

TAUNTON'S

Fine Woody Working

December 1997, No. 127

U.S. \$6.95

Canada \$7.95

U.K. £4.25

Benchstones

Big cabinet jobs

Thickness planers

Veneer crossbanding



Building a Humidor



12 >

JET's Rebate- a bright idea

Save up to
\$100

Buy any of these JET
tools, and shed some
light on saving money!

Offer effective October 1, 1997
through February 28, 1998.

The
Industry's
Best
Contractor
Saw



JWTS-10
Contractor's Tablesaw
\$35
Rebate

JET
EQUIPMENT & TOOLS



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



JWP-15HO Planer
\$100
Rebate



JWBS-14CS
Closed Stand Bandsaw
\$30
JET
JWBS-14OS
Open Stand Bandsaw
\$20
Rebate



JPM-13OS
Planer/Molder
\$30
Rebate



JJ-6CSX Jointer
\$20
Rebate



JWP-12 Planer
\$15
Rebate



JTAS-10 Left or Right XACTA Saw
\$100
Rebate



JDP-17MF Drill Press
\$20
Rebate

If you're thinking about buying a Delta Unisaw[®] or a Powermatic 66, think again.

Only JET offers you the choice of two different 10" saws with features that are better than the competition. One XACTA SAW[™] tilts to the right and the other tilts to the left.

Both saws have the features you want for power and performance: 3 or 5 horsepower; 3V-belt drive; built-in dust port; hinged motor cover; the largest cast iron work surface; and a convenient up-front switch...all standard.

Plus JET includes the highly acclaimed 50" commercial XACTA FENCE[™]. The whole package is backed by a 2-year warranty.

What's more, the XACTA SAW[™], completely equipped, sells for up to \$435 less than the competition.

And the experts agree.

"Good features, performance and value. Delta and Powermatic look out"

-American Woodworker

"The first thing we noticed was that the fit and finish were exceptional."

-Fine Woodworking



XACTA SAW[™] RIGHT
\$1,399*
BEFORE \$100
MANUFACTURER'S REBATE

XACTA SAW[™] LEFT
\$1,399*
BEFORE \$100
MANUFACTURER'S REBATE



Receive a \$100 rebate
on either XACTA SAW
during JET's Rebate
October 1, 1997 through
February 28, 1998

JET
EQUIPMENT & TOOLS

Choice is a powerful tool.

Why would you choose anything else?

For a free 29-minute video (#900040) or for the name of your local JET dealer,
call 1-800-274-6848 or visit our website at <http://www.jettools.com>

READER SERVICE NO. 101

*Extension table and legs not included

DEPARTMENTS

- 6 **Letters**
- 22 **Questions & Answers**
*Planning for wood movement;
Replacing damaged veneer;
Protection while spray finishing*
- 32 **Methods of Work**
*Foolproof drawer face
installation; A retractable
work table; Knife-setting jig*
- 108 **Tool Forum**
*Mini power feeder; Combination
nail/staple gun; New line of
circular sawblades*
- 122 **Reviews**
*Furniture by Design; Pocket Ref;
Vintage Woodworking Machinery*
- 126 **Events**
- 130 **Notes and Comment**
*The Furniture Society conference;
Belt sander drag racing*
- 138 **First Person**



Veneered crossbanding, p. 59



Benchstones, p. 76



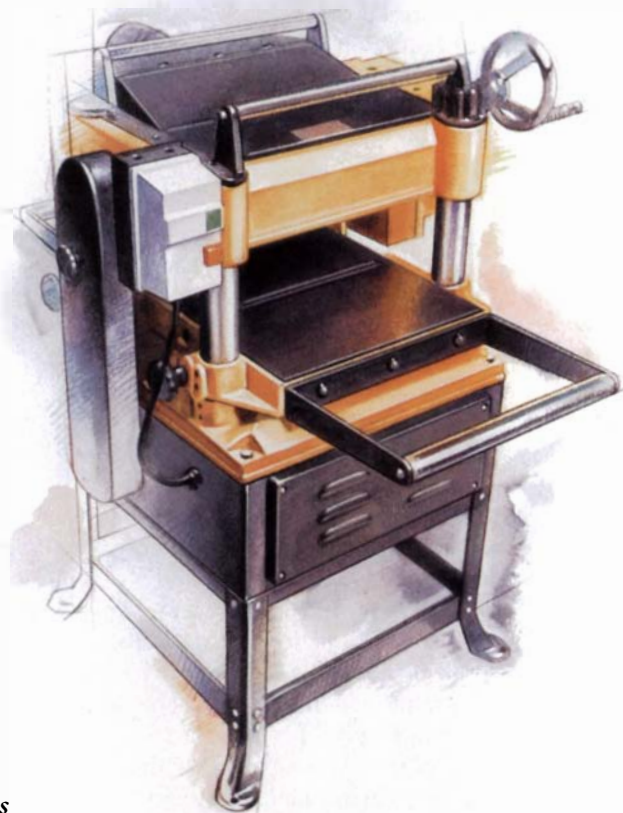
Making wood look old, p. 90

On the Cover:

*A good cigar humidor is more than a handsome box. Just how well it protects its contents depends on construction detailing and the choice of materials, as Rick Allyn explains on p. 44.
Drawing: Bruce Morser*

ARTICLES

- 44 **Building a Humidor**
Maintaining tropical humidity in a box takes precise joinery and Spanish cedar
by Rick Allyn
- 50 **More than one way to store a stogie**
by Strother Purdy
- 52 **Mid-Sized Thickness Planers**
Fine Woodworking editors try 14 machines from Taiwan, Japan and Canada
by Anatole Burkin
- 54 **Ten planers, a single Taiwanese factory: Can there really be much of a difference?**
- 59 **Crossbanding a Round Tabletop**
Trammel-mounted routers give you borders that match the top seamlessly
by Frank Pollaro
- 64 **Protecting Your Lungs from Woodworking**
Dust masks and respirators can capture a variety of workshop hazards
by Charles W. Calmbacher
- 68 **Arts-and-Crafts Sideboard**
Ebony and carved yellow heart inlay: crowning touches for a handsome case
by Gary Rogowski
- 76 **In Search of the Perfect Benchstone**
The pros and cons of Arkansas stones, ceramic stones, diamond lapping plates and waterstones
by Brian T. Derber
- 82 **A Game Plan for Big Cabinet Jobs**
Good shop drawings, the right materials and accurate machine setups are the keys to success
by John W. West
- 85 **Factory fresh doesn't mean it's square**
- 88 **Pneumatic Die Grinders in the Woodshop**
These versatile tools solve a host of small shop cutting, grinding and sanding problems
by Greg Scholl
- 90 **Making Wood Look Old**
Adding texture, dye stains and glazes transforms even lumberyard pine
by Jeff Jewitt
- 94 **Good Work**
Outspoken and unapologetic, a Welsh chairmaker makes a plea for hand tools
by John Brown



Mid-sized thickness planers, p. 52



Working with hand tools, p. 94

Planes can be art—The articles by James Krenov and David Welter on wooden planes were a pleasure to read (*FWW* #126, pp. 64-73). I find wooden planes fun to build and use and beautiful to look at. Indeed, I have several that I inherited, and some of them adorn my library as objects of art.

The reason I don't use them more often is that they are difficult to adjust. With my metal planes, I can cut shavings of 1 to 3 mils thick and have the job done before I can set a wooden plane.

But there are many woodworkers who prefer wooden planes. For example, the shipwrights at Purdy's on Long Island used wooden planes almost exclusively.

My collection of planes is extensive. I've fitted my spokeshave with a Hock blade, which because of its thickness eliminates any tendency toward chatter.

—Thomas Sharp, Sanibel, Fla.

David Welter's article on wooden planes is one of the few excellent explanations I have read about making something out of wood. He actually includes all of the steps and provides information about pitfalls.

The staff at the College of the Redwoods provides minute attention to detail of each operation during the week that a class works on planes. Making planes at the college is a great introduction to very high-quality woodworking.

By the way, Don Weber laments that books by Alexander Weygers on blacksmithing are out of print ("Reviews," *FWW* #126, p. 108). Ten Speed Press has reprinted all three in one volume under the title *The Complete Modern Blacksmith*. This has to be one of the best values in books used by woodworkers. You can get in touch with Ten Speed Press at P.O. Box 7123, Berkeley, CA 94707; (800) 841-2665.

Fine Woodworking provides informative articles. I've enjoyed reading the magazine for years.

—Harold Hubbard, Berkeley, Calif.

Repairing a broken tenon—For the most part, Jeff Jewitt's article on repairing failing joints (*FWW* #125, pp. 68-71) is a good treatment of a subject that is covered very little. But his solution to a broken tenon at the bottom of a rocking chair leg leaves something to be desired.

The diameter of the tenon is too close

to that of the leg, and a hole drilled in the bottom of the leg to accept a full-sized tenon replacement would probably break the leg. Mr. Jewitt's solution is to slice off the leg at a steep angle and scarf on new wood to replace the missing leg and tenon. But this removes good wood from the leg, something to avoid whenever possible, and the scarf joint is prone to failure. My solution to this break is to drill a deep hole smaller than the tenon into the bottom of the leg (experience and common sense will tell you what the leg can accept). On my lathe, I turn a two-step tenon to replace the original. The small diameter half of the tenon gets glued into the leg and the large into the rung. I've used this repair for more than 20 years in my shop, on hundreds of rocking chairs, and I've yet to have one come back rebroken.

—Grey Doffin, Duluth, Minn.

More on tapping wood for screws—

Pat Warner's article on threading machine screws directly into wood (*FWW* #126, p. 63) ignores several truisms of pullout and shear strength.

The pullout strength of such a system is simply the surface area of the edge of the threaded unit times the shear strength of the weaker of the two materials. Thus a 1/4-in. bolt will have twice the pullout strength of a 1/8-in. bolt. Inserting it 1 in. rather than 1/2 in. also will double the pullout strength from wood.

The shear strength of wood is only a small fraction of that of steel or brass inserts, so the entire failure will take place in the wood. The typical metal insert will have a diameter of three or four times that of its matching machine screw, which will be its strength advantage over his suggestion.

Also, the threads are much less likely to be damaged with repeated disassembly. Moreover, if you use T-nuts (if the back side of the piece is available), you can achieve the shear strength of steel threads,

Writing an article

Fine Woodworking is a reader-written magazine. We welcome proposals, manuscripts, photographs and ideas from our readers, amateur or professional. We'll acknowledge all submissions and return those we can't publish. Send your contributions to *Fine Woodworking*, PO Box 5506, Newtown, CT 06470-5506.

Fine Woodworking

Editor Scott Gibson

Art Director Bob Goodfellow

Associate Editors Vincent Laurence,
William Duckworth, Anatole Burkin

Assistant Editor Strother Purdy

Copy/Production Editor Deborah Surprenant

Associate Art Director Michael Pekovich

Editorial Secretary Bea Vangor

Contributing Editors Tage Frid,
R. Bruce Hoadley, Christian Becksvoort,
Robert M. Vaughan, Mario Rodriguez,
Chris Minick, Gary Rogowski

Methods of Work Jim Richey

Indexer Harriet Hodges

Publisher Paul Roman

Marketing Manager Suzanne Roman

Advertising Sales Manager Norman Sippel

Sr. National Accounts Manager Dick West

National Accounts Managers Tom Brancato,
David Gray, Linda Abbett

Sr. Advertising Coordinator Kathryn Simonds

Advertising Secretary Hilda Fernandes

Woodworking Books & Videos

Publishing Coordinator Joanne Renna

How to contact Fine Woodworking:

Telephone: (800) 283-7252
(203) 426-8171

Fax: (203) 270-6751

E-mail: fw@taunton.com

Web site: http://www.taunton.com

Customer Service:

Orders: (800) 888-8286

Other Inquiries: (800) 477-8727

E-mail: fwservice@taunton.com

Advertising Sales: (800) 283-7252 x 829

E-mail: fwads@taunton.com

Taunton Trade Company:

Retail Sales: (800) 283-7252 x 265

**Member Audit
Bureau of Circulation**



Copyright 1997 by The Taunton Press, Inc. No reproduction without permission of The Taunton Press, Inc. *Fine Woodworking*® is a registered trademark of The Taunton Press, Inc. **Subscription rates:** United States and possessions, \$32 for one year, \$56 for two years, \$82 for three years; Canada and other countries, \$38 for one year, \$67 for two years, \$95 for three years (in U.S. dollars, please). Single copy, \$6.95. Single copies outside the U.S. and possessions: U.K., £4.25; other countries and possessions, \$7.95. Address all correspondence to the appropriate department (Subscription, Editorial, or Advertising), The Taunton Press, 63 South Main Street, PO Box 5506, Newtown, CT 06470-5506. List management: The Kleid Co., 530 5th Ave. New York, NY 10036-5101.

CONWAY Hardwood Products

Large inventory of high grade
Domestic & Imported hardwood
Rough or Surfaced

Monday - Friday 8:00 - 4:30 • Saturday 8:00 - 12:00
1 George Washington Plaza, Gaylordsville, CT
37 Gaylord Road, Gaylordsville, CT
(860)-355-4030

READER SERVICE NO. 38

Her-Saf® Router Bits

Made in the USA



Reverse Helix Carbide Cutters
Screw-on for Quick Change
Sizes Available from 1/8" to 1-1/2"+

For a **FREE** Catalog
Call **1-800-553-9344**

Manufactured By:
Sabrauek Enterprises, Inc.
Atascadero, California

READER SERVICE NO. 28



When it comes to hardware selection,
we get the same reaction every time.

From cabinet hardware to jig and fixture knobs, Woodcraft's extensive
selection of hardware will put a smile on your face.

For a free catalog call:

1-800-542-9115

www.woodcraft.com



WOODCRAFT®
Helping You Make Wood Work™

210 Wood County Ind. Park, Dept. 97HAWWQ4, PO Box 1686, Parkersburg, WV 26102-1686

READER SERVICE NO. 47

If you want to know what our customers
have experienced for over forty years
TAKE A LOOK AT OUR VIDEO!

from \$ 8690.-

Call now
800-572-0061



BF 6-31
Woodworking System

Precision sliding table • 12" table saw • 12" jointer-
planer • self setting planer knives • shaper tiltable 90°-45°
• 15,000 rpm router spindle • 3 HP motors • scoring unit

FELDER
Woodworking Machines + Tools

FELDER USA

4003 Seaport Blvd. • W. Sacramento, CA 95691
Phone 916-375-3190 • Fax 916-375-3194

READER SERVICE NO. 178

The Ultimate Blades...

...For the
Professional
Woodworker

FINER CUTS

Precision ground carbide teeth
set on hand tensioned tool steel
bodies produce finer cuts.

QUIETER

Patented resin bond filled
expansion slots reduce noise
and vibration.

LONGER LIFE

High grade micro-grain
anticorrosive carbide teeth fight
both chemical and abrasive wear
to remain sharp longer.

INTRODUCING MEL-PRO

Our Pro Series includes **Mel-Pro**
—the world's most advanced melamine
cutting blade.

Making quality saw blades since 1910

TENRYU
TENRYU AMERICA, INC.

One Air Cargo Place, Unit 1 • Melbourne, FL 32901
1-800-951-SAWS • (407) 951-2400 • Fax: (407) 951-2250

READER SERVICE NO. 197

about 15 times that of most woods.

For a piece with only rare necessity for disassembly and where you could put 2 in. of machine-bolt threads into cross grain, not end grain, tapping threads in wood might be useful.

—King Heiple, Pepper Pike, Ohio

Mr. Warner should have recommended backing the tap out every few turns to clear the wood chips from the flutes of the tap. This will prevent jamming the tap and potentially ruining the threads that already have been cut.

Also, the most common taps have a tapered end that will cut the threads less deep than the body of the tap will cut. That means you must allow for the end of the threaded hole being too small for a machine screw.

Using a somewhat smaller than recommended drill will give a greater depth of thread for more holding power. But it must not be so small that you can't start or turn the tap properly.

—Robert Delgado, Monrovia, Calif.

Woodworking in the real world—As a *Fine Woodworking* subscriber for more than eight years, I benefit most from your ongoing series of articles about comparing and tuning up tools. I also read most of the “Letters” section of each issue because there is often some benefit or insight to be realized from others’ experiences and suggestions.

Every once in a while, however, a letter appears here that bears the distinct stamp of an elitist. I am referring to the letter from James Thomson (*FWW* #126, p. 10) concerning edge-jointing boards. Mr. Thomson ends the letter by saying, “No woodworker can truly call himself

a craftsman unless he can consistently edge-joint by hand.”

Had Mr. Thomson’s letter began the letter with that sentence, I would have dismissed it summarily. Mr. Thomson is not thinking rationally. In the real world that most of us live in, conveniences like edge jointers and dovetail jigs are a necessity, not an easy out, as Mr. Thomson implies. Perhaps *Fine Woodworking* should start a separate column for letter submissions like this. Authors could preen their feathers, and the rest of us (dare I say most?) could save some valuable time.

—Cal Arnold, Red Hook, N.Y.

Good tips on rabbets and dadoes—

You have two great articles in the October issue: one on rabbets and dadoes (*FWW* #126, pp. 74-77) by Sven Hanson and the other on basic repairs for power tools by Robert Vaughan (pp. 84-87).

The article on rabbets and dadoes is right down my alley. My father taught me those tricks long ago, and one doesn’t forget how to use them. I’ll use the T-square and router for some of my cuts, but most of the time, I set up my tablesaw to cut these joints. With today’s undersized thicknesses in plywood, the dadoes can be fit with greater accuracy this way. It takes time, but it’s worth it. I use the stack blades for my dado cuts.

A pat on the back for Mr. Hanson on two counts. First, I notice he is wearing short sleeves around his power tools, a great safety habit. Long sleeves are a no-no around any power tool.

Second, he uses wooden inserts in his tablesaw that are cut to fit the width of the cut. When I made my tablesaw purchase several years ago, those metal inserts went into the trash. I have

wooden inserts for each width cut. No metal around my sawteeth. That’s another trick my father taught me.

I enjoy the magazine. Keep up the good work. —Hugh A. Vickers, Marion, Ind.

Another way of cutting staves—I was very interested in the article by Garrett Hack on cooping a door (*FWW* #126, pp. 40-45). I offer a suggestion for an alternate method to make the angled cuts on the staves. If one extends the radii at the ends of the door until they intersect (like lines meeting at the center of a pie), the total angle of the door can be measured with a protractor.

In Mr. Hack’s example, the angle looks to be 90°, and he wants eight staves in the door. Thus, there will be 16 angled cuts to total 90° or 5.625° each. A well-tuned tablesaw can be set to 5.6° on the bevel scale, which should be quite acceptable. To emphasize, the number of staves and the total angle uniquely determine the cutting angle. —Gail Adams, Talent, Ore.

GARRETT HACK REPLIES: This is a good suggestion, provided that the door’s curve is a section of a circle and the angles between staves are all the same. When the curve is elliptical or otherwise irregular, the angles between staves change. That calls for a different approach, like the method outlined in the article.

Cabinet looked familiar—A very interesting folding rule cabinet designed and built by Michael Mason appears in the October issue of *Fine Woodworking* (*FWW* #126, p. 118). Although very creative, this reminded me of something I saw 20 years ago. On p. 118 (quite coincidentally) of the 1977 *Fine*

Taunton
PUBLICATIONS
for fellow enthusiasts

The Taunton Press: Paul Roman, chairman; Diane Patterson, secretary.
Marketing Communications: James Chiavelli, director. **Corporate Editorial:** John Lively, editor-in-chief & vice president. **Human Resources:** Carol Marotti, director; Linda Ballerini, Christine Lincoln. **Finance/Accounting:** Janice A. Roman, chief financial officer; Wayne Reynolds, controller; Elizabeth Conklin, Kathy Worth, Carolyn Kovaleski. **Accounting:** John Chapman, Mary Sullivan, Andrea Henchcliffe, Carol Diehm, Margaret Bafundo,

Patrick Lamontagne, Irene Arfaras, Keith Chapman, Mary Sullivan, Andrea Henchcliffe, Carol Diehm, Margaret Bafundo, Dorothy Blasko, Susan Burke, Lawrence Rice, Gayle Hammond, Lydia Krikorian, Lorraine Parsons, Elaine Yamin. **Corporate Design:** Susan Edelman, director; Laura Bergeron, Amy Bernard, Mary Terrizzi. **Photography:** Boyd Hagen, Anthony Phillips. **Promotion:** Philip Allard, Francesca Arminio, D. J. Ameson, Sallianne Norelli, Wendy Bowes, Julia Brine, Mary Beth Cleary, Leigh Haeger, Jennifer Winston. **Corporate Services:** Thomas Luxeder, director; Jane Torrence. **Corporate Circulation:** Sarah Roman, manager. **Fulfillment:** Client Services: Patricia Williamson, Carolyn Arneith, Kathryn Dolson, Holly Smith, Eileen Swirsky. **Order Processing:** John Comerford, Nancianne Boland, Barbara Lowe, Eileen McNulty, Dawn Teixeira, Marylou Thompson. **Customer Services:** Patricia Malouff, Donna Baxter, Christi Heuer, Dorothy Knauer, Penny Lefferts, Jennifer Severino, Barbara Smith. **Data Entry:** Carole Ando, Bonnie Beardsley, Margaret Fainer, Madeline Frengs, Debra McCormack, Gina Pabis, Andrea Shorrock, Betty Stepney. **Distribution:** Paul Seipold, Mary Ann Costagliola, Deborah Greene, Linnea Ingram, Brian Leavitt, Aaron Lund, Frederick Monnes, Jonathan Pond, Elsie Rodriguez,

Alice Saxton, Eileen Sheehan. **Manufacturing:** Kathleen Davis, director; Kathleen Donovan. **Prepress:** Austin Starbird, John Garofalo, Stephen Roma, Patricia Sigetti, Deborah Cooper, William Bivona, David Blasko, Richard Booth, James Chappuis, Mark Coleman, Lisa DeFeo, Tina Foster, William Godfrey, Florence Nichols, Linda Reddington, Martha Stammer, Chansam Thammavongsa, David Kenney, Amy Evon, Kathy Martin, Monica Murphy. **Print Production:** Dee Flanagan, Nicole Anastas, Lynda Morris, promotion; Thomas Greco, Deborah Baldwin, Michael Gyalay, books; Philip VanKirk, John Cavallaro, Tracie Pavlik, magazines. **Video:** Craig Umanoff, Thomas Menard. **Management Information Systems:** Robert Peters, director. **Brendan Bowe, James Courtright, Maurice Downey, Gabriel Dunn, Lisa Northrop, Majorie Omalayev, Roger Seliga. PC Applications:** Heidi Waldkirch, Robert Nielsen, Andrew Wiles. **PC Systems:** Margaret Archer, Joanne Bisson, Rita Myers. **Operations:** Purchasing & Facilities: William Schappert, Christopher Myers, Peter Bishop, Michael Capalbo, Michael Lewis, Jeannette Pascal, Patricia Rose, Charles Hollis, Jeffrey Meslin, Aaron Nobel, Susan Nerich, Oscar Carranza, Alvin Jack, Lincoln Peters, Ernest Thompson. **Cafeteria:** Donna Freeman, Geraldine Benno, Diane Nutter, Norma-Jean Taylor. **Taunton Books:** James Childs, publisher; Ellen Williams, Leann Tong. **Book Editorial:** Carolyn Mandarano, editor; Ruth Dobeavage, Peter Chapman, Thomas C. McKenna, Robert Olah, Jennifer Renjilian, Diane Sinitzky. **Book Art:** Jodie Delohery, Susan Fazekas, Thomas Lawton, Lynne Phillips, Henry Roth, Carol Singer, Kenneth Swain, Rosalie Vaccaro. **Taunton Direct:** Maryann Diette, Brenda Hamilton, Dennis O’Brien, David Pond, Megan Sangster, Jeanne Todaro. **Taunton New Media:** Roy Swanson, director; Christopher Casey, Sean Messenger, Marc Vassallo. **Taunton Trade Company:** Dale Brown, president; Thomas Johnson, John Bacigalupi, Peter Bill, Barbara Buckalew, Linda Yurchishin.

LASER LEVELING MADE AFFORDABLE

SUPER ACCURACY & AN AMAZING SET OF FEATURES FOR ONLY \$299.95!

RoboLaser™ is the exciting new laser pointing system that will revolutionize leveling and layout work on the jobsite. RoboLaser is a remote controlled, wireless, rotary (motor driven), self-leveling system that gives the accuracy of \$2,000 laser beacon systems for only \$299.95.

- ✓ **It's Self-Leveling!** RoboLaser requires no time consuming level adjustments. There are no leveling screws and no tripod is required (tripod mounts are built in). Simply place the compact RoboLaser on any surface and RoboLaser's patented self-leveling mechanism does the rest. RoboLaser is accurate to $\pm 1/8"$ over 100 feet!
- ✓ **Automatic Out of Level Sensing!** RoboLaser has a built-in level sensor. This means the laser will immediately begin to blink if it is out of level. If the unit is bumped or disturbed after initial setup and goes out of level for any reason, you'll know right away!
- ✓ **Effective At Distances Over 100 Feet!** Unlike other laser pointing systems, RoboLaser utilizes only the best laser diode componentry and its patented laser projection circuitry maintains a super bright dot over distances of greater than 100 feet. This dot can easily be seen anywhere on the jobsite, indoors or outdoors.
- ✓ **The First Wireless Remote Controlled Laser Pointing System**
The key to RoboLaser's ease of use is the remote controlled hand unit. This feature lets you aim the dot by remotely rotating the precision step motor that drives RoboLaser while you stand next to the target. No squinting, no eye strain, no more frustration. In a matter of minutes, using RoboLaser and a simple chalk snap-line, interior carpenters can layout an entire room with perfectly level reference lines for countertops, window installations, and trim work. RoboLaser is also ideal for masons in setting forms for foundations, laying tiles, and building up cinder blocks. Framers will find that the time they save in leveling out headers and ridge beams will pay for RoboLaser in a day. Plumbers setting grades for drainage lines will never go to another jobsite without RoboLaser again. Call 1-800-984-0404 & order your RoboLaser today! FREE Carrying Case for a limited time.



Remote Control Rotates RoboLaser to Point the Beam Where You Need It - From Up To 100' Away!



Self-Leveling Set RoboLaser Up & Go to Work!
(in less than 1 minute)

Now Just \$299.95

Best Market Value
Accurate to $\pm 1/8"$ over 100' RoboLaser provides all the functionality & accuracy of a \$2,000 laser system for only \$299.95!

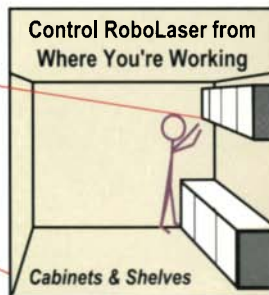
AVOID COSTLY LEVELING ERRORS! A bubble level can be off as much as 4" over 100'! RoboLaser is accurate $1/8"$ over 100'!

Remote Control RoboLaser Stays The Remote Goes With You to the Target

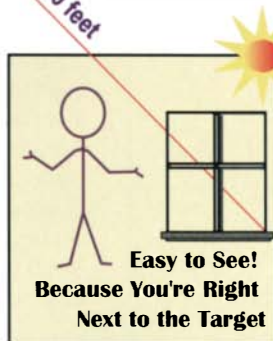
1-800-984-0404
Call Today & Order

\$299.95
(plus s/h, tax in CA)

Toolz • 555 Bryant St., #355
Palo Alto, CA 94301



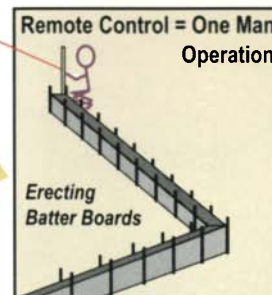
Control RoboLaser from Where You're Working
Cabinets & Shelves



Easy to See! Because You're Right Next to the Target



RoboLaser follows You! Remote Control points the beam wherever you want it!



Remote Control = One Man Operation
Erecting Batter Boards

Free Carrying Case
Order TODAY & Get a Free Carrying Case (\$50 value)
1-800-984-0404
outside the U.S. call 650.323.7836 or e-mail us at Robo@toolz-inc.com
(Visa/Mastercard/Discover Accepted)

Visible Even In Direct Sunlight

Radio Control Range 150 feet

Use With or Without Tripod

CODE-FW1197

Woodworking Biennial Design Book, a picture is shown of a nearly identical cabinet built by Leroy Schuette of Durham, N.H.

The back cover prophetically states, "This unique book is a source of inspiration for today and a record for tomorrow." It would be interesting to see pictures of other cabinets built to mimic old tools, because I'm sure that there are other fine examples.

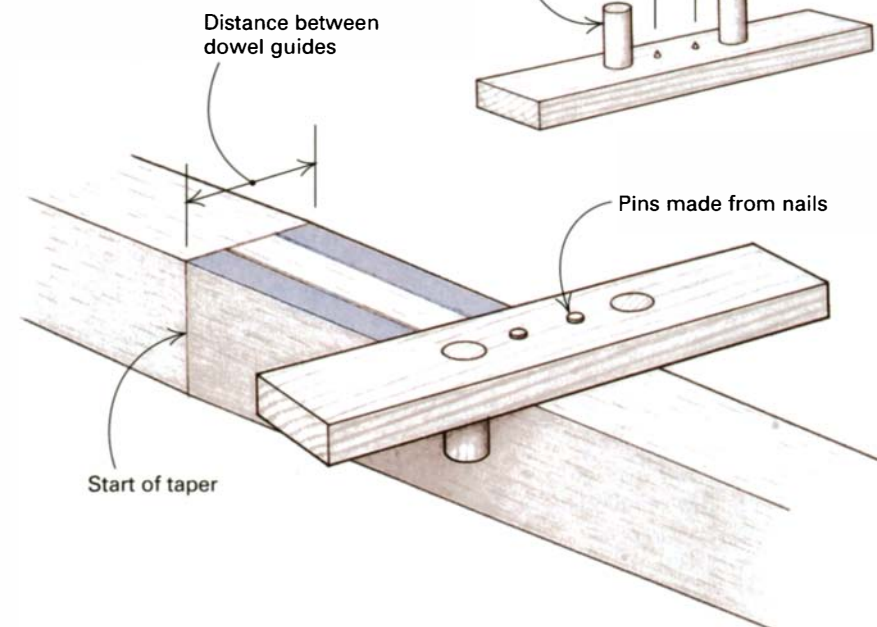
—Ken Black, Knoxville, Tenn.

EDITOR REPLIES: Mr. Mason reports that he's never seen a photo of the original cabinet, published in the first of the *Design Book* series 20 years ago. He says he originally planned to build a cabinet in the shape of a molding plane, but when that proved too difficult, he turned to another familiar tool—his folding rule. He says he'd like to try the molding plane cabinet again at a later date.

Another approach to octagonal posts—Having just made a pencil-post bed myself, I can tell you there are two important tips that Chris Becksvoort left out in his response to Mr. Brehm's query

Laying out a chamfered post

This easily made gauge simplifies layout for a tapered, octagonal post. Starting with square stock, cut straight tapers on four sides of the post, and then use the gauge to scribe lines creating an octagon.



on the best way to cut the tapered octagonal posts ("Questions and Answers," *FWW* #125, p. 16).

I used a bandsaw to rough out the tapers. Then, after handplaning them down to dimension, I used a spar maker's marking gauge to lay out the corner chamfers of the octagon. I got the idea for the marking gauge from *FWW* #41 (p. 56) in a short article by Michael Podmaniczky. It only took about 10 minutes to construct, and it worked wonderfully for laying out perfectly proportioned chambers along a tapered post (see the drawing below).

When it comes time to cut the chamfers, it is true that you could use a handplane to waste all of that stock as Mr. Becksvoort suggested, but it will take a very long time. Instead, I reached for my draw knife and made amazingly quick work of roughing out those chamfers. A plane, a chisel and a scraper completed the job. I remember purchasing that draw knife some years before at a flea market. At the time, I had no idea what I would ever do with it, but I thought that it was kind of neat. This turned out to be exactly the type of job for which it was made. It accomplished in minutes what would

otherwise have taken hours of laborious handplaning. Plus there was a real thrill in using an antique tool to make a classic piece of furniture the same way that our colonial forebears would have.

—Keith Landin, Vernon, Conn.

Lighten up—I have noticed a disturbing trend in the "Letters" section of *Fine Woodworking*. In *FWW* #125, nine of the 12 published letters were some sort of complaint about the quality, accuracy or subject matter of the articles. To point out an error or omission that could be dangerous is one thing, but some of these commentaries are absurd.

The people who write these letters have definitely lost sight of the purpose of their craft. If there is anything I have learned it is that there is no one perfect way of accomplishing anything. The point is, you could ask 10 people for the perfect method to solve any problem, and you might get 10 different answers.

I am only an amateur woodworker and nearly everything I have learned about this wonderful art comes from outstanding articles like those in *Fine Woodworking*. So to all those folks with their perfect methods, I say, "Lighten up." Somewhere along the way, you have forgotten that exploring for your own perfect method can be fun.

—Todd S. Virtz, Germantown, Md.

Erratum—A drawing showing parts for a door on Gary Rogowski's Arts-and-Crafts sideboard included an incorrect dimension (*FWW* #126, p. 82). The door panel should be 14½ in. tall, not the 15½ in. that's shown.

About your safety:

Working wood is inherently dangerous. Using hand or power tools improperly or ignoring standard safety practices can lead to permanent injury or even death. Don't try to perform operations you learn about here (or elsewhere) until you're certain they are safe for you. If something about an operation doesn't feel right, don't do it. Look for another way. We want you to enjoy the craft, so please keep safety foremost in your mind whenever you're in the shop.

—Scott Gibson, editor



JESADA TOOLS™

**"The smoothest
and sharpest
we've ever seen"**

... *American Woodworker Magazine*

Here's what author and router expert Patrick Spielman had to say about Jesada bits:



"Jesada has recently introduced some new bits I designed and I am especially pleased to inform you that I have never seen better quality router bits produced anywhere, ever! Made entirely and shipped directly from their Florida factory, the new Jesada bits have the sharpest, longest-lasting carbide with the highest polish finish in the industry. Producing these unmatched bits is largely due to Jesada's new 5-axis computerized grinding centers. This, and their company's commitment to excellence driven by CEO Carlo Venditto, guarantees the same superb customer service and the best bits in the world! Look for Jesada's new white (PTFE) coated router bits . . . If you've never tried their bits, I strongly recommend that you do."

... from *Patrick Spielman's Home Workshop News*, Vol. II, issue 9, © Spielman Publishing Co.

Patrick is the author of more than 50 woodworking books and is the editor of *Home Workshop News*, a bi-monthly magazine



"Smooth Performers"

"Jesada Tools has introduced an improved line of router bits with a trademarked white, non-stick PTFE coating. The carbide tips on these bits are the smoothest and sharpest we've ever seen, thanks to Jesada's new state-of-the-art grinding equipment. Test cuts in our shop produced exceptionally smooth profiles."

