plus, the best, all around patented dovetail incremental fence system you will ever own. Because IPM's accuracy is based upon a fine-threaded chrome lead screw, fine joinery is made easy and accurate cuts assured every time. Micro-adjustability even allows you to move the fence in thousandths of an inch increments.



CABINET MAKER'S SYSTEM

This one can do it all. All cabinet making operations can be accomplished with this ONE System. JOINTECH'S CabinetMaker's Systems® include all the Joinery System components plus our award-winning SmartFence®. You don't have to be a master craftsman to build beautiful cabinetry, furniture or even jewelry boxes. Our 48 templates enable you to easily make every type of dovetail and box joint. SmartFence accommodates any cutter in your shop allowing you to make raised panels, rails & stiles, tongue & groove, face frame construction, drawer design, edge-work and more. JOINTECH'S CabinetMaker's System is simply the best investment in quality and at a very affordable price.



New Woodworker's Notebook
with Twelve Practical Projects
plus jigs, fixtures and more.

Packed with over 300 photos and illustrations, this book is a must for any woodworker (including Incra® owners).

Incra is a registered trademark of Taylor Design Group, Inc.

CALL, WRITE OR FAX FOR A FREE BROCHURE
& SPECIAL INTRODUCTORY OFFER DETAILS!

P.O. Box 790727 • San Antonio, Texas 78279
Toll Free: (800) 619-1288 • Fax: (210) 377-1282



**WOOD®
CLASSIFIED MART**
For rates: 1-800/424-3090 Fax 312/464-0512

APPAREL/ACCESSORIES

ATTENTION SUSPENDER WEARERS! Patented No-Slip Clip. Prevents suspenders from slipping, sliding off pants. For casual/dress. Top quality 1/2" elastic. Guaranteed. Great gift for yourself, others. Hold-Up Suspender Co. 1-800/700-4515.

BUSINESS OPPORTUNITIES

KITCHEN SAVERS INSTITUTE. Learn all aspects to start and operate successful independent business. No franchise fees - Save Thousands! Cabinet refacing and restoration workshop includes: installation techniques, job pricing, suppliers, marketing and support services. 1-800/905-3980.

ROULETTE WHEEL MANUFACTURING BUSINESS established 1987 with worldwide contacts. Tooling templates, drawings, inventory, and customer list included. Leave message 909/244-5708.

COMPUTERS/SOFTWARE

WOODSHOP DESIGNER. SOFTWARE for woodworkers! Design your shop and projects with ease. Free brochure! Phone/Fax 918/825-4162; PO Box 690535, Tulsa, OK 74169.

FINISHING/RESTORATION

SPRAY-ON SUEDE. Free brochure with sample. New mini flocker. DonJer Products, Ilene Court, Bldg. 8W, Bellemead, NJ 08502. 1-800/336-6537.

HARDWOODS/LUMBER

ARCHITECTURAL MOULDINGS Exquisitely detailed mouldings beautify furniture, mantels, rooms. Send \$1.00 for color catalog. R&R, PO Box 808 Suffern, NY 10901.

HENDERSONVILLE HARDWOODS OF NC! 25 years lumber expertise. Family management team emphasizes top quality Appalachian Hardwoods/Softwoods, professional service, best prices. Small UPS specials, or large carrier orders. Send for our brochure: Hendersonville Hardwoods, PO Box 288, Hendersonville, NC 28793. For information call: 704/697-2929.

MANZANITA DECORATIVE WOOD! Australia/Mexico/USA exotic hardwoods. Banksia pods, Buckeye/Manzanita Burls. Assorted turning squares. Importer direct: POB 111, Potrero, California 91963-0111, 619/478-5849.

THINWOODS 1/16" - 3/8" thickness. Perfect for scroll sawing, crafts, boxes, musical instruments and more. Ash to Zebra wood. Free Brochure Call 1-800/514-3449 Sheerwoods, Columbia, MO.

KILN DRIED CHERRY, WALNUT, ash, sassafras, catalpa, oak, tulip. Logs International, PO Box 727, Corydon, IN 47112. Call Toll-Free 1-888/789-5647. Fax 1-812/738-6400.

INSTRUCTION/EDUCATION

THE SCHOOL OF CLASSICAL WOODCARVING Learn or improve fine hand carving skills from British master carver Ian Agrell. Call 415/626-2180.

MUSIC/SUPPLIES

PLANS, KITS, SUPPLIES for musical instruments: harps, dulcimers, psalteries, banjos, guitars, more. Musicmaker's Kits, Dept. B96, PO Box 2117, Stillwater, MN 55082. 612/439-9120.

PLANS/KITS/PATTERNS

FURNITURE PLANS. Easy to follow. Easy to make. Computer generated. Catalog \$3.00; Lake Superior Design, Box 751, Grand Marais, MN 55604-0751.

UNIQUE KILN PLAN. For less than \$500 you can build a 1,000 to 4,000 board feet kiln. Tested for 7 years. For complete plan and how to instructions. Send \$29.95; Henagar Cabinet, 102 Gilbert Road, Henagar, AL 35978. 1-205/657-6250.

NEW CROCHET CHESTS! 3 distinctive models. Uniquely crafted with the one-of-a-kind features you've been waiting for! Specially Designed Drawers let you store and use yarn right from the drawers. Great gift! For information call 614/676-7907, or write: Wood Patterns by Pappy, 62012 Hawthorne Rd., Jacobsburg, OH 43933. Visit us on the Web: <http://users.1st.net/pappy>

FASCINATING NEW SOUTHWEST DESIGNS. "Woodworking Southwest Style" - Book includes 36 patterns, \$12.95 plus \$3.00 S/H (sample "Old Mission" desk organizer pattern \$2.00); A-Pro Design Studio, PO Box 20578-W, 260 Montazona Trail, Sedona, AZ 86341.

TOOLS/EQUIPMENT

DRY YOUR OWN LUMBER. Ebac's user friendly dry kilns 200BF-40,000BF. Mix species in same load. Great 3-year warranty. Over 6000 systems worldwide. Call Today. 1-800/433-9011.

STEAM GENERATORS/PHASE CONVERTERS: Steam bend wood with this electric steam generator-run 3 phase tools in your home workshop with this 220v converter. Write or fax for info: Tiffany Mfg., 7501 Ashton Ct., West Hills, CA 91304. 818/994-7211 Fax 818/994-3563.

**ATTENTION
CLASSIFIED ADVERTISERS**

Now you can reach over 1,100,000 responsive woodworkers and do-it-yourselfers in the **WOOD® Classified Mart** section.

The next closing date is **December 7, 1996** for the March 1997 issue.

For rates and information call:
1-800/424-3090 • Fax: 312/464-0512
or write

WOOD® Classified Mart
500 North Michigan Avenue • Suite 2010
Chicago, IL 60611.

WOODLINE ARIZONA, Inc
P.O. Box 1530 • Payson, AZ 85547
• All Major Credit Cards Accepted
• Shipping is only \$3.75 per order
• 24 hours a day • 7 days a week
1-800-472-6950

Great Router Bits! & Shaper Cutters
One-piece RAIL & STILE CUTTER, raise bit 3/8" to make matching cut. Available in Ogee, Roundover, and Cove & Bead profiles • Great fit! • No changing bits or reversing the pieces.
PANEL RAISER W/ UNDERCUTTER, 3 profiles: Ogee, 15° Face Cut, and Convex avail. Tongue thickness perfectly matches groove in Rail & Stile—everytime!
Best Buy! BOTH RAIL & STILE CUTTER & PANEL RAISER W/ UNDERCUTTER.
ONLY \$95.00 or \$49.00 ea

SUPER BUY! Great sets in attractive wooden boxes! Available in 1/4" and 1/2" shank
SUPER SALE!! Cutters & Bearing Sets (to change depth of cut) Two-Flute Cutters avail. in 1/4" or 1/2" shank. Allen wrench included.
Priced at only **\$15.00 ea** SAVE \$6. **\$39.00** Set of 3

- 8 pc. Joint Making Set 2 Straight Bits, 6 Dovetails \$49.00
- 6 pc. Roundover Set 1/8", 3/16", 1/4", 5/16", 3/8", 1/2" radius \$55.00
- 5 pc. Cove Set 3/16", 1/4", 5/16", 3/8", 1/2" radius \$49.00
- 5/32" Kerf w/ 3 bearings, cuts slot to fit all biscuit sizes. Sample bag of biscuits incl.
- Rabbeting Bit w/ 4 bearings for rabbets of 1/4", 5/16", 3/8" & 1/2" depth
- 1/4" Kerf Slot Cutter w/4 bearings cut slots 1/4", 5/16", 3/8" & 1/2" depth

• Best Prices • Same Day Service • Super Selection
32-page Catalog included with every order

Circle No. 1395

**INNOVATIVE MACHINES,
COMMITMENT TO QUALITY,
ALWAYS RESPONDING TO
THE NEEDS OF WOODWORKERS.**

ALL MACHINES
BACKED BY A FULL
ONE YEAR WARRANTY



A better 12" planer. Period.

CT-340 12½" Benchtop Planer

- 12-1/2" x 6" Capacity
- Four Post Support
- Powerful 2HP 15 Amp Motor
- 2 Blade Cutterhead
- Adjustable fold-up bed extensions
- Stock rollers on top for consecutive cutting operations
- Optional dust hood



Eventually, our 15" Wide Belt Sander could make the drum sander obsolete.

SDM-15 15" Wide Belt Sander

- Change belts in 30 seconds! vs. 2 hours on a drum sander
- Belts last up to 20 times longer
- Efficient dust extracting system
- With continuous oscillation and pneumatic tracking, Sheng Shing wide belt sanders deliver superior quality sanding at affordable prices.