... *American Woodworker Magazine*, October, 1997

Mirror-finish grinding

Micrograin carbide cutting edges

White nonstick PTFE coating (a trademark of Jesada Tools)



<http://jesada.com>

Over 60 pages of products, instructions, tips and a factory tour!

E-Mail: jesada@packet.net

Call for our **Free Catalog**



To order, call toll-free 24-hours:

1-800-531-5559

Toll Free FAX: 1-800-870-7702

Free shipping on orders over \$200.00
(\$5.00 shipping & handling for orders under \$200.00)

Dealer inquiries welcome!

Export orders: (813) 891-6160 FAX: (813) 891-6259

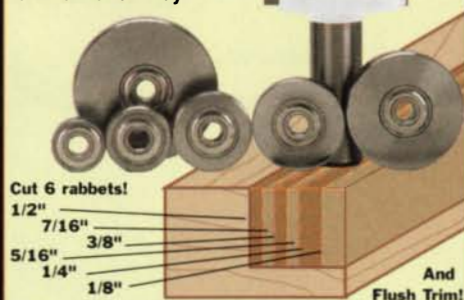
JESADA TOOLS,
310 Mears Boulevard, Oldsmar, FL 34677

In Canada, call:

ToolTrend Ltd. 1-800-387-7005

Rabbit-Master Plus™ masters 7 different cuts

JESADA TOOLS' Rabbit-Master Plus cuts rabbets from 1/8" to 1/2" deep & flush trims as well! The set includes one of our 1-3/8"-diameter carbide tipped rabbeting bits, seven ball bearings and an allen key.



Cut 6 rabbets!

1/2"
7/16"
3/8"
5/16"
1/4"
1/8"

And Flush Trim!

800-639 1/4" Shank Set,
List: \$49.40.....**SALE: \$38.90**

800-640 1/2" Shank Set,
List: \$54.40.....**SALE: \$39.90**

Try Jesada and Save with our 3-Bit Special

This special introductory offer lets you experience JESADA TOOLS' quality first hand! You'll get 3 bits from our state-of-the-art U.S. factory with features like Fatigue-Proof® steel, micrograin carbide and our mirror-finish grinding, all for about half our regular price!



1/4" radius Roundover



1/2" diameter Straight



1/2" diameter Flush Trim

800-701 3-bit set, 1/4" Shank,
Regular: \$69.60.....**SALE: \$34.90**

800-702 3-bit set, 1/2" Shank,
Regular: \$72.70.....**SALE: \$36.90**

Dust-Free Sanding

Eliminate hazardous dust

Before it becomes airborne



Airborne dust is now being recognized as a major health hazard. Imagine sanding in a dust-free environment, where 98% of the dust created by sanding is gone.

How It Works

Dust produced by sanding is immediately sucked away through holes located in the sandpaper, the bottom of the sander's pad, AND around the outside edge of the pad (a FEIN exclusive). The extracted dust is contained by a powerful vacuum.

Unbeatable Finishes

Typically when you sand with normal sanders, your sander ends up riding on a bed of dust and broken abrasive. With the FEIN Sanding System, this "bed" of dust doesn't exist. Your paper cuts faster, cleaner, and lasts up to 10 times longer. You simply can't get the same finish by any other sanding method.

Automatic Vacuum

When you turn your Fein sander on, the vacuum starts. When you switch your sander off, the vacuum stops. . . automatically. The Fein Turbo II Vacuum is built to handle large amounts of super-fine dust.

It's easy to get more information, simply call and ask for a free color brochure:

(800)441-9878

FEIN Power Tools Inc.

1030 Alcon St.
Pittsburgh, PA 15220
(412) 922-8886 fax: (412) 922-8767

READER SERVICE NO. 164

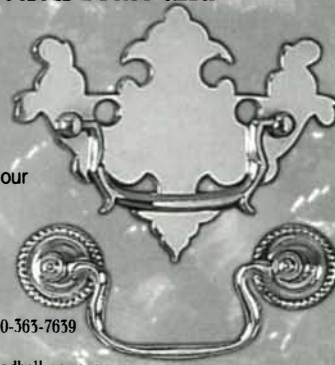


Finest Quality Reproduction Brass and Iron Hardware

Since 1932, BALL AND BALL has been manufacturing the finest quality antique reproduction furniture hardware, builders hardware, lighting fixtures, and fireplace accessories available. Call for our 108-page catalog, available for \$7.00 (catalog cost refunded on first order).



Ball and Ball
463 W. Lincoln Highway
Exton, PA 19341
Phone: 610-363-7330 • Fax: 610-363-7639
Orders: 1-800-257-3711
Visit our website - www.ballandball-us.com



READER SERVICE NO. 146

The Mirrora™ Collection

Beveled Mirrors

"Reflections of Quality"

Your beautiful handcrafted projects deserve the best . . . a beveled mirror from Shapes + Surfaces!

We carry over one million pieces in stock for quick shipment and can fabricate almost any shape, color or size of mirror you may need. Call today to place your order and to receive a copy of our color catalog.



Circles,
ovals, squares,
rectangles & octagons.

SHAPES + SURFACES

1-800-647-7670

1649 Sycamore Ave., Bohemia, NY 11716

READER SERVICE NO. 31

**Lie-Nielsen
TOOLWORKS
INC.**

Free Brochure

**Low Angle Adjustable
Mouth Block Plane
\$145
1-800-327-2520**

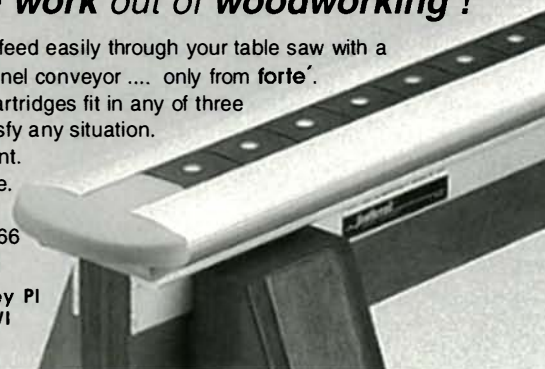
Makers of Heirloom Quality Tools™ www.lie-nielsen.com/

READER SERVICE NO. 143

Take the **work** out of **woodworking** !

Heavy panels feed easily through your table saw with a featherail panel conveyor . . . only from forte'. Multiple ball cartridges fit in any of three models to satisfy any situation. 360° movement. precision made. patented. 1-414-228-7766

forte'
6631 N. Sidney Pl
Milwaukee, WI
53209



READER SERVICE NO. 155

New Products From Lee Valley & Veritas®

Veritas® Carver's Vise

A good carver's vise should be adjustable in all three axes. This one has full rotation in two axes and 3" of height adjustment in the third axis. It also has controlled release; when you relieve the clamping pressure, the internal springs and O-rings provide residual resistance so that work does not suddenly fall or rotate. Work can be repositioned and adjusted without needing three hands.

The vise can be bolted to a bench, clamped in a vise (it has side flats), or side or top



mounted in a 3/4" diameter dog hole with the optional dog-hole mount assembly.

The body is arched to let work overhang the edge of a bench when top mounted, giving maximum flexibility of use. The 3 1/2" diameter by 1/2" thick mounting plate is fastened to a 1/2" diameter steel rod. The body is made from the new alloy ZA-12 (same as our Tucker Vise) with a solid brass hub and a repositionable gyrotory locking lever. Spare mounting plates are available.

- FW230** Veritas® Carver's Vise **\$75.00**
- FW231** Dog-Hole Mount Assembly **\$ 7.95**
- FW232** Spare Mounting Plate with Rod **\$12.95**

Veritas® Wheel Marking Gauge

Avoid the shortcomings of standard pin marking gauges. Our marking gauge will perfectly scribe at any point of its circumference. Since the hardened steel wheel is both sharp and bevelled only on the inside, it cuts through grain and forces the gauge face against the stock, maintaining accuracy. It cuts rather than tears and leaves a clean mark, even on cross grain. The gauge is easy to set since it has an internal O-ring to keep light but constant friction on the stem. The anodized aluminum head has a 1/8" thick brass face and a brass thumbscrew. A very comfortable gauge to use.

- FW220** Veritas® Wheel Marking Gauge **\$18.95**

Veritas® is the manufacturing arm of Lee Valley Tools Ltd.
12 East River Street, Ogdensburg, N.Y. 13669
Visit our Web site at www.leevalley.com

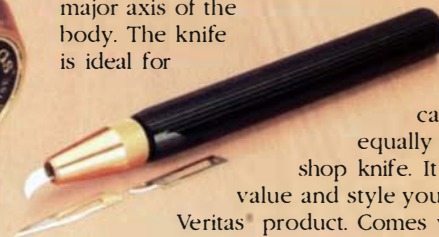
Veritas® Carver's Knife

The Veritas® Carver's Knife has an oval handle with fine grooves for a comfortable fit and grip. The razor-sharp high-carbon blades can be honed many times before replacement. The anodized aluminum body of the knife

has a solid brass collet with an internal steel sleeve. Blade change is easy and blade orientation is always in line with the major axis of the body. The knife is ideal for



Grooved oval handle allows for a good grip in your hand.



whittling, carving and is equally effective as a shop knife. It has both the value and style you expect of a

Veritas® product. Comes with a dozen blades, 4 of each style shown.

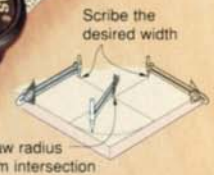
- FW201** Veritas® Carver's Knife **\$12.95**
- FW202** 10 Repl. Blades, Spear **\$ 2.50**
- FW203** 10 Repl. Blades, Curved **\$ 2.50**
- FW204** 10 Repl. Blades, Classic **\$ 2.50**



Veritas® Carpenter's Gauge

The Veritas® Carpenter's Gauge was specifically designed to be carried in an apron or pocket. It is both a direct-reading compass and a marking gauge, two things that carpenters frequently need but find hard to carry. This tool has a rotatable head, which locks vertically for use and horizontally for storage and tip protection. It is direct reading, both for radius and diameter, in inches and centimeters. It is useful in a cabinet shop because of the direct-reading feature, which substantially reduces errors, as well as for the fast corner radiusing. Made of brass, stainless steel and high-impact ABS, it is 7 1/2" long overall, and will scribe circles up to 12" diameter.

- FW214** Veritas® Carpenter's Gauge **\$14.95**



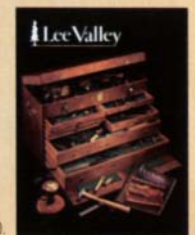
Our 252-page catalog of woodworking tools and accessories is sent free with an order or is available for \$5 (refunded with first order).

Call: 1-800-871-8158

or fax: 1-800-513-7885



N.Y. residents, add sales tax. Outside U.S.A., call: 1-613-596-0350 or fax: 1-613-596-6030.



MINIATURE ROUTER BIT SET

FOR FINE WOOD MODEL MAKING



Set #
MRS
2000

With these new carbide-tipped miniature and micro-sized router bit sets from Amana Tool, you now have the long-needed alternative to solid steel type bits. Made with extraordinary precision from high quality tool steel, with razor sharp carbide tips, these bits have centerless ground shanks for perfect concentricity and balance. Profiles included can be used for miniature handrails, chair-rails, bullnose, cove, base, crown and other architectural moldings. The ideal cutting tools for model making, doll houses, jewelry boxes and other miniature projects. Available individually or as a set of twelve in a custom hardwood box.

Profiles included
in MRS-2000,
shown full size



MM14000 (1/16")
MM14010 (5/64")
MM14020 (1/8")



MM4030



MM4040



MM4050



MM4060



MM4070



MM4080



MM4090



MM4100



MM4110

Exclusively from
Amana Tool

Call (800) 445-0077, for the dealer nearest you, or visit our web site at www.amanatool.com

READER SERVICE NO. 195

The Laguna Tools New 18 Bandsaw.



PROBABLY THE BEST
18" BANDSAW EVER BUILT!

Compare to other manufacturers:

- ✓ 3 HP motor
- ✓ Heavy-duty cast iron trunion
- ✓ Dynamically balanced cast iron flywheels
- ✓ Heavy duty fence
- ✓ Foot brake
- ✓ Rack-and-pinion adjustment of upper guide
- ✓ European-style guide bearings
- ✓ Optional mobility kit
- ✓ Optional heavy-duty miter-gauge
- ✓ 12" resaw capacity
- ✓ Tension indicator
- ✓ Excellent dust collection

Call now for a free video!

LAGUNA TOOLS
(800) 234-1976
(714) 494-7006
<http://www.lagunatools.com>

2265 Laguna Canyon Road
Laguna Beach, CA 92651

READER SERVICE NO. 190

FREE WOODTURNERS CATALOG!



Craft Supplies USA offers woodturners the finest selection of woodturning tools and accessories anywhere!

- Signature Tools by Henry Taylor Tools
- Richard Raffan, Ray Key Tools
- Stabilized Pen Blanks
- Woodfast Lathes
- Vicmarc Mini Lathes
- One Way and Axminster chucks
- Pen and Pencil kits
- Dale Nish Workshops

To order your copy of
THE WOODTURNERS CATALOG call: **1-800-551-8876**
visit our web site at www.craftusa.com

CRAFT SUPPLIES USA • 1287 E. 1120 S. Provo, Utah 84606 • (800) 551-8876 • Fax (801) 377-7742

READER SERVICE NO. 33



WE HAVE
IT ALL IN
WOODWORKING
SUPPLIES

POWERMATIC
**WOODWORKER'S
DEPOT
INC.**

3001 RAMADA WAY
GREEN BAY, WI 54304
1-800-891-9003

www.woodworkersdepot.com

FAX (414) 336-8683

PROFESSIONAL QUALITY AT WAREHOUSE PRICES

CMT
MADE IN ITALY



READER SERVICE NO. 136

22 TEETH
ALTERNATE TOP BEVEL

5/8" AR
LASER CU

REQUIRES LESS POWER

	Fair	Good	Excellent
Rip Wood			
Crosscut Wood			
Chip Board			
Plywood			
Laminate			
Non-Ferrous Metals	Not Recommended		

ALWAYS SAFETY & SAFE

Copyright of Freud Inc. 1990

HOT BLADE.

COOL CUT.

What is it?

Our new line of Teflon® coated blades. TCS, short for a new industrial coating by DuPont® that makes our blades run super fast, super smooth and super cool.

How?

- The coating makes these blades more resistant to friction and heat buildup. The blade stays up to 50% cooler than non-coated blades. This helps the wood glide by the blade with a lot less effort compared to conventional blades. So, you get some major benefits.
- This puts less stress on the blade. Studies by DuPont tell us that TCS coated blades last up to 50% longer than conventional blades before sharpening.
- It also causes less pull on the saw, 38% to be exact. Which translates into over 1/3 more cutting power. And as a bonus, the smoother cutting action means less wear and tear on the motor.
- TCS blades won't bind like conventional blades. The self-lubricating, non-stick finish sheds sappy wood residue before it builds up. So you will get a smoother, more professional cut with TCS blades.
- Clean up with these blades is also easy. Pitch and resins just don't stick well to the industrial Teflon. So, even after extensive use, simply wipe clean with hot water.
- Don't be concerned about cleaning the blades with water. The Teflon coating makes the blade rust resistant, in fact, you don't need oils, greases or rust-preventatives.

The industrial Teflon coating gives you a lot of great benefits, but remember that under the Teflon coating is a Freud blade.

For Catalog Call 1-800-472-7307 or E-Mail freudinc@aol.com

Red is a trademark of Freud USA, Inc.
Information courtesy of DuPont Industrial Coatings®.
READER SERVICE NO. 104



■ TEFLON
■ CONVENTIONAL

freud®

Precisely what you need.



*Based on an average of consumer-reported problems at 3-months' ownership in a survey of Ford and competitive models designed and built in North America. Sales leadership based on Divisional sales.

- WORLD'S ONLY STANDARD THIRD DOOR • LARGEST FULL-SIZE PICKUP BOX BY VOLUME
- TRITON™ V8 ENGINES ARE THE ONLY LINE OF PICKUP ENGINES WITH FAIL-SAFE COOLING
- MOST POWERFUL STANDARD V6 ENGINE AVAILABLE IN A FULL-SIZE PICKUP

REMODEL OFFERS PLENTY OF SQUARE FOOTAGE
AND THE FRENCH DOORS AT NO EXTRA CHARGE.



FORD F-SERIES.
THE BEST-BUILT, BEST-SELLING AMERICAN TRUCKS.*
1-800-258-FORD or www.ford.com

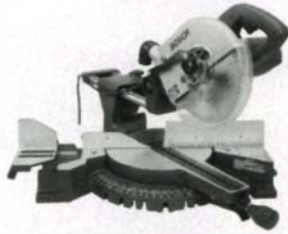


TOOLS ON SALE™ div. of
SEVEN CORNERS HDWE Inc.
 216 West 7th St. • St. Paul, MN 55102 • Est. 1933
 Toll Free 1-800-328-0457

BOSCH Holiday Specials



1587 AVSC Anniversary Jig Saw
 ... plus 20% discount
 off first blade purchase!
 Sale 149.00



3915 Mitre Saw
 ... plus FREE 40 tooth
 carbide blade!
 Sale 559.00



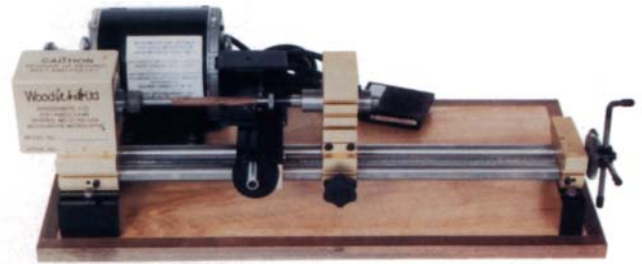
1634VSK Recipro Saw
 ... plus \$40.00 in FREE
 bi-metal blades!
 Sale 189.00



1278VSK Belt Sander
 ... plus 10 FREE extra belts!
 Sale 129.00

READER SERVICE NO. 107

One Good Turn. . .



. . . deserves the Gold Standard in micro-lathes from WoodWrite. Ready-to-run, assembled, aligned, **ALL NEW Model 160** (shown) features:

- 1/3 hp AC induction motor with foot switch;
- 400 - 5700 rpm (6 steps); 16-1/2" between centers; 5-1/2" swing over bed; 2-3/4" swing over saddle; high speed ball bearings--head and tail stocks; screw-type live center included;
- the **ALL NEW E-Z Glide™** crank (4 turns to move saddle 1");
- carbide tipped cutting tool; tool mount; 7 mm mandrel and knurled nut;
- dynamic dust collection manifold.

The **ALL NEW Model 260** includes all of the above **PLUS** a motorized saddle drive -- works so smoothly you'll hardly ever need sandpaper!

And, check out the **ALL NEW Copy-Cat™** duplicator -- the easiest way to copy from patterns or other work.

WoodWrite Ltd.

WoodWrite, Ltd.
 2121 Abell Lane, Bldg. 101
 Sparks, MD 21152 USA
 Tel: 1-888-966-3974
 410-771-4444

See us in action at the AW show in
 Ft. Washington, PA, Nov 7-9 (Booth 134)

e-mail: woodwrite@worldnet.att.net
 Fax: 410-771-4879

READER SERVICE NO. 182

FREE CATALOG
100's
 of Carbide Tipped
 Router Bits and
 Unique Woodworking
 Accessories!

MERLE The ADJUSTABLE CORNER CLAMP®

- Adjustable, uniform clamping pressure
- Forces a frame into a perfect square
- Almost NO capacity limitation
- Even jointing force at ALL corners
- Great for wide cabinet type frames.
- 23 ft. steel banding
- Aluminum & Steel construction



FREE SHIPPING
 IN CONTIGUOUS USA FOR ALL ITEMS

Order 1-800-533-9298

MILCS

PROFESSIONAL WOODWORKING PRODUCTS
 P.O. Box 4053 FA, Rydal, PA 19046

READER SERVICE NO. 174



VARIETY

Shape, Form and Smooth
 like never before. *Microplane* tools are
 made from hardened, stainless steel
 and have razor sharp, non-clogging
 teeth that don't create dust.

1-800-555-2767

• dealer inquiries encouraged

www.microplane.com email: gracemfg@aol.com

Microplane

A Product of Grace Manufacturing

READER SERVICE NO. 85

RECANE for
fun and profit

Recane or re-rush heirloom chairs
 -- for yourself or for others as a
 profitable hobby -- with our full line
 of materials & instruction books.

Since 1934 America's largest
 selection of caning & basketry
 materials & supplies --

- Superior quality weaving cane & machine woven cane
- Flat, oval & round reeds
- Fibre & genuine rush
- Danish seat cord
- Raffia, rattan, seagrass
- Hoops & handles

Illustrated catalog
 with complete how-
 to-do-it informa-
 tion, prices, order
 form: \$1 (refund-
 able with 1st order)

CANE & BASKET SUPPLY CO.

1283 S. Cochran, Dept. FW, Los Angeles, CA 90019

READER SERVICE NO. 708

FREE WOODWORKER'S CATALOG

Over 5000 products to
**BUILD, REPAIR,
 RESTORE, REFINISH**
anything made of wood!

- lumber
- veneers
- inlays
- moldings
- carvings
- tools
- hardware
- glues
- finishes
- books
- plans
- and more

CALL TOLL FREE
1-800-223-8087

CONSTANTINE
 Serving Woodworkers Since 1812
 2050 Eastchester Rd., Dpt. 37711, Bronx NY 10461

READER SERVICE NO. 665

NOW YOU WON'T CHOKE ON THE DUST OR THE PRICE.

For those dusty jobs, you'll appreciate all that the Craftsman Tool Vac® offers*. It collects dust from a variety of power tools through a two-stage, fine debris filter that boasts a 99% efficiency rating. And for convenience, just plug your power tool into the Tool Vac. Its three-position switch gives you on/off control and a handy automatic setting that turns on the vac from your power tool. When you shut off the tool, the vac runs an additional five seconds to clean the hose. Also, Tool Vac comes with an 11 foot hose to give you extended reach without having to move the base.



You'd expect all this in a vac costing twice as much, but the

Craftsman Tool Vac's price will surprise you. So, whether it's dry wall, wood-working, auto body repairs, boat refinishing or wood floor sanding, you can breathe easier knowing you've got the right vac at the right price.

* Hand held sander sold separately.



EXCLUSIVELY AT SEARS AND SEARS HARDWARE STORES



READER SERVICE NO. 176

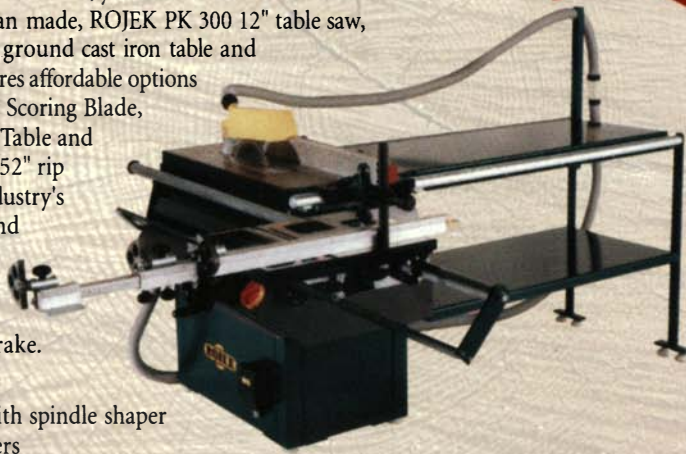
The Heart of the Woodworking Industry

Has Just Grown Stronger

Before you can finish any project, you have to start it. And when you work with wood, you can't start without a table saw. The European made, ROJEK PK 300 12" table saw, with its precision ground cast iron table and tilting blade, features affordable options such as an 80mm Scoring Blade, Precision Sliding Table and Extension Table (52" rip capacity). The industry's most advanced and reliable table saw is powered by a 3 hp motor with electronic brake. Also available:

- table saws with spindle shaper
- planer/jointers
- spindle shapers
- combination machines

Call us at (501) 945-9393 or (800) 787-6747 for more information on the complete line of ROJEK machinery.



TM
TECH MARK, INC.

Special limited offer \$2,850
* Includes all options

READER SERVICE NO. 54

SHAKER CHAIR KITS

Discover the beautiful proportions and classic simplicity of Shaker furniture. Our catalog features reproduction dining chairs and tables, rockers, bar stools, candle stands, small tables, clocks, oval boxes, baskets, peg board and Shaker chair tape. Furniture available as precisely fashioned kits for easy finishing or custom finished.

FREE Catalog
SHAKER WORKSHOPS
Box 8001-FW8, Ashburnham, MA 01430
1-800-840-9121

READER SERVICE NO. 99

GET KLINGSPOR'S WOODWORKING CATALOGS TODAY



Make sure you're receiving our easy-to-use catalogs. You'll find just about every product you need to complete your woodworking projects in the pages of these catalogs. Each is filled with useful tools and supplies, gadgets for the woodworker who has everything and informative shop tips to make your woodworking as enjoyable as possible.

Call, write or fax to receive these catalogs.

KLINGSPOR'S Sanding Catalogue

P.O. Box 5069, Hickory, N.C. • 28603-5069
Toll Free 1-800-228-0000 • Fax 1-800-872-2005

www.sandingcatalogue.com

READER SERVICE NO. 133

"Multico is the best overall"

....*Fine Woodworking Magazine*

Multico Mortisers, Made in England by the inventors of bench-top mortisers. Seven models, from ½ to 1½ HP. Prices start at only \$299. For a little more than the price of a cheap imitation, you can invest in a genuine Multico Mortiser.

FREE Catalog or to Order, call Toll Free or write:

Garrett Wade
161 6th Avenue
NY, NY 10013
800-221-2942
800-566-9525 (fax)
888-593-2453 (In LA)



READER SERVICE NO. 110

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



*Extension table slides 3½" 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.*

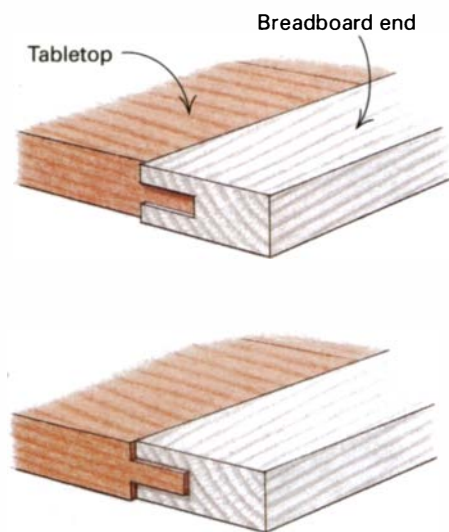
The new Bosch 10" slide compound miter saw cuts down any thought of compromise. With all the best features of any saw rolled into one, it's sure to be the envy of the neighborhood you're building.

BOSCH



ENGINEERED FOR PERFORMANCE™

Tabletop won't stay flush with breadboard ends



Wood expands and contracts across the grain with changes in humidity. As a result, tabletops with breadboard ends often will not line up evenly.

In recent years, our shop has built a number of tables with breadboard ends. We've had no problems with this construction—until now. Recently two tables, one of maple and one of cherry, have come back to haunt us. The wood that runs the length of the table has swollen significantly so that its edge is proud of the breadboard ends. What should we do to remedy this, and what can we do to avoid this problem in the future?

—Michael McHugh,
Albuquerque, N.M.

Garrett Hack

replies: The problem you describe is not really a problem at all, but is typical of

Keeping track of seasonal wood movement can help predict how breadboard ends will fit over time. A simple approach is to record changes in width on a sample board.

breadboard ends—rarely are the ends and the edges of the tabletop in exact alignment. The length of the end pieces doesn't change, but the tabletop expands and contracts with changes in humidity. A finish will slow this process but won't stop it. Considering all of the benefits of breadboard ends, this misalignment is a small price to pay. You may have to educate your clients, so they'll understand that if they want a piece of furniture made of solid wood, movement comes with it.

To minimize this movement, choose the wood for your tabletop carefully. Using a stable wood will help, as will making sure it's quartersawn (that's because wood always moves less radially than it does tangentially). Cherry is a better choice than hard maple. Here in Vermont, a 35-in.-wide cherry tabletop might move about $\frac{1}{4}$ in. in width seasonally, or $\frac{1}{8}$ in. to either side of the top (the breadboard ends should be pinned at their centers).

To keep track of wood movement, I find it helpful to keep a few wide boards of different species in my shop and measure their widths over the year. Then if I am building a table in, say, March, I can refer to my sample boards and adjust the pieces accordingly. In this case, the lumber would be close to its minimum moisture content (after the winter's heating), so I would cut the breadboard ends a bit longer than the top is wide. The tabletop will be proud of the breadboard ends part of the year and shy of the ends part of the year. [Garrett Hack farms, writes and builds furniture in Thetford Center, Vt. He is the author of *The Handplane Book*, published by The Taunton Press.]

How square is square? Comparing diagonals to square a carcass

Is there a rule of thumb for an allowable difference when comparing diagonal measurements? For example, if one diagonal is 80 in., how much variation can there be in the second diagonal? One-tenth of 1% of 80 in., for example, is 0.08 in., or a little less than $\frac{3}{32}$ in. Is that an acceptable deviation?

—Werner Steinle, Roanoke, Va.

Peter Korn replies: The appropriate limits of precision vary according to the

nature of the project and, of course, the extent of your compulsiveness. From the front, a dresser with drawers or a cabinet with inset doors should be "exact," though this is an elusive condition. Over a diagonal of 80 in., I wouldn't want to be off more than $\frac{1}{16}$ in. There is often more leeway, however, when looking down at a carcass from the top. Picture a kitchen cabinet with doors and adjustable shelving. If its diagonals are off $\frac{3}{32}$ in. over 80 in., who's going to notice?

The steps that follow can affect how square an assembly must be when it's being glued up. For example, a traditional drawer may be squared up when you slide the bottom panel in from the rear. Similarly, you might improve the squareness of a dresser when you attach its back or top.

When I think about appropriate levels of perfection regarding furniture, I try to remember that I'm working with wood, not metal or plastic. It moves on its own, shrinking, expanding, cupping. What makes great work is not the accuracy of a machinist, but rather the trace of the human hand and heart on the work. [Peter Korn is the director of the Center for Furniture Craftsmanship in Rockport, Maine.]

Replacing damaged, delaminated veneer

I am refinishing some antique furniture that has walnut veneer on the edges and panels. Some of the veneer is in very poor shape and will have to be replaced. How do I remove this veneer? And how should I reattach it? I was planning to use the hot iron method. Also, with all the walnut available then, why would veneer have been used?

—George M. Floyd, Wynnewood, Pa.

Roland Johnson replies: Removing the veneer from your antique furniture should be relatively easy. Most likely, the veneer is held on with hide glue, which is quite sensitive to heat and moisture. Simply heat the veneer using a damp cloth and a clothes iron, and lift the veneer away from the substrate with a putty knife. Do a small section at a time, and be careful not to use a soaking wet cloth or too much heat when removing the veneer from an edge. If you do, you might loosen the adjacent veneer. If the

Classic Edition Unisaw
 Manufactured by Delta Especially for
STEVE QUAYLE

Very limited quantities of this machine will be made right here in the USA, and each will carry the personalized name plate of its owner. Namely you.

A 50-tooth ATB blade is standard on the Classic Edition Unisaw. It's covered by a lifetime warranty and two free re-sharpenings.



We invented it. And today we can provide parts for almost every Unisaw built since 1937. Some of you might ask: "Why tamper with success?" We didn't tamper. We just created a workhorse of a different color.



Model #36-800

The Great White comes with a 50" commercial-duty Biesemeyer® Fence, right extension table and steel support legs.

Great White.

GREAT WHITE
\$1599
WITH REBATE

EXTRA VALUE

This price includes nearly \$300 worth of "extras" at no cost to you.

From August 1 through December 31, 1997, you can get the Classic Edition Unisaw® at a great price—just \$1,599 after a \$100 Delta rebate.



Quality and precision are never optional with Delta. Every single arbor is flange-faced *after* assembly to reduce run-out. An extra step that other manufacturers don't bother with.

Proud sponsors of *The New Yankee Workshop* on PBS.



Introducing the Classic Edition Unisaw. The "Great White" as some folks are calling it. At a great price. A price that includes nearly \$300 worth of "extras" at no cost to you. For the name of your nearest participating dealer call Delta International Machinery Corp., 800-438-2486. www.deltawoodworking.com

READER SERVICE NO. 40



adjacent veneer should lift, you can reattach it by heating it and pressing it down with a block of wood. The old glue will re-adhere as it cools.

Be aware, too, of how the surface veneer meets the edge veneer. Often, the edge was veneered first, with the surface veneer overlapping it. Be careful not to tear or cut the surface veneer when removing the veneer from an edge. For this work, I've modified a thin knife with a flexible blade by rounding its corners and tip. Keep the knife clean as you work, because a buildup of glue on the knife will greatly slow your progress.

If the veneer will not loosen with the application of heat and moisture, it is held down with an adhesive other than hide glue. This calls for more drastic measures. To remove the veneer from an edge, I usually resort to a very sharp chisel, carefully paring the veneer from the substrate. Although care must be taken not to cut into the substrate, this is fairly easy to avoid because there's a glueline between the veneer and substrate that will help guide your chisel. Sharpen your chisel frequently—the glue will really do a number on the cutting edge.

Your best bet with large flat panels is to take them to a good-sized cabinet shop with a thickness sander. Many of them rent time for a reasonable fee.

Matching new veneer to old can be a challenge. Old veneer is usually quite a bit thicker than the veneer available today. There are a few specialty veneer suppliers that stock thick veneer, but it's usually available only in common species. One such company that I've bought from is Certainly Wood (11753 Big Tree Road, East Aurora, N.Y. 14052; 716-655-0206). The last time I checked, they did stock walnut veneer $\frac{1}{16}$ in. thick. Most veneer being produced today is less than half that thick. If you can't find matching veneer that's as thick as the old veneer on your furniture, you'll have to sand the old veneer down to the new. Just be careful.

To attach the new veneer, I'd use a veneer press if you have access to one, or use hot hide glue and a veneer hammer. The iron technique may work, but I've not used it, and I've had no problems with the traditional techniques in 20-odd years of furniture repair and restoration.

As to why the piece was veneered in the

first place, it was most likely a cost-saving measure. Using less than premium lumber for the substrate, whether of the same species as the veneer or not, would save the manufacturer a good deal. And the veneer would ensure a piece of furniture that looked great. On wide surfaces, such as a tabletop, using narrower boards for the substrate also provided greater stability and reduced the likelihood of warpage.

[Roland Johnson restores antiques and builds reproduction furniture and architectural millwork in his one-man shop in St. Cloud, Minn.]

Eye protection when spraying lacquer

Much has been written about the need for respiratory protection during wood processing and spray finishing. I am concerned, however, about the hazard of absorbing these materials through the eyes. Even when wearing an organic vapor respirator, I occasionally notice tired, burning and red eyes and even a slight "buzz" when spray finishing. Could I be absorbing lacquer thinner through the mucous membranes of my eyes? Should I be taking greater precautions?

—David Otten, Chagrin Falls, Ohio

Chris Minick replies: I'm not a medical doctor, so I don't know whether it's possible to absorb harmful quantities of volatile solvents such as lacquer thinner through the eyes.

I assume that if you are using a solvent-based finish like nitrocellulose lacquer, you have a spray booth. If your eyes are burning and red and you feel light-headed or disoriented while you spray, your spray booth is not working as it should.

The first thing I'd do is replace the overspray arrestor filters. Chances are they're clogged, causing a decrease in airflow and subsequent buildup of vapors in the spray booth. While you're at it, vacuum out the chamber behind the filters, clean and lubricate the draft flapper doors and check the blower-motor belt tension. If spray-booth maintenance doesn't alleviate the problem, then you either need a bigger spray booth or a full-face respirator.

I find full-face respirators hot and uncomfortable, especially since I wear

eyeglasses. A powered, air-purifying respirator (PAPR) may be a better alternative. PAPRs supply a constant stream of purified air to the face mask via a small, battery-powered air pump.

Constant air pressure prevents solvents from entering the mask. PAPRs are not inexpensive. Expect to pay up to \$500 for a good one (for more on respirators, see the article on p. 64). Personally, I would spend the money to upgrade the exhaust fan in my spray booth instead.

[Chris Minick is a finish chemist and amateur woodworker in Stillwater, Minn.]

Information on Faye & Egan hollow-chisel mortiser

I recently purchased a Faye & Egan hollow-chisel mortiser, and I need some information that the dealer was unable to supply. What lubricants should I use in the bearings and transmission? And why will it accept only $1\frac{1}{32}$ -in.-dia.

shank bits? —Chip Worrell, Zirconia, N.C.
Robert Vaughan replies: The bearings in your machine, assuming they're ball bearings, can be lubricated with regular automotive wheel-bearing grease. The transmission should work fine with 90-weight gear oil.

As for your mortiser accepting only $1\frac{1}{32}$ -in. bits, I have to surmise that there's a bushing stuck in the machine. Some old mortising machines used conventional chucks to hold the bits; others used bushings secured by setscrews. For those that used bushings, a bushing bored to the diameter of a particular bit's shank is required to mount the bit in the mortiser. Assuming there is a bushing stuck in your mortiser, you'll need to remove it and then buy (or have machined) bushings to accept the bits you wish to use.

If the $1\frac{1}{32}$ -in.-dia. hole isn't in a removable bushing, you'll need to have a bushing or bushings made to fit the bits you'll be using. Incidentally, the chisels for hollow-chisel mortisers are generally held in place with the same type of bushing and setscrew.

[Robert Vaughan tunes, repairs and restores woodworking machinery in Roanoke, Va.]

Dating Delta equipment

A few years back, I bought a used drill press with a label that reads "Delta Mfg.

FLIP THE SAW. NOT THE WORK.

Now, you don't have to pick up your material and flip it around to make the bevel cut you need. The new DW708 Sliding Compound Miter Saw bevels both left and right. And, to end frustration with out-of-square corners, the DW708 bevels beyond 45° to 48° in both directions. With unmatched vertical and horizontal capacity, the DW708 makes cuts other miter saws can't. The tall fence allows you to cut molding up to 5-1/4" standing vertically against the fence.

And, the saw glides smoothly on dual vertical rails utilizing a linear ball bearing and bronze guides to easily cut stock up to 12" wide. The easy-to-see stainless steel miter scale has eleven positive stops and an unprecedented cam-action miter locking system. It's not just a miter saw. It's a DEWALT. For more information, call 1-800-4-DEWALT.



On the job with
Kevin Knight & Co.
Columbus, Ohio.



Div. of Rockwell Home Craft." The drill-press head casting is stamped with the marking "HDP 125," and the serial number is A12507. Is there any way to tell the approximate age of this tool? Who could I contact to learn more of the history of the Delta/Rockwell/Home Craft product line?

—Neil Howard, West Chester, Pa.

Robert Vaughan replies: Your drill press is an 11-in., sleeve-bearing, entry-level model made for the home workshop. Your machine was probably made in the early 1950s. Delta still has most of the parts available for this machine. For information on this line, you can call Delta (800-438-2486).

Age and value of jointer plane

I recently purchased a used No. 7 jointer plane at an auction. The word "Bailey" is cast on the upper side of the sole, forward of the hand knob. Behind the frog, the following is cast in the upper side of the sole: "Pat'd Mar-25-02 Aug-19-02 Apr-19-10." And near the heel on the top side of the sole, "No. 7" is cast. The sole is grooved. The front knob appears to be walnut, and the rear handle is made of a deep red-colored wood that I suspect is rosewood. What can you tell me about it?

—Anthony Fudge, Snow Hill, Md.

Garrett Hack replies: Stanley made a line of Bailey bench planes from the smallest No. 1 to the longest No. 8. The Bailey name cast into the toe of these planes honors Leonard Bailey, the inventor of the original design, which was later acquired and manufactured by Stanley. Although Bailey didn't actually invent cast-iron planes, he did develop features such as easy adjusters for the iron (both depth and lateral) and a securely locking lever cap.

Not all Stanley bench planes have the Bailey name cast into them, but they are all basically the same design. The numbers cast into the body are patent dates for design improvements. Because the last date is April 19, 1910, your No. 7 jointer plane was made some time after this date and probably before the next improvement (a kidney shaped hole in the lever cap), which was added on July 18, 1933.

The front knob and rear tote are likely

rosewood, which is typical of a Bailey plane of this vintage. Rosewood can vary considerably in color.

The grooves machined on the underside of your plane give it what is called a corrugated sole. Stanley and others used this technique to reduce friction between the sole and the surface of the wood.

Your plane is quite common, although only about one in three is corrugated. For this reason alone, it once would have been worth more than a smooth-soled plane. Today, prices are similar for both. Your plane's value—somewhere between \$50 to \$100—depends on its condition. The closer the plane is to complete and unworn and the more of the original iron that's left, the more valuable the plane is. With an original box, such a plane could be worth well over \$100.

Using exotic woods for coffee cup lids

I've made a number of lathe-turned lids for coffee mugs, and I'm getting ready to make some more. I'm concerned, though, that some of the woods I'm using—generally tropical, exotic hardwoods—could be harmful if their oils leach into the coffee.

A search of past issues of your magazine has turned up a number of articles on toxic woods, but all these articles discuss woodworking hazards such as dust inhalation and dermatitis. And articles on finishes for food-related uses don't help, because I leave the lids unfinished. Any thoughts?

—Alan Walker, Ventura, Calif.

Jon Arno replies: Making coffee mug lids out of exotic, tropical species might be a risky pursuit. If a particular wood does happen to contain a potentially toxic compound, often an alkaloid, three factors tend to make it all the more dangerous when used in contact with food: heat, moisture and time. Exposing food to a potentially poisonous wood in the presence of heat and moisture, especially over a long period of time, maximizes the amount of toxin that will leach out of the wood and permeate the food.

At the very least, there is a good chance that many of these woods will adversely taint the flavor of the coffee. With some woods, the result could be far worse,

especially if the individual consuming the coffee has an extreme sensitivity to the toxin.

Members of the rosewood genus, *Dalbergia*, and other temptingly attractive species such as mansonia, teak, Gonçalo alves, peroba rosa and imbuia would be very poor choices to use in this application. The problem is there are scores if not hundreds of other woods that could be just as dangerous. The market is loaded with woods that have not yet been thoroughly researched to determine their toxicity.

A much safer approach would be to turn the lids out of a well-known and chemically friendly wood such as maple. You can enhance the lid's appearance by applying an exotic veneer only on the top where it will be isolated from the heat and moisture inside the mug. [Jon Arno is a wood technologist and consultant in Troy, Mich.]

Tiling a tabletop

I've made a few tile-top coffee tables and end tables using 3/4-in.-thick plywood with a bonded-paper finish on one side, standard 4-in.-sq. countertop tiles and commercially available ceramic tile adhesive. So far, no tiles have come loose, but I wonder if I'm using the best system for tiled furniture. Also, I have just acquired some handmade Mexican tiles, and would like to know the best way to set them.

—Bob Jeffreys, Pawcatuck, Conn.

Tom Meehan replies: The tabletops you've already tiled will most likely be fine. In most cases (except when left outside), a tile-top table is not subject to a lot of abuse, and standard tiling procedures—using mastic or latex-modified thinset over a plywood substrate—will give you perfectly acceptable results.

Personally, I prefer having a substrate that's 1/4 in. thick, either a sheet of 1/2-in.-thick tile backer board glued and screwed to 3/4-in.-thick plywood or just 1/4 in. of plywood. At the very least, you should prime a plywood surface 24 hours before tiling, using a very good quality latex-modified thinset. This will help prevent the plywood from warping as soon as wet cement or mastic hits it.

Sealing the inside edge of the wooden

PORTER+CABLE

BN125	18 GA. BRAD NAILER KIT 5/8" - 1 1/4"	87
BN200	18 GA. BRAD NAILER KIT 3/4" - 2"	134
CF1400	1 HP PANCAKE COMPRESSOR	192
CF1540	1 1/2 HP SIDE STACK COMPRESSOR	292
CF240	2 HP SIDE STACK COMPRESSOR	314
DA250	15 GA. ANGLE FINISH NAILER KIT 1 1/4" - 2 1/2"	199
DA250A	15 GA. ANGLE FINISH NAILER KIT 1 1/4" - 2 1/2"	234
FN250A	16 GA. FINISH NAILER KIT 3/4" - 2 1/2"	189
FR350	FRAMING NAILER W/CASE 3 1/2" CAPACITY	289
NS100	NARROW CROWN STAPLER KIT 1/2" - 1"	94
NS150	NARROW CROWN STAPLER KIT 1/2" - 1 1/2"	157
100	7/8 HP ROUTER	107
314	4 1/2" TRIM SAW	152
330	SPEED BLOCK FINISHING SANDER	65
332	QUICKSAND 5" RNDM ORB W/STKIT PAD	56
333	QUICKSAND W/HOOK & LOOP, DUSTLS	64
334	QUICKSAND W/STKIT, DUSTLESS	64
335	6" QUICKSAND W/REVERSIBLE PAD	84
340	1/4 SHT FIN SANDER W/DUST PUJ	54
347K	7 1/4" FRAMERS SAW, 15 AMP WITH CASE	249
352VS	3" X 21" BELT SANDER DUSTLESS W/VAR SP.	164
360	3" X 24" BELT SANDER W/DUST BAG	214
360VS	3" X 24" BELT SANDER, VS WITH BAG	228
361	3" X 24" BELT SANDER	203
362	4" X 24" BELT SANDER W/DUST BAG	223
362A	4" X 24" VS DUSTLESS BELT SANDER	223
505	1/2SHT FIN SANDER	138
556	BISC JOINER W/CASE & TLT FENCE	136
690	1 1/2 HP ROUTER	136
691	1 1/2 HP "D" HANDLE ROUTER	162
693PK	1 1/2 HP PLUNGE ROUTER, FIXED BASE, CASE 196	162
693PKX	693PK WEDGE GUIDE & TEMP GUIDE SET	229
697	ROUTER TABLE WITH 1 1/2 HP MOTOR	232
698	ROUTER TABLE ONLY	234
743K	7 1/4" FRAMERS SAW, LEFT SIDED WITH CASE 128	234
5116	OMNI JIG	268
6931	PLUNGE ROUTER BASE	82
7116	NEW 24" OMNIJIG	299
7335	5" RANDOM ORBIT SANDER	134
7336	6" RANDOM ORBIT SANDER	137
7518	3 1/4 HP FIXED BASE ROUTER-5 SPEED	284
7519	3 1/4 HP FIXED BASE ROUTER-1 SP.	252
7538	3 1/4 HP PLUNGE ROUTER-1 SPEED	258
7539	3 1/4 HP PLUNGE ROUTER-5 SPEED	278
7800	DRYWALL SANDER	338
7810	POWER TOOL TRIGGERED WET/DRY VAC	266
9118	PORTA PLANE KIT W/CASE, CRBD BLD	234
9125	3 1/4" PLANNER WITH CASE	139
9444	PROFILE SANDER KIT WITH ACCESSORIES	96
9444VS	VAR. SPEED PROFILE SANDER KIT	112
9737	RECIP TIGER SAW, 9.6A, QUICK CHNG CHUCK 159	159
9830	9.6V CORDLESS KIT W/2 BATTERIES, CASE	144
9862	12V CORDLESS KIT W/2 BATTERIES, CASE	174
9862F	12V KIT W/2 BATT, CHARGER & FLASHLIGHT	184
9863	12V BACK HANDLE KIT W/2 BATTERIES	178
9872	14.4V CORDLESS DRILL KIT W/2 BATT. & CASE 198	198
9873	14.4V BACK HANDLE KIT W/2 BATTERIES	206
97310	LAMNT TRIMMR KIT W/3 BASES & CS	188
97549	JIG SAW W/CASE & 3 BLADES	139

Panasonic

EY3502EQMKW	12V CORDLESS METAL SAW	286
EY3503FOKW	12V WOOD SAW KIT W/2 BATT	249
EY6100EQKW	12V PREDATOR CORDLESS KIT W/KEYLESS CHUCK, 2 IRONMAN BATTERIES, 15 MIN. CHARGER & CASE, VSR	178
EY6230FOKW	15.6V CORDLESS KIT COMPLETE	208

Jorgensen

ITEM	JAW LENGTH	OPEN CAP	OUR PRICE EACH	BOX OF 6
------	------------	----------	----------------	----------

STYLE 37	2 1/2" THROAT 1 1/4" x 3/4"			
3706	6"		6.00	32.50
3712	12"		6.50	36.95
3718	18"		7.50	40.75
3724	24"		7.95	43.50
3730	30"		8.80	47.75
3736	36"		8.95	53.95

PONY CLAMP FIXTURES			
#50	3/4" BLACK PIPE CLAMPS	8.10	
	BOX OF 12 \$91.95		
#52	1/2" BLACK PIPE CLAMPS	6.95	
	BOX OF 12 \$74.75		
PONY SPRING CLAMPS - 3201HT 1" - 1.35			
3202HT 2"	1.89	3203HT 3"	3.99

Milwaukee

0415-21	12V KYLS CDLS DRILL KIT W/2 BAT, CS	189
6490-6	10" MITER SAW	264
6494-6	10" CMPND MITER SAW W/CARB BLADE	314
6496-6	NEW! 10" SLIDE COMPOUND MITER SAW	565
6497-6	10" SLIDE COMPOUND SAW W/ACCS	629
6537-22	SUPER SAWZALL/QUICKCHANGE CHUCK	175

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 DAWIE RD., DAWIE FLORIDA 33317

FREE FREIGHT & SAME DAY SHIPPING

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

BOSCH

1003VSR	3 1/2" VSR DRILL W/KEYLESS CHUCK	76
1194VSR	1/2" VSR, 2 STAGE HAMMER DRILL	148
1274DVS	3" X 21" VS DUSTLESS BELT SANDER	168
1275DVS	3" X 24" VS DUSTLESS BELT SANDER	213
1276DVS	4" X 24" VS DUSTLESS BELT SANDER	228
1295DH	5" RANDOM ORBIT SANDER	82
1370EVS	6" VS DSTLS RNDM ORB SNDR	246
1584VS	CLIC BARREL HANDLE JIG SAW, VS	142
1584VSW	1584VS JIG SAW W/CASE & 10 BLADES	159
1587AVSK-50	50TH ANNIV. JIGSAW KIT W/13 BLADES	156
1587DVS	DUSTLESS VAR. SPEED JIG SAW	177
1587VS	TOP HANDLE JIG SAW, VAR SP	142
160A	1 3/4 HP ROUTER W/CASE & ROUTER PAD	144
1609AKX	DELUXE INSTALLERS KIT W/4 BASES	229
1613EVS	2 HP VAR SP PLUNGE ROUTER	198
1613EVSK	1613EVS W/RA1051 DELUXE EDGE GUIDE	208
1613EVSKX	1613EVS, EDGE GUIDE, TEMP GUIDE KIT	229
3107DVS	5" RANDOM ORBIT SANDER, VS	98
3107DVSX	5" RANDOM ORBIT SANDER WITH CASE	114
3725DVS	5" DUSTLESS VS RANDOM ORBIT SANDER	144
3727DVS	6" DUSTLESS VS RANDOM ORBIT SANDER	149
3272AK	3 1/4" PLANNER KIT WITH CASE	119
3296K	3 1/4" PLANNER KIT WITH CASE	178
3310K	12V CRDLS HANDLE W/2 BAT, CS & CHR9	174
3610K	14.4V CDLS DRILL KIT W/2 BATT	194
3915	10" SLIDE COMPOUND MITER SAW	538

BIESEMEYER

78-900	50" COMMERCIAL FENCE SYSTEM	324
78-930	28" HOME SHOP FENCE SYSTEM	244
78-931	40" HOME SHOP FENCE SYSTEM	254
78-935	52" HOME SHOP FENCE SYSTEM	274
78-985	T-SQUARE CUT OFF SAW STOP	74.95

SKIL

H077	7 1/4" WORM DRIVE CIRCULAR SAW	159
H077M	7 1/4" MAGNESIUM WORM DRIVE SAW	189
HDD65-02	BISCUIT JOINER	134
3400	10" TABLE SAW W/CARB BLADE & STAND	198

PERFORMAX PRODUCTS, INC.

16-32 PLUS	16"-32" BENCH DRUM SANDER	899.00
22-44 PRO	22" PRO DRUM SANDER	1799.00
SUPERMAX 25x2	25" DUAL DRUM SANDER	3299.00
SUPERMAX37x2	27" DUAL DRUM SANDER	3999.00

INTERNATIONAL TOOL HOLIDAY SUPER SPECIALS

BOSCH Model 1587AVSK-50 50th Anniversary Jigs Saw Kit w/13 blades	PORTER+CABLE Model 693PKX 1 1/2 HP router w/2 base, edge guide, template guide kit, & case	DELTA Model 22-560 12 1/2" Portable Planer	freud Model J5100 Biscuit Joiner	DEWALT Model DW991K2 14.4V 3/8" Cds Drill with 2 batteries, charger, & steel case	HITACHI Model C10FS 10" slide comp. miter saw
\$156.00	\$229.00	\$389.00	\$94.00	\$208.00	\$688.00 after rebate

SENCO

SKS	NARROW CROWN STAPLER	274
SLP20	BRAD NAILER W/CASE 5/8" - 1 5/8" CAP	278
SFN40	FINISH NAILER 1 1/4" - 2 1/2" CAP	389

HITACHI

C75BK	7 1/4" CIRCULAR SAW WITH CASE	102
C8FB	8 1/2" SLIDE COMPOUND MITER SAW	456
C10FC	10" COMPOUND MITER SAW	194
C10FS	10" SLIDE COMPOUND MITER SAW WITH \$50 FACTORY REBATE	738
M12V	3 HP VAR SPEED PLUNGE ROUTER INCLUDES \$15 FACTORY REBATE	238
NR83A	FULL HEAD STRIP NAILER, 2 - 3 1/2" CAP	388
P20S7	3 1/4" PLANNER	79
S875	3" X 21" SPEED BELT SANDER	139
TR12	3 HP PLUNGEROUTER	158

POWERMATIC

13	6" X 89" EDGE SANDER W/3 BELTS	629
14	OSCILLATING SPINDLE SANDER W/3 SPINDLES	295
15	15" PLANNER W/ FREE REPLACEMENT KNIVES	1295
24	2 HP SHAPER W/1/2" ROUTER BIT ATTACHMT	995
44	14" BAND SAW, 1 HP, 1 PH W/3 BLADES	645
54	6" JOINTER W/ENCLSD STAND & XTRA KNIVES	545
60	8" LONG BEJ JOINTER	1775
64	1 1/2 HPT BL SAW W/ACCU FENCE W/CARB BLD	745
64L	1 1/2 HP TBL SAW W/50" ACCU FNC W/CARB BD	845
66	3 HP, 1 PH 10" T.A. SAW W/50" FENCE	1995*
66	5 HP, 1 PH 10" T.A. SAW W/50" FENCE	2095*
73	1 1/2 HP DUST COLLECTR W/CLOTH LOWR BAG	398
75	3 HP DUST COLLECTR W/LOWER CLOTH BAGS	675
84	COMBIN. BELT/DISC SANDER W/XTRA PAPER	445
117017	DRILL PRESS W/MORTISING ATTACHMT	399
3520NEW	WOOD LATHE	3495

*INCLUDES ACCESSORY PACKAGE & \$200 U.S. SAVINGS BOND

RYOBI

AP12	12" PORT. PLANNER W/EXTRA BLADES	369
DBJ50	DETAIL BISCUIT JOINER	68
DC500K	DETAIL CARVER KIT	62
DS2000K	2 SP DETAIL SANDR W/CS & ACCYS	62
HT20VSK	MULTI ROTARY TOOL W/CS & ACCYS	45
ML618	18" WOOD MINI LATHE	199
OSS450	OSCILLATING SPINDLE SANDER	149
SC165VS	16" VS SCROLL SAW	164
WDS1600	WIDE DRUM SANDER	564

BESSEY

BOX OF 5		PRICE (EACH)
K3.512	12" K BODY CLAMP	28.95 30.95
K3.524	24" K BODY CLAMP	31.95 34.95
K3.531	31" K BODY CLAMP	34.95 36.95
K3.540	40" K BODY CLAMP	38.95 41.95
KP	BLCKS FOR USE WITH K BODY CLAMPS	24.95
TG2.506	6" BAR CLAMP, 2 1/2" THROAT	8.95
TG2.512	12" BAR CLAMP, 2 1/2" THROAT	9.95
TG2.518	18" BAR CLAMP, 2 1/2" THROAT	10.95
TG2.524	24" BAR CLAMP, 2 1/2" THROAT	11.95
TG2.530	30" BAR CLAMP, 2 1/2" THROAT	13.45
TG2.536	36" BAR CLAMP, 2 1/2" THROAT	14.95
VAS23	VARI ANGLE STRAP CLAMP	39.00
WS3	ANGLE CLAMP	20.95

NEW LOW PRICE \$168

MSXE-636-2 OSCILLATING TRIANGULAR SANDER

INCLUDES CASE & PAPER ASSORTMENT

FEN TURBO VAC \$248.00

ALRY

0241NK	18 GAUGE BRAD NAILER 3/8" - 9/16" WITH CASE & 5000 NAILS	96
0250NK	18 GAUGE BRAD NAILER 3/4" - 2" W/CASE & 5000 NAILS	160
0232NK	18 GA BRAD KIT 3/8" - 1 1/4" WITH CASE	68
0565T	ANGLE FINISH NAILER 1" - 2 1/2"	202
0262NK	NARROW CROWN 1/4" STAPLER 1/2" - 1" WITH CASE & 5000 STAPLES	103
EZ-1	SHOOTS 1/4", 3/8", 1/2" CRN STAPLES & BRADS, 5/8" CAP, W/CASE & FASTNERS	96
EZ-2	SHOOTS BOTH BRADS & STAPLES	138

Trakita

1912B	4 3/8" PLANER	199
3901	BISCUIT JOINER	204
5007NBK	7 1/4" CIRC SAW W/CS & BLADE	124
6095DWE	9.6V CDLS DRILL KIT W/2 BATT	124
6019DWE	7.2V CDLS DRILL KIT W/2 BATT	95
6213DWA	12V CORDLESS KIT W/2 BATTERIES	169
6233DWA	14.4V CORDLESS KIT W/2 BATTERIES	194
BO5001	5" RANDOM ORBIT SANDER	67
DA3910W	9.6V ANGLE DRILL KIT	178
LS1011	10" COMPOUND MITER	428
LS1013	10" DUAL COMPOUND MITER SAW	566
LS1211	12" COMPOUND MITER	778
NR1900B	3 1/4" PLANER	138

DELTA

\$100 REBATE ON ALL UNISAWS THRU 12/31/97

11-990	12" DRILL PRESS	183
14-650	HOLLOW CHISEL MORTISER	238
17-900	16 1/2" DRILL PRESS, 3/4 HP, 12 SPD	398
22-540	12" BENCH TOP PLANNER	328
22-560	NEW! 12" PORTABLE PLANNER	389
23-710	NEW! SHARPENING CENTER	174
28-185	BENCH TOP BAND SAW	167
31-050	1" BELT SANDER	72
31-080	1" BELT 5" DISC SANDER	88
31-280	6" BELT 12" DISC DANDING CENTER	799
31-460	4" BELT 6" DISC SANDER	124
31-665	6" BELT 7" DISC SANDER	308
31-780	B.O.S.S. OSCILLATING SPINDLE SANDR	193
31-890	12" RADIAL ARM SAW	1599
33-990	10" RADIAL ARM SAW	809
34-182	TENONING JIG	89
36-250	10" SLIDE COMPOUND MITER SAW	498
36-800	GREAT WHITE UNISAW AFTER REBATE	1599
37-070	NEW! 6" VS BENCH JOINTER	264
37-350A	8" PRECISION JOINTER, 1 1/2 HP	1695
40-540	16" VS SCROLL SAW	1188
40-650	Q-3 VAR SPEED SCROLL SAW	489
43-355	HEAVY DUTY WOOD SHAPER	809
46-701	12" VS WOOD LATHE WITH STAND	498

DEWALT

CALL FOR PRICES ON NEW BENCHTOP TOOLS!

DW321K	TOP HANDLE JIG SAW KIT	182
DW359K	7 1/4" CIRCULAR SAW W/CASE	128
DW411	1/4 SHEET SANDER	57
DW420	5" RANDOM ORBIT SANDER, PSA	68
DW421	5" DSTLS RNDM ORB SANDER, VELCRO	69
DW423	5" VS DSTLS RANDOM ORBIT SANDER	93
DW431	3" X 21" DSTLS BELT SANDER VAR SP	183
DW443	6" ROS SANDER VAR SP, VELCRO	139
DW610	1 1/2 HP ROUTER, 9 AMP	147
DW615	1 1/4 HP PLUNGE ROUTER, VAR SP	162
DW621	2 HP VS DSTLS PLUNGE ROUTER	214
DW625	3 HP HVY DTY PLUNGE RTR, VAR SP	258
DW673K	7/8 HP LAMINATE TRIMMER KIT	185
DW675K	PLANNER KIT, 7.2 AMP W/STEEL CASE	159
DW682K	BISCUIT JOINER KIT	192
DW705	12" MITER SAW W/CARB BLADE	357
DW708	NEW! SLIDING COMP. MITER SAW	667
DW733	NEW! 12 1/2" PORTABLE PLANNER	446
DW744	10" PORTABLE TABLE SAW	539
DW788	NEW! 20" VAR. SPEED SCROLLSAW	479
DW935K	14.4V CDLS CIRCULAR SAW KIT	228
DW936K	18V CORDLESS CIRCULAR SAW KIT	244
DW972K2	12V CRDLS KIT W/ BATTERY & CS	178
DW991K2	DW991K2 W/991K2 WITH TWO BATTERIES	208
DW995K	14.4V CDLS DRILL & CIRC SAW KIT	338
DW995K2	18V 1/2" DRILL W/BATT, CHRGR & CS	224
DW995K2S	18V DRILL & SAW COMBO KIT	358
DW997K	18V HAMMER DRILL KIT, 1/2" CHUCK	244

freud

TR215	8 1/2" COMPOUND SAW	238
JS100	BISCUIT JOINER	94
JS102	BISCUIT JOINER W/VAR. ANGLE FENCE	118
FT2000E	3 hp PLUNGE ROUTER W/\$30 REBATE	204
EB100	EDGE BANDING SYSTEM	214
F410	10" X 40T QUIET BLADE	48
F810	10" X 80T QUIET BLADE	73
LM72M010	10" X 24T FLAT TOP RIP BLADE	36
LU82M010	10 X 60T CROSSCUT/RIP BLADE	44

rails will help prevent warpage. And it will prevent the rails from absorbing moisture from the grout line around the perimeter of the tiles.

As for your Mexican tiles, don't use mastic. These tiles often have large voids because of how they cup when fired, so a latex-modified thinset is a much better alternative. Handmade tiles are certainly lovely, with their subtle, uneven coloring, but they're also rather fragile.

Last but not least, you probably should seal your tabletop with a good impregnator-sealer. As always, though, test the finish on a piece of scrap tile first, and let it sit for an hour before sealing the tabletop.

[Tom Meehan owns Cape Cod Tileworks in Harwich, Mass. He's been in the tile business for 25 years.]

What is dewaxed shellac?

I read with interest Chris Minick's reply concerning finishing and gluing problems caused by antioxidants in certain tropical hardwoods (FWW #120,

p. 26). Members of our woodworkers' club have also experienced some of those problems. Chris' suggestion for overcoming the problem left us with a question. What is dewaxed shellac?

—George Finkel, Cranbury, N.J.

Jeff Jewitt replies: Shellac in its raw, unrefined form contains from 4% to 7% wax. This wax detracts from the durability of the dried film, particularly its resistance to heat and moisture. It can also cause adhesion problems with finishes applied over it—especially oil- and water-based urethanes. The wax is present in seedlac, buttonlac and #1 orange (the premixed stuff sold in hardware stores).

Wax is removed from the shellac flakes by dissolving them in alcohol and then filtering the solution. When the remaining solution dries, the result is shellac that is sold as dewaxed or wax-free. Most mail-order woodworking and wood finishing suppliers sell it as dewaxed. Super blond is a type of dewaxed, amber-colored shellac, but other dewaxed shellacs are available ranging from a dark, garnet

color to a bleached white. Dewaxed shellacs have a shorter shelf life than raw shellac, both dry and mixed with alcohol. They're also more prone to blocking, which is a clumping or caking together that occurs in hot, humid weather.

An alternative to purchasing dewaxed flakes is to dissolve regular, waxed shellac flakes in alcohol. After they are completely dissolved, let the solution sit for a few days. With most shellacs, the wax will settle to the bottom of the jar, and you can decant the clear solution at the top into another jar.

In case you're wondering what happens to all that shellac wax that's left after the dewaxing process, it's what you've been putting on your shoes for years.

[Jeff Jewitt repairs, restores and conserves antique furniture in North Royalton, Ohio.]

Do you have a question you'd like us to consider for the column? Send it to Questions & Answers, Fine Woodworking, P.O. Box 5506, Newtown, CT 06470-5506.



HELP PUT A STOP TO MACHINE ACCIDENTS WITH THE EASY OFF™ POWER CONTROL

No matter how careful you are, you risk an accident every time you use your machine. But you can work even more safely if you install the EASY OFF™ POWER CONTROL from ReiTech.

Big, Easy-to-See Control

This big, easy-to-see shut-off mounts right to your equipment. It provides a safer, easier way to control table saws, band saws, shapers, and most types of fixed or stationary equipment.

Hands-Free, Instinctive, 100X Bigger

The EASY OFF™ POWER CONTROL is significantly better than conventional power controls.

- Hands-free shut-off
- 100 times larger than conventional push-button controls
- Key lock for security
- Instinctive knee-jerk reaction
- Easy to install with universal mounting bracket included
- 5 year limited warranty

Call 1-800-385-6161

It only takes an instant to lose control and injure yourself for life. Don't put yourself at risk. Call ReiTech today.

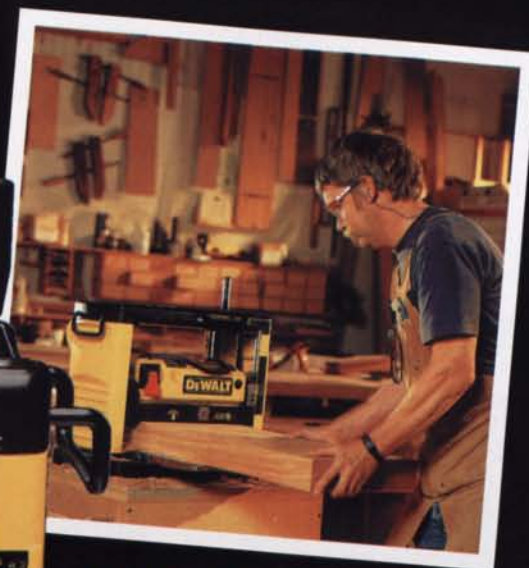
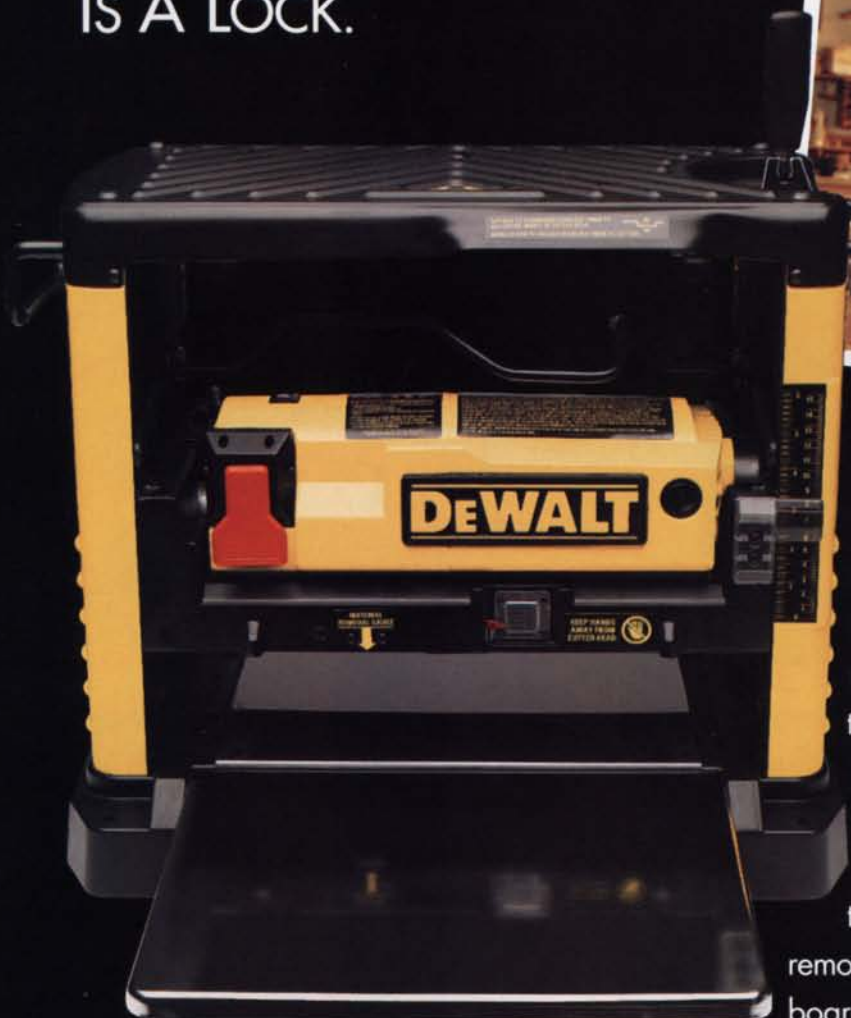


ReiTech

11965 12th Ave. So., Suite 200 • Burnsville, MN 55337
Ph.: 612-895-6161 • Fax: 612-895-8010 • Toll Free: 800-385-6161

READER SERVICE NO. 22

AVOIDING SNIPE IS A LOCK.