Use your fingers wisely.

M-3 Baby Power Feeder

- Perfect for table saws, router tables, and shapers
- 6.5 - 40 Ft./Min., Reversible
- 3 Rollers
- 1/6HP Motor



The Best Machinery Value in America.™
Sunhill Machinery, 500 Andover Park East, Seattle, WA 98188
U.S.: 1-800-929-4321 / CANADA: 1-800-544-1361

Circle No. 97

**CALL 1-800-929-4321
FREE CATALOG**
Featuring our full line of
quality woodworking machinery



Continued from page 92

For small turnings, check out this vertical lathe

If you occasionally need to make a small turning, but don't have the shop space or money for a lathe, you might want to look at the Verti-Lathe. This unique product temporarily converts your drill press into a mini lathe. The Verti-Lathe won't do table legs, but it will allow you to turn projects up to about 4x12".

The mounting plate on the Verti-Lathe bolts to your drill-press table and holds a live center seated in a bearing in the plate. You

chuck the drive center into the drill-press chuck just as you would a drill bit. An adjustable vertical tool rest also attaches to the mounting plate with an allen-head cap screw.

While it looked flimsy at first, I was impressed by how solidly the Verti-Lathe is built. Even after intentionally catching a skew chisel, I detected little deflection. Turning on this device proved easy, although the unusual working position made my neck stiff. So, I don't recommend using the Verti-Lathe for hours at a time.

I did notice some roughness in the bearings after about three turnings. This I attributed to the fact that the wood dust falls straight onto the bearings. To prevent this, you'll need to clean the bearings frequently with compressed air. But the Verti-Lathe is a clever tool that will yield small



turnings at a fraction of the price you'd pay for a lathe. ♣

—Tested by Dave Henderson

PRODUCT SCORECARD

Verti-Lathe

Performance ★ ★ ★ ☆ ☆

Price \$39

Value ★ ★ ★ ★ ☆

G.H. Devine Incorporated, 306 Albany Ave., Kingston, NY 12401. Call 914/338-7621.

14" BAND SAW
\$ 265.00



DRUM
BRUSH SANDER
\$ 310.00



6" JOINTER
\$ 345.00



3 HP 1" SHAPER
\$ 695.00



10" HEAVY
DUTY
TABLE SAW
\$ 1,075.00



20" PLANER
\$ 1,225.00



TRANSPower

Tel: 818-815-9897
Fax: 818-815-9807
Order Desk: 1-800-654-7702

CP TOOLS, INC. 611 DUGGAN AVE., Azusa CA 91702

Circle No. 15

FACTORY OVERSTOCK!

**STEEL
BUILDINGS**



The 'A' model, SteelMaster's perfect backyard shop

**SAVE
UP TO
50%**

SteelMaster Buildings at Factory Direct Closeout Prices!

- Easy Financing Available
- Buy Factory Direct
- Build It Yourself



Call now for **FREE** information
and **Save Up To 50%**

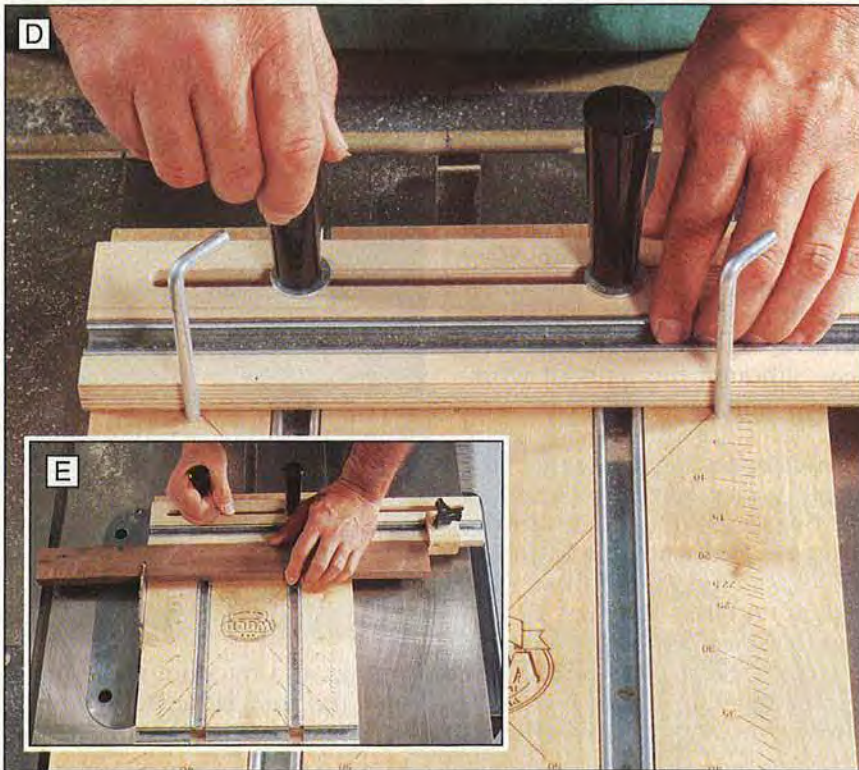
Save on Select Sizes:
16X20 25X42 35X62 40X74

1-800-888-4606

© 1996 SteelMaster

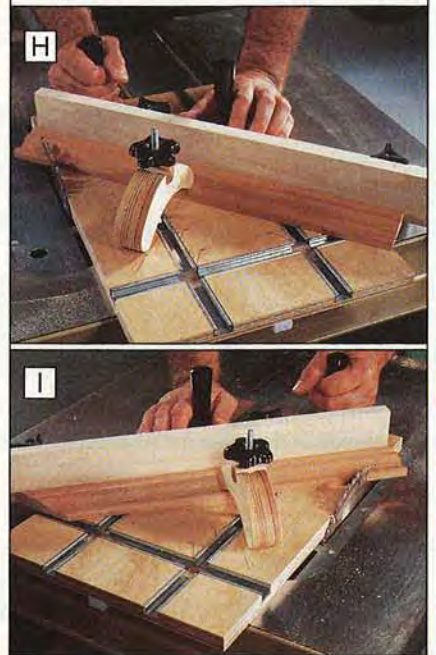
Circle No. 2030

How to use your **Tablesaw Jig** Continued from page 75



For making accurate 90° crosscuts, use the pivot pins to accurately align the fence on the laser-cut table as shown in Photo D. Use the jig and fence for crosscutting as shown in Photo E. For repetitive cuts, secure the stopblock to the fence to ensure consistent lengths from piece to piece.

Accurately cut both left and right miters with this jig as shown in Photos H and I. Note the use of the auxiliary attachment. For crown molding and picture frame material, you'll need to move the jig to the opposite side of the blade as shown in Photo I. ♣



To set the angle using the laser-engraved table, fit one pivot pin in place, and pivot the fence against the pin. Align the fence with the laser-marked angle as shown in Photo F.

If you use your own stock for the jig table, use an adjustable triangle and a piece of scrap stock held against the edge of the jig table to correctly angle the fence as shown in Photo G.



Written by Marlen Kemmet Project Design: James R. Downing Photographs: Hetherington Studios Illustrations: Kim Downing; Lorna Johnson



The New Dodge
presents

WEEKEND HOME IMPROVEMENT TOUR

at



Featuring ideas from the editors of *Better Homes and Gardens*, *Better Homes and Gardens WOODS*, *Country Homes*, *Traditional Homes*, *Better Homes and Gardens Special Interest Publications*, *Weekend* magazines, and *Home Improvement 1-2-3*.

See do-it-yourself demonstrations at 25 cities nationwide. Tour starts September 28. Call 1-800-362-9554 for demonstration times.

- Discover great ideas about
- kitchens ■ baths ■ wallpapering
 - repairs ■ window treatments
 - painting ■ wood projects

ENTER OUR SWEEPSTAKES
and you could win a Dodge vehicle
of your choice.

For Dodge dealer information, call 1-800-4-A-DODGE or visit our Web Site at <http://www.4adodge.com>

Dodge "Home Depot/Home Improvement" Sweepstakes Official Rules

1. HOW TO ENTER: NO PURCHASE NECESSARY. To enter the Dodge "Home Depot/Home Improvement" Sweepstakes, obtain an official entry form available at the Dodge "Home Depot/Home Improvement" Tour demonstration booth. Follow instructions to complete entry, and deposit entry in the sweepstakes entry box provided at that location. Or, you may enter by printing your full name, address, city, state, ZIP Code and daytime telephone number on a 3' x 5" piece of paper, place in a stamped envelope, and mail to the Dodge "Home Depot/Home Improvement" Sweepstakes, P.O. Box 505, Sayreville, New Jersey 08671-0505. Limit one entry per household. All entries must be deposited or postmarked by the sweepstakes ending date, March 23, 1997. Mailed entries must be received no later than March 30, 1997. Mechanically reproduced, damaged, lost, late, postage due, misdirected, incomplete, illegible, or facsimile entries are not eligible. By participating in this promotion, entrants agree to be bound by the Official Rules and the decisions of the judges.

2. PRIZE DRAWING: Winners will be selected in a random drawing from among all eligible entries conducted on or about April 10, 1997, by Marden-Kane, Inc., an independent judging organization whose decisions are final on all matters relating to this promotion. Winners will be notified by mail on or about April 17, 1997. Winners will be required to sign and return an affidavit of eligibility and release within 14 days of receipt of notification. Noncompliance, or return of any prize notification as undeliverable, will result in the disqualification of the entry and selection of an alternate winner. Winners must consent to the use of their names and/or likenesses for promotional purposes without additional compensation, except where prohibited by law. Odds of winning depend on the number of entries received.

3. PRIZES: (1) Grand Prize: Choice of a 1997 Dodge Ram, Dakota, Ram Van, Intrepid, Stratus, Avenger, Neon, or Caravan with a total MSRP value (including destination and dealer preparation charges) of \$27,620 or less, to be delivered to the authorized Dodge dealer nearest winner's residence in the continental United States. (10) First Prizes: Hampton Bay Fans (Approximate Value: \$160 each). (25) Second Prizes: Husky Tools Sets (Approximate Value: \$80 each). No transfer or substitution of prizes permitted except by sponsor due to prize unavailability. No cash alternative for prizes. All prizes will be awarded. Limit one prize per household. All taxes, insurance, licensing and other associated fees are the sole responsibility of the winners.

4. ELIGIBILITY: Sweepstakes open to U.S. Residents who, as of 4/10/97, are 18 years or older. Winners must reside in the U.S. at time of prize delivery. Employees (and members of their immediate families) of Home Depot, Meredith Publications, The Chrysler Corporation, Contemporary Group, Marden-Kane, Inc., and their affiliates, subsidiaries, dealers and their advertising and promotional agencies are not eligible. Winners agree to hold harmless Home Depot, The Chrysler Corporation, Contemporary Group, Marden-Kane, Inc., and each of their respective affiliates, officers, directors, employees, representatives, agents, successors and assigns from any and all loss, liability, damage, cost and expense arising out of or in conjunction with this sweepstakes, or any prize or the use of any prize related thereto. This sweepstakes is subject to all federal, state, and local laws. Void where prohibited. This sweepstakes is offered nationally.

5. WHO WON? For the prize-winners list, available after April 28, 1997, send a self-addressed, stamped envelope to: Dodge Home Depot/Home Improvement Winners, P.O. Box 714, Sayreville, New Jersey 08671-0714. Requests received after May 15, 1997, will not be honored.

GIANT SELECTION BIG SERVICE

Small Prices



Get your hands on some of the best woodworking tools and supplies around. All at the lowest prices every-day. Hundreds of items only available from us.

FREE CATALOG

Call or write us today to receive your FREE catalog of over 900 unique woodworking tools.

ALL GUARANTEED FOR LIFE!

Hartville Tool Company
13163 Market Ave N Dept. BHG1296C
Hartville, OH 44632

1-800-345-2396

Circle No. 865

Subscribers, please note:

Many of our customers are mail-order buyers. These consumers are interested in receiving offers for other products and services from our company (Meredith Corporation) and for products and services offered by other reputable companies.

In order to promote our other products, we retain your name and address in a prospective customer file. We also provide the name and address to other reputable companies who offer products we consider to be of value and interest to our customers.

However, we also respect the rights of those customers who prefer not to receive additional mail-order offers.

Should you prefer to have your name restricted, please fill out the coupon below, clip it out and mail it to the address shown. Please be sure to indicate if you wish to restrict all offers or just those from other companies.

- I will accept offers from Meredith Corporation only.
- I prefer not to receive any offers.

Include a current magazine address label with this coupon, and mail your request to:

Magazine Customer Service
PO Box 10263
Des Moines, IA 50309-3023

NEW!

AFFORDABLE, HIGH-PRECISION WOOD MILLING CENTER!

Revolutionary IRONWOOD MILL•RIGHT 3-Axis Router Milling Center!

Mount virtually any router – even the most powerful standard or plunge type – in the new, heavy-duty MILL•RIGHT Router Milling Center. Shape, rout, and join wood with total precision, total freedom, total creativity.

*Professional quality tool
at a homeshop price!*

- **Fast, repeatable set-up** without jigs, fixtures, templates, guides.
- **High-quality Cast Iron** for stability, noise and vibration control.
- **Precision Guides & Positioner** give micro-adjustment to 0.001".
- **You get control & accuracy** with *precision ACME Leadscrews and Guide Rods*.
- **Simply attach your router** in bit-down or bit-up position.



FREE CATALOG & DEMONSTRATION VIDEO!
CALL TOLL FREE 1-800-478-2453

Or write: IRONWOOD MILL•RIGHT Wood Milling Center
P.O. BOX 620, 1737 Union St., Dept. 104, Schenectady, NY 12309

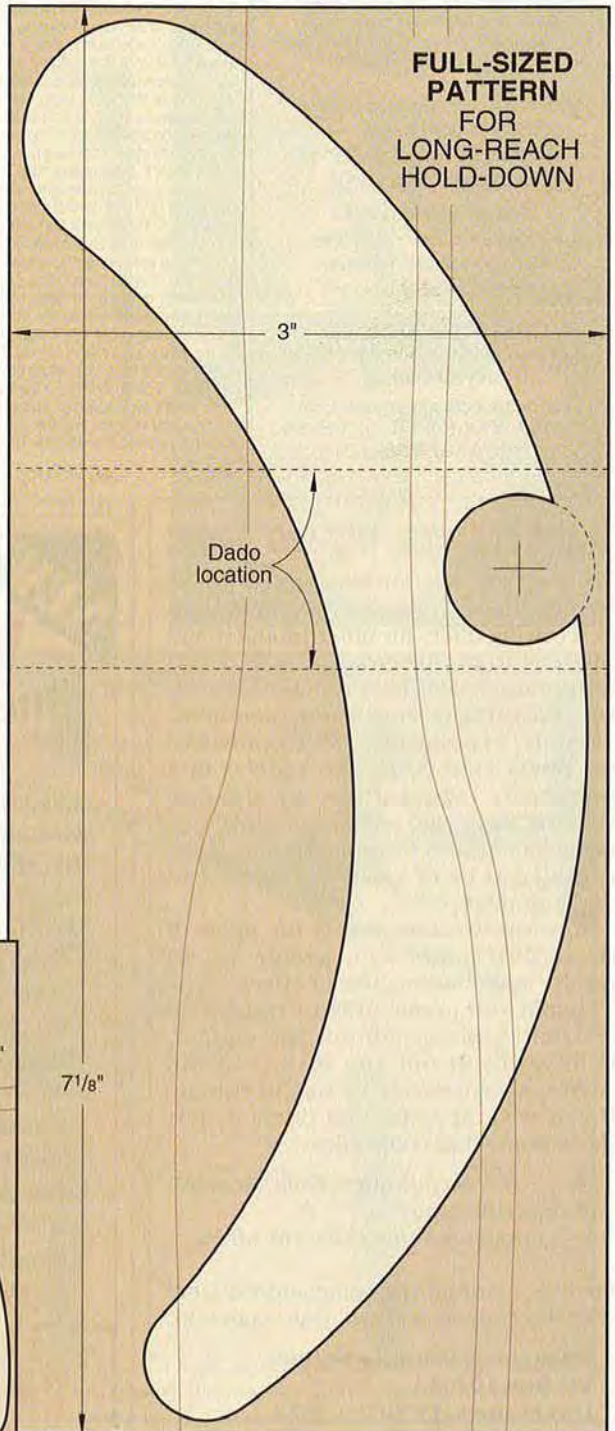
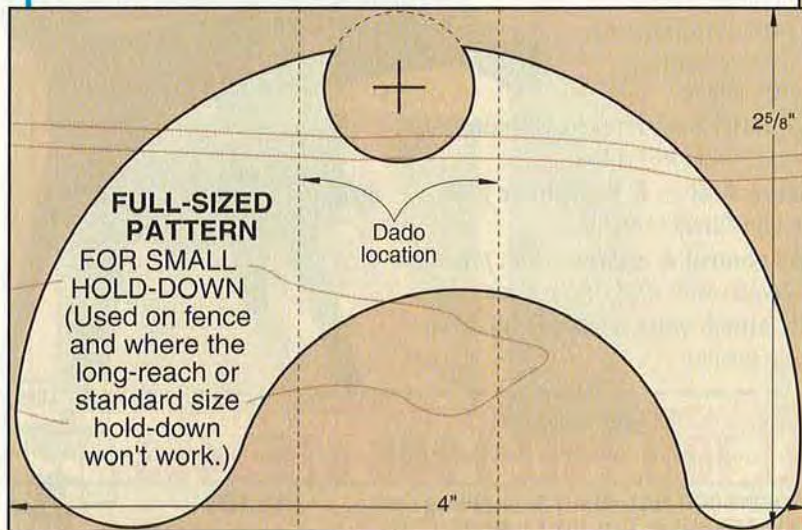
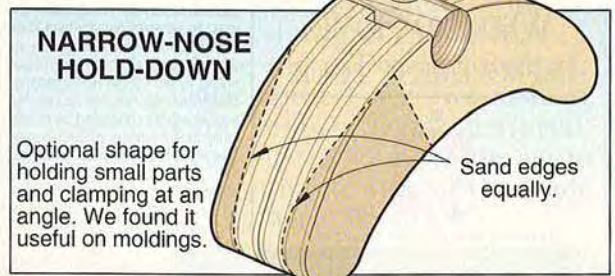
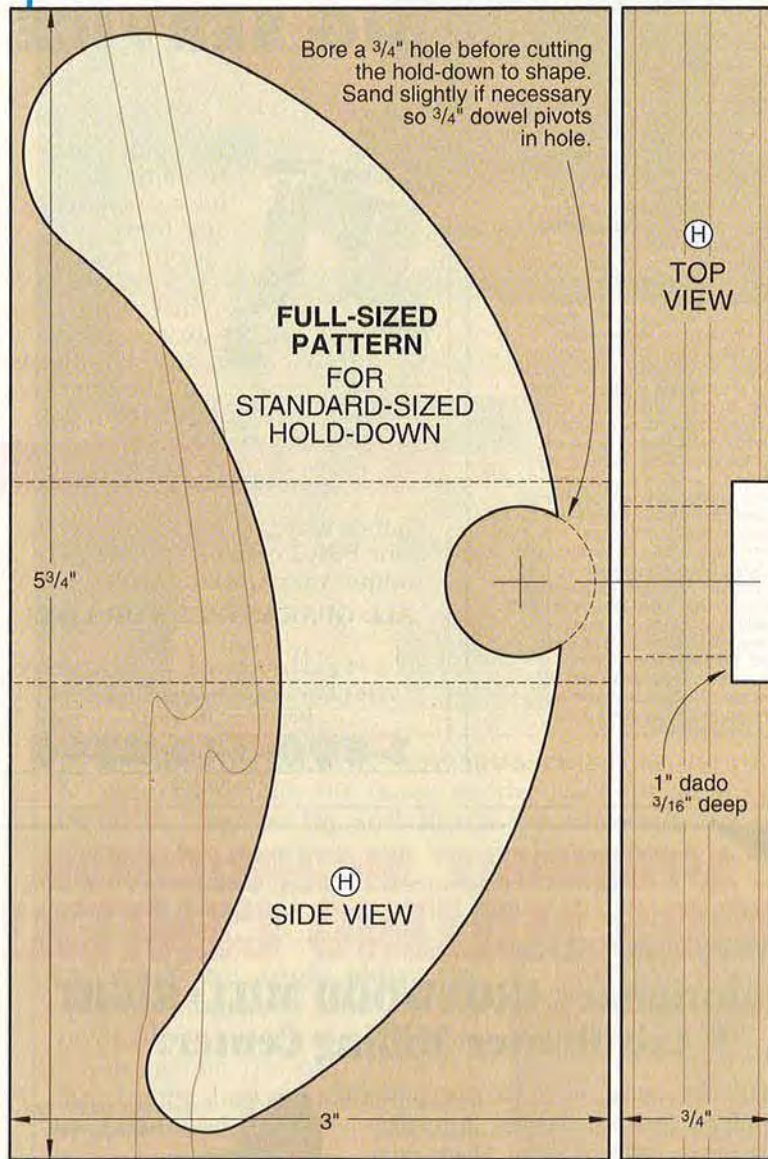
Ext. 104