On the job with
O.B. Williams Company,
Seattle, Washington.

The exclusive four-column DEWALT Head Lock eliminates the movement that contributes to snipe. Simply push the handle to securely lock the cutterhead against four steel columns. With the cutterhead stabilized, the same amount of stock is removed from the entire length of the board. To further reduce snipe, the

DW733 has large infeed and outfeed tables to stabilize and reduce movement of material passing through the planer. And, unlike other planers, the DW733 has the exclusive DEWALT turret depth stop to quickly and accurately return to pre-set thicknesses. The planer's easy-to-read magnified depth scale measures to 1/32", while a material removal scale measures to 1/64" and a calibrated depth crank measures to 1/16" per rotation. The DEWALT knife changing system features a magnetic gauge to accurately hold the knives in position and free both hands. It's not just a planer. It's a DEWALT. For more information, call 1-800-4-DEWALT.



FROM ARCHITRAVES TO ZEBRAWOOD!!!

The **WOODWORKER'S LIBRARY™** has it all.
 Hundreds of books on all aspects of woodworking.
 Send for your **FREE** catalog.
 Call toll free in USA & Canada 800-345-4447.
 See our complete catalog on the world wide web at
<http://www.lindenpub.com>



LINDEN PUBLISHING

336 W. Bedford, # 107 • Fresno, CA 93711 • FAX (209) 227-3520

READER SERVICE NO. 144

Quality Exotic Wood

»TURNERS«
 Thick Planks for Bowls/Squares
 »CABINET MAKERS«
 Individually Selected Lumber
 for
 Furniture / Boxes / Inlays

Over 70 Species

All Inquiries Welcome...Call or Write

The **BereaHardWoodsCo.**

125 Jacqueline Drive • Berea, Ohio 44017
216-243-4452

Pink Ivory
 Dagamé
 Brazilian Rosewood
 Pear
 Plum
 Burls
 Snakewood
 Bubinga
 Koa
 Satinwood
 Cocobolo
 Padauk
 Rosewood
 Bloodwood
 Ziricote
 Purpleheart
 C. Ebony
 Pau Rosa
 Camphor

"It's a matter of pride for both of us"

Pernambuco
 Mac. Ebony
 E.I. Rosewood
 Bocote
 Curly Maple
 Quilted Maple
 African Ebony
 Zebrano
 Lacewood
 Lignum Vitae
 Osage
 Tulipwood
 Blackwood
 Mahogany
 Jelutong
 Holly
 Wenge
 Goncalo Alves
 Many More...

"It's a matter of pride for both of us"

READER SERVICE NO. 651

FIND CENTER FAST

SIMPLE • ACCURATE • GUARANTEED

This 25' tape has all the standard tape markings, including foot markings, stud layout, and BCI layout, plus a new center-finding scale.

HOW IT WORKS

FIRST MEASURE THE DISTANCE



To order call
1.800.540.6604

VISA/MC accepted

16.95 ea + 4.25 3-day shipping, 48 hrs. / 24 hrs.

Baklund-Hellar Inc. Rt. 1, Box 623, Eastsound, WA 98245

THEN FIND THE SAME NUMBER HERE - THAT'S THE CENTERPOINT.

READER SERVICE NO. 34

Make Furniture
 Make Cabinets
 Make Crafts
Make Money

The **Onsrud Inverted Router** has launched more new businesses than any other single tool. **Find out why.**
 1-800-638-8185



C.R. ONSRUD INC.

Patented/patents pending

• P.O. Box 419 • Troutman, NC 28166 • USA • Fax 704-528-6170 •

READER SERVICE NO. 126

ARTISAN LINE

Model 1140-A
 14" Drill Press
 Floor and Bench

FREE: 4" Vise
 \$32.00 Value

Model 1170
 17" Drill Press

FREE: Mortising Attachment,
 1/4" Chisel and Bit
 \$60.00 Value

FREE: Dust Collector Adaptor,
 Set of Replacement Knives
 \$80.00 Value

FREE:
 1/2" Router Bit Adaptor
 \$57.00 Value

Model 54
 6" Jointer

Model 24
 Shaper

Value Added Package FREE
 with purchase of
 any ARTISAN LINE machine
 Offer ends Dec. 31, 1997

POWERMATIC

Internet Home Page: <http://www.powermatic.com> or E mail us at: powermatic@worldnet.att.net

CALL 1-800-248-0144 FOR YOUR NEAREST POWERMATIC DEALER

READER SERVICE NO. 115

The Largest Selection Of Small Turning Projects

Woodcraft offers the greatest selection of quality pen and pencil kits you'll find anywhere! Not to mention key rings, letter openers, magnifying glasses, perfume applicators, darts, book marks, plumb bobs, etc. Each kit comes complete with detailed instructions. These are ideal projects for beginning to advanced woodworkers!

Check our web site at www.woodcraft.com where you'll find most of our kits along with instructions and tips on pen making.



For A Free Catalog Call: 1-800-542-9115



WOODCRAFT
Helping You Make Wood Work™

Visit one of our stores located nationwide! Call us for the store nearest you.
210 Wood County Industrial Park, Dept. 97PEWWQ4, PO Box 1686, Parkersburg, WV 26102-1686

READER SERVICE NO. 182

Power Feed DRUM SANDER

Quickly Pays For Itself!
Saves hours of tedious hand sanding!



Choose from 26" and 38" Single or Dual Drum Models!

Craftsmen everywhere are using their Woodmaster Drum Sander to save hours of valuable shop time...you can too! In a matter of seconds, you can produce a satin-smooth, absolutely level surface impossible with hand methods. No more low spots, waves or cross grain marks!

SEE WHY WOODMASTER OUTPERFORMS THEM ALL!

Woodmaster's patented design includes infinitely variable feed rate and a superior dust removal system for longer paper life. Call or write today for **FREE Facts** on how you can try this precision machine in your own shop for one full month without risk. Made in U.S.A. 5-Year Warranty. Easy Terms.

1-800-821-6651 ext. DS56

Woodmaster Tools, Inc.

1431 N. Topping Ave. Dept. DS56
Kansas City, MO 64120

READER SERVICE NO. 169

The Professional's Choice

Since 1935, Titebond® has gained a reputation of solving woodworkers' needs... and doing it first.

- 1st ready-to-use, liquid ground-hide glue
- 1st aliphatic wood glue for general applications
- 1st Type II water-resistant glue for exterior use

Today, Titebond offers a complete line for every woodworking application, including:

NEW! Titebond Polyurethane Glue

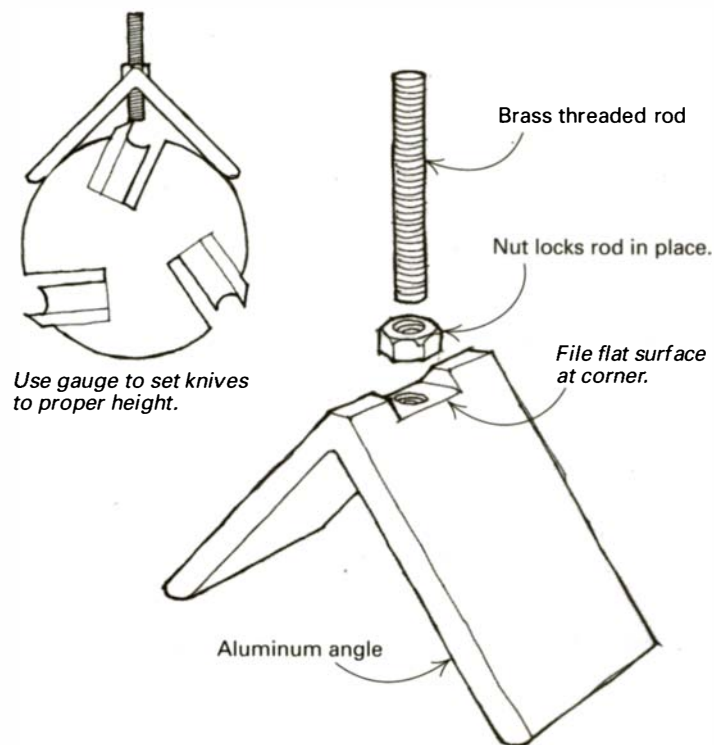
- Versatile—bonds almost anything
- 100% waterproof for exterior projects
- No-run, no-drip formula

To find out where you can purchase Titebond Glues, call our Technical Service Team at 1-800-347-GLUE.



READER SERVICE NO. 1

Knife-setting jig



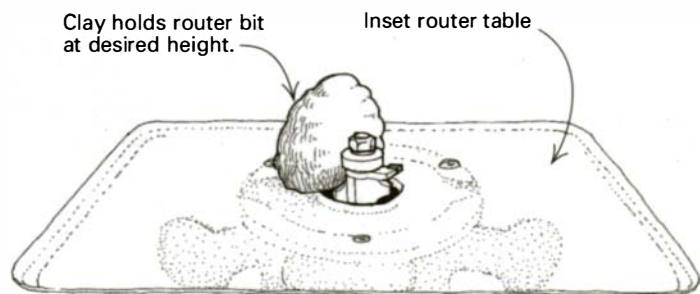
Here is a simple jig for setting planer or jointer knives. This aluminum and brass jig (both soft metals) will not damage the knives during the setting process.

To make the jig, cut a 1½-in.-wide section from 2-in. by 2-in. aluminum angle. File a flat surface on the corner of the angle. Using a drill press, drill through the flat spot, and tap the hole to fit the threaded brass rod. Screw a piece of the threaded brass rod in the hole, adjust the height and lock the rod in place with a jam nut, as shown in the drawing above.

These jigs are quick and inexpensive to make, so you can have one for each machine, fixed at the proper setting.

—Ronald E. Young, Chattanooga, Tenn.

Holding router bits with clay



With my router mounted upside down in a router table, I use a golf-ball size blob of children's clay or modeling compound to temporarily hold a router bit in place while I tighten the collet nut.

The material has just the right consistency to do this job, and it will not leave a residue on the router bit or the table. Pressed onto the router table and against the bit, the clay acts as a third hand to keep the bit from dropping too far into the collet.

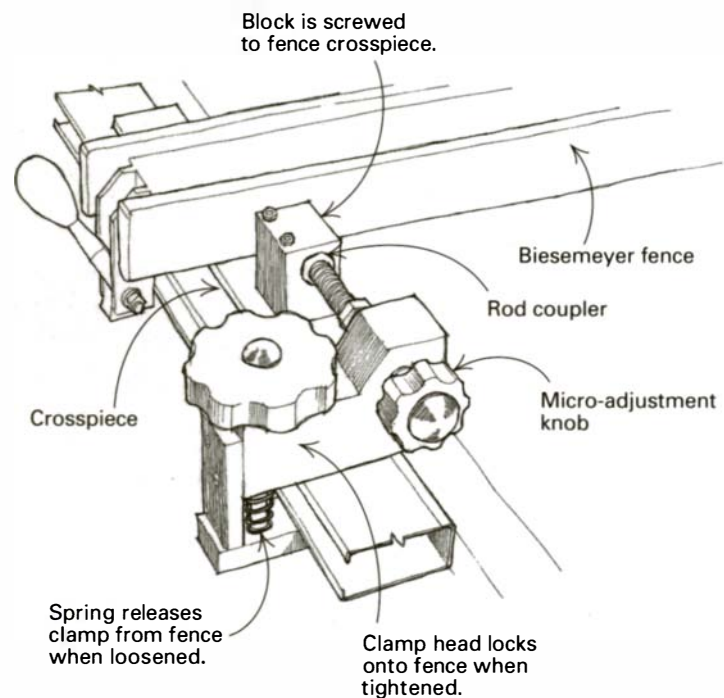
This method gives me better control over making fine adjustments to the bit height than I get by dialing the router up and down. I store the material in a plastic bag to keep it from drying out.

—Bob Kelland, St. John's, Newfoundland, Canada

Quick tip: My shop is heated only when I'm using it. So to keep my paints and stains from freezing, I use an old junk refrigerator heated by a 40-watt bulb. Even when the outside temperature is in the teens, the heat from the bulb keeps the inside of the "defrigerator" around 70°F. I guess the old question "will the light go off when the door is closed?" doesn't apply in this case.

—Jeff Householder, Vincent, Ohio

A micro-adjustment for the saw fence



This micro-adjustment fixture enables you to fine-tune the settings on a Biesemeyer-style tablesaw rip fence. The fixture consists of two main parts: a block that attaches to the cross piece of the rip fence and a clamp head that locks onto the front rail of the fence.

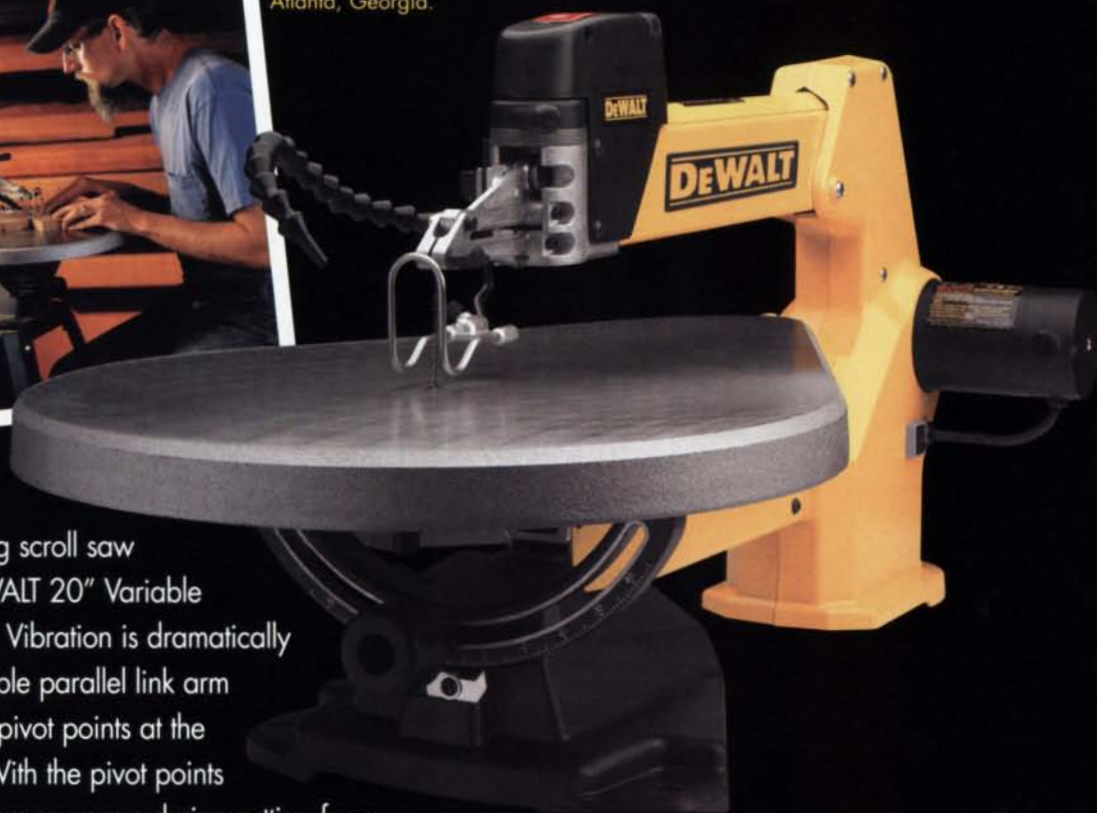
The adjusting device itself is a 6-in.-long, ½-in. carriage bolt with a wooden knob glued to its head with epoxy. The bolt runs through a slightly oversized hole in the clamp head and into a rod coupler that has been press-fit into the block. The length of the rod coupler, as opposed to a standard hex nut, helps prevent the adjusting bolt from binding as it is turned. The range of adjustment is about 1 in., more than enough for most applications.

To use the device, leave the fence-locking lever up, and then clamp the head to the fence. Twist the micro-adjustment knob as necessary to locate the fence where you want it. Then lock the

THE FIRST THING IT CUTS IS VIBRATION.



On the job with
Spaghetti Western Furniture
Atlanta, Georgia.



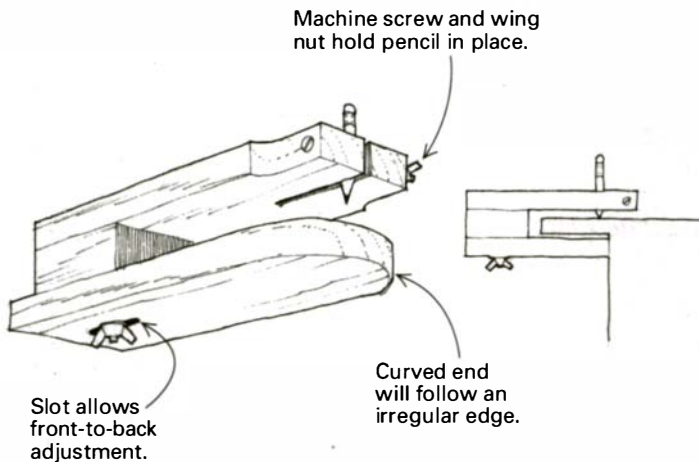
You won't find a smoother operating scroll saw than the new DEWALT 20" Variable Speed Scroll Saw. Vibration is dramatically reduced by a double parallel link arm design which has pivot points at the front of the saw. With the pivot points up front, less of the arm moves during cutting for a smoother and quieter operation. This design also keeps the blade perpendicular to the work, eliminating under or over cutting. To make following a line easier, the DW788 has a fixed-position blade clamp to decrease deflection, while blade changing is made easy with the DEWALT tool-free blade change system. Conveniently, the on-off switch, electronic variable speed, flexible dust blower and blade tensioning lever are all located on the front upper arm so there is no need to reach around the saw for adjustments. An oversized cast iron table provides extensive material support and bevels 45° left and right for shadow boxes or inlays. It's not just a scroll saw. It's a DEWALT. For more information, call 1-800-4-DEWALT.



fence in place with the regular locking lever. The whole setup works smoothly and is a pleasure to use.

—Timothy D. Anderson, Chippewa Falls, Wis.

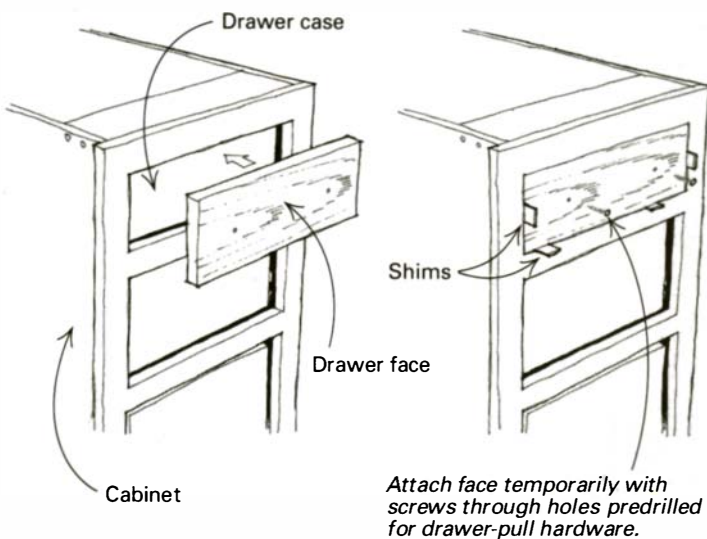
Overhang marking gauge



Originally, I made this jig to mark some laminate slightly oversized for trimming. Then I realized how handy the jig would be for other tasks, like marking a cutting line on the edges of an irregular deck. For a one-time job, it's easy to make up a jig with a few scraps held together with a C-clamp. Or you can make a more permanent adjustable version, as shown in the drawing above.

—Leon G. Wilde, Andover, Mass.

Foolproof drawer face installation



Here's a method for accurately installing applied drawer faces. It replaces the normal method that requires three hands, vigorous cursing and a lot of luck.

The method works as long as you are using drawer-pull hardware that is mounted with screws through the face into the drawer case. Install the drawer case in the cabinet. Drill two holes for

the hardware through the drawer face, and place it against the drawer case, shimming as necessary. (I use strips of plastic laminate for shims.) With the face in position, drive screws through the hardware holes, temporarily attaching the face to the drawer case in the correct location.

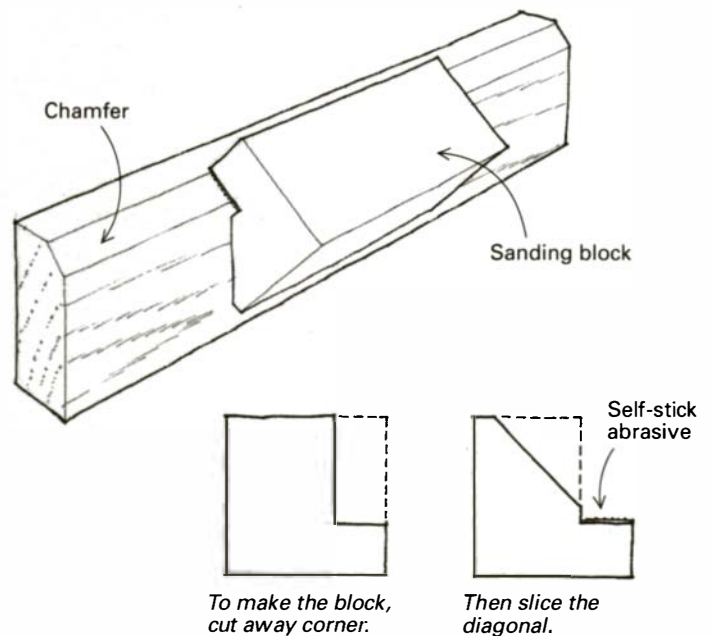
Pull out the drawer, and permanently attach the face with screws through the inside of the drawer case. It's a good idea to clamp the face to the drawer case to prevent any slight movement when you drive the screws. After removing the two holding screws, you can use the predrilled hardware holes as guides to drill through the case for screws that secure the drawer pulls.

—Peter Rippon, New York, N.Y.

Quick tip: Keeping the threads of clamps and woodworking machinery clean and greased is not always practical. Another alternative is to clean the threads with a wire wheel and then spray them sparingly with Sandaro's TopCote product. This is a spray lubricant that leaves a dry, waxy film that stays cleaner than greased threads.

—Robert Vaughan, Roanoke, Va.

Sanding block for small chamfers



Here's how to sand a small chamfer without rounding it over. Make a sanding block by first cutting away one corner of a hardwood block. Then cut through the body of the block at 45°. Add self-stick abrasive paper along the edge of the block, as shown.

—Paul Davis, Renton, Wash.

Rubber mats in the shop

My dairy farm friends contributed a rubber mat to my new workshop. These pads are about 3/4 in. thick. They are made from shredded car tires and are used in dairy barns to protect cows' legs from injury on cold and wet floors. I find that the pads work equally

FORREST'S BUY ONE & SAVE - BUY MORE & SAVE MORE SALE THRU 12/31/97

Buy any sawblade or dado in this ad and save 10% off the sale price! Buy additional sawblade(s) or dado(s) and save even more! 15%-20%! **HOLIDAY SALE!** Call Forrest now for details -- (800) 733-7111 or (973) 473-5236

CHOPMASTER FOR SLIDING COMPOUND & 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 SALE PRICES!

NEW SIZES AVAILABLE

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.

WOODWORKER I - 7 1/4" - 14" For TABLE and RADIAL SAW

This trim and crosscut ALL PURPOSE blade gives scratch-free polished cuts on all materials RIP or CROSSCUT UP TO 2".

- ALL 60T AND 3/32" THIN KERF 30° ATB and 5° face hook on 10" diameter and under. 12" and 14" are 20° ATB 1/8"K.
- DOUBLE HARDER and 40% STRONGER carbide.
- THIN KERF: Saves 1/3 wood loss on each cut, radial or table. Feeds easy when used for moderate rip and crosscut on table saw. Reduces "JUMP IN" for better "PULL CONTROL." Practically eliminates bottom splinter on RADIAL CROSSCUT.
- Totally stops ALL bottom and top splinter on ply veneers in push-cut mode on RADIAL.
- Our STIFFENER STRONGLY RECOMMENDED against outside blade for best cuts. Made & serviced in U.S.A. for your benefit.

TAKE EXTRA 10%-20% OFF SALE PRICES!

14"x60Tx1" 1/8"K	\$224	\$159
12"x60Tx1" or 5/8" 1/8"K	\$198	\$139
10"x60Tx5/8" 3/32"K	\$162	\$129
9"x60Tx5/8" 3/32"K	\$156	\$119
8"x60Tx5/8" 3/32"K	\$150	\$109

NEW!

8-1/4"x60Tx5/8" 3/32"K	\$150	\$109
7-1/4"x60Tx5/8" 3/32"K	\$150	\$109
RYOBI RA200	SEARS TS200	
MAKITA 5008NBA	MAKITA 2708W	
HITACHI PSM8	PORTER CABLE 368-1	

FREE shipping thru 12/31/97
FREE \$45 in sharpening coupons with each order placed by 12/31/97
Mention *Fine Woodworking* to receive discount and free coupons and free shipping
Coupons valid thru 6/30/99 and good on all makes of carbide blade and dado set sharpening.

WOODWORKER II - 6"-7 1/4" TO 14" FOR TABLE & SMALL PORTABLE SAWS

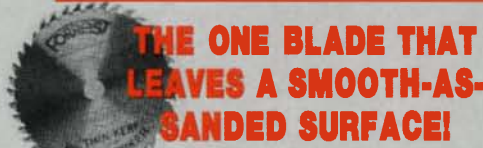
With this one ALL PURPOSE blade you can RIP & CROSSCUT 1"-2" ROCKHARDS and SOFTWOODS resulting in a SMOOTH AS SANDED surface. PLY-VENEERS of OAK and BIRCH will crosscut with NO BOTTOM SPLINTER at moderate feed rates.

- DOUBLE HARD AND 40% STRONGER C-4 CARBIDE
- Ends blade changing
- Ends scratchy saw cuts
- Ends second-step finishing
- Ends cutting 1/16" oversize to allow for RESURFACING
- BUY AND SHARPEN 1 BLADE INSTEAD OF 3

5/8" holes, boring thru 1-1/4" add \$7.50. Larger at Time Basis - Shipping \$4.50

WOODWORKER II	LIST	SALE	10%	20%
14"x40Tx1"	\$215	\$149	\$134	\$119
14"x30Tx1"	\$195	\$139	\$125	\$111
12"x40Tx1"	\$183	\$129	\$116	\$103
12"x30Tx1"	\$162	\$119	\$107	\$95
10"x40Tx1/8" or 3/32"	\$156	\$119	\$107	\$95
30T 1/8" or 3/32"	\$135	\$99	\$89	\$79
9"x40T	\$146	\$109	\$98	\$87
30T	\$125	\$99	\$89	\$79
*8-1/4"x40Tx3/32"	\$136	\$99	\$89	\$79
8"x40T 3/32"	\$136	\$99	\$89	\$79
30T	\$115	\$89	\$80	\$71
7-1/4"x30T 3/32"	\$112	\$69	\$62	\$55
**6"x40T 3/32"	\$136	\$89	\$80	\$71

*NEW for Sears & Makita 2708W Table Saws **New for Saw Boss



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!

Outperformed 36 other premium blades, both foreign and domestic!
WOOD® Magazine test, Sept. '93, pg. 45

save another \$45 to \$90

after using sharpening coupons

TRY A FORREST CARBIDE BLADE TODAY!

FREE \$21 10" ORANGE PLASTIC BLADE RUNNER-CARRIER!
Shipped FREE with 6"-8"-10" Dado sets
Holds up to 10 blades, 5 per side on centerbolt, or dados.

NEW DELUXE DADO-KING

AS LOW AS \$184 NET AFTER USING SHARPENING COUPONS

WORLD'S NO. 1 DADO - NO CHIPS ON PLYS & MELAMINE
Cuts 1/8" to 29/32" wide, in 1/32" increments

C-4 Carbide Tips-4 on each chipper with special negative face hooks. Shims and 3/32 chipper.

	LIST	SALE	10%	15%
6" D. 5/8" Bore NEW	\$299	\$269	\$242	\$229
8" D. 5/8" Bore	\$321	\$289	\$260	\$245
10" D. 5/8" & 1" Bore	\$389	\$349	\$314	\$297
12" D. 1" Bore	\$499	\$449	\$404	\$382

(Bore up to 1-1/4" Add \$25 — Plus \$5.50 S&H)

CUTTING PROBLEMS?

Call the factory for FREE technical help!!

1-800-733-7111
(973) 473-5236

FLASH NEWS!!

Our \$79 - \$89 30T & 40T OUTPERFORMED (E-EXCELLEN) 23 other 40T and 50T premium blades both foreign and domestic on Ply, Melamine, MDF and Oak/Rip!

Fine Woodworking Magazine test, Oct. 96, page 43

After installing your blade and 5 in. stiffener the vibration in my saw went down another 20%. I ran several pieces of hard wood through the saw, both crosscut and ripping, and was amazed at the smoothness. I have like cutting butter, maybe smoother. I have never had a saw blade that cut this smooth.

Rick Price

DURALINE HI-A/T FOR TABLE & RADIAL SAWS PORTABLE & PANEL SAWS

5/8" HOLES. Boring up to 1-1/4" \$7.50 extra. TAKE EXTRA 10%-20% OFF SALE PRICES!
Larger holes-time basis. Shipping \$4.50

Faster feed rates & absolute splinter control. Stops splintering on OAK/BIRCH PLY VENEERS & MELAMINE

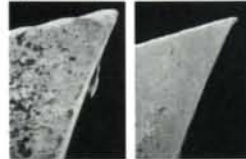
SIZES AVAILABLE	LIST	SALE	SIZES AVAILABLE	LIST	SALE
7-1/4" x 60T x 3/32"K	\$149	\$129	300mm x100Tx1/8" x30mm	---	\$189
8" x 80T x 1/8" & 3/32"K	\$202	\$169	12"x100T x 1-1/8"K	\$253	\$215
220mm x 80T x1/8" x 30mm	---	\$159	14" x 80T x 1"	\$232	\$197
9" x 80T x 1/8" & 3/32"K	\$207	\$179	14" x 80T x 1"	\$266	\$226
10" x 80T x 1/8" & 3/32"K	\$207	\$159	16" x 80T x 1"	\$262	\$223
12" x 80T x 1-1/8" K	\$212	\$181	16" x 100T x 1"	\$294	\$243



Above 1" bore standard

CARBIDE IS THE HARDEST OF THE C-4 GRADES AND 40% STRONGER, NOT WEAKER!
FOR 50% TO 300% LONGER LIFE.

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!

BLADE DAMPENERS-STIFFENERS

FOR BETTER CUTS on all brands of blades, use our large 1/8" DAMPENERS-STIFFENERS against one side.

- Parallel and flat to .001
- Stop vibration, flutter, cutting noise, and blade ring
- Tryable and returnable for full cash refund

4"	\$21
5"	\$24
6"	\$25

7" AND LARGER AVAILABLE

FULL RANGE OF OTHER INDUSTRIAL SIZES
REDUCES NOISE 50% - 75%

WE RECOMMEND OUR FACTORY SHARPENING as some local sharpening creates problems with MICRO-CHIPPED EDGES reducing blade life & cutting quality.
2-4 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 AND FREE SHIPPING MENTION *Fine Woodworking* MAGAZINE.

PHONE TOLL FREE (800) 733-7111
IN NJ: 973-473-5236
FAX: 973-471-3333

Quality is why we're different!



(800) 733-7111 or (973) 473-5236

WESTERN CANADA:
CALL EUROPEAN SHARPENING
403-287-0850
FAX: 403-287-1622

BUSINESS OPEN ACCOUNTS AVAILABLE



FL, NJ, NY Residents Please Add Sales Tax.
SATISFACTION GUARANTEED OR FULL CASH REFUND.
Fine American saw making & sharpening since 1946.
DEALER INQUIRIES WELCOME

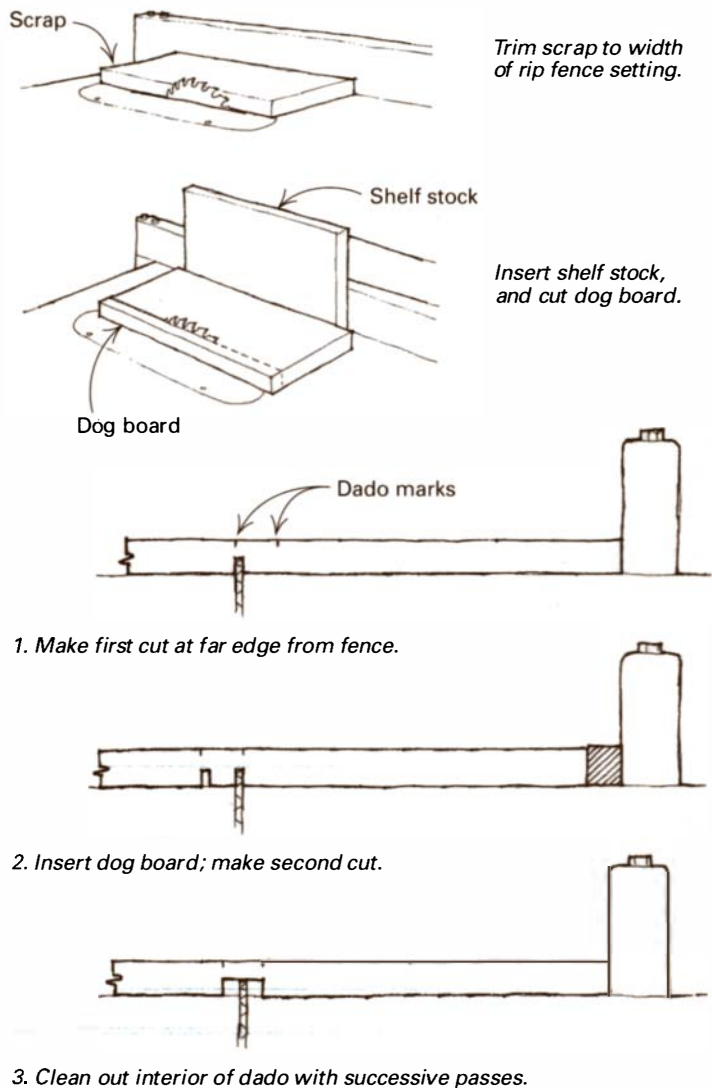
FORREST MANUFACTURING COMPANY, INC. • 457 RIVER ROAD, CLIFTON, NJ 07014 • FAX (973) 471-3333

well for human legs: They provide relief for tired leg muscles and increase the length of time you can stand on your feet. Another benefit is that a cast-iron plane or a spokeshave dropped on the floor will bounce harmlessly, rather than shatter.