©1996, Positive Position, Inc.

How to use your **Tablesaw Jig** See related article on page 70

When using our jig, it became apparent that different-sized hold-downs were necessary for the many sizes of workpieces we needed to secure to the sliding table and fence. Use the full-sized patterns shown here to make your own hold-downs.



Woodworking—It's magic!

LaVerne Anderson, 60, doesn't claim to be Houdini. But ever since he joined a magic club five years ago, he lives with illusions.

A part-time woodworker and full-time Des Moines, Iowa, real estate broker, LaVerne really took to the trickery. In magic, he also discovered another avenue along which to develop his woodworking skills. "I built two shielded boxes on casters for Ben Ulin, the resident professional magician at Adventureland [a local amusement park]. He uses them in a version of what magicians call the Cobra-and-Lion illusion," says LaVerne. "It's kind of like a shell game—the audience sees that the objects change places, but they don't know how they did it."

That little magical woodworking job eventually led to another,

even larger assignment from Ulin. "Ben asked me if I could make a table and box for the Dividing-a-Lady-in-Half illusion," LaVerne recalls. The box he built (see photo *right*) features all oak and oak plywood construction. He made its stand from black polycarbonate plastic and oak. "All the measurements were based on his assistant's 5'9" height," explains LaVerne. "Which means that there were some minimal internal dimensions I had to provide for the illusion to work."

According to LaVerne, specialized dimensions are the main reason ready-made boxes aren't sold by supply houses. "The equipment for every illusion is custom-built to fit the magician's assistant, usually by a local woodworker," LaVerne explains.



Woodworker LaVerne Anderson knows what it takes for a magician to "saw a lady in half." He built the box!

"Magicians wouldn't want internal measurements for things blabbed all around a strange cabinet shop. For me, that translates into some fun projects to build."

Toys from the past: Rock around the Christmas tree

What could please a child more than a rocking horse next to the Christmas tree? Such a steed ignites young imaginations.

This board-sided rocking horse dates to early 17th-century Germany. The original is on display at the Museum of London.



The earliest rocking horses, though, had quite another purpose. In the Middle Ages, simple platformed horses constructed of planks were used by novice knights for jousting and tilting practice. In later centuries, more refined rocking horses helped would-be equestrians gain the balance, posture, and bridle skills necessary to handle a real horse.

Before their commercial availability, rocking horses were carefully crafted by a skilled professional or crudely assembled at home. By the mid-1800s, howev-

er, English and German companies established themselves solely to supply the European demand.

Rocking horses came into vogue in England and America during the Victorian era, paralleling the prominence of the outdoor carousel. Exquisitely detailed, the wooden rocking horses of those times most often were designed to reflect different occupations, such as a hunter, a soldier, or a member of the gentry. Today, examples from this heyday of rocking horses are highly prized collectibles.

It takes more wood to live alone

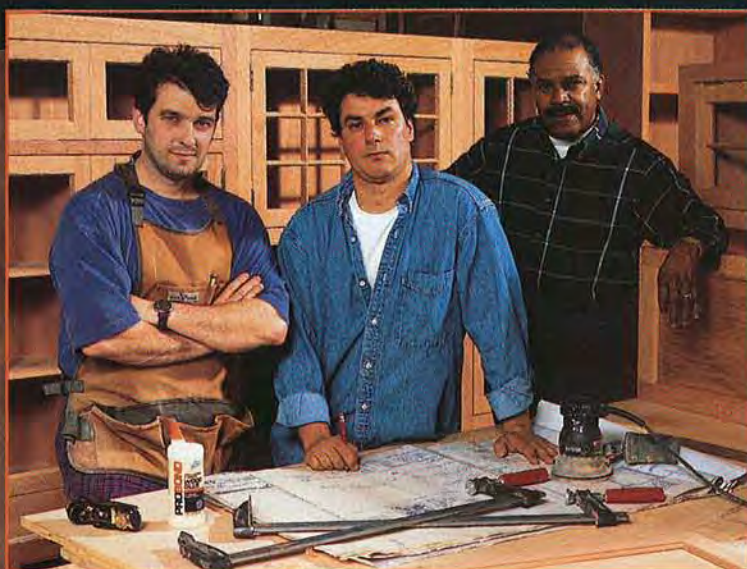
Because multifamily housing units share roofs as well as interior walls, they require about one-third less lumber to build per square foot of living space than a single-family house, calculates the Western Wood Products Association.

Deck the halls—with care

The red berries and green leaves of American holly (*Ilex opaca*) have always been a popular yuletide decoration. But throughout its eastern and southern range, the tree faces a threat each holiday season as pickers tear off its branches for trim. Insects and disease can then readily enter to shorten its life. If you do harvest holly, make clean cuts with a knife or saw. These will heal naturally. And preserve what you bring home with a spray coat of lacquer or shellac. So treated, holly leaves and berries will last several seasons. 🌿



THESE ARE THE BRAINS BEHIND NEW PROBOND WOOD GLUE.



What happens when you listen to wood-working professionals?

A new wood glue that meets their every expectation.

Introducing ProBond™ Professional Strength Wood Glue.

The features that woodworkers want and need are formulated into ProBond Wood

Glue. Extensive field testing among professionals has confirmed ProBond's outstanding performance. In fact, among those expressing a preference, ProBond was rated higher in overall quality than the leading brand.

Ease of Use Combined with Firm, Snug Bonding. A glue with strong wet tack. It sets in just 15 to 25 minutes. With minimal clamping. After curing, **the bond is actually stronger than the wood itself.**

It pours easily. It's sandable and paintable. Plus it's resistant to heat and moisture.

New Bottle Works Great. ProBond's revolutionary bottle helps get the job done fast. The size and shape fit your hand perfectly. The offset spout delivers the right amount of glue right where you want it. Every time. Even in tight corners.

We even designed the cap and wide-neck bottle to be easy to open and easy to fill.

ProBond Wood Filler is as Professional as Our Glue. ProBond Professional Strength Wood Filler has a totally unique solvent formula. Dries fast. Won't crumble. Resists shrinking and cracking. It's easy to sand. It's stainable and available in colors that match most popular woods.

So next time you need wood glue or wood filler, step up to new ProBond.



You'll notice a difference the first
time you squeeze the handle.
Starting with the fact that you can
actually squeeze the handle.



Our new Sharpshooter™ staple gun takes only 19 pounds of force to drive a staple flush. (That's a third less than our leading competitor.) It also has an anti-jam staple core. And a patented double-bumper

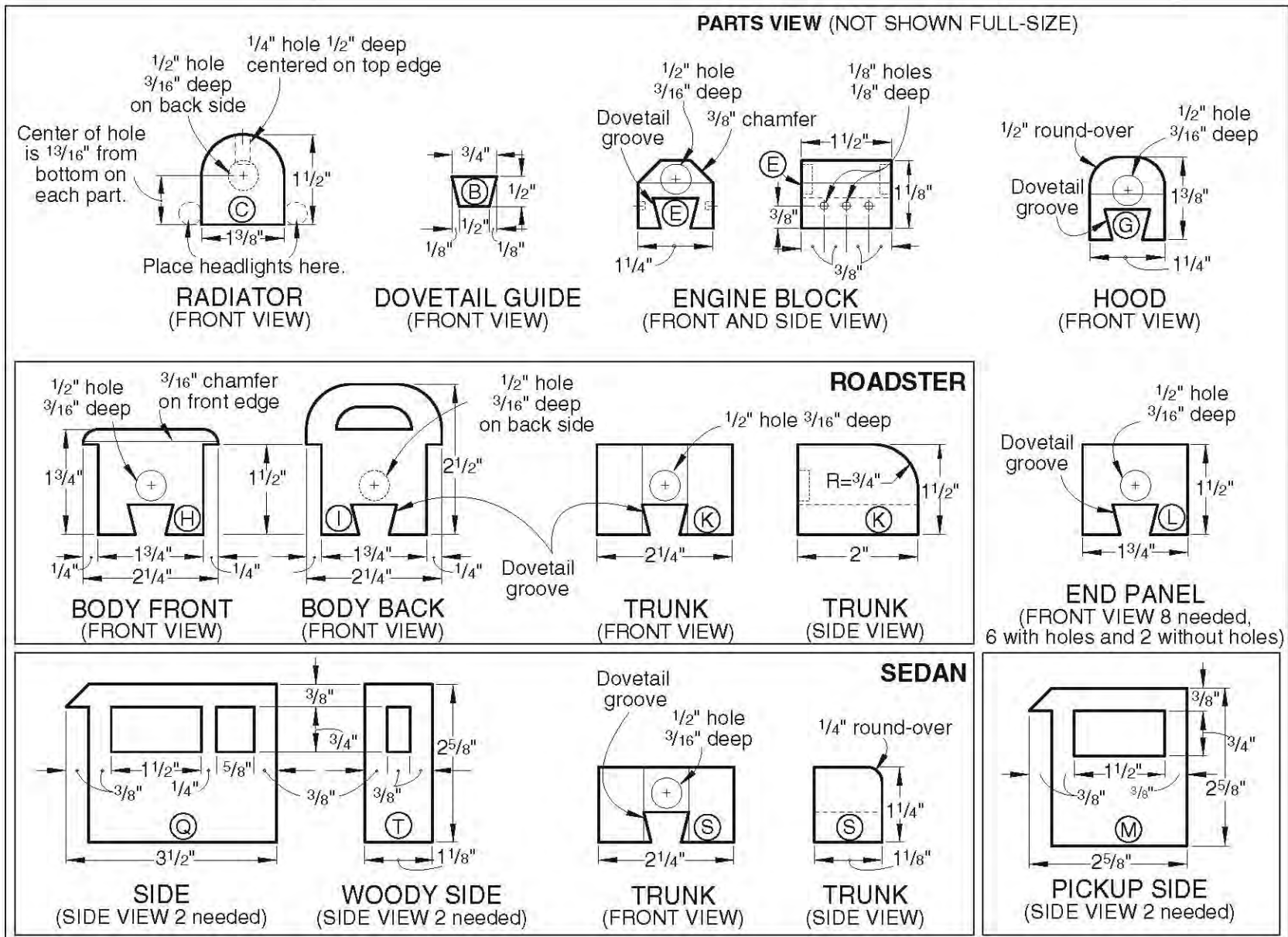
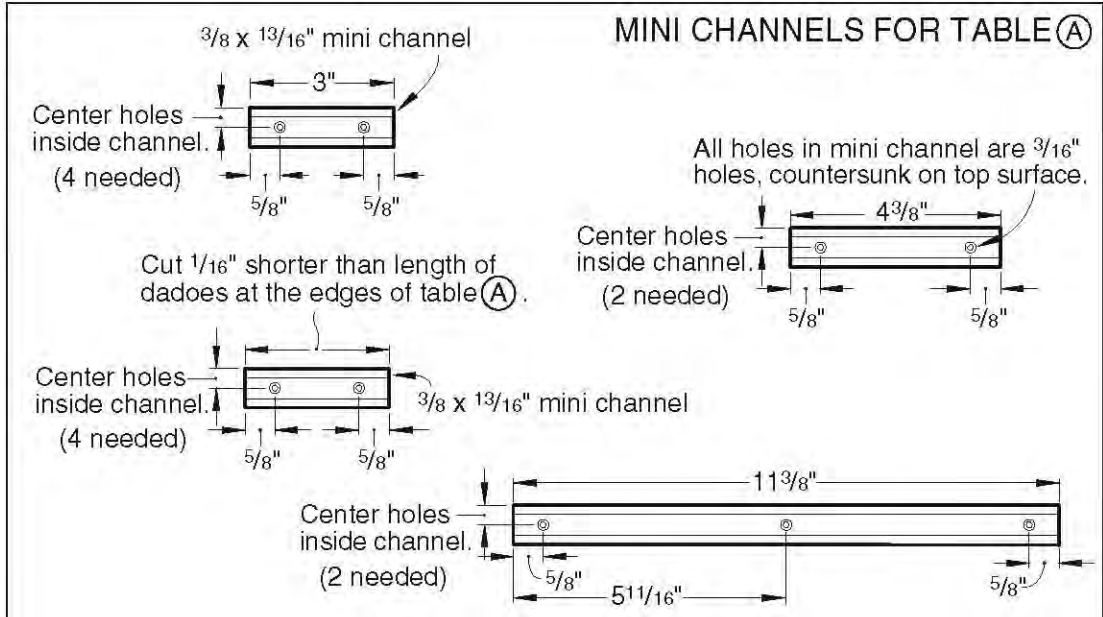
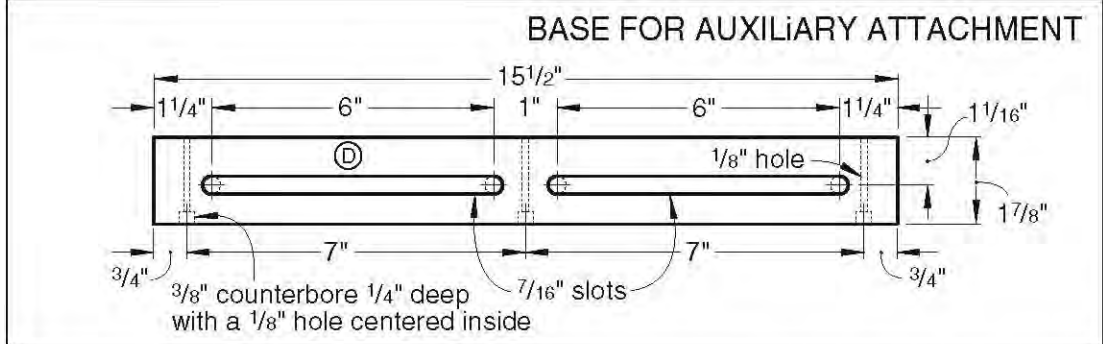
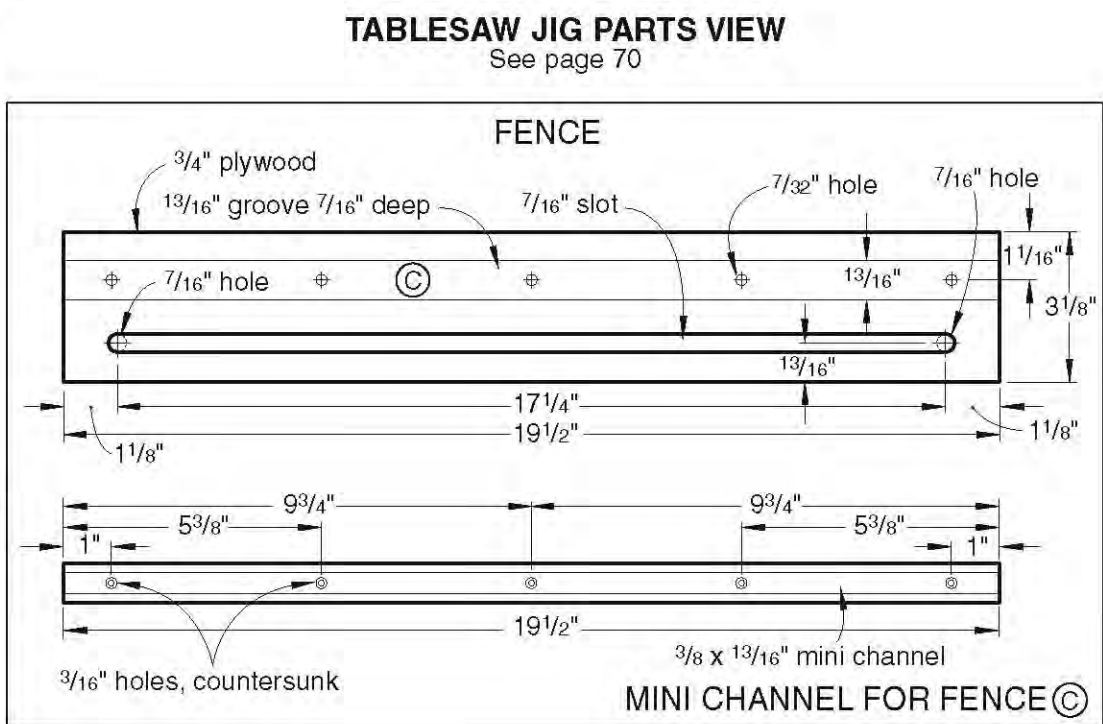
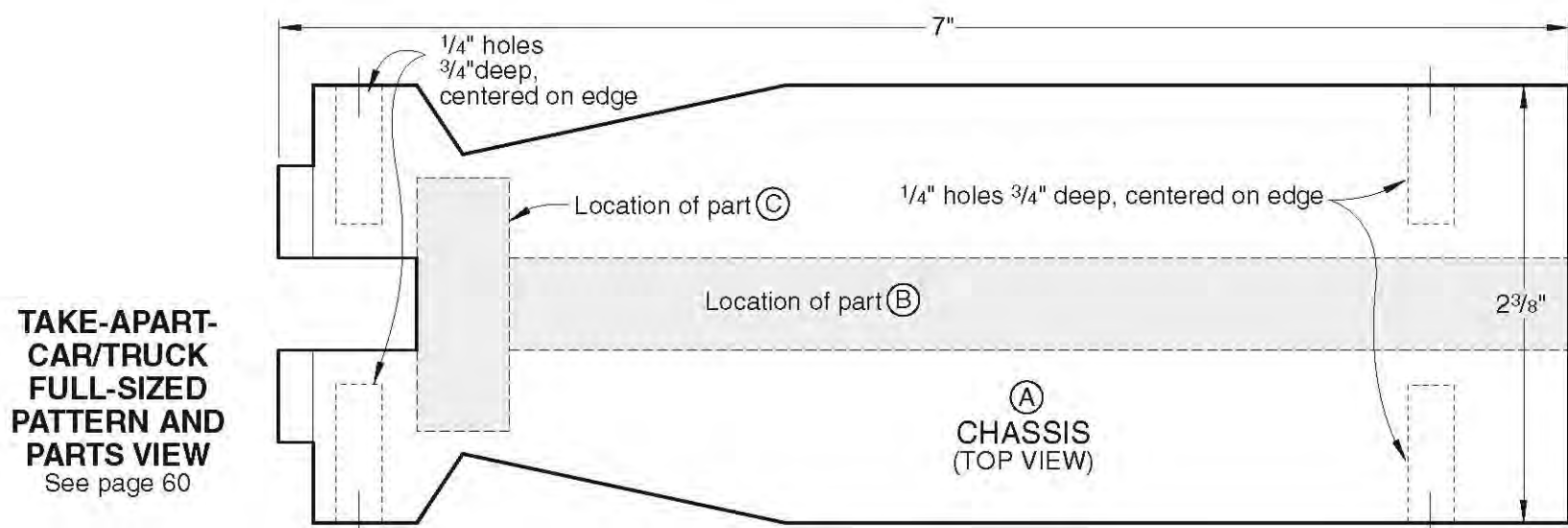
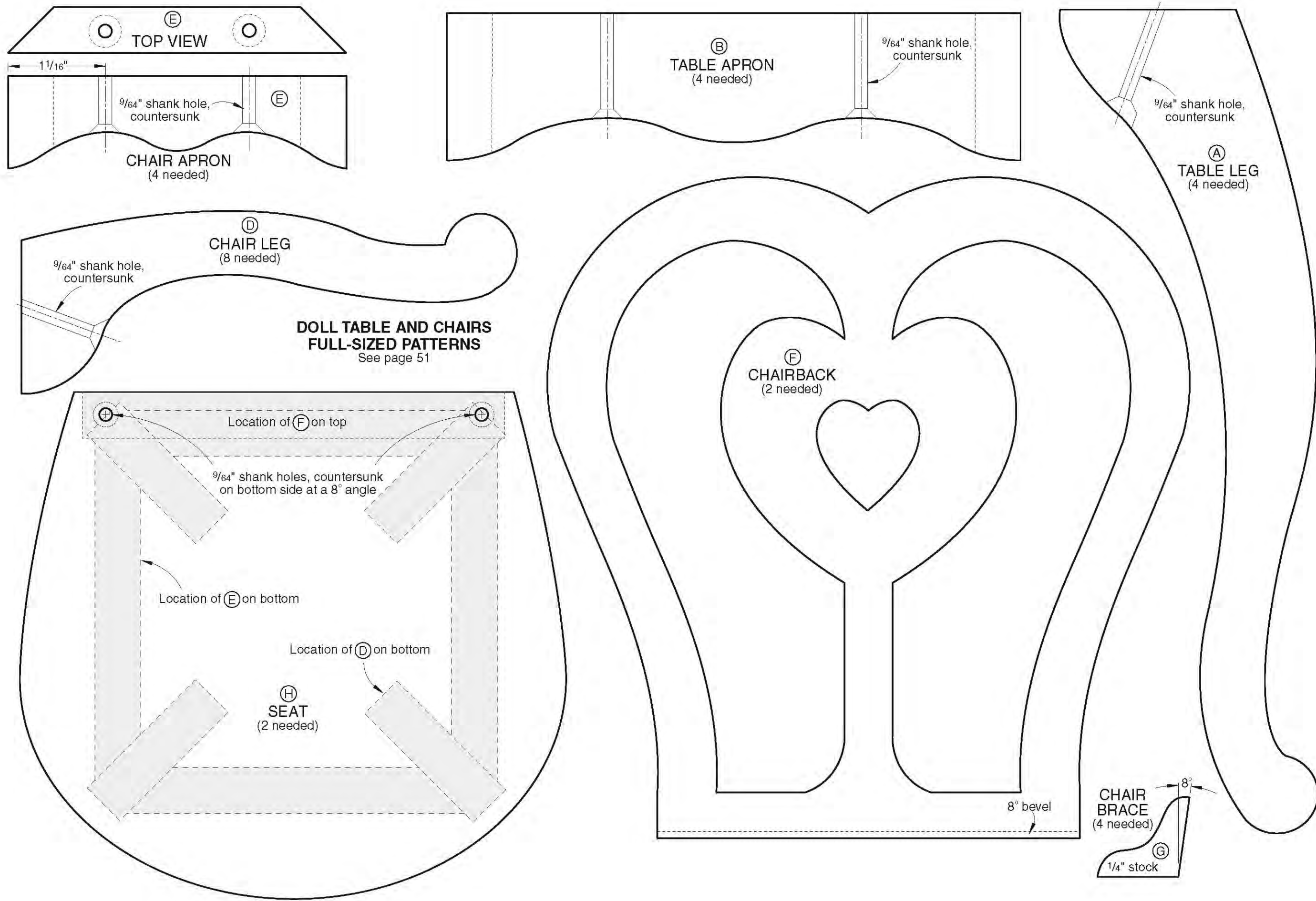