If you live in dairy country, the mats are commonly available at farm supply and co-op stores. Elsewhere, call Global Rubber (610-640-4292). They can ship you a mat directly or direct you to a distributor in your area. The mats cost \$25 to \$50 and weigh up to 100 lbs. each, depending on size.

—Richard Bird, Belleville, Ont., Canada

Making dados with a dog board



I devised this method so that I could cut a few dados quickly and accurately without having to adjust a set of dado cutters to an exact width with paper shims. The key to this method is a strip of scrap, which I call a dog board, that shifts the workpiece the exact distance needed to cut both sides of the dado.

To make the dog board, trim a piece of scrap to a random width with the rip fence so that the sawblade cuts a clean surface along

the edge of the scrap. Insert a piece of the shelf stock between the scrap and the fence. Run the scrap through the saw, and save the cutoff. You now have the strip—the dog board—that will move a workpiece over the thickness of the shelf stock, minus a sawkerf.

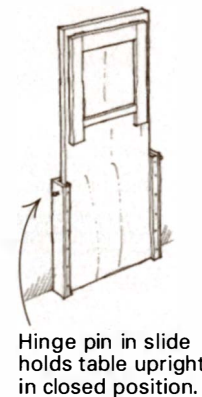
To use the dog board, mark the dado locations on the workpiece, and set the rip fence and blade height for the first cut, the one farthest from the rip fence. Make the cut. Now insert the dog board between the workpiece and the fence, and make the second cut. Nibble out the waste between the two cuts with successive passes. The dado will fit the shelf stock perfectly.

I wouldn't recommend this technique for long production runs. But when you need to cut only three or four dados, it will definitely save you time.
—James Kimbriel, Batavia, N.Y.

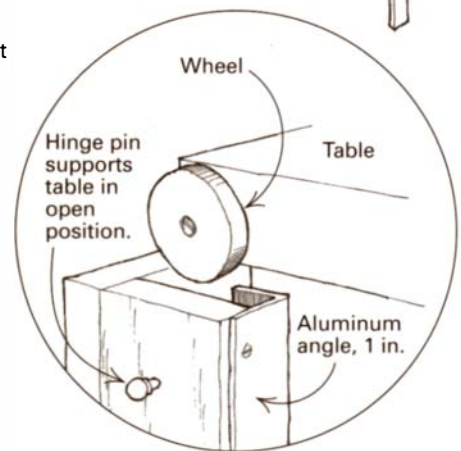
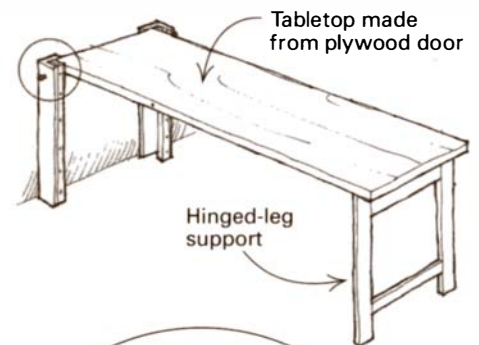
Quick tip: I have several 10-in. sections of railroad track in my shop that I use as anchors for all sorts of chores. They are especially useful at the radial-arm saw, where I use a section to hold down a row of identical pieces of wood for cutting dados. They serve like another pair of hands, and they're more predictable than a shop assistant.
—Ted Welchert, Tucson, Ariz.

Retracting shop table

Closed position



Open position



Hinge pin in slide holds table upright in closed position.

Wheel
Table
Hinge pin supports table in open position.
Aluminum angle, 1 in.

I've been using a retractable table in my small shop. It serves as an assembly platform for cabinets and furniture and as a drawing table. It is large enough to accommodate the full-sized drawings that I use with my projects.

The tabletop is an old flush door (32 in. by 84 in.) fitted into a slide that holds it upright against the wall when not in use. The

FEATURED PRODUCTS

BINKS

HVLP Spray Gun

Use with only 1-1/2 H.P. compressor! Now you don't have to rely on a limited turbine. Great for a wide range of materials. Includes gun and one quart cup, 25 ft. 3/8" air hose with connection and air regulator with gauge. #BKS 98-1121



CALL FOR SPECIAL PRICE!

PORTER-CABLE

18-Gauge Brad Nailer Kit

18 ga., 2" brad nailer kit accepts 3/4" - 2" brad nails. Quick-release nose-piece so you can quickly clear jams without disassembly. #PCT BN200 List Price \$248.00



SUPER SALE \$129.90

BOSCH

1613EVSP 2HP Plunge Router w/ FREE Deluxe Guide & Router Mat

(\$52.67 value).....\$206.90



1615EVSP 3-1/4 H.P. Plunge Router with FREE Deluxe Guide (a \$36.95 value)

.....\$299.00

3310K 12V Cordless Drill Kit w/ Case & 2 Batteries

.....\$176.90

3610K 14.4V Cordless Drill Kit w/ 2 batt., case & charger

.....\$193.90

3170DVS 5" H.D. R/O Sander-Polisher

.....\$94.60

3725DVS 5" H.D. R/O Sander-Polisher

.....\$143.90

3915 10" Slide Compound Miter Saw

.....\$542.90

NEW! 1295DH 5" Swift Sand R/O Palm Sander

.....\$86.50

SKIL

NEW! 1910-02 Scraper/Carver Kit

.....\$94.95



HD2745-04 12V Cordless Drill Kit w/ 2 batt., case & charger

.....\$127.95

HD5660 8-1/4" 13 amp Circular Saw w/ 80° Pro Bevel

.....\$168.00

SENCO

SLP20 Brad Nailer \$268.90

SFN1+ 12" Finish Gun \$339.00

SFN40 1-2" Finish Gun

w/case\$385.00

SKS Med. Duty Stapler

.....\$273.50

SN325+ Framing Nailer

.....\$418.00

SCN40R Roofing Nailer

.....\$448.00

SN60 Full Round Head Nailer

.....\$448.00

PC0701 A9 Palm Sander

.....\$159.00

STANLEY BOSTITCH

BT35B-2KIT 1/2"-1" Brad Tacker

.....\$128.00

BT50B-2KIT 1/2"-2" Brad Tacker

.....\$174.90

S325X-KIT 1/2"-1/2" Fin. Stap

.....\$146.50

N60FN-2KIT 1 1/2"-2 1/2" Finish Nailer Kit

.....\$294.50

RN45B-1 1/2"-1 1/2" Coil Roofing Nailer

.....\$367.90

N80SB-1 2"-3 1/2" Framing Stick Nailer

.....\$348.00

DREMEL

3955 Var. Spd. Moto-Tool Kit with 72 accessories

.....\$81.80

3956 Var. Spd. Tool Kit with 72 accessories and flex

.....\$88.90

7365 HD Flex Shaft Kit

.....\$179.00

290 Engraver

.....\$19.80

SAW TRAX

STM FR552

.....\$995.00

This panel saw offers bevel and depth of cut control along with routing ability. No saw compares in this price range. U.S. Made



WISE-GRIP

AMT 53006 4-1/2" Micro

.....\$7.50

AMT 00506 6" Bar Clamp

.....\$12.95

AMT 0051212" Bar Clamp

.....\$15.45

AMT 0051818" Bar Clamp

.....\$16.70

AMT 0052424" Bar Clamp

.....\$17.95

AMT 0053636" Bar Clamp

.....\$20.55

AMT 550 50" Bar Clamp

.....\$24.65

RYOBI

RYB WDS1600P

16/32" Drum Sander

with FREE stand and 2 rolls of 50" abrasive paper (\$148.00 value) only

.....\$568.90

RYB DBJ50 Detail Biscuit Joiner

.....\$68.90



STOCK YOUR SHOP!™

DELTA

12-1/2" Planer

Features: •Quick change knife system •Exclusive cutterhead-snipe control lock •Easy-to-read English and Metric scale. #DEL 22-560 List Price \$568.00

SUPER SALE \$387.90

New!



DELTA

OPTIONAL TABLE BOARDS

30" FENCE CTE 2731\$23.90

52" FENCE CTE 2747\$28.90

Uni-Saws with Biesemeyer or Uni-Fence

NEW! 36-800 White Classic Edition Unisaw w/50" Biesemeyer Fence\$1599.00*

36-830 3H.P. w/30" Uni-fence\$1399.00*

36-831 3H.P. w/30" Biesemeyer T-Square Fence.....\$1399.00*

36-820 3H.P. w/52" Uni-fence (Special Edition).....\$1499.00*

36-821 3H.P. w/50" Biesemeyer 52" T-Square Fence.....\$1499.00*

* Price after Delta rebate

34-4452 Contractors Saw w/30" Uni-fence and \$200.00 in accessories FREE\$799.00*

34-182 Tenoning Jig\$79.90

11-990P 5SP Drill Press w/Free 17-905 Mortiser Attach. (\$38.90 value)\$192.00

14-650P Hollow Chisel Mortiser w/ FREE 17-908 (1/4") & 17-910 (3/8") Mortiser Bits (\$87 value)\$268.90

NEW! 50-850 1" HP 1200 CFM Dust Collector \$327.90

NEW! 50-851 2HP 1200 CFM Dust Collector \$497.00

NEW! 36-865 Versa-Feeder\$247.90

22-675Y 15" Planer w/50-655 stand (\$260.55 value) \$1144.95*

28-275 14" Open Band-Saw\$497.90*

28-280 14" Enclosed Band Saw 1 HP\$679.00*

28-2802 14" Closed B/S w/ \$225 accys FREE \$779.00*

31-780P Oscillating Spindle Router Bonus Buy: Includes Sanding Spindle Set (\$65.70 Value).....\$218.95

31-780 Osc. Spindle Sander\$192.50

40-540P 16" VS Scroll Saw w/Free 36 asst. blades (\$14.50 value) \$188.90

40-650P Q-3 18" Scroll Saw w/Free 36 asst. blades (\$14.50 value) \$398.90*

37-190 6" Deluxe Jointer\$429.00

37-350A 8" Jointer w/stand\$1498.00*

43-379 Special Edition Shaper\$1349.00

43-505 Router/Shaper\$294.60

50-345 Universal Mobile Base\$47.90

31-280 Sanding Center\$749.00*

BIESEMEYER

DEL 78-900 50" Right 12" Left Fence System. \$329.00

JDS COMPANY

JDS 350 550 CFM Filtration System.....\$259.00

JDS 8-12 1570 CFM Filtration System \$488.00

DEWALT

DW 682K Biscuit Joiner with FREE 100 Biscuits (8 value).....\$198.00

DW621 2 HP VS Router.....\$216.95

DW625 3 HP Router.....\$267.00

DW421 Sander\$69.96

DW 4235" EVS R/O Sander w/H&L & Dust Collector \$88.90

DW 708 12" Cmp. Sid. Miter w/Free Dust Bag (\$18 Value) \$679.00

DW 991KS-2 14.4V Combo Drill & Saw Kit w/case\$339.00

DW 995KS-2 18V Combo Drill & Saw Kit w/case\$377.00

DW 321K 5.8A Jig Saw Kit\$162.00

DW972K-2-RECON Recon. 12V Adj. Clch. Clds w/2 Batt. \$148.95

DW991K-2-RECON Recon. 14V Adj. Clch. Clds w/2 Batt. \$169.90

Makita

LS1211 12" Compound Miter Saw\$769.00

3901 Plate Joiner w/Free100Biscuits (\$8 Value) \$198.90

3612C 3HP Plunge Router with Brake.....\$258.90

9820-2 Blade Sharpener\$214.00

GEO600 Die Grinder\$89.90

6221DWLE 9.6V Crdls Drill, 2 Batt. & Flashlight \$114.95

6213DWAE 12V Cordless Drill Kit\$177.90

6233DWAE 14.4 Cordless Drill Kit\$197.90

Milwaukee

NEW! MLW 6516-22 18V Clds. Sawzall w/2 batt & case\$348.90

MLW 6496-6 10" Slide Compound Saw with FREE Deluxe Folding Stand \$567.00

MLW 6266-6 Orbit Action Jig Saw\$158.00

MLW 0234-1 1/2" Electric Magnum Drill\$133.00

MLW 0235-1 1/2" Electric Magnum Drill (Keyless). \$133.00

MLW 6546 Cordless Screwdriver Kit\$88.50

PL Adhesives & Sealants introduces...

PL POLYURETHANE

Premium Wood Glue

"The Very Best" most affordable glue on the market!
•Solvent Free •Available in 8, 16 and 32 oz. sizes •100% waterproof •Twice as strong •Moisture curing •Odorless VOC compliant •PH neutral stainable paintable •2-3 times coverage



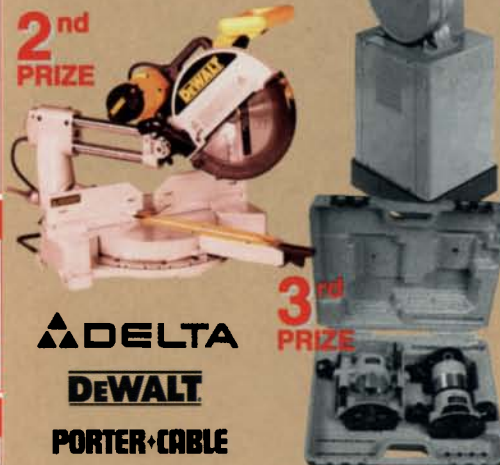
ITEM # AND OUNCES	LIST	SUPER SALE
#PLA 73946089 - 8 oz.	\$8.85	\$5.90
#PLA 73946169 - 16 oz.	\$12.72	\$8.50
#PLA 73946325 - 23 oz.	\$20.97	\$13.95

WOODSHOP GIVEAWAY!

Order Today to Win one of These Fabulous Prizes!*

...AND SEVERAL MORE

- ✓ Delta 14" Band Saw
- ✓ DeWalt 12" Compound Miter Saw
- ✓ Porter Cable Router with Plunge Base



10 WINNERS WILL BE SELECTED!

*FOUR WAYS TO WIN: 1) You will be automatically entered each time you place an order by calling A&I Supply's 800 number. To be eligible for the sweepstakes, your order must be received by 2/10/98. 2) No purchase necessary. Hand print your name, company name, and address (including zip code & phone number) on a 3" x 5" piece of paper and mail in a hand addressed #10 envelope, with first class postage affixed, to: A&I Supply Sweepstakes, 401 Radio City Dr., North Pekin, IL 61554. Limit one entry per envelope. No mechanically reproduced entries permitted. Entries must be postmarked by 2/10/98 and received by 2/17/98. 3) You may enter by making a purchase in person at our showroom during regular business hours by close of business on 2/10/98. 4) You may enter by following all instructions provided on the A&I Web Site at http://www.ai-supply.com. RANDOM DRAWING: Winners will be selected in a random drawing on or about 2/17/98 by an independent judging organization whose decisions are final.



401 Radio City Dr.
Rt. 29 - Auto Row
N. Pekin, IL 61554

FREE SHIPPING!

(On orders over \$50 in Cont. U.S.)

Visit our web site: www.ai-supply.com
Email address: aisupply@mtco.com

To ORDER CALL TOLL FREE:

1-800-260-2647

Ask For Our FREE 164-Page Catalog!

24 Hr. Fax Orders: (309) 382-1420

Limited Quantities & Prices Subject to Availability



table swings down to a comfortable working height that is the same height as my radial-arm saw table. I use the table for additional support when I'm cutting long boards.

I made the slide by attaching aluminum angle to the front edge of two wooden wall brackets. The slide captures 2-in. wheels that are screwed to the back corners of the door, so the door opens from a stowed position smoothly and safely. When stowed in an upright position, the door is locked in place with some pins I borrowed from a pair of door hinges. The hinge pins slide under the wheels to hold the door at the right height when it's in an open position.

—Dave Gillis, Milwaukee, Wis.

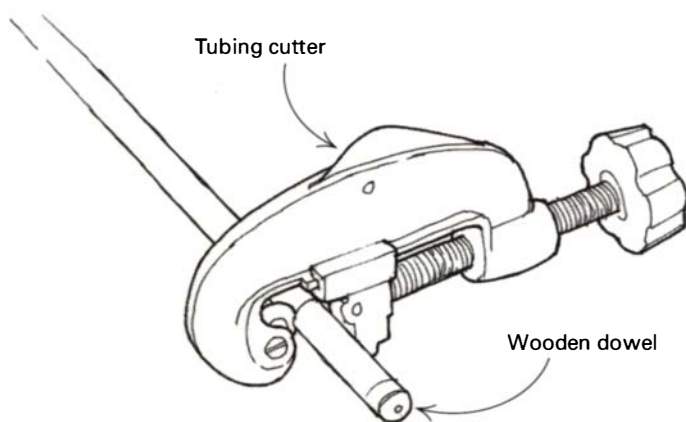
Positioning laminate over contact cement

When you apply contact cement to a large piece of plastic laminate and a substrate, it's a challenge to position the laminate accurately, especially if you work alone. I've found that using metal shelf standards work well. Spaced about 16 in. apart, they keep the laminate from coming into premature contact with the cement-covered substrate (after which it won't move). Yet they are thin enough to allow very accurate positioning.

When the laminate is positioned correctly, press the center down first to keep the piece from shifting. Then lift one end at a time, remove the standards and press the laminate from the center out. Any glue residue on the standards will wipe off easily with lacquer thinner or acetone.

—Daniel Silverman, Wellfleet, Mass.

Cutting dowels with a tubing cutter



I use a tubing cutter (the kind plumbers and electricians use) to cut wooden dowels. Roll the cutter around the dowel a few turns, and snap off the dowel. For cutting just a few dowels, this is faster and more accurate than using a saw. —Howard Moody, Upper Jay, N.Y.

Methods of Work buys readers' tips, jigs and tricks. Send details, sketches (we'll redraw them) and photos to *Methods of Work*, Fine Woodworking, P.O. Box 5506, Newtown, CT 06470-5506. We will return only those contributions that include an SASE.

Sand-Rite Pneumatic Drum/Brush Head Sander

Eliminate Tedious Hand Sanding!

Model No. DB-612
Made in U.S.A.

Call for a **FREE** Catalogue and Price List
800-521-2318

Sand irregular surfaces without loss of shape or detail.

Pneumatic sanding drum. Available in five diameters, 2" to 8". Operator-regulated inflated drum conforms abrasive sleeve to contoured work.

READER SERVICE NO. 11

VENEERING and CLAMPING with VACUUM

VACUUM PRESSING SYSTEMS, INC.
553 RIVER ROAD
BRUNSWICK, MAINE 04011
207-725-0935 / FAX 207-725-0932
VIDEO AVAILABLE

The leader in vacuum technology for woodworking offers a complete line of innovative products for:

- VENEERING
- LAMINATING
- CLAMPING

NEW products include:
Flip Top Frame Presses,
Inflatable Bladders
and Videos

READER SERVICE NO. 51

Groff & Groff Lumber
formerly
Groff & Hearne Lumber, Inc.
Exceptionally Fine
Furniture & Instrument
Grade Woods

PREMIUM WALNUT, CHERRY, CURLY CHERRY,
BIRDSEYE AND TIGER MAPLE
Sawmill Direct • Slabs to 40" Wide
75+ Unusual Native & Imported Species
Matching Flitches • Burls & Turning Blocks
Order 75 Domestic and Imported Species 4/4-16/4

No Order Too Large or Too Small
858 Scotland Road, Quarryville, PA 17566
1-800-342-0001
(717) 284-0001 • Fax (717) 284-2400

National & International Shipping

READER SERVICE NO. 66

**To PIN . . .
... or NOT to PIN?**
WE HAVE THE ANSWER!

TWO-WAY MOISTURE METER
. . . PIN-TYPE OR PINLESS
INSTANT PUSHBUTTON SELECTION
WIDE RANGE 0% - 99% DIGITAL
WOOD SPECIES COMPENSATION
NEW DUAL-MODE MODEL CMT-908
. . . ASK FOR FREE CATALOG OF
ALL OUR MOISTURE METERS

END WOOD WARPING NIGHTMARES
PIN-TYPE & PINLESS MOISTURE METERS FROM \$69
<http://www.icis.on.ca/electrophysics/>

Electrophysics
1-800-244-9908

Box 1143, Station B
London, Ontario
Canada N6A 5K2

ACCURACY FOR SALE!

Carter Band Saw Guides increase cutting accuracy, reduce blade friction and improve overall saw performance. A variety of models to fit saws 14" and larger. Conversion Kits also available for many popular saws.

Carter PRODUCTS CO., INC.
Send \$1.00 for Brochures
437 Spring St., NE • Grand Rapids, MI 49503
(616) 451-2928 • FAX: (616) 451-4330
E-Mail: sales@carterproducts.com
Visit our Website at: www.carterproducts.com

READER SERVICE NO. 63

THE NEW RYOBI DETAIL BISCUIT JOINER

THE DIFFERENCE BETWEEN WOODWORKING AND WOODNOTWORKING.

Staples, dowels, and glue won't do. Standard-size biscuits won't fit.

So how can you make neat, tight, professional joints even in small stock? With Ryobi's new

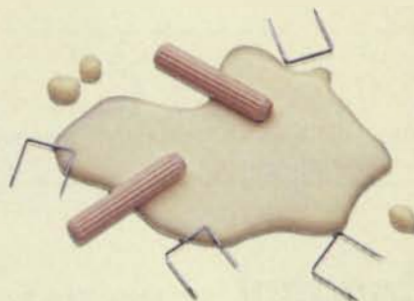
Detail Biscuit Joiner, that's how.



Standard biscuits stick out of small joints, and the mis-match shows, even after you trim the excess.



The new Ryobi Detail Biscuit Joiner uses miniature "Accu-biscuits" for neat, tight, professional joints.



This compact powerhouse cuts smaller slots and uses miniature

"Accu-biscuits™" to fit where standard biscuits don't. And its price

is as small as its biscuits. But the Detail Biscuit Joiner is

big on performance, from its beefy motor to its die-



cast base and see-through fence. So see the



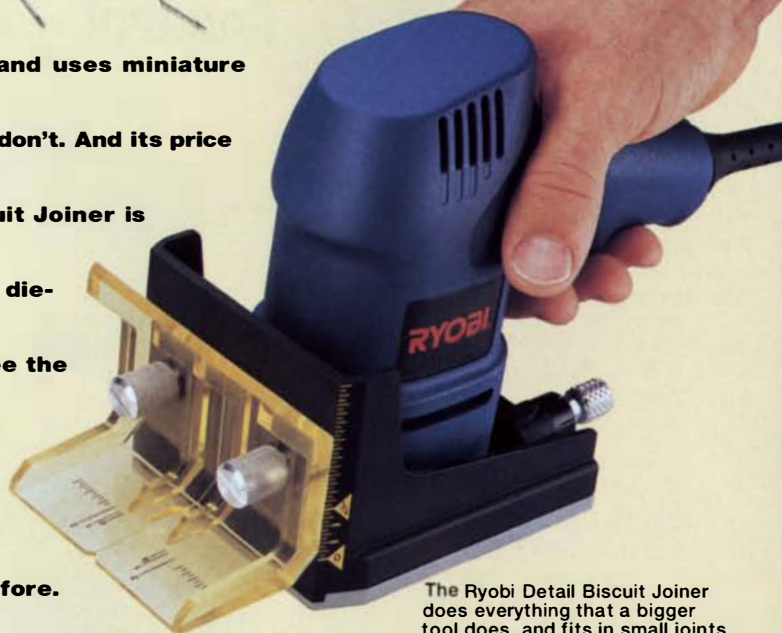
new Ryobi Detail Biscuit Joiner at



your local home center. It'll get

Ryobi "Accu-biscuits"
(actual size).

your wood working like never before.



The Ryobi Detail Biscuit Joiner does everything that a bigger tool does, and fits in small joints where a bigger tool won't.

RYOBI
Exceed Your
Expectations™

Cabinet Hinges

simply the best & always in stock



Horton Brasses Inc.

Nooks Hill Rd.
PO Box 120, dept F
Cromwell CT 06416

860-635-4400 catalog: \$4.00
www.Horton-Brasses.com

READER SERVICE NO. 802

NEW!

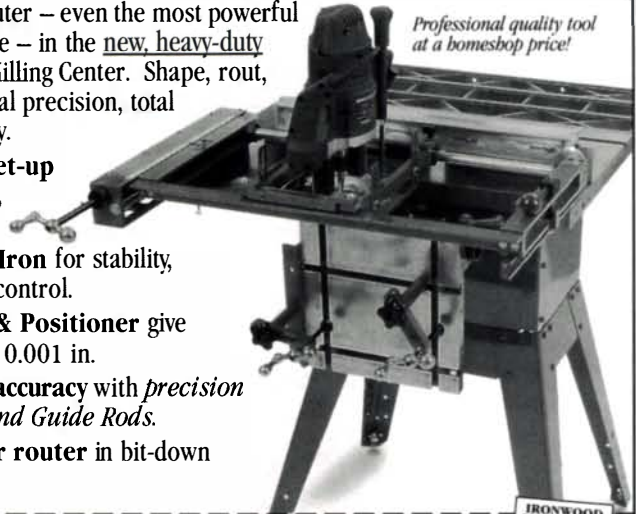
AFFORDABLE, HIGH-PRECISION WOOD MILLING CENTER!

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 in.
- **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 1-888-478-2453

Or write: IRONWOOD MILL•RIGHT Wood Milling Center Ext. 150
1737 Union St. BOX 620, Schenectady, NY 12309

© 1996, Positive Position, Inc.

READER SERVICE NO. 156

BUILD YOUR OWN POWER TOOLS & SAVE!

Gil-Bilt kits include step-by-step plans, full scale patterns, and all the necessary metal parts and components (except wood parts and the motor). Made in America with pride since 1946 by Gilliom Manufacturing, Inc.

For **QUALITY CRAFTSMANSHIP** choose **GIL-BILT** and construct your own:

- ▼ 12-inch Band Saw
- ▼ 18-inch Band Saw
- ▼ 10-inch Tilt/Arbor Saw
- ▼ Lathe/Drill Press Comb
- ▼ 9-inch Tilt Table Saw
- ▼ 6-inch Belt Sander
- ▼ Spindle Shaper
- ▼ Circular Saw Table

Send \$9 per plan, \$25 for any 4 tool plans, or \$2 for brochure. Satisfaction Guaranteed!

GILLIOM MANUFACTURING, INC.
Dept. FW711, P.O. Box 1018
St. Charles, MO 63302
PHONE (314) 724-1812

READER SERVICE NO. 659

General 10" Table Saw w/3hp, Mag Switch 50" T-Square Fence*



\$1,799

100% North American Made

*NOTE: Table board (\$85) and legs (\$49/pair) optional

READER SERVICE NO. 87



2625 Beaver Avenue, Des Moines, IA 50310

1-800-835-5084

<http://www.augsthometools.com>

Your Complete Store For: Power Tools, Hand Tools, Hardwoods, Finishes, Books, Hardware

More General Machinery

- 15" Band Saw (#490-1) 1HP.....\$ 999
- 12" Lathe (#160-2) 1HP.....\$1,349
- 12" HD Lathe (#260-VD).....\$2,695
- 8" Jointer (#480-1).....\$1,699
- 6" Jointer (#1180-1) 1HP.....\$ 849
- 15" Drill Press (#34-01).....\$ 749

AIRMATE 3




SAVE \$30.00

Only \$339

Includes Free Shipping

An excellent Christmas gift!

Excellent for all woodworking jobs which create dust.

Visit our web site! www.mid-web.com/airware

Call for FREE Info 1-800-328-1792

19 years experience **RACIAL HEALTH & SAFETY** selling only →

AIRWARE AMERICA

Box 975, Elbow Lake, MN 56531

READER SERVICE NO. 5

LAUNSTEIN HARDWOODS

Manufacturer & Distributor of
3/8" SOLID HARDWOOD FLOORING

Pre-sanded and ready to finish. Available in
RED OAK, WHITE OAK, ASH, HICKORY, HARD
MAPLE, CHERRY, WALNUT

Choice of 4 widths and 3 grades

Unlimited choice of mouldings
Most orders shipped within 24 hrs

LAUNSTEIN HARDWOODS

384 S. Every Road,
Mason, Michigan 48854

PHONE FAX
517-676-1133 517-676-6379

<http://www.vmail.net/launstein/>

READER SERVICE NO. 159



In a durability test, the competitor's hammer lasted 60 seconds. If you happen to need one for longer than that, buy a Stanley hammer.

This picture tells the story better than any words can. In our overstrike tests, the Stanley hammer outlasted the competitor's brand by a 4 to 1 ratio.*

You see, after years of research (and a whole lot of sleepless nights) our engineering department concluded that jacketed, solid-core fiberglass is more durable than the compression-

molded variety some of our competitors use to make their hammers.

That's the Stanley philosophy. Don't quit working until your product is perfect. You'll find this kind of dogged determination across the board at Stanley. In everything we make. Like a garage door insulated to reduce noise. Or a closet organizer made

with steel planks instead of wire so it doesn't wrinkle your clothes.

It's innovative thinking like this that's kept us ahead of the competition for more than 150 years. At Stanley, we're not happy simply churning out products. We're only happy when our products are better than anyone else's.

STANLEY
helps you do things right.

118 SIPHON GUN **AN ECONOMICAL WAY TO SPRAY:**
STAINS PAINTS LACQUERS ADHESIVES

Ideal for many woodworking projects!
EASY TO OPERATE
EASY TO CLEAN
CONE SHAPED SPRAY PATTERN

Available at:
 Lee Valley Tools Ltd.
 1 800 871-8158

Woodworker's Supply 1 800 645-9292
 The Woodworkers' Store 1 800 279-4441

CRITTER GREAT PRODUCTS
 CALL TOLL FREE 1 800 982 9438

READER SERVICE NO. 185

All your pen turning supplies... and more!

From **HUT** Wood Finishes to exotic pen blanks, we offer a complete line of products for the pen turner.

- Larger selection of pen blanks than our leading competitors **combined**.
- Project kits
 - pen and pencil
 - flashlight
 - plumb bobs
 - **and many more**

HUT Products for Wood

READER SERVICE NO. 73

NEW from HUT
 Accessories for our Sherline™ minilathe:

- outboard tool rest
- pen-drilling jig
- carriage tool rest
- inboard tool rest

CALL FOR YOUR FREE CATALOG
 1-800-684-9371

University of Rio Grande
 2 year Associate Degree in **Fine Woodworking Technology**

Emphasizing traditional techniques to build fine quality custom furniture. For more information call Lonnie Bird at 1-614-245-7311 or toll-free in Ohio 1-800-282-7201. (FW)

Rio Grande, Ohio 45674

The Kreg Jig

"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

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

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!

McFEELY'S PO Box 11169, Dept. FW
 SQUARE DRIVE SCREWS Lynchburg • VA • 24506-1169
 Call Toll Free: 1-800-443-7937 Ext 211

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
 www.woodcraft.com

WOODCRAFT
 Helping You Make Wood Work™

Visit one of our stores located nationwide! Call us for the store nearest you.

Proud sponsor of "The American Woodshop" hosted by Scott Phillips on PBS.

210 Wood County Ind. Park, Dept. 97WW11Q, PO Box 1686, Parkersburg, WV 26102-1686

This brad nailer was made to order.

Introducing the tool that makes your life easier. The new Senco® SLP20 Brad Nailer. Designed by people who use brad nailers to make their living. That's why it has the most impressive power-to-weight ratio in the business, to let you drive fasteners from 3/8" to 1 1/8" in length into hard woods. Why it has a grip that fits your hand better. Superior balance for more comfortable operation. Easier loading. And a lack of recoil you have to experience to believe. Stop in and ask for a free SLP20 demonstration.

For additional information on how Senco fastening systems will save you time, reduce costs, and increase quality, call your nearest Senco Authorized Dealer or Distributor listed in the Yellow Pages under "Staples," or call our toll-free Action Line: 1-800-543-4596.

Visit us on the World Wide Web:
 http://www.senco.com

SENCO
 PROFESSIONAL FASTENING SYSTEMS

READER SERVICE NO. 92

READER SERVICE NO. 124

THE DUST STOPS HERE.

The danger is obvious: the wood dust that coats your clothing can also contaminate your lungs.



**AIR-MATE 3
STOPS DUSTS
AND MISTS**

AIR-MATE 3 —

Ideal respiratory protection for woodworkers!

- Sturdy Helmet/Head Protection
- Flip-up Visor/Eye & Face Protection
- Low Initial Investment Price
- Lightweight, Compact
- Portable Battery-Powered Air Filter Unit
- Dust/Mist Filter



RACAL HEALTH & SAFETY, INC.

7305 Executive Way, Frederick, MD 21701-8368
(301) 695-8200 • (800) 682-9500 • FAX (301) 695-4413

RACAL © Racal Health & Safety, Inc. 1993

READER SERVICE NO. 125



LRH Enterprises, Inc.

"Tooling for the woodworker who recognizes QUALITY."

Stock # PR-T&G Shaker Door Set

(3-Wing Carbide Shaper Cutters)

- BENEFITS (ADVANTAGES)**
1. 7/32" Tongue & Groove for undersized 1/4" veneered Plywood Panels.
 2. Adjustable with shim to loosen or tighten fit after re-sharpening.
 3. 1/2" Long Tongue & Groove for extra strength and easy sizing of cut list.
 4. Micrograin Carbide Tips for longer life.
 5. Anti-Blow Out Design made to Eliminate Chipping, irrelevant to species being cut.
 6. Anti-Kickback Body Style.
 7. Available with 3/4", 1" & 1-1/4" bores.
 8. All Bores are honed and all cutters are electronically spun-balanced to assure a smooth, chatter-free cut.
 9. **AFFORDABLE!**

SALE PRICE: \$295.00



100%
Made in the U.S.A.

To Order: Call TOLL FREE 1-800-423-2544, see your local L.R.H. dealer, or visit our website at www.lrhent.com.

READER SERVICE NO. 49

HEAVY DUTY CABINET SHOP QUALITY



BWS-15A 15-INCH WIDE BELT SANDER

\$3495.00

FEATURES:

- Large, 8" diameter, cushioned contact drum.
- Open end design sands up to 30" width with 2 passes through.
- Trouble free pneumatic belt tensioning and tracking.
- USA made motor—5 hp 1 phase or 7.5 hp 3 phase

VISIT OUR SHOWROOM:
One block west of I-83 exit 11
Hours: Monday through Thursday 8 am–5 pm
Friday 8 am–7 pm Saturday 9 am–noon.

WILKE MACHINERY COMPANY

MACHINERY POWER TOOLS

TO RECEIVE A CATALOG FAST, SEND \$2.00 TO:
3230 Susquehanna Trail, York, PA 17402
NOW! VISIT OUR CATALOG PAGES ON THE INTERNET
www.wilkemach.com

FOR TECHNICAL SERVICE CALL: 1-717-764-5000

SLIDING TABLE

FEATURES:

- Mitre gauge
- Forward/reverse
- 2 spindle speeds
- Magnetic starter
- 1/2" collet chuck
- 3 interchangeable spindles: 1/2", 3/4" and 1"
- 3 HP 220V 1 PH motor

BW-310SL SLIDING TABLE SPINDLE SHAPER

\$1695.00



Shipped F.O.B., York, PA
Prices subject to change without notice.

TO ORDER, PHONE TOLL FREE: 1-800-235-2100

READER SERVICE NO. 663

Building a Humidor

*Maintaining tropical humidity
in a box takes precise joinery
and Spanish cedar*

by Rick Allyn



Not just pretty boxes—Humidors need to be carefully constructed if they are to maintain the right humidity for cigars.

You can smoke a dry cigar, but you won't enjoy it. It will burn too hot, making the smoke acrid and unpleasant. Most of the flavor and all the subtleties of the tobacco will be lost. Cigars are made in the tropics where the relative humidity is a constant 70%, and they should be kept at that level. The relative humidity in Southern Idaho, where I live, is about 30% in the summer, and lower in the winter—a really hostile environment for cigars.

I have had cigars dry up, even unwrap, four hours after I bought them.

A properly functioning humidor is a necessity for enjoying good cigars anywhere outside of the tropics. With only monthly upkeep, a well-made humidor will preserve cigars indefinitely. Very fine cigars even improve when aged in a humidor.

Building a humidor that works is not as simple as making a nice box and fitting a humidification device in it. This is often

how they're made, and the results are cigars ruined from too little or too much moisture. Maintaining 70% humidity is a balancing act that depends in large part on the wood you use and the tightness of the lid's seal. It's not rocket science, but making a good humidor takes some care in design and execution.

Why use Spanish cedar?

The wood you choose to make and line the humidor is particularly important. It

should not have an unpleasant smell or taste because the cigars will pick it up. The wood also should be porous so it will first absorb, then release moisture evenly, while remaining dimensionally stable. The wood will reach 70% moisture content on the inside, while the humidity on the outside could be as low as 20%. For many woods, this is a recipe for severe cupping.

Spanish cedar is the traditional and best choice for a humidor. When kiln dried, it is very stable and will not warp or grow much when it reaches 70% moisture content. Its oils inhibit the growth of molds and mildew that destroy cigars. Spanish cedar has a delicate aroma that is complementary, enhancing the cigar's taste.

Spanish cedar does have one serious problem: bleeding sap. It will ooze out of the wood, stick to your cigars and ruin them. Pieces that look sap-free can bleed many months after the humidor is finished. Common advice is that South American cedar (*Cedrela fissilis*) has a sap problem, and the Central American varieties (*Cedrela odorata* and *C. mexicana*) do not. However, I have found little difference between them. There are ways to reduce the problem with sap. The thinner you slice the cedar, the less sap the piece will bleed later. Kiln drying, if well done, will set the sap. And if you do get some sap on the surface, acetone or lacquer thinner will take it off.

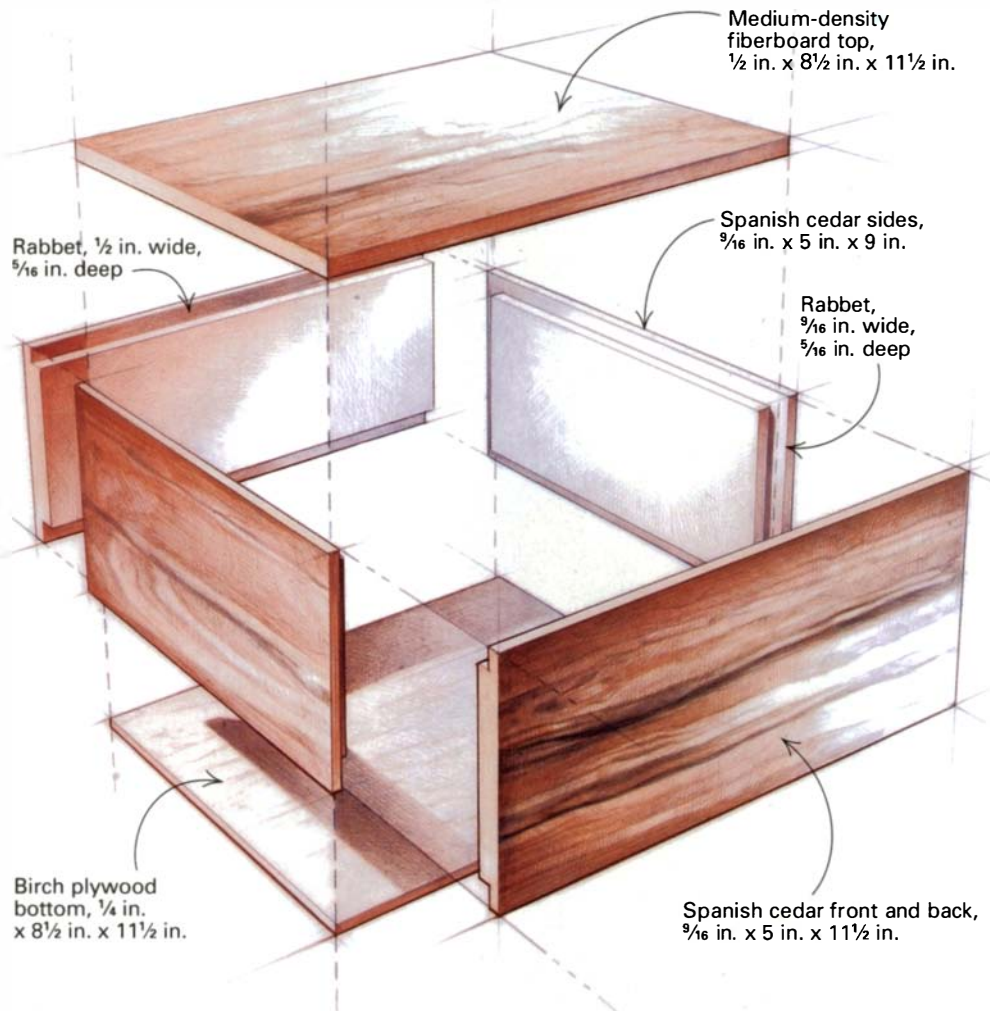
One-sided veneering for the basic box

Because I build humidors professionally, I make a variety of designs. But they're all simple and easy to build. The only joints are rabbets and grooves. I use Spanish cedar for the sides and the top, veneering only the outside. I glue up the whole box at once, and put a solid-wood edge-band along every side. Then I cut the box into top and bottom halves on a bandsaw. One of my favorite styles uses pau ferro (*Machaerium spp.*) veneer with wenge edge-banding and holly and mahogany inlay (see the photo on the facing page).

The most common box size I make is 12 in. by 9 in. by 5 in. with internal dimensions of 10½ in. by 7½ in. by 3¾ in. It will store about two boxes of cigars, 50 in all. Cigars range from 4½ in. to 8 in. long and 35 to 52 ring size (about ½ in. to just over ¾ in. dia.). Most commonly, however, they

Simple joinery makes a sturdy box

The front, back and sides of the box are cut from one long piece of veneered Spanish cedar. The top is veneered MDF; the bottom is plywood. All the joints are rabbets and depend on precise fitting for strength.



Rabbet the four sides at once, while they're still one piece. A dado blade will make the cut in one pass.



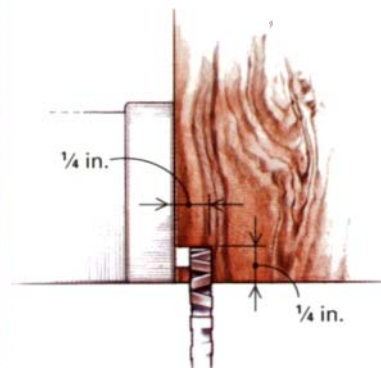
Cut the rabbeted sides apart and to length on the table saw. Use a stop block to ensure consistent lengths.



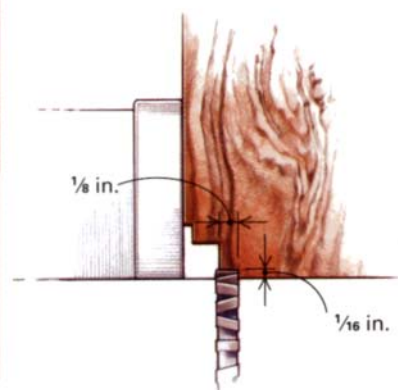
Rabbets for edge-band and inlay



For the edge-banding, make $\frac{1}{4}$ -in. x $\frac{1}{4}$ -in. cuts along the top and sides. Make the bottom cuts $\frac{1}{4}$ in. x $\frac{1}{8}$ in. deep.



For the inlay, make $\frac{1}{8}$ -in. x $\frac{1}{16}$ -in.-deep cuts along the edge-banding rabbets.



Tablesaw makes the edge-banding and inlay joints a cinch. Four cuts along each edge create the necessary joints.

are about 6 in. long by 42 ring. If you buy a much longer cigar, it can go in sideways.

For the front, back and two sides, I mill a single piece $\frac{5}{16}$ in. thick, 5 in. wide and about 48 in. long. For the top, I use a piece of 8 $\frac{1}{2}$ -in. by 11 $\frac{1}{2}$ -in. medium-density fiberboard (MDF), $\frac{1}{2}$ in. thick. The MDF adds weight to help keep the lid closed. I veneer all the Spanish cedar on one side, but for the bottom, I use $\frac{1}{4}$ -in. birch plywood without any veneer.

Now, I know we all have been taught to veneer both sides of anything, but this is an exception. Perhaps it is a combination of things that makes it work: the stability of the cedar, the stability of the box construction, the constant humidity on the inside, the lacquer finish on the outside. Anyway, it works. I have never had a box come apart using this technique.

With a dado head, I cut $\frac{1}{2}$ -in.-wide rabbets $\frac{5}{16}$ in. deep along both long edges of the piece of cedar. Next I cut it to the lengths necessary for the front, back and

side pieces. On the side pieces only, I cut $\frac{5}{16}$ -in.-wide rabbets $\frac{5}{16}$ in. deep on the ends to form the corner joints (see the drawing on p. 45).

I dry-clip the front, back and sides together with several band clamps. Only at this point do I carefully trim the top and bottom to size in a crosscut box for an exact fit. The joints of the top and bottom provide a great deal of strength to the humidior and should be right on.

After the dry-fitting, I glue the box together. I use a reactive polyurethane glue from Custom-Pak Adhesives (11047 Lamb's Lane, Newark, OH 43055; 800-454-4583) because it is waterproof, sets slowly enough to make clamping up a stress-free job and has a clamp time of just over an hour.

Waterproof glue is a necessity on the corner joints because they will eventually live in a high moisture environment. Even the waterproof type II polyvinyl acetate (PVA) glues will eventually let go if exposed to so much water for long. At the same time, I

have used regular PVA glue for the veneering, edge-banding and inlay without a problem. Because the polyurethane glue is activated by moisture, I spray a little water on the joints before gluing up the box.

Edge-banding to resist wear

Spanish cedar is a soft, lightweight wood, and the veneer isn't much more durable. I use a hard, solid wood edging for protection against the dings and dents that come with everyday handling. I add inlay along the edge-banding for contrast. The result is visually pleasing and reasonably durable.

After the box has been glued together, I cut rabbets along each edge of the box for the edge-banding (see the photos and drawings above). I make the rabbets $\frac{1}{4}$ in. by $\frac{1}{4}$ in. along the top and sides. And I make them $\frac{1}{4}$ in. by $\frac{1}{8}$ in. deep on the bottom because the edge is thinner.

Along the cuts for the edge-banding, I make a second series of cuts for the inlay, $\frac{1}{8}$ in. wide and $\frac{1}{16}$ in. deep. The veneer on

the edge of these cuts cannot have any breakout. I use an alternate-bevel, 80-tooth blade to cut the cross-grain rabbets and a 24-tooth flat-top blade to cut the long-grain rabbets.

Next I cut the pieces of $\frac{5}{16}$ -in.-sq. wenge edge-banding to length, fit and glue one piece at a time. Each piece simply butts against the other because the wenge end grain is difficult to discern from the long grain. First I apply the banding along the bottom edge, then around the top and, finally, along the sides. I use yellow glue and 3M long masking tape to clamp each piece (see the photo at right). This tape stretches for a stronger grip but won't pick up the grain when I pull it off.

When the edge-banding sets, I remove any squeeze-out from the inlay grooves with a small chisel. I cut the one-piece inlay to length and miter each corner. Then I run a bead of yellow glue down the groove and press in the inlay with the back of a chisel (see the bottom photos). Don't bother trying to clamp it in; the press-fit should hold it in place. When it dries, I plane the edge-banding level with the inlay and veneer, round the edges and file down the end grain on the corners. Then I use a cabinet scraper to smooth the whole box.

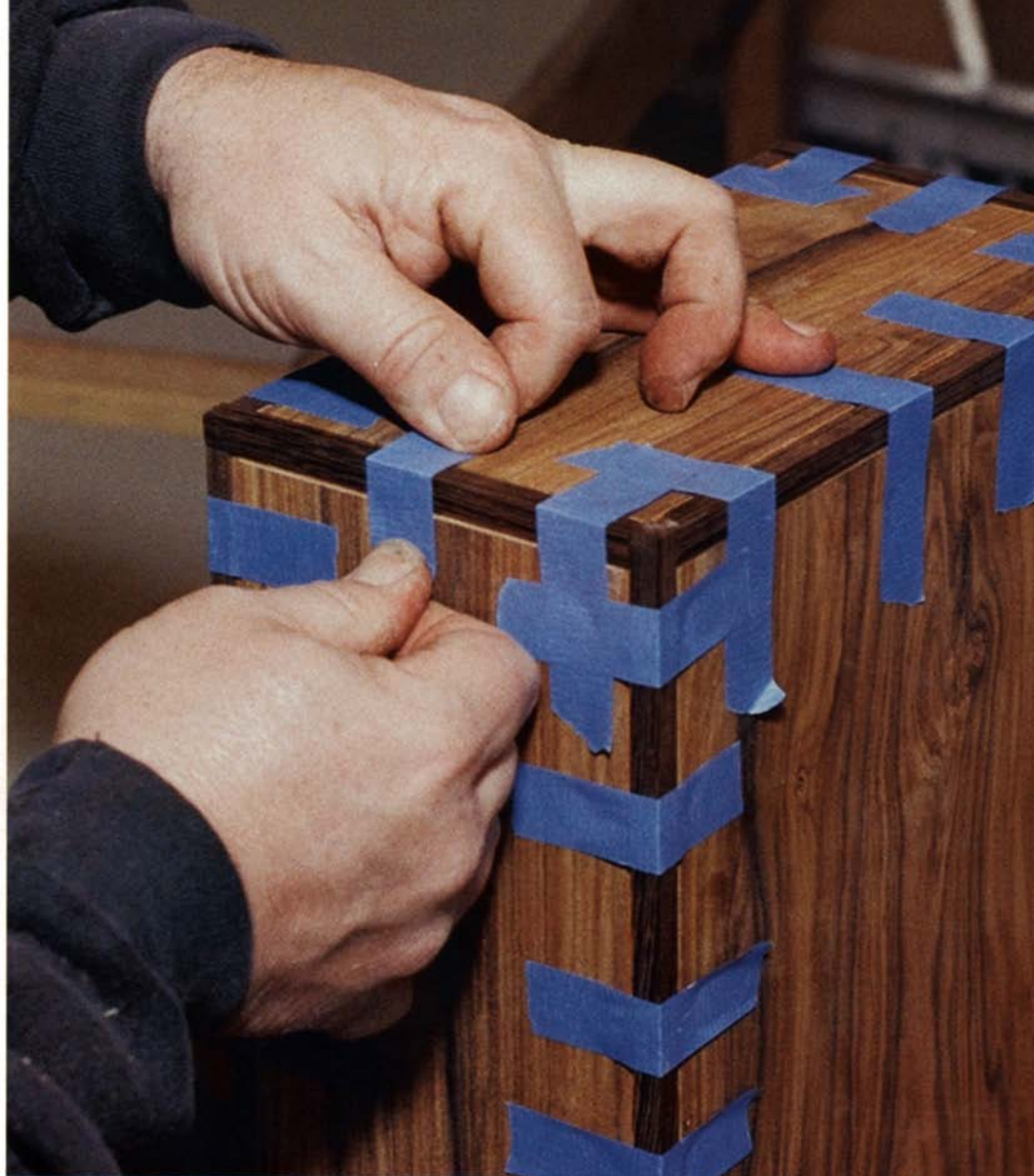
Bandsawing the box open and fitting the hardware

Building the box in one piece and then slicing it open is the best way to ensure a perfectly matching top and bottom. I perform this delicate operation on a bandsaw with a $\frac{1}{2}$ -in., 3 teeth-per-inch (tpi) blade with very little set. It makes this cut quickly and removes a minimum of wood.

I use a tall fence and set it so the top will be $1\frac{5}{8}$ in. thick. Then I cover the cut line with masking tape to prevent breakout. With a careful push through the saw, it's done (see the top left photo on p. 49). I use a cabinet scraper to smooth the edges and make them perfectly flat. Ideally, the joint should be hard to distinguish when the box is closed. I use Brusso quadrant hinges (available from Whitechapel Ltd., P.O. Box 136, Wilson, WY 83014; 800-468-5534) because they are well made, look nice and are strong enough to keep the heavy lid from going anywhere. I install a box lock with a flush escutcheon on the outside.

The lining creates the seal

For the lining, I use pieces of Spanish cedar $\frac{3}{16}$ in. thick. The cedar covers all six sides inside the box and is fitted to create a seal



Yellow glue and tape attach the edge-banding. Wenge edge-banding is butted at the corners, not mitered, because end grain is not conspicuous.

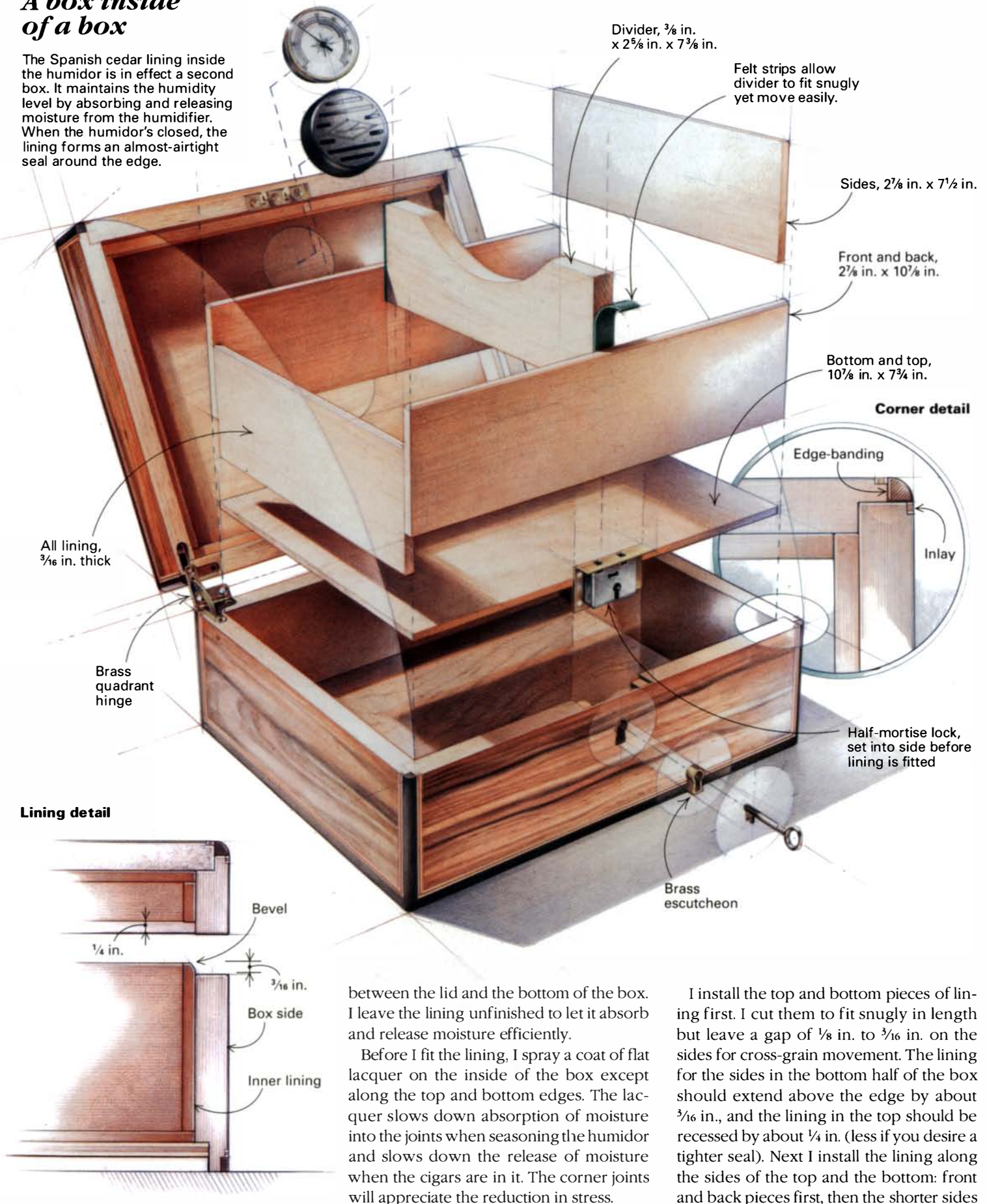


Press the inlay into the groove with the back of a chisel (left). It should not need clamping or taping. Fine-tune the miter if necessary (below).



A box inside of a box

The Spanish cedar lining inside the humidor is in effect a second box. It maintains the humidity level by absorbing and releasing moisture from the humidifier. When the humidor's closed, the lining forms an almost-airtight seal around the edge.



between the lid and the bottom of the box. I leave the lining unfinished to let it absorb and release moisture efficiently.

Before I fit the lining, I spray a coat of flat lacquer on the inside of the box except along the top and bottom edges. The lacquer slows down absorption of moisture into the joints when seasoning the humidor and slows down the release of moisture when the cigars are in it. The corner joints will appreciate the reduction in stress.

I install the top and bottom pieces of lining first. I cut them to fit snugly in length but leave a gap of $\frac{1}{8}$ in. to $\frac{3}{16}$ in. on the sides for cross-grain movement. The lining for the sides in the bottom half of the box should extend above the edge by about $\frac{3}{16}$ in., and the lining in the top should be recessed by about $\frac{1}{4}$ in. (less if you desire a tighter seal). Next I install the lining along the sides of the top and the bottom: front and back pieces first, then the shorter sides



Saw the top off the box on a band-saw. Tape the entire saw line, and use a 1/2-in., 3-tpi blade to avoid breakout.



Gently press-fit lining around interior. When you season the humidor, the lining will swell and lock itself in place.

(see the top right photo). One thin bead of yellow glue down the middle of each piece will keep them centered during assembly.

The joint between the edge of the lid and the lining around the bottom will establish how well your humidor holds its humidity (see the drawing at left). If the joint's too tight, not only will the box be difficult to open and close, it also will force the humidity level beyond 70%, making the air musty from poor circulation and increasing the chance of mold. A damp cigar will not burn well, and it will produce smoke too thick and pungent to be enjoyable. Like wood, a cigar that absorbs too much moisture may split. And if left soggy for too long, a cigar will begin to rot. But too loose a joint will let in drafts and make it difficult for the humidor to reach 70% relative humidity and remain there.

If you will be opening the humidor every few days, make the seal tight so that a dropped lid will float closed on a cushion of trapped air. If you won't be opening the humidor very often, make the seal less tight to help keep the air from becoming too damp.

Opening and closing should be easy, and you should just feel the lining touching on the lid as it shuts. For a tight seal, cut a steep bevel on the lining in the bottom of the box, and for a loose seal, make the bevel lower. The front needs more of a bevel than the sides and back so the lid opens and closes properly. I bevel all sides for even breathing and to maintain a continuity of style (see the photo at right).

Finishing the humidor and installing a humidifier

I finish the outside with several coats of lacquer. I apply two or three coats of sanding sealer and then about 10 coats of gloss lacquer, sanding after every three coats. Af-

ter the last coat, I let the finish cure for at least a week and then sand with 1,000-grit and water and power buff with automotive glazing compounds. Let the finish cure for as long as you can before waxing.

The humidifier provides a source of moisture in the box. Most humidifiers are extremely simple. A sponge-like material, often florist's foam, is contained in a plastic or metal vented case. Because moisture from the humidifier falls, I attach the humidifier to the center of the lid for the most even distribution.

To help the humidifier stay put, I seal the cedar right behind it with lacquer. Even with the humidifier at the top of the box, the bottom will be more humid. If you leave cigars in your humidor for a long

time, rotate their position once a month.

The humidifier I prefer to use is the Non-pareil (available from Beall Tool Co., 541 Swans Road N.E., Newark, Ohio 43055; 800-331-4718). It is made of anodized aluminum and uses a removable and easy-to-clean urethane foam pad. This eliminates the need to mess with distilled water because mineral deposits that would otherwise clog the humidifier can be washed out. Many humidifiers do not come apart for cleaning.

Before you put any cigars in your humidor, it's essential to season it first. After I fill the humidifier, I put a cup filled with wet paper towels in the closed humidor. It will take a few days for the box to reach 70% moisture content.

To monitor the humidity level of your humidor, you can attach a hygrometer (available from Woodcraft Supply, P.O. Box 1686, Parkersburg, WV 26102; 800-225-1153) to the bottom of the lid in the same way that you did with the humidifier. Remember that dial hygrometers are rarely accurate. The feel of the cigar is always the best measure of a properly functioning humidor. A good cigar should feel soft but not spongy or crunchy. □

Rick Allyn used to make guitars, but now designs and builds studio furniture and humidors. He attended the College of the Redwoods. He lives in Twin Falls, Idaho.



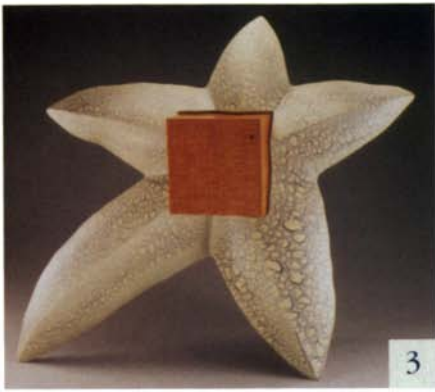
Careful with that bevel angle. It determines the rate the humidor loses humidity and receives fresh air. A humidor that is opened frequently should have a tighter fitting lid.

More than one way to store a stogie

Last year, the United States imported 293 million cigars from its southern neighbors, an all-time record. This year, that number will probably double. Like the recent stock market, this cigar boom may be the result of irrational exuberance. But in its wake, a huge demand for fine humidors has followed—a boom in its own right and a windfall to woodworkers. Though there are thousands of plain, manufactured boxes on sale everywhere, a few woodworkers have been making humidors that display the finest craftsmanship and imagination. A few that we've found are shown on these two pages. □

Strother Purdy is an assistant editor of Fine Woodworking.





1. Humidor table by James Gray—Eastern walnut, wenge, tagua nut, red gum eucalyptus and Spanish cedar; 36 in. high by 20 in. wide by 44 in. long. Photo: Lee Fatherree

2. Ruhlmann-style humidor by Frank Pollaro—Amboyna burl, ivory and Spanish cedar; 6³/₈ in. high by 10 in. wide by 15 in. long.

3 & 4. Forbidden by Wendell Castle—Jelutong, lacewood and Spanish cedar; 58 in. high by 72 in. wide by 20 in. deep. Photos: David Mohny

5. Humidor by Ken Frye—Pearwood, madrone burl and Spanish cedar; 6 in. high by 9 in. wide by 12 in. long. Photo: Craig Cook

6. Newporter by John Goff—Cuban mahogany and Spanish cedar; 5³/₄ in. high by 9³/₄ in. wide by 17 in. long. Photo: Kevin Halle



Mid-Sized Thickness Planers

Fine Woodworking *editors try 14 machines from Taiwan, Japan and Canada*

by Anatole Burkin



You can get a great workout planing roughsawn lumber with hand tools, but the exercise is more quaint than efficient. Many of us resort to benchtop thickness planers, which keep getting bigger. But if you routinely plane large amounts of lumber or boards wider than 12½ in., the maximum capacity of benchtop machines, you're better off with a bigger planer.

We were surprised to discover how many companies sell 14-in. to 16-in. planers, what we consider mid-sized machines for the small shop. We invited 15 companies to participate in our review. Thirteen responded, and we ended up with 14 planers. Despite the many labels, the majority of the machines came from the same Taiwanese assembly plant, Chiu Ting Machinery, also known as Geotech (although the individual components of these machines

may come from different sources). Not surprisingly, all the 15-in. machines from Chiu Ting—AMT, Bridgewood, Grizzly, Jet, Powermatic, Reliant, Sears, Star Tools, Sunhill and Woodtek—are similar in many respects (see the box on pp. 54-55). The 15-in. Delta planer is also made in Taiwan, but at a different plant. It's somewhat different from the Chiu Ting machines but not drastically so. Actually, it looks a lot like its predecessor, the Rockwell 13-in. planer, which is the machine the Taiwanese used as inspiration when they designed their 15-in. planers.

Makita sent us its 15⅝-in. planer, the only Japanese entry. We also looked at a few industrial-duty machines, a 16-in. Bridgewood planer made by Chang Iron Works in Taiwan, and a 14-in. planer made by General in Canada. The American-made RBI 816 Woodplaner, made by RBIndustries in Harrisonville, Mo., wasn't included in our review because it has the capability of being converted into a molder or sander. This review is limited to dedicated planers.

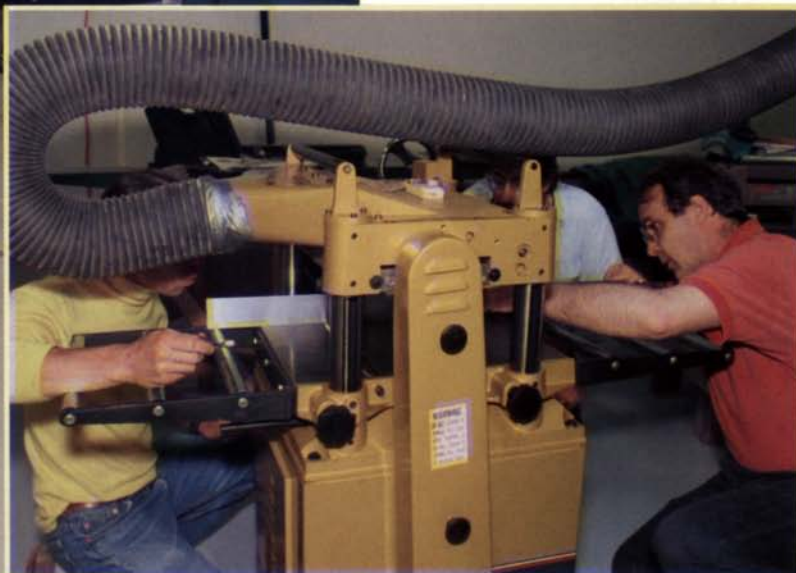
Prices range from \$765 for the Grizzly (without a stand) to about \$3,200 for the General. But most of the 15-in. Chiu Ting models cost between \$800 and \$1,300. The price range among these is substantial considering there are so few significant differences in design. The General and 16-in. Bridgewood, which costs \$2,795, are in a class all their own. They are heavy, industrial-duty machines.

In our review, we looked closely at the surface quality of lumber after planing. We also considered the ease of assembly, instruction manuals, warranties, knife changing and, of course, price. We wish we could tell you how these machines will perform over time, but that's not possible in this kind of review. We do want to find out how well a machine that costs about \$1,000 holds up, so we're buying one of the Taiwanese models. After using it for a year, we'll do a follow-up report.

All the machines do a good job of planing

A planer is a dimensioning tool, not a finishing tool. Before running a rough board through a planer, you need to flatten one face on a jointer. A thickness planer flattens the other face, parallel to the first. A good planer will give you a board that is smooth and flat, nearly free of machining marks, and with virtually no snipe, a slight dishing out of the board at either end. All planers leave some tool marks from the spinning cutterhead, and to get a furniture-grade board, handplaning, scraping or sanding is required.

We were pleasantly surprised after running a pile of hickory, a



Some assembly required—Mid-sized planers are heavy tools, and all of them were delivered in wooden crates. Most required some assembly.

Ten planers, a single Taiwanese factory: Can there really be much of a difference?



AMT

The Taiwanese company Chiu Ting, located in Taichung, cranks out thousands of 15-in. planers every year. The machines are sold under a dozen different names, and they come in more colors than a bag of M&M's candy. The basic 15-in. Chiu Ting planer is a medium-duty, two-speed machine with a four-post, three-knife cutterhead design. It owes some of its heritage to the original four-post Brazilian-made Rockwell 13-in. planer. Chiu Ting made several changes, such as increasing the cutting width by 2 in., putting the motor below the machine (except on the planer made for Grizzly, which has the motor on top) and designing it so the table, not the cutterhead portion, moves when adjusting the height. The Taiwanese know how to modify a good existing design and produce a machine economically.

AMT, Bridgewood, Grizzly, Jet, Powermatic, Reliant, Sears, Star Tools, Sunhill and Woodtek all import their machines from Chiu Ting. It's hard to get a straight answer about whether some or most of the parts are identical, but many components look the same, and many parts are interchangeable. Chiu Ting

Common features

Magnetic switch

Sturdy four-post design

Cast-iron body

Three-knife cutterhead

Adjustable bed rollers

contracts with many other smaller shops, which actually make these parts. Some machines have American-made motors, but most are Taiwanese. Stated horsepower ratings range from 2 hp to 3 hp.

The iron castings are substantial and effectively dampen vibration. Most of the machines weigh about 475 lbs. Once the drive belts were broken in, all machines ran smoothly. We hogged off maximum cuts (a hair shy of $\frac{1}{8}$ in.), and none of the machines bogged down, despite the

differences in stated horsepower.