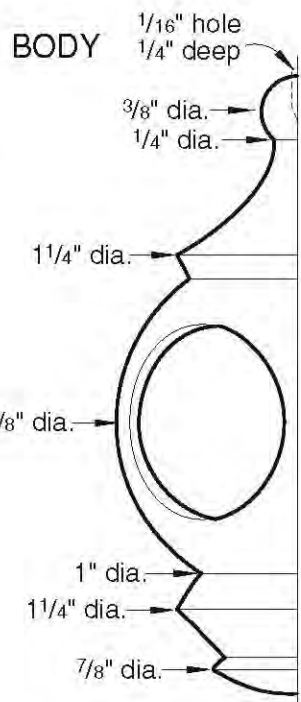
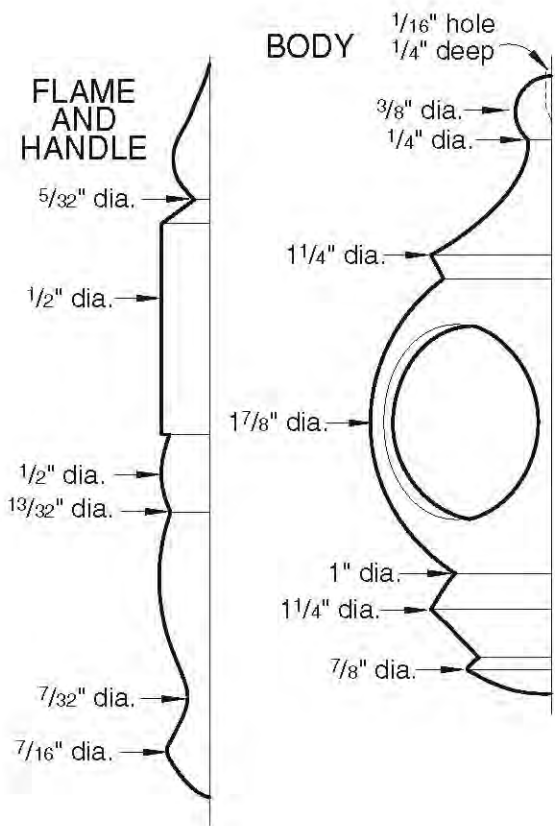
system that helps reduce recoil and hand fatigue. This intense



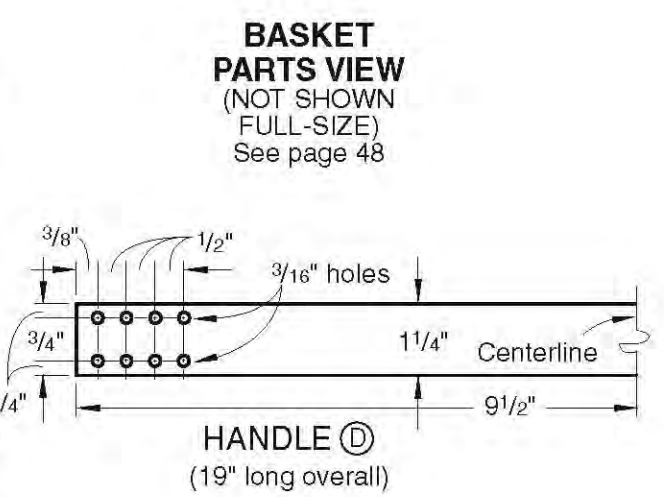
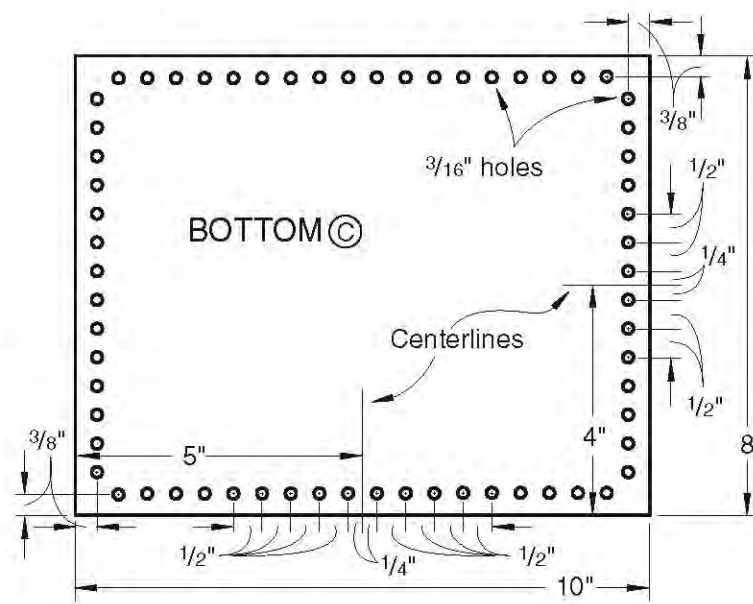
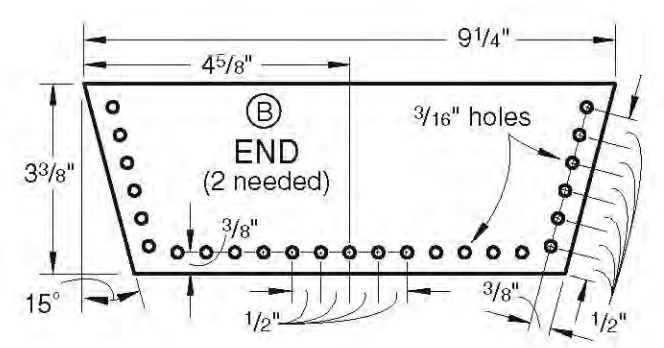
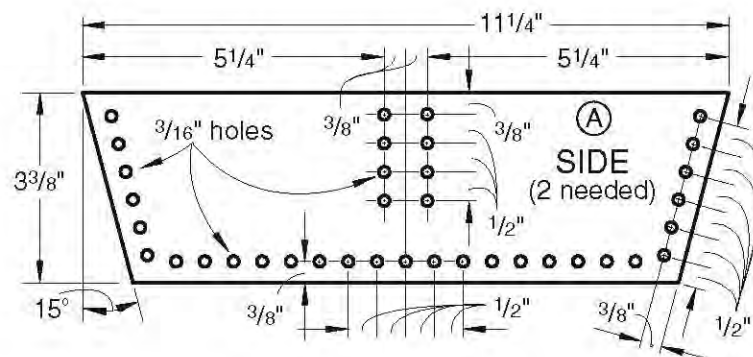
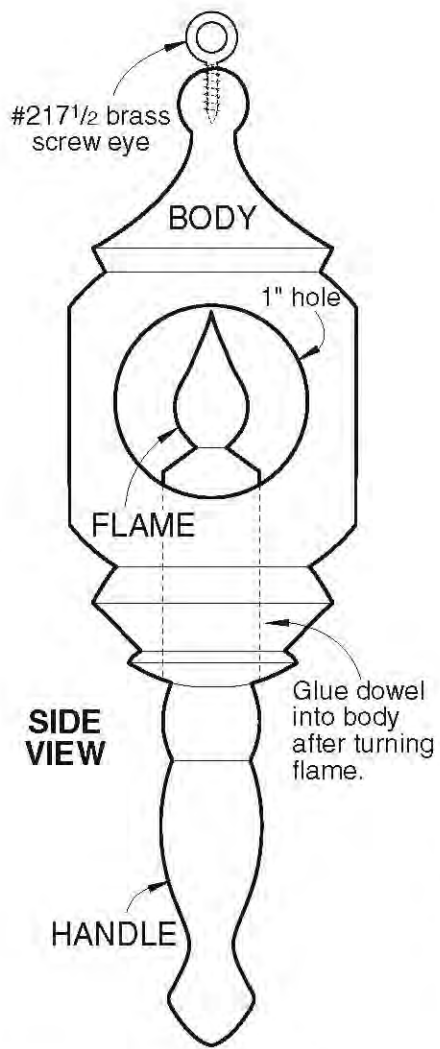
attention to detail sets Stanley apart from other tool companies. It's what led us to design a garage door able to withstand a hurricane and a tape rule that's Mylar®-coated for durability. And it's something we're quite confident you'll notice every time you pick up one of our products.