All of the 15-in. Chiu Ting machines have infeed and outfeed extension rollers, and some of them, when bolted tight, ended up too high, no matter how we fiddled with the adjusting setscrews. Keeping the bolts slightly loose corrected the problem. A better solution would be to enlarge the already oversized extension-arm mounting holes or slots with a file, which would

very hard wood, through the machines: All produced good-quality boards. We examined and measured boards for snipe, taper and quality of finish. There was about $\frac{1}{64}$ in. or less of snipe on every board, which we considered acceptable. All the machines planed lumber to a uniform thickness of better than $\frac{1}{64}$ in. The knife marks, at slow feed rates, were minor. We also tried bogging the machines down by taking the maximum recommended cuts, a hair shy of $\frac{1}{8}$ in. Again, no problem with any of them.

With the exception of the General, all the machines came out of

their crates with sharp knives and the critical internal parts (chip-breakers, infeed and outfeed rollers) accurately adjusted. After removing a set of poorly sharpened knives from the General planer and honing them, that machine also performed well. All the planers have three-knife cutterheads except the Makita, which has two.

The 15-in. machines have two feed-rate speeds, 16 feet per minute (fpm) or 20 fpm, except the Delta, which operates at 16 fpm or 30 fpm. Speed is changed by moving a lever connected to the gear-box. Faster feed rates are fine for initial planing; for a final cut,

allow them to be positioned lower on the machine. Or you could gently bend the soft-iron bar the rollers are mounted on. Extension arms help support long stock, so alignment isn't critical as long as the rollers are even.

So why would you pick, say, Powermatic's \$1,250 planer over the \$1,080 Jet? Both have stands with wheels; Powermatic's stand is enclosed. Both have 3-hp, 230v motors. Both planed boards flat with minimal snipe. The Jet's knives are easier to set because of the cutterhead design. Powermatic's warranty runs one year, Jet's two years. Between the two, we'd pick the Jet. But we'd be comfortable recommending the others too, if planing performance was the only criterion. If instruction-manual clarity is a consideration, we'd point you toward the Bridgewood, Grizzly and Powermatic.

Delta's machine is assembled at Delta's Taiwanese partner factory, Shin Hou, but it appeared to share some parts (or parts of similar design) with the Chiu Ting machines. For example, the chipbreakers, chipbreaker springs and chip deflectors looked the same. The height-adjusting handle looked like Grizzly's. Delta's infeed roller seemed better machined, with sharper edges for grabbing stock. Delta's castings differ from the others in design too. When you turn the height-adjusting crank on the Delta, the cutterhead and motor move, and the table remains stationary. Raising the cutterhead takes some effort because of all the mass. Internally, many parts, such as infeed/outfeed rollers, are attached to the castings in the same way that Chiu Ting assembles them.

Who copied whom? Does it really matter anymore? —A.B.



Bridgewood



Grizzly



Jet



Powermatic



Reliant



Sears/Craftsman



Star Tools



Sunhill



Woodtek

you'll get a better finish by slowing down the feed rate. The General runs at one speed, 15 fpm, the slowest of the bunch, but it produces the best finish—less snipe and finer knife marks. The Makita has only one speed, 29.5 fpm. (The cutterhead moves faster too, and the surface quality of boards are comparable to the other 15-in. planers. But with one less knife, we assume that the blades will need sharpening more frequently.) The 16-in. Bridgewood is a variable-speed rate machine, 20 to 30 fpm. With the exception of the Makita, which has a 110v universal motor, the planers have

230v induction motors. Stated power ranged from 2 hp to 3 hp.

The General has the look and feel of a top-notch tool. When you turn the wheel to adjust the table height, the action is smooth and precise. The bolts for adjusting the infeed and outfeed rollers are large and easy to reach. Each knife is held in place with nine gib bolts—more than on any of the other machines. It takes longer to perform a knife change, but you feel confident that the cutters will stay put under the most severe load.

The Bridgewood is a solid machine too, but with a few rough

Delta 15 in.

Delta's planer can be operated at a faster feed rate than the other 15-in. planers and is available with retractable, laminate-coated extension wings.



Bridgewood 16 in.

Of the Taiwanese planers reviewed, this was by far the heaviest duty model. It comes with infinitely variable-speed control and several safety features.



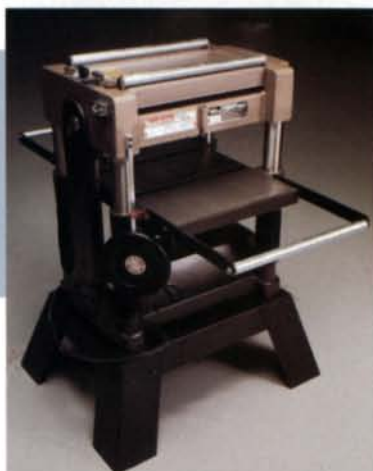
General 14 in.

The Canadians make a solid one-speed planer with excellent fit and finish. And it has a price to match.



Makita 15½ in.

Because of its lighter weight, the Makita is a good choice if you need a portable planer.



edges. The table casting is very solid, the stand itself is cast iron, the belt-drive system is beefy and the variable speed gives you a lot of options. Some of the castings and welds aren't as neat as those on the General, and the dust chute, though it works just fine, looks like it was shaped by hand on an anvil.

Problems surfaced during assembly

For many years, instruction manuals that came with Taiwanese tools were difficult to understand. The good news is that many importers have corrected that oversight. The bad news is that not all have done so. The manuals that come with the AMT, Reliant, Star Tools, Sunhill and Woodtek machines are identical. They share an unappreciation for clarity, and they contain errors. For example, in the section that tells you how to set the chipbreaker, the manuals equate 1mm with 0.40 in. when the conversion should be 0.04 in. The section on adjusting table rollers is incomplete, although we were able to figure out how to do it after some fiddling.

Among the companies that import Taiwanese machines, Bridgewood, Grizzly, Jet, Powermatic and Sears corrected the errors in the generic manuals. The Sears manual doesn't provide clear instructions on wiring the motor, a U.S.-made Marathon. When we first hooked it up, it ran backward. We got it right on the second try. The Grizzly and Bridgewood manuals include good troubleshooting sections. Delta's manual has exceptionally clear photos, which is a help when trying to figure out an unfamiliar tool. General's is sparse and lacks any photos but does include good line drawings with all the parts labeled. Makita's manual is concise and easy to follow.

Although assembly is a one-time headache, it can tell you a lot about a machine, the genius or lack of it in the engineering behind it, and the attention to detail, such as paint, fit of components and the clarity of the instruction manual. The assembly required varied depending on the model and took between a few minutes to a few hours. Most of the planers required assembly of stands, motor mountings, wiring and miscellaneous rollers and hand cranks. The bodies of most of these machines weigh about 400 lbs. To lift the planer's main body onto a stand requires the aid of at least two strong people or an engine hoist. All the 15-in. machines made in Taiwan had one nice feature: four retractable iron bars that can be used for lifting the machine.

Delta's sturdy sheet-metal stand was by far the most pleasant to assemble because there were no sharp edges. That's because Delta's U.S.-made stands are cut by a laser, which leaves a softer edge. The stands on the other 15-in. Taiwanese machines are cut by a punch press, which leaves a burr, and those aren't always removed at the factory. This is a minor point, but sometimes little things like this make you appreciate a machine over the long haul, especially if you have to move it. Having a heavy tool on wheels is also a nice touch, and Powermatic and Jet thought to include wheels as standard equipment on their well-made stands.

Sooner or later, you'll have to sharpen the blades

Changing blades on a thickness planer is about as much fun as rotating the tires on your car, but it has to be done regularly. The worst part of the job is setting the blade height accurately. Some manufacturers have made this task easier.

On all the machines we evaluated, planer blades are held fast to the cylindrical cutterheads by a row of gib screws or bolts. Details vary (see the drawings on p. 58), but to remove a blade, you loosen the gib screws and lift out the blade. Putting sharp blades

Thickness planers

Model	Cost	Warranty	Accessories
AMT 15 in.	\$890	1 year on motor; 10 years on machine	Stand included
Bridgewood 15 in.	\$949	1 year	Stand included; Esta disposable knife system: \$335
Bridgewood 16 in.	\$2,795	1 year	Esta disposable knife system: \$350
Delta 15 in.	\$1,199	2 years	Stand included; dust hood: \$65; mobile base: \$95
Grizzly 15 in.	\$765	1 year	Stand: \$60
Jet 15 in.	\$1,090	2 years	Stand with wheels included
Powermatic 15 in.	\$1,250	1 year	Stand with wheels included
Reliant 15 in.	\$845	1 year	Stand included
Sears/Craftsman 15 in.	\$1,299	1 year	Stand included
Star Tools 15 in.	\$875	1 year	Stand included
Sunhill 15 in.	\$879	2 years	Stand included
Woodtek 15 in.	\$1,085	1 year	Stand and extra set of knives included
General 14 in.	\$3,200	2 years	Dust hood: \$85
Makita 15½ in.	\$1,680	1 year	Stand and dust hood: about \$70 each

■ All from Chiu Ting assembly plant in Taiwan

back in place is trickier because you have to realign the blades parallel to the table and make sure they're all at the same height. With the exception of the General, the machines come with a simple knife-setting jig (see the photo below). Makita's jig consists of two small blocks of wood. It's worth noting that aftermarket knife-setting jigs are available, and they are an improvement over the ones supplied with these tools.

Setting the blades on most of the 15-in. Chiu Ting machines is a trial-and-error exercise. First you insert a knife into a spring-loaded slot in the cutterhead. Then you place the jig on top of the knife and press down until the arms of the jig contact the cutterhead. While holding the jig in place, the gib screws are tightened (see the top photo on p. 58). Sometimes the knife will move a bit, either due to the torque on a gib screw or because you wiggled the jig. Then you have to loosen the screws and try again. This has to be done for each knife.

Four machines—Delta, General, Jet and Sears—have cutterheads with a helpful feature, a pair of jack screws for each knife. Knives on these machines rest on the jack screws, whose height is adjusted with a hex wrench (see the center photo on p. 58). You still feel like you need three hands to set the knives, but the chance of a knife moving out of position while tightening the gib screws is reduced, at least in one direction.

Bridgewood offers an optional Esta disposable knife system for its planers. This system, imported from West Germany, simplifies blade changes. The knives fit into holders, which rest upon a pair of height-adjusting screws installed in the cutterhead slots (see the bottom photo on p. 58). Once set, these screws ensure an accurate height setting when installing replacement knives. The knife/holder assembly is held fast to the cutterhead by the stock gib screws. An Esta system costs \$335 for the 15-in. planer and \$350 for the 16-in. planer, installed. Twelve replacement knives are included. Stock Bridgewood cutterheads used to be similar to the basic Chiu Ting models, but the company has switched to jack-screw cutter-

heads. Powermatic will also offer Esta cutterheads as an option.

Adjusting the Makita knives is a trial-and-error process, much as it is with the Taiwanese machines. A disadvantage is that there are no springs in the cutterhead behind the knives. But there is a plus. By turning a lever, the Makita's cutterhead locks in position.

Many of the differences are in the details

Tools sometimes act like magnets for small children who may want to emulate a parent in the shop. The switches on the Sears and Makita planers can be locked with a key. Delta's switch has a hole predrilled for a padlock, sold as an accessory.

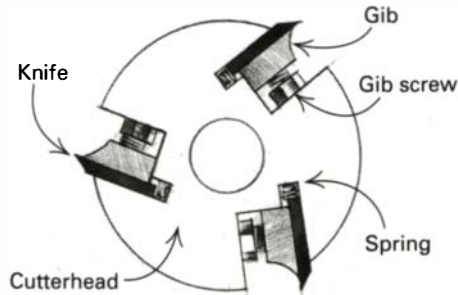
The General, Sears and Powermatic machines have large stop buttons that have to be reset before turning on the machine. We didn't like where the switches are located on the Sears planer. You



Setting knives can be fussy. Positioning knives accurately is crucial for top performance. A knife-setting jig helps, but cutterhead designs on some planers in this group make knife changes easier.



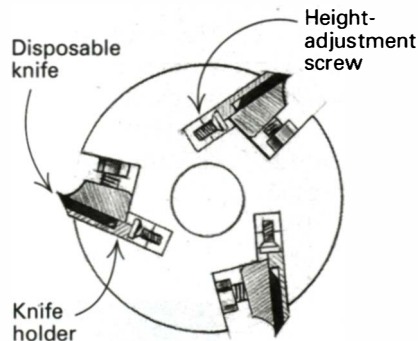
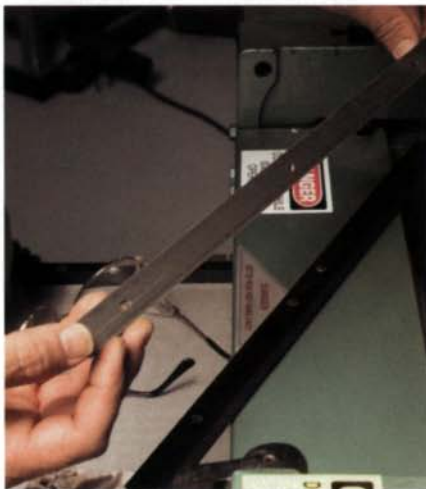
CUTTERHEADS AND KNIVES



Typical cutterhead—Knives rest on springs and are held in place by gibs and gib screws.



Cutterhead with jackscrews—Knives rest on adjustable jack screws; gib and gib screws keep knives in place.



Esta disposable knives—Double-edged knives fit into a holder that rests on height-adjustment screws. Same gib and gib screw setup.

have to reach under the long outfeed table rollers to get to them.

The 16-in. Bridgewood has a lot of safety features, including more warning stickers than you'd find on a nuclear reactor. There's an emergency power cutoff lever within easy reach. If you've ever had an uneven board jam in a planer, you'll appreciate this feature. This machine has additional cutoff switches that prevent the motor from running if the top or sides of the machine are opened.

A planer is one of the noisiest tools in the shop, and these were no exception. Under load, with a dust collector hooked up, most of the machines ran at about 100dB. They're also one of the messiest tools. Most come with dust chutes, but Delta, General and Makita make you pay extra to own one.

Unlike benchtop planers, many internal components of these mid-sized machines can be adjusted to account for wear and tear. For example, if the table gets out of whack and isn't parallel with the cutterhead, you can readjust it. Infeed and outfeed rollers can be set for depth and pressure. Table rollers can also be adjusted. The 16-in. Bridgewood is the only machine we evaluated that has a lever for quick table-roller adjustments. For rough stock, you raise table rollers to reduce friction; the downside is that there's more snipe. For smooth stock, the rollers are set just a few thousandths of an inch above the tabletop and snipe is minimized. Adjusting the table rollers on the other machines is a time-consuming procedure that requires an Allen wrench, an open-ended wrench, a straightedge and a feeler gauge. You're better off finding a setting that works for both rough and smooth stock. We found that if the rollers are about 0.003 in. to 0.004 in. above the tabletop, the machines performed well for all types of lumber.

Most of the machines are built with solid-metal infeed and outfeed rollers. There were a few exceptions. The 15-in. Bridgewood, Delta and Woodtek have polyurethane outfeed rollers. The Makita has neoprene infeed and outfeed rollers. Manufacturers claim that softer outfeed rollers help reduce marring of lumber. We found that if you use a dust collector, which removes chips before they get trapped between the outfeed roller and the stock, either type of roller works fine.

The 16-in. Bridgewood has a segmented infeed roller and segmented cast-iron chippers. Those features allow you to feed stock of slightly different thicknesses through a planer at the same time.

Machines that stood out

The General is a fine machine: sturdy and smooth to operate. With the 16-in. Bridgewood, you get a lot of features not found on the other machines, including sheer mass. Either machine seems fit to handle the needs of a busy shop.

Among the 15-in. machines, we had a hard time finding major differences. You could safely pick one based on price alone. However, we liked the Delta and Jet for a number of reasons: improved cutterhead design that makes knife-adjusting easier, sturdy stands and two-year warranties. We liked the optional Esta disposable knife system that's offered on the Bridgewood planers. The Makita is a solid machine too, yet at 254 lbs., the lightest in weight. For someone who needs to take a mid-sized planer to the job site, the Makita is a good choice. □

Fine Woodworking editors William Duckworth, Scott Gibson, Vincent Laurence, Strother Purdy and shop technician Anthony Bezok also contributed to this article.

Crossbanding a Round Tabletop

*Trammel-mounted routers
give you borders that match
the top seamlessly*

by Frank Pollaro

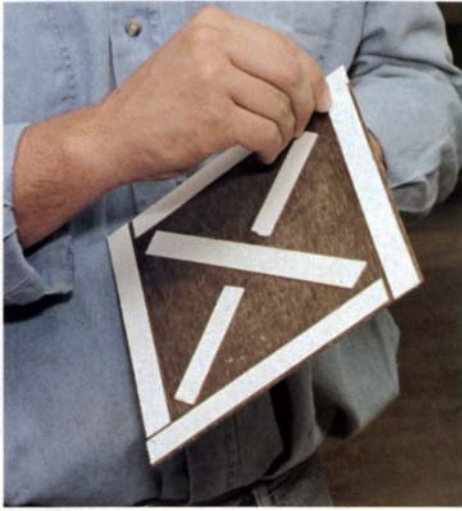
After we built a large library of Macassar ebony several years ago, my shop was left with a huge stack of veneer offcuts—none more than a foot long. I couldn't just throw them away, but I couldn't think of any good use for them either. So the veneer sat on a shelf. A year later, I figured out what to do with them. I'd just finished veneering a round table with a crotch mahogany sunburst pattern. It looked great, but it didn't feel finished. I

decided to try crossbanding the top with some of the ebony scraps—that is, running a narrow border of ebony around the perimeter of the table. It was just what the table needed.

Crossbanding that first table was a little hair-raising for me. It takes a fair amount of nerve to plunge a router into a beautifully veneered tabletop. But with each table I have worked on, my confidence has grown and my technique has improved. These



Set the center-point fixture precisely



Trammel center must be positioned precisely. The author lines up the corners of the laminate on seams of the sunburst pattern, automatically centering the fixture.

days, the whole process is efficient, predictable and, as a result, a lot of fun.

Fixed center point is key to routing a round rabbet

I rout the rabbet for the inlay around the perimeter of the tabletop with a trammel-mounted plunge router. What makes this technique work is establishing a fixed pivot point at the center of the table for the trammel (see the photos above). I make a center-point fixture by driving a finish nail through the center of a piece of 1/2-in.-thick plywood about 6 in. sq. The size isn't critical, but it's essential that the piece of plywood be perfectly square. To locate the center point, I draw lines diagonally from corner to corner and nail through the inter-

section. I epoxy a piece of plastic laminate about 8 in. sq. to the bottom of the plywood. The plastic laminate prevents the nail head from damaging the veneered top. Again, the dimensions of the laminate aren't critical, but the laminate must be perfectly square, and the plywood must be glued to the laminate at dead-center.

Centering the plywood on the laminate is easy. I just draw diagonal lines from corner to corner across one side of the laminate and then place the plywood down so its corners are on the diagonal lines on the laminate. This centers the plywood automatically. I pencil mark the perimeter of the plywood on the laminate to make sure I glue it down in the right spot.

I use double-faced tape to attach the cen-

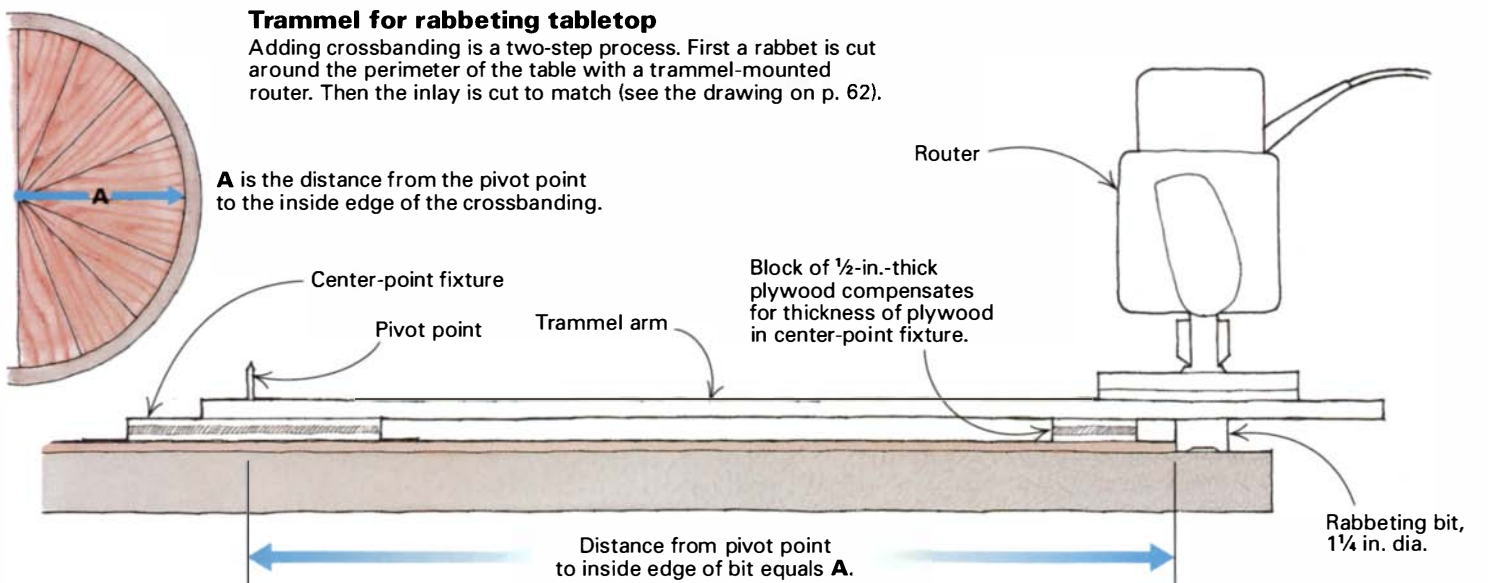
ter-point fixture to the center of the table. I like the kind that has a thin foam core. It's about 1/16 in. thick and very sticky (don't worry about removing it later; it's easy). To keep the fixture in place, I sand off the veneer tape where the fixture is to be attached and blast the area clean with compressed air before pressing the fixture into place. I use the sunburst pattern itself to center the fixture on the table, aligning the corners of the fixture with seams of the sunburst. Be sure the fixture is well-seated. If the jig is removed or comes loose during the operation, it will be impossible to relocate it to the same spot.

Before routing the rabbet for the crossbanding, I determine the outside dimension of the table, mount a trammel on the center-point fixture and swing it around with a lumber crayon or grease pencil at the end. I follow this line with a jigsaw, cutting the corners off the table blank, turning a square into a round. Later, I'll use a router to trim the top to its finished size.

Correct depth of cut is critical

The trammel arm for the plunge router is made of 1/2-in.-thick birch plywood (see the drawing below). I generally make these about as wide as the router and 6 in. to 8 in. longer than the radius of the finished table. I screw the router base to this trammel arm and plunge a hole through it so the 1 1/4-in.-dia. rabbeting bit is exposed. A 1/2-in.-thick block glued and screwed to the underside of the trammel arm, just behind the router bit, compensates for the thickness of the plywood block on the center-point fixture. The laminate thickness is insignificant.

Setting the bit depth for the rabbet is the



Rabbeting the tabletop



Veneer crossbanding is used to set plunge depth. The thickness of the veneer is added to the thickness of a plywood spacer when setting plunge depth. Check the setting in scrap.

most critical step in the whole process. The crossbanding should be dead flush with the rest of the top when you're done. After zeroing the bit on the tabletop, I use a sample of the crossbanding as a spacer to set the depth stop on my plunge router (see the photo above). I make a test cut in a piece of scrap to check the accuracy of this setting.

The distance between the bit and pivot point is determined by the radius of the tabletop and how wide I want the crossbanding to be. I use crossbanding that's anywhere from 1 in. to 3 in. wide, depending on the size of the table. I always rout the rabbet wider than it needs to be, making two passes, and routing right to the edge of the tabletop. This lets me run the crossbanding off the edge, rather than fitting it in a groove. I rout the inner pass first because it's the critical one, where the crossbanding meets the field. Any excess width can be trimmed away later after all the inlay work is done.

Once I've established the distance from the pivot point to the inside edge of the crossbanding, I hold a rule to the underside of the trammel, with one end against the inside edge of the bit, and mark the length on the trammel. I drill a hole with a bit the same diameter as the finish nail pivot point, so the trammel will fit snugly.

Though routing the rabbet is straightforward, I take my time (see the photo above right). After the first pass is complete, another hole is drilled in the trammel arm for



Routing the rabbet—The author moves slowly around the tabletop, maintaining pressure at the center so the trammel doesn't ride up and create an angled rabbet.

the second pass. I use a block plane to level the rabbet where the two passes overlap. I knock off any fuzz created by the router at the edge of the veneered field using a piece of 120-grit paper wrapped around a block.

Laminate trimmer cuts matching curve in crossbanding

To get a perfect joint between the field and the crossbanding, I use the same trammel

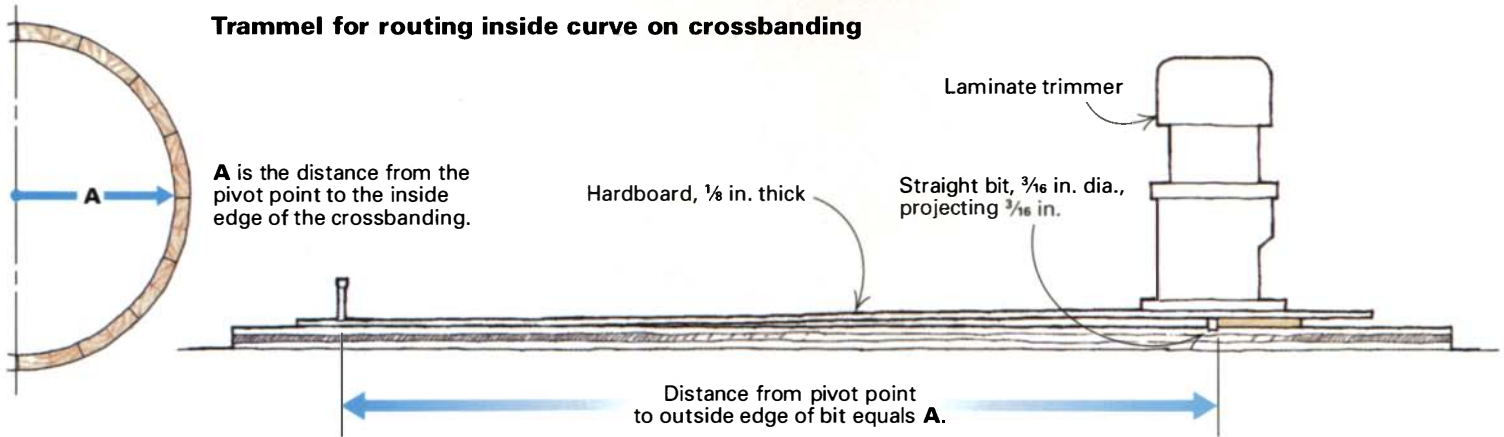
measurement for cutting the crossbanding as I did for the rabbet—with one big difference. To cut the rabbet, I measured from the pivot point to the *inside* cutting edge of the rabbeting bit. To cut the matching arc in the crossbanding, I switch to a laminate trimmer and a $\frac{3}{16}$ -in.-dia. straight bit and measure to the *outside* cutting edge. I use a laminate trimmer for this job because it's light and can be managed easily with one

Routing inside curve on crossbanding

1. Trim the waste; then check the fit. As long as the trammel length was set accurately, the fit should be perfect.

2. Crossbanding is marked for width. The author allows a little extra, which will be trimmed away later after the banding is glued down.

3. Rout out the strips of crossbanding. The author holds the veneer in place rather than clamping it down.



hand. Bit depth is about $\frac{3}{16}$ in. The trammel arm is made of $\frac{1}{8}$ -in.-thick hardboard and is tacked to a piece of $\frac{1}{2}$ -in.-thick plywood.

Swinging the trammel arm across the plywood gives me a reference groove. I place the leaf of veneer I'll be using for the crossbanding over this groove, trim away the waste at one end (see the top left photo above) and then check the fit. If it's not

quite right, I'll adjust the distance between the pivot point and bit by drilling another hole in the trammel arm. If the fit is good, I mark the veneer a little beyond the edge of the table, establishing the width of cut (see the top right photo above).

This width is then transferred to the piece of plywood I'm routing. I simply hold the veneer in place against the pencil marks on

the plywood, swing the laminate trimmer slowly through the veneer and then advance it for each subsequent cut (see the bottom right photo above).

Veneer tape, clamps pull crossbanding tight to field

Gluing the crossbanding in place is next. I position each piece of crossbanding so it's

centered on a section of the sunburst. Then I align a straightedge with the seams of the sunburst, mark the crossbanding (see the near right photo) and cut it with a veneer saw. I apply glue to the rabbet for that one section of crossbanding, tape the banding in place and pull the veneer tight to the field (see the far right photo).

The trick to getting perfect seams is in the clamping. The first time I tried crossbanding, I unclamped the first few pieces only to find that they'd crept away from the field and had left 1/16-in.-wide gaps between the inlay and the field.

When I asked my friend Frank Klausz how to prevent this, he said that the clamp must be tilted out before it's tightened. This causes the clamp to walk forward as you apply pressure (see the bottom photo at right). Pressure is transferred to the clamping cauls, which push the crossbanding tight against the field. Since I have adopted this technique, every seam has been perfect.

I work my way around the top, gluing down every other section as I go. When I finish, I usually take a break and maybe have a bite to eat while the glue dries. When I get back, I start in on the sections in between. Any squeeze-out at the edges of the sections of crossbanding already glued down can be cleaned up with a sharp chisel. I mark and cut these in the same way as the first pieces, just taking a little more time because the fit has to be perfect at the edges as well as along the inside curve.

Adding string inlay is simple. I like the way a 1/16-in.-wide line of holly or ebony defines the border between field and crossbanding. The process for grooving the tabletop for stringing is identical to routing the rabbet and uses the same center-point fixture. I use the laminate trimmer because it gives me more control, and I set the distance between bit and pivot point so the bit straddles the seam.

The last thing I do before removing the center-point fixture is rout the edge of the tabletop to its finished diameter. Using the router on the trammel arm leaves an edge that's smooth, round and ready for edge-banding. I set the distance between pivot point and the inside of the bit to the desired table radius and plunge a long straight bit slowly down through the edge of the table as I move the router. I move very slowly around the table, maintaining pressure near the center.

The center point can be removed now. I squirt a little VM&P naphtha (available at

Trimming and gluing crossbanding



Mark and cut seams. While holding the crossbanding firmly in place, mark seams by lining up a straightedge on the sunburst seam.



Tape crossbanding in place. After spreading glue in the rabbet, stick veneer tape to the crossbanding, and pull it in toward the center.



Angle the clamp out, so it forces the crossbanding inward when you apply pressure.

most hardware stores) under the fixture and pry gently on the laminate with something that won't dent or gouge the wood. The naphtha breaks the bonds between laminate, tape and veneer and will not stain the wood.

If I've routed a groove for string inlay, as I did on this table, I press the stringing in, using white glue to hold it in place. The

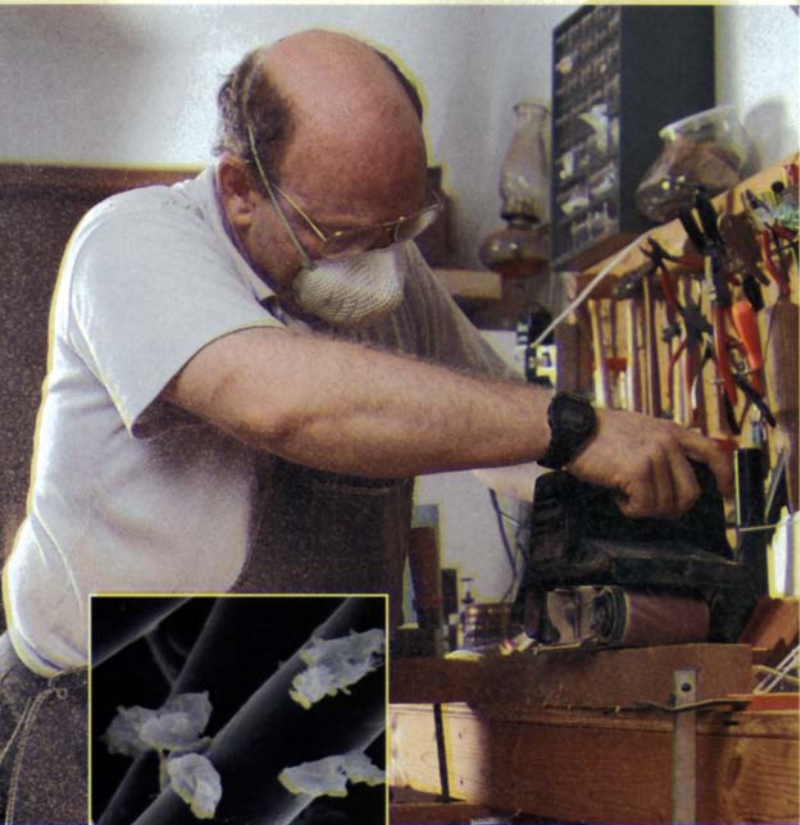
table is now ready to be sanded. When working with veneer, you can't sand after every step. Each sanding increases the likelihood of sanding through the veneer, so wait until all inlays are in and you have nothing left to add before sanding. □

Frank Pollaro owns and operates a custom furniture shop in East Orange, New Jersey.

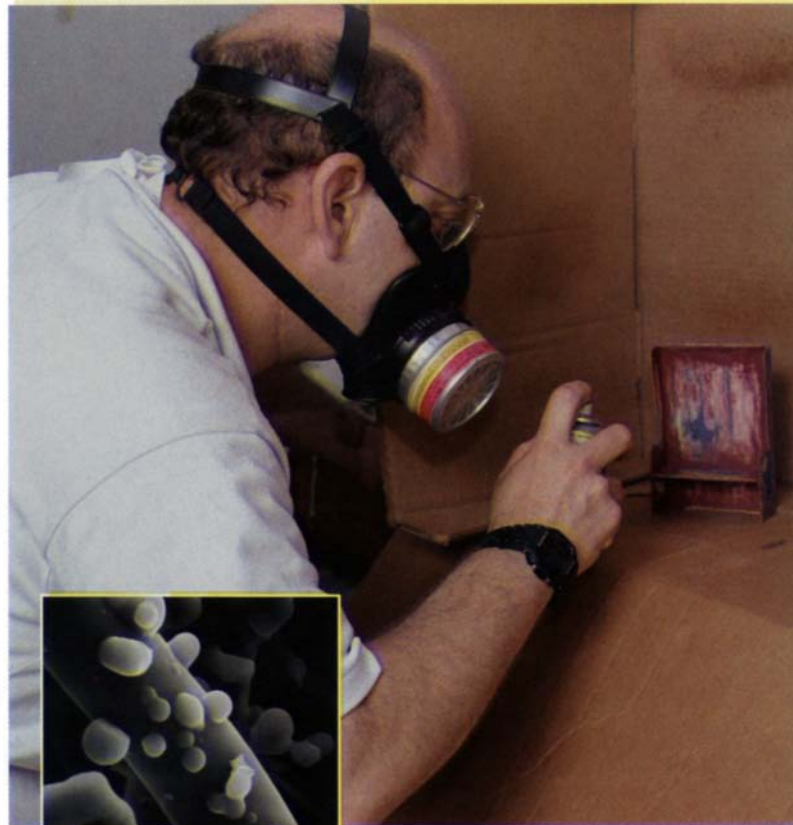
Protecting Your Lungs from Woodworking

Dust masks and respirators can capture a variety of workshop hazards

by Charles W. Calmbacher



Power sanding produces a lot of airborne dust. Seen under 1,200x magnification (inset left), wood dust particles are stuck to the strands of a dust mask.