STANLEY
helps you do things right.®

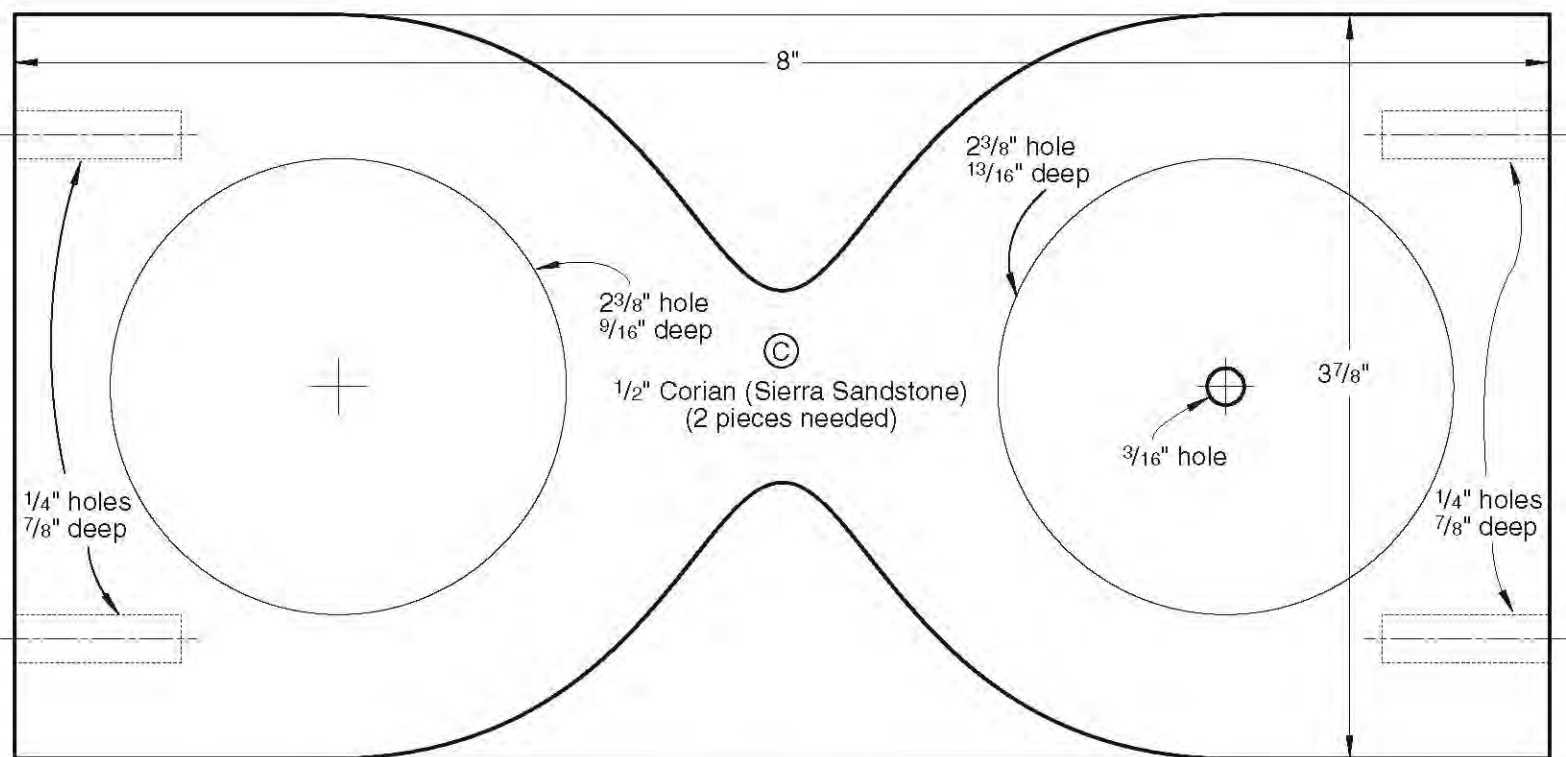
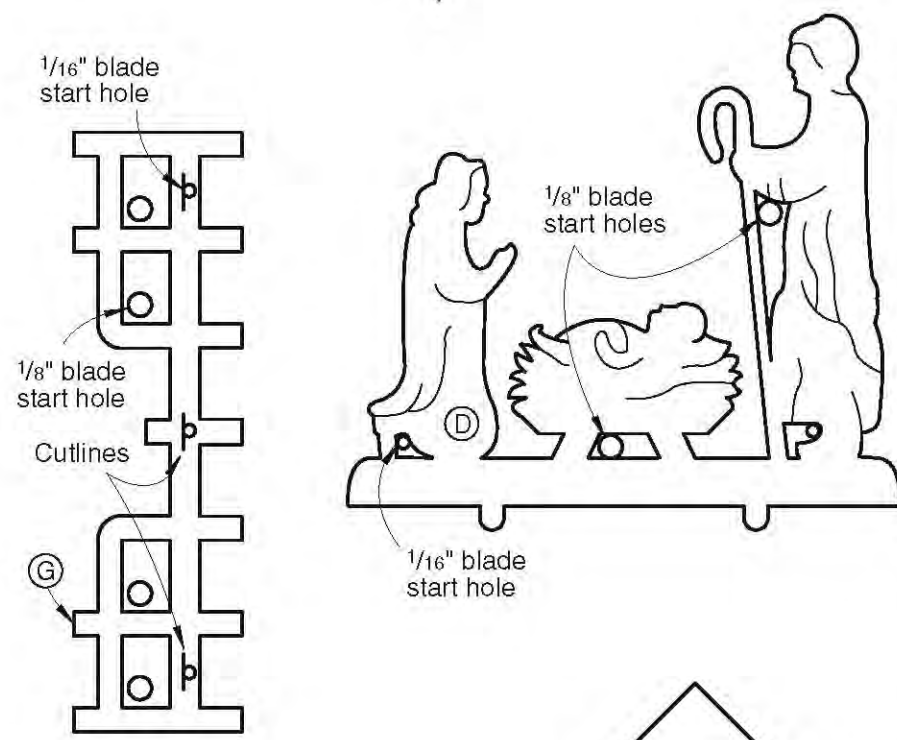
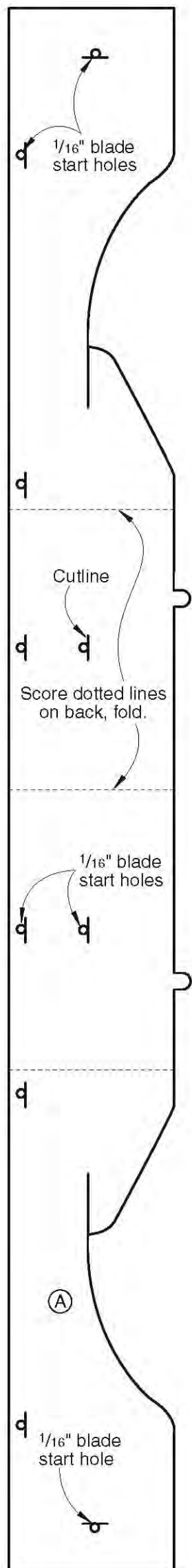
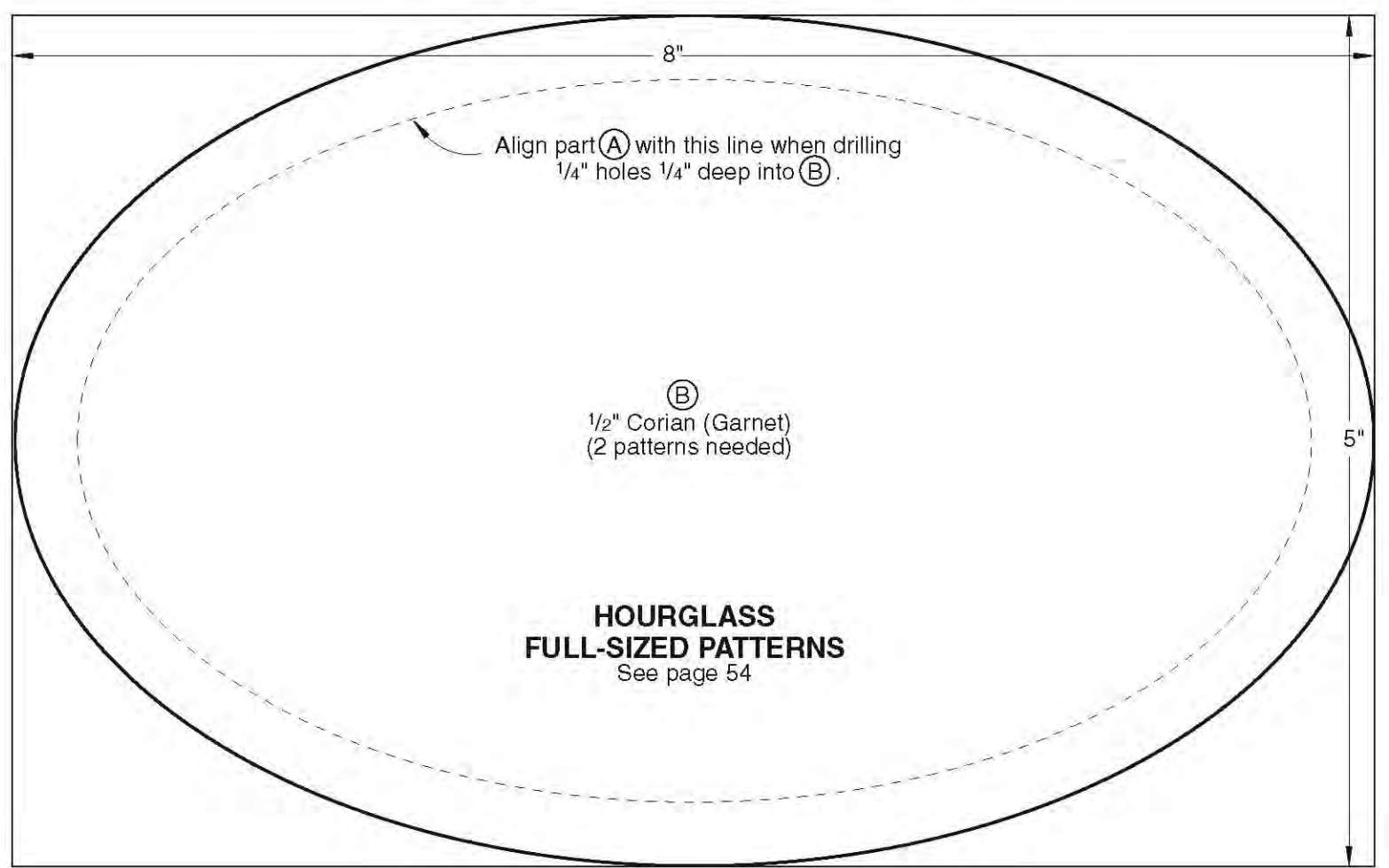
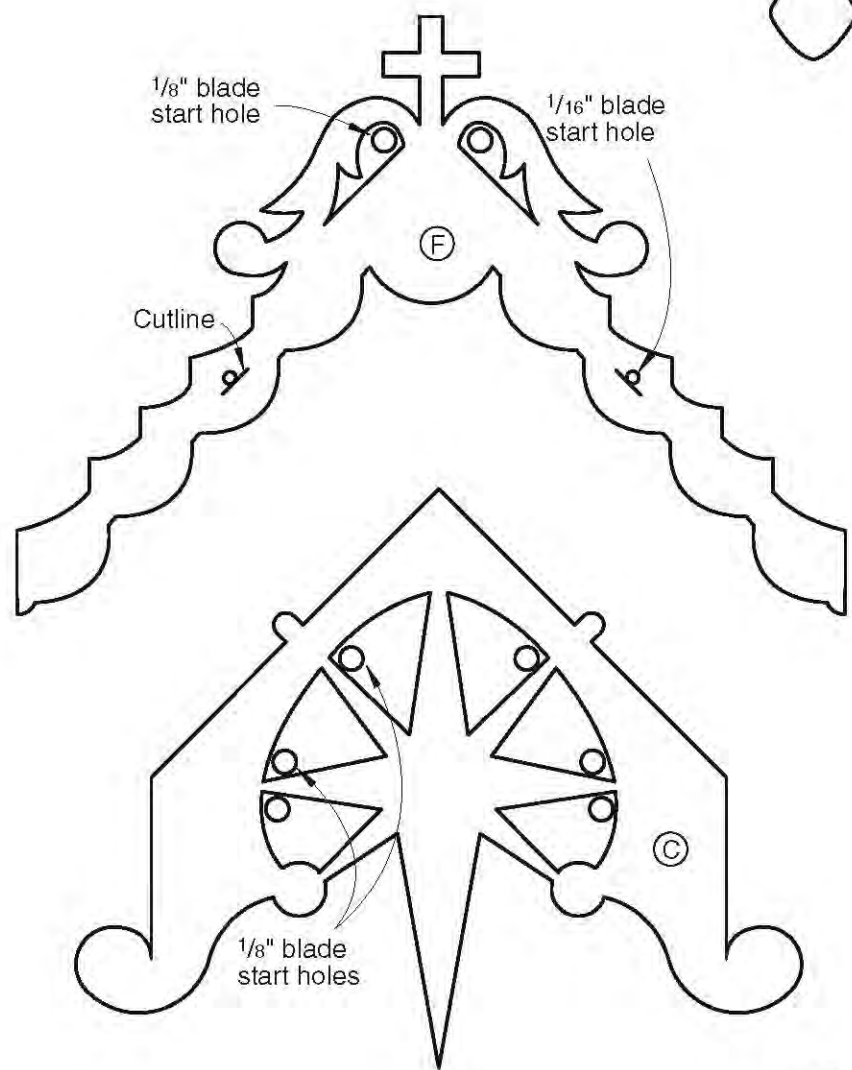




ORNAMENT FULL-SIZED PATTERNS
See page 57



BASKET PARTS VIEW (NOT SHOWN FULL-SIZE)
See page 48



NATIVITY SCENE FULL-SIZED PATTERNS
See page 46