Overspray from finishing—Under 1,200x magnification (inset), droplets of finish are shown captured by the fibers of a respirator.

My great-grandfather emigrated to this country from the Black Forest of Germany at the end of the 19th century and found work as a finisher for a piano company. That would have been unremarkable except he had only one arm. He was a hard worker and wasn't cut any slack.

The company occasionally held demonstrations that displayed his speed and ability to keep up with other workers. He became so well known for his talent that Mark Twain, who had an eye for unusual characters, hired him to repair some furniture the author had singed with cigars.

In my great-grandfather's day, safety took a back seat to getting the job done. He never wore a dust mask or respirator when he

worked. That attitude has prevailed for many generations of woodworkers. I approach woodworking with more caution. For many years, I worked in the pesticide and herbicide industry where a respirator was mandatory. I got used to wearing one, and I've carried that habit over to my workshop.

Fine dust particles are the most dangerous

Wood dust particles created in woodworking come in all sizes, some so small you can't even see them. Sanding machines produce very fine particles; even dull cutting tools will create fine dusts as well as larger chips. Very fine particles cause the most damage to your lungs. Wood dusts are considered a potential carcinogen by

Not all masks are rated for wood dust. You might find these low-cost masks near the lumber racks at the home center, but read the label carefully. Some aren't rated for wood dust.



the National Institute of Occupational Safety and Health (NIOSH). Some woods, such as Western red cedar, contain resins that are considered toxic. Studies have found that people in the wood-working industry suffer a higher incidence of respiratory system problems, including lung cancer, than the general population.

The nose and bronchial tubes are the body's first line of defense against air-borne invaders. There, fine hair-like fibers, called cilia, snag particles. The irritants get trapped in mucus and are expelled through coughing or sneezing. Excessive exposure, however, can irritate the tissues in the nose and bronchial tubes, causing difficulty in breathing and other allergic reactions.

Dusts and mists are most harmful when they enter the lungs, which act like a freeway interchange to other parts of the body, including the bloodstream, kidneys and central nervous system. Small particles, those ranging in size from 0.5 microns to 5 microns (a sheet of typing paper is about 25 microns thick), are most likely to do this. When dust particles enter the lungs, the body's immune system springs into action and tries to destroy and expel the invaders. Our bodies are quite successful at this. But lung cells can get battle-weary and mutate into cancerous cells when they're overwhelmed by toxins.

NIOSH has revised its standards for respirators because it has been determined that respirator filters are less efficient at filtering dust and mist particles about 0.1 to 0.3 microns in diameter than at filtering smaller or larger particles (see the box on p. 67). New respirators are very efficient at capturing all sizes of fine particles. Because you never know exactly what size particles you might face in the workshop if you're running machine tools, it pays to wear some sort of dust mask or respirator. When spray finishing, it's even more important to protect your lungs because you will be faced with fine mist particles as well as potentially hazardous vapors from the chemicals.

Disposable masks have improved

Disposable masks are designed for specific hazards. Some are only designed for pollen and other large particles (see the top left photo above). It's a safe bet to pick a mask that's been certified by NIOSH. Then you'll know it meets certain standards.

Though often referred to as paper dust masks, these disposables are made of a variety of materials including finely woven paper, plastics and polymers. These filters come in many styles: from the basic mask with an elastic headband to more elaborate, molded units with exhalation valves, silicon seals and adjustable headbands. Prices for these respirators range from about 15 cents to several dollars each. The most inexpensive masks, made of thin



Getting a good fit from a respirator—Masks with two adjustable straps (top and center) usually fit well. A mask that doesn't seal flat against the face (bottom) will allow dust or mist to escape past the filter.





Quarter-face mask—This mask seals well because of its soft body and fabric covering. The filter is replaceable.



Half-face mask—These respirators are usually made of soft rubber or silicone and have replaceable filter cartridges.



Full-face protection—Powered air-purifying respirators deliver a constant supply of filtered air.

materials and a flimsy bendable metal strap over the nose bridge, often don't seal well. Fiber masks, made of thicker materials molded to conform to the shape of the face, provide a better fit and improved seal. Some come with one-way valves, which make breathing easier and help prevent fogging of glasses. Masks equipped with two adjustable straps offer a more secure fit than those with a single elastic band. People who have beards, however, won't get a good seal with any of these masks.

Replace a disposable mask when breathing through it becomes difficult. Don't try to extend the life of a mask by vacuuming or washing it. Doing so will only break down the material and make the mask ineffective.

Air-purifying cartridge respirators

Air-purifying cartridge respirators come in three basic styles: quarter-, half- and full-face designs. These make you look like a serious

toxic avenger. The quarter- and half-face models cover the nose and mouth; the full-face models offer eye protection as well. Again, many of these will not seal well if the wearer has a beard. To be effective, respirators must seal against bare skin.

The quarter-face air-purifying respirator is usually made of rubber, silicones or plastic (see the photo at left above). It is designed to fit over the nose and mouth, and it rests on the chin. It comes with a replaceable filter that will block out dusts and nontoxic mists. These respirators cost about \$5 and replacement filters are usually available for about \$1 or less.

The half-face respirator covers the nose and mouth and fits under the chin. Outfitted with the appropriate cartridges, it can protect against very fine particles, toxic vapors, mists and some gasses (see the top photo on the facing page). A respirator body with a pair of filters costs \$25 to \$40. Cartridges cost \$8 to \$20 per pair.

These are a good choice for woodworking because they have soft rubber or silicone seals and adjustable straps. A good fit is important with a respirator, and except for those with beards, half-face respirators will fit almost anyone (see the photo at left).

Although half-face respirators serve most woodworkers well, there is a mask that provides even more protection: the full-face respirator, available from industrial equipment suppliers. It seals along the forehead, temples, cheeks and under the chin. A full-face respirator has the additional advantage of built-in eye and face protection. The body of these devices costs from \$150 to \$250. Cartridges are \$8 to \$20 per pair.

Powered air-purifying respirators are comfortable

Powered air-purifying respirators (PAPRs) come in several styles: half-face, full-face, with a hood or with a face-shield and a seal around the face. These respirators (see the photo at right above) have battery-powered fans that draw air through replaceable filters. Depending on the model, they can filter dusts, mists and other hazards. (NIOSH is still developing new standards for these.) Like full-face respirators, these offer excellent protection. If you wear glasses or have a beard, a full-face, hooded PAPR may give you the best fit and, therefore, the best protection. I prefer PAPRs for woodworking because they reduce the strain of breathing through a filter.

PAPRs are available through professional tool stores, woodworking equipment suppliers, safety equipment companies and directly from some manufacturers. The cost of these respirators



Testing the fit of a cartridge-style respirator—Cover the cartridges with your hands and inhale. The vacuum pressure created should collapse the mask against your face.

varies based on the design—the more hazards they guard against, the higher the cost. Prices range from approximately \$150 to \$500. Cartridges range in price from \$8 to more than \$20.

PAPRs pump filtered fresh air toward your face, which makes them very comfortable to wear, even in warm weather. But pay attention to the sound of the fan; if it sounds like it's beginning to strain, it probably means that it's time to change the filter.

Filters are made for a variety of applications

It's important to pick the right filter for the job. When spraying lacquer, for example, be sure to get cartridges rated for organic vapors. Those come with charcoal filters that capture toxic vapors, which even the best dust mask won't. You shouldn't be able to detect the smell of a finishing product when breathing through a respirator fitted with the proper cartridges. If you can, it's time to replace the cartridges. They cannot be cleaned.

There's not a cartridge available for every chemical you might use in the workshop. If you're working with methanol or products containing isocyanates, such as urethanes and polyurethanes, have plenty of fresh air circulation—there isn't a NIOSH-approved filter cartridge to trap those vapors. A respirator, however, will help somewhat by capturing mists from overspray.

It's possible to fill an enclosed room, such as a spray booth, with a high concentration of mists and vapors, which will overwhelm an air-purifying respirator. Air-purifying respirators do not supply oxygen, they only filter contaminants. If you suspect you are creating high concentrations of chemical contaminants, you should have a professional test for oxygen levels.

Because NIOSH has issued new standards for respirators, and old and new models are still on the market, it's confusing sorting through all the numbers and alphabet soup printed on the labels.

On old-style disposable respirators rated for dusts and mists, the label or packaging will have the code TC-21C, followed by some numbers. The 21C tells you it's an old-style mask, and possibly less effective than the newer models. New masks are coded different-



Use the proper cartridge for the chemical hazard. For spraying lacquer, organic vapor cartridges, which contain carbon filters, will trap hazardous fumes.

ly, and even the most basic NIOSH-approved dust mask will capture 95% of the particles at 0.3 microns, the most penetrating size.

If you have a cartridge-style mask, there are many specialty filters available. For capturing fine dusts, high-efficiency particulate air (HEPA) filters are a good choice. Most of the HEPA filters manufactured under the old standards will meet the highest level of the new guidelines, which require filters to capture 99.97% of dusts in the 0.3 micron size. □

Charles W. Calmbacher is an environmental, health and safety consultant and teaches at the University of Georgia at Athens. He lives in Lawrenceville, Ga.



Dust mask that complies with new standards—This NIOSH-approved dust mask is rated N95. That means it's not oil resistant, and it's 95% efficient at capturing dust particles as small as 0.3 microns.

New standards for respirators

The National Institute for Occupational Safety and Health (NIOSH) has issued new standards for respirators that went into effect July 10, 1995 and allowed a 3-year grandfather period. Dust masks and cartridges for respirators manufactured after July 10, 1998 must meet the new standards. Consumers will continue to see older products sold after that date because retailers will be allowed to deplete their stocks. Respirators that meet the new guidelines are already on the market.

The new regulations require approved filters to be at least 95% efficient at capturing particles 0.3 microns in size, the most penetrating. Disposable masks that meet the new standards are rated with a letter designation followed by a

number, such as N95. Masks beginning with an N are for use where there is no oil present in the air, masks labeled with an R are resistant to oil mists and P is for masks that are even more resistant to oils. The numbers refer to the efficiency of the respirators: 95%, 99% and 100% (actually 99.97%) efficient. Cartridge-style filters must meet the same standards. Because cartridges are available for a host of hazards, they are labeled with additional information.

Manufacturers are making new cartridges to fit all or most masks on the market. The new standards apply to all particulate filters for non-powered air-purifying respirators. NIOSH may work on new standards for powered respirators in the future. —C.W.C.

Arts-and-Crafts Sideboard

——Part three——

*Ebony and carved yellow heart inlay:
crowning touches for a handsome case*

by Gary Rogowski

Details in a handmade piece of furniture are what make it sing, and where a furnituremaker can really have fun. In some ways, this mahogany sideboard looks as if it could have been designed by Charles and Henry Greene in the early 1900s. I relied on the inlay of ebony and carved yellow heart to make this design my own.

Articles in the last two issues of *Fine Woodworking* have covered construction of the carcass, the web frames, which support the drawers, and the doors. What's left is the top, back rail, drawer pulls and door handles, and, finally, the inlay across the front of the case. Although each of these remaining parts gave me some chance to experiment with design, I especially looked forward to the carved inlay that would simulate ginkgo leaves blowing across the face of the finished sideboard.

A breadboard top stays flat but allows seasonal movement

To keep the top flat, I used breadboard ends, which prevent the top from cup-

ping yet still allow it to move across its width as humidity changes (for more on breadboard ends, see *FWW* #110, pp. 78-81). The breadboard ends were dimensioned $\frac{1}{16}$ in. thicker than the top and a little longer than the top is wide, adding shadow lines. The top and breadboard ends are flush on the bottom.

To join the breadboard ends and top, I used four mortises and tenons at each end, along with a full-length groove in the ends and a mating tongue at either end of the top (see the drawing on pp. 70-71).

The mortises and grooves in the breadboard ends were cut on the router table. The tenons and tongue across the ends of the top, both $\frac{1}{4}$ in. thick, were cut with a hand-held plunge router after being defined by sawkerfs. Remember that any trimming to fit must be from the top cheek of the tenon so the bottoms of the bread-





Inlay is the finishing touch—Carved inlay in the shape of ginkgo leaves help put the author's stamp on this mahogany sideboard. Leaves were carved and positioned to look as if they were scattered across the doors by the wind.

board ends and top remain flush. When the tenons were finally seated, I pulled the two end pieces off and planed a slight belly along their inside edges. This spring joint ensures that the joints between top and ends remain tight.

Once the joinery was cut and fitted, I eased all exposed edges on the top and ends, except for those where the ends meet the top. I finish-planed and then wet-sanded before I glued on the ends. This work is easy now, but a real pain later on.

Pins and plugs finish top, functionally and decoratively

Because the top has to be able to move across its width, I couldn't glue all four tenons on each end into their respective mortises. Instead, I glued just the center two tenons and used short sections of dowel to pin all the tenons. The outer two tenons have slotted pin holes so the top can move. I plugged all four holes at each end with squared ebony plugs.

With the top and breadboard ends apart, I drilled the 1/4-in.-dia. plug holes (about 1/4 in. deep) into the ends and then squared them. These holes do not go into the mortise. Next I drilled 3/16-in.-dia. pin holes (centered on the 1/4 in. holes) through the mortises and just into the bottom half of the breadboard ends. Then I dry-clamped the top and ends together and marked the pin locations on the tenons. I pulled the ends off, drilled the holes in the two center tenons at each end and routed 1/2-in.-long slots in the outer tenons.

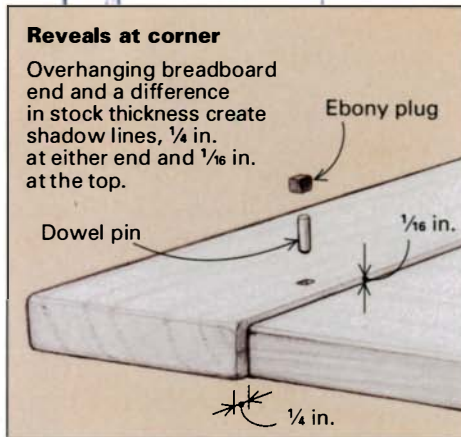
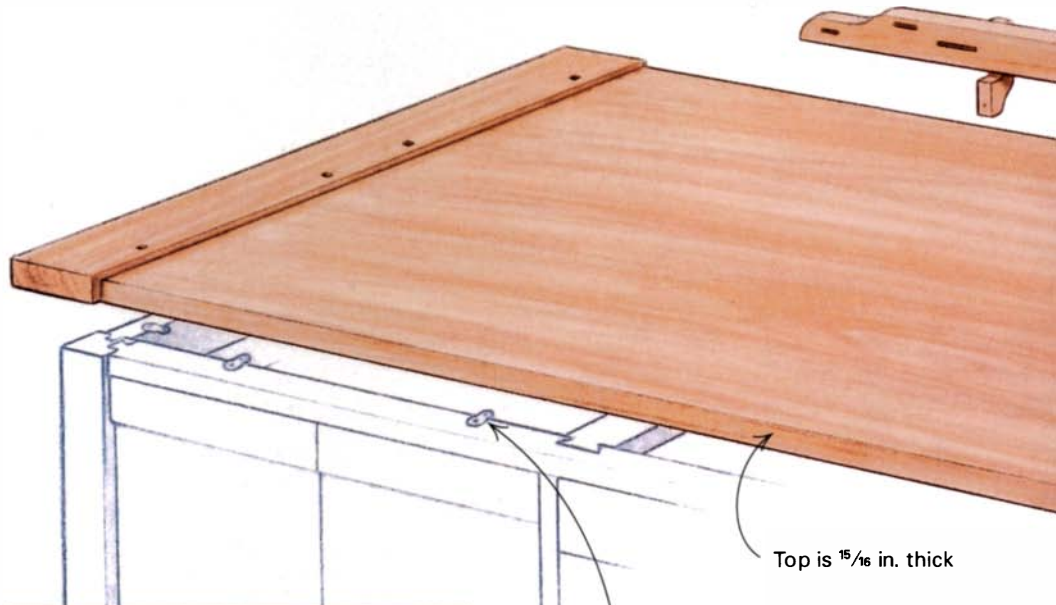
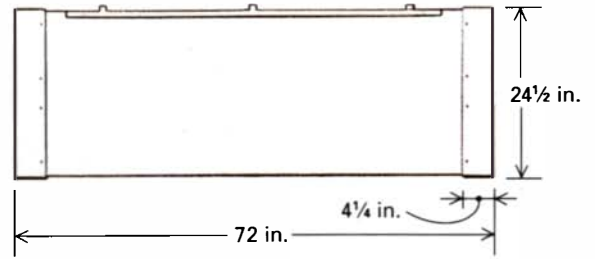
I glued and clamped the breadboard ends to the top next (see the top photo on the facing page). When you glue the ends on, make sure you have the same reveal at both edges of the top and that the ends pull in at their centers. Have long clamps ready to apply pressure on both sides of the top, and make sure the ends don't deflect under clamping pressure. If you don't have long enough clamps, threaded couplers can connect lengths of pipe clamp.

I pinned the four mortise-and-tenon joints at each end of the top with short sections of 3/16-in.-dia. dowel, driving them home with a piece of brass rod (see the center photo on the facing page). Then I tapered one end of each of the 1/4-in.-sq. ebony plugs to ease their entry into the squared holes in the breadboard ends. I hammered these home, stopping when I could hear that they were fully seated (see the bottom photo on the facing page).

This sideboard called for a soft, rounded

■ Breadboard ends keep the top flat and create shadow lines for visual interest. The ends are pinned and plugged. The back rail is attached to the top rear rail of the carcass with a pair of brackets that are notched to fit around the overhang of the top.

SIDEBOARD TOP



Reveals at corner

Overhanging breadboard end and a difference in stock thickness create shadow lines, 1/4 in. at either end and 1/16 in. at the top.

Figure-eight clips secure top to case. The clips are mortised into the rails all around so the top sits flush with the case.



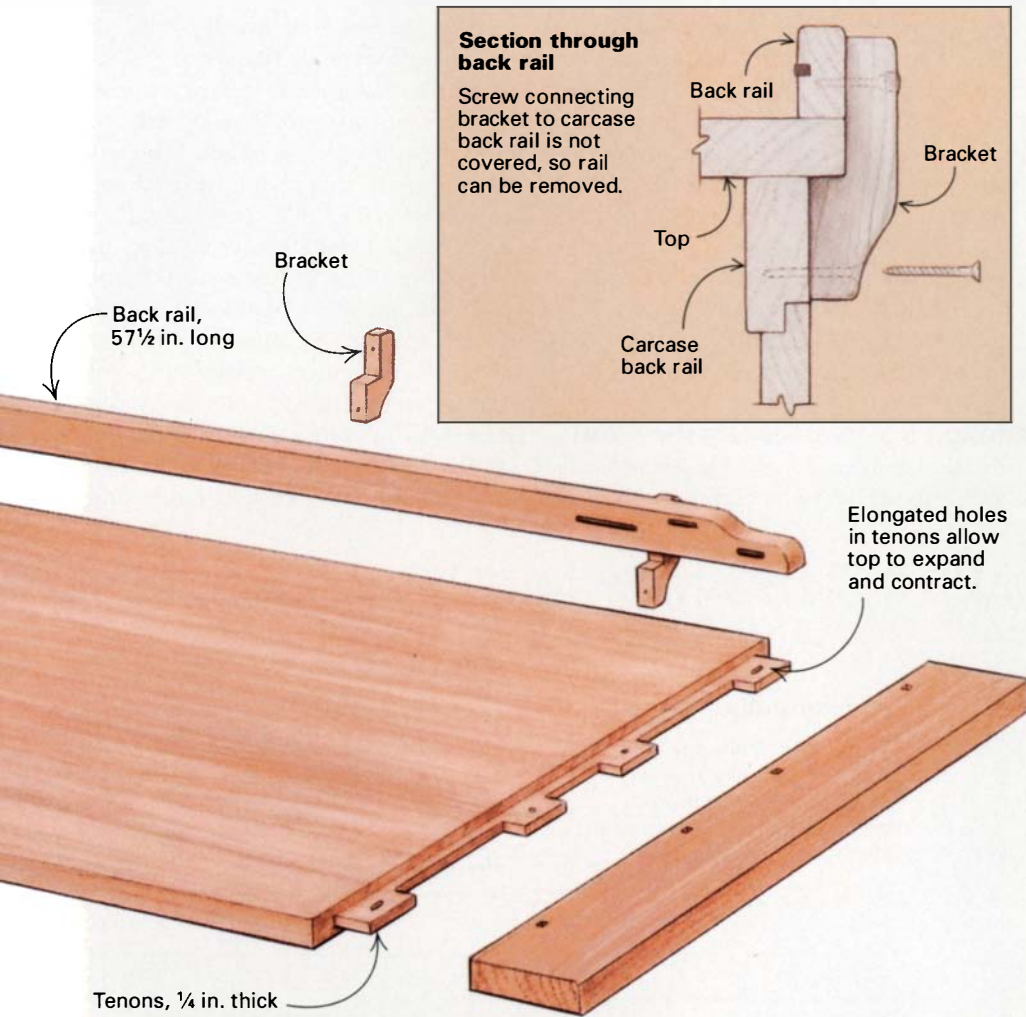
look, so I domed the plugs using a chisel and sandpaper. A scrap of plastic laminate prevented damage to the breadboard ends as I pared down the ebony plugs to within 1/16 in. of the surface. I finished doming the plugs with 180-grit sandpaper, stopping when I could run my finger over a plug without catching an edge.

I attached the top to the carcass with 20 figure-eight clips (see *FWW* #112, pp. 54-57 for more on attaching tops to bases). I used

a 3/4-in.-dia. straight bit in a plunge router to cut the recesses in the top rails for the clips. Because the figure-eights can pivot, the top is free to expand and contract.

A low back rail doesn't overwhelm the case—I had originally designed the back rail as a 5-in.-high plate rail with cutouts similar to those in the stretchers. But later, something told me that such a tall back rail wasn't quite right. So I started mocking up

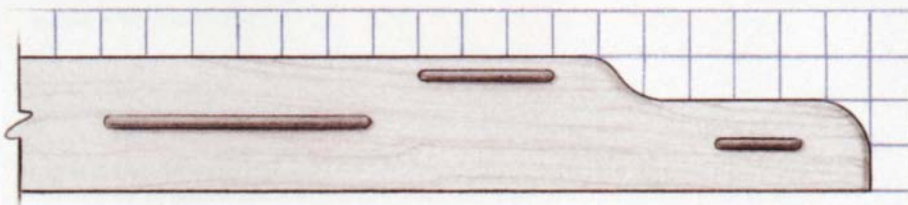
AND BACK RAIL



Back rail detail

Ebony inlay is gently rounded and just proud of the back rail's surface.

1 sq. = 1/2 sq. in.



other possibilities on cardboard, using a marker to indicate inlay. I arrived at a rail just 1½ in. high and inlaid with strips of ebony. The effect is lighter and more graceful than what I had intended.

I routed 1/8-in.-wide grooves in the back rail for the inlay, using support pieces on either side of the rail to keep the router base steady. To fit the inlay, I planed the ebony to thickness, sanded one end round to fit and then cut the other end close to

length. I snuck up on a fit by sanding a little off the other end, checking and repeating until it just fit the groove. Once I'd glued the ebony in place, I domed its top to match the plugs in the top and elsewhere on the sideboard.

To attach the back rail, I glued, screwed and plugged brackets to it from behind, notching them to fit around the overhang of the top (see the drawing detail above). The brackets are screwed to the back of the

PINNED JOINTS



Glue only the center. The center two mortise-and-tenon joints are glued. The other two are pinned through elongated holes but assembled without glue so the top can move with seasonal changes in humidity.



Joints are pinned and then plugged. Tenons in the ends of the top are pinned in place with short sections of 3/16-in.-dia. dowel. The author uses a piece of brass rod to set the pins before adding the ebony plugs.

carcase. To ensure accuracy, I attached the brackets with the back rail in place.

Handles are designed after the piece is built

I never design handles for a piece of furniture until it's built. It's impossible to know what will look right until then. I started with a stylized ginkgo-leaf shape for the door handles. It looked great there, but it didn't work as a drawer pull—it wasn't enough for the huge expanse of drawer face.

I mocked up longer pulls so they would be more prominent. I kept playing with the proportions of the pulls until they felt right both visually and in my hands. I settled on long mahogany pulls with a pattern of ebony inlay in them (see the drawing below). For the door handles, I shortened the

pulls and included one square of ebony. The undersides of the pulls are slightly coved to provide a better grip.

Door handles are placed as close to each other as possible, centered in the width of each top door rail. Locating the drawer pulls took a bit more head scratching. Both pulls and inlay increase in length from top to bottom. I wanted them to line up on a diagonal, with each of the pulls centered on the width of the drawer, but when I tried that, it just didn't look right. I ended up keeping the top two pulls centered in the drawer faces, but I positioned the bottom pull nearly 1 in. above center.

Ginkgo leaves swept by the wind

This inlay work was the detail I was most excited about. It was a chance to break

away from the Greene and Greene mold. What I hoped to create was a natural-looking display of ginkgo leaves, as if a gust of wind had just blown a small pile of them across the front of the sideboard.

I got the patterns for my carved leaves from real ginkgo leaves I'd collected (like the one on the facing page). I began by drawing these shapes until I felt I had a sense of what the leaf looked like, whether flat or curled, falling or tumbling in a breeze. Because the leaves were brittle, I also made up some cardboard versions, which I folded and rolled to mimic real leaves. Then I started to draw various leaf shapes on large sheets of brown paper where I had drawn the outline of the doors.

When I liked a leaf, I traced its shape onto cardboard using carbon paper and a

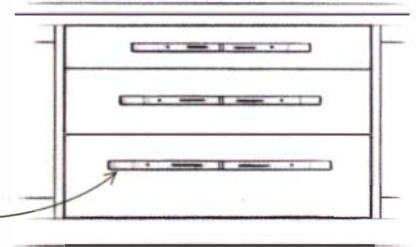
SIDEBOARD PULLS AND HANDLES

Both pulls and handles are made of mahogany with ebony inlay. The ebony is pared down and gently rounded until it's just proud of the mahogany.

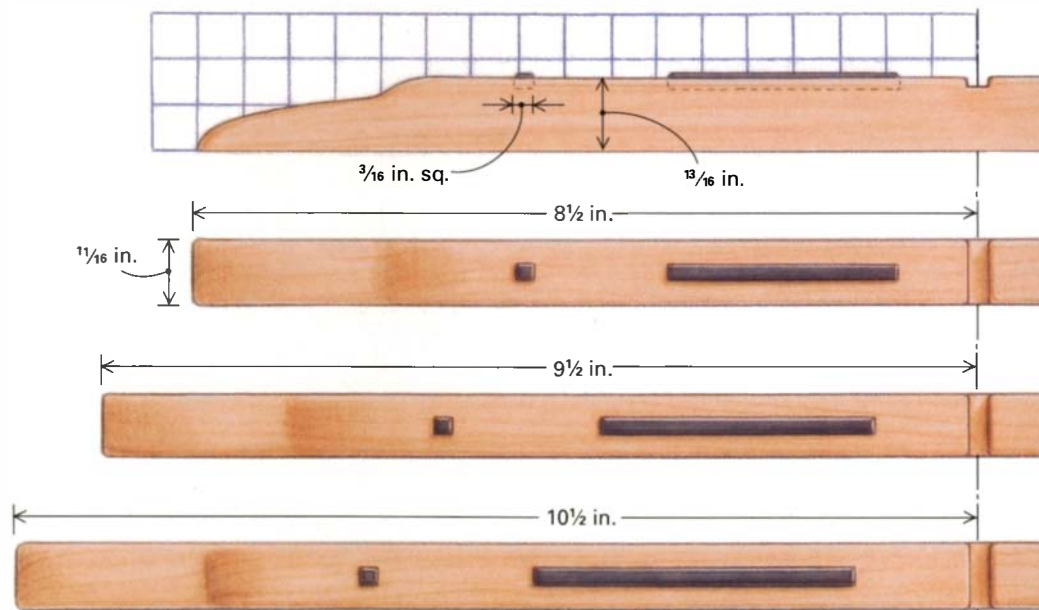


Drawer pulls

The top two pulls are centered on their drawers, top to bottom. The pull on the bottom drawer is situated about 1 in. above center.

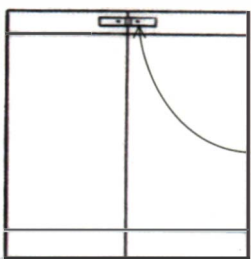


1 sq. = 1/2 sq. in.



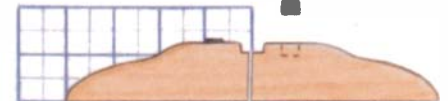
Centerline

1 sq. = 1/2 sq. in.



Door handles

Handles are situated as close together as possible and are centered on the width of the top rail.



CARVING THE LEAVES

A gust of wind sends the leaves flying. The author sought a natural looking display of leaves blowing across the front of the sideboard. He taped real leaves on the doors as he worked toward a final design.



pencil and cut out the pattern (see the near right photo). Then I played with the position of each leaf. A yellow marking pen brightened the cardboard enough to give it some life. I began designing with the leaf patterns by applying them to the real doors with double-faced tape.

Inlay is sawn, shaped and beveled—

The wood I chose for the inlay was yellow heart. This South American wood is valued for its consistent yellow color and is often used in parquet flooring and, surprisingly, fabric dye. It was perfect for the autumn yellow of my ginkgo leaves.

I used quartersawn material to minimize wood movement and resawed it into pieces $\frac{3}{16}$ in. thick. The leaf pattern was marked on the yellow heart so the grain followed the direction of the stem. This way, I wouldn't have to worry about a stem breaking off because of short grain.

I cut the leaves on a bandsaw and scroll-saw, then shaped and beveled them slightly, using a sanding drum (see the top right and bottom left photos). Any edges I couldn't reach with the sanding drum were shaped and beveled with a knife.

Recess for inlay is routed, then refined with carving tools

The next step was to transfer the leaf patterns to the door. I placed each piece of in-



Trace, then cut. The author transfers a drawing to cardboard with carbon paper (left). Patterns are used to trace leaves on the inlay before they are cut (above).



Shape the leaves, and bevel their edges. A spindle sander does the job quickly (left), but the author needs a knife to get into tight corners. He scribes a leaf on a door (above).

CARVING THE LEAVES *continued*



Rout out most of the waste; then pare to the line. After routing as close to the line as he dares, the author finishes the job with carving gouges, cutting straight down or slightly undercutting.



Press, tap and then clamp the inlay. The author used a caul to distribute clamping pressure evenly across the inlay.



Detail is carved in. The author creates depth and motion in the leaves through his use of line and texture.

Photo: Jim Piper



The illusion of depth—With just $\frac{3}{32}$ in. of leaf above the surface of the door, every cut counts when carving. Deeply incised cuts where the leaves fold or curl create shadow lines that suggest depth. Gentle, flowing curves give the leaves an organic feel.

lay on the door in position, marking its shape with a scratch awl and with a thin knife in very tight spots (see the bottom right photo on p. 73). Accuracy at this point is critical. A slip of the knife can create nasty marks on the door's surface, and a slip of the inlay will result in an inaccurate pattern that's nearly impossible to fix. Take your time, keep a firm grip on the inlay and make sure the entire perimeter of the leaf is marked before you lift it off the door. I darkened the incised line with a soft pencil—it's much easier to see than a knife line when you're routing.

To create the recess, I used a $\frac{3}{16}$ -in.-dia. straight bit in a fixed-base router and set its depth of cut at $\frac{3}{32}$ in. I attached spacer strips to the door with double-faced tape to bring the router base up to the level of the door rails. Then, after a deep breath, I began routing out the inlay pattern (see the top left photo). I started at the center of each pattern and gradually worked my way out to the edges. Because the bit pulls itself into the cut when routing clockwise, I cut in the opposite direction to maintain control.

For the leaf stems, I used a $\frac{1}{16}$ -in.-dia. straight bit; then I switched to a shopmade, $\frac{1}{32}$ -in.-wide chisel. I put a hollow grind on its edge, honed it razor sharp and used it to finish cutting the stem recesses to depth.

After routing, I trimmed the walls of each recess with carving tools, trying to keep them straight or just slightly undercut (see the top right photo at left).

BUILDING AN ARTS-AND-CRAFTS SIDEBORD

Then I began fitting each leaf. I used carving tools and a sanding drum. I checked the fit often—until the leaf fit almost all the way down into its ground. If a leaf sticks in its recess, lever it out with the edge of a #1 gouge or a skew chisel.

When I was comfortable with the fit of a leaf, I spread a little glue in the recess, pressed the leaf into place and then tapped it so it was well-seated (see the center photo on the facing page). Then I put a caul over the leaf and another under the door and clamped the inlay until it would go no farther. There was a considerable amount of glue squeeze-out, so I pulled my clamps after three hours and cleaned up the excess.

When the glue had cured, I carved in the wind. Here was a chance to play with the shape and texture. I spent about an hour working on each leaf with #3 and #5 gouges, carving in the gentle undulations and curves that you see in falling leaves. Then I lightly trimmed each leaf edge with a #1 skew chisel to make them friendly to the touch. Do this with a carving tool, not sandpaper. Sandpaper will smear the details and leave a soft, unsatisfying edge. After each leaf had been carved, I burnished its surface with a piece of burlap.

Finishing the sideboard: shellac inside, varnish outside

For all the interior surfaces of this cabinet, I used a 1½-lb. cut of dewaxed super blond shellac (a proportion of 1½ lb. of shellac flakes to a gallon of denatured alcohol) that I mixed myself. I added a few drops of jasmine oil (available in many health-food stores) to this mixture to give it a pleasant scent. This finish is easy to apply, dries quickly and has a much nicer aroma than lacquer, varnish or oil. The drawers were shellacked inside and out except for their faces. I also waxed the drawer sides and web frames after the shellac had dried.

For the exterior of the sideboard, I used a product called ProFin manufactured by Daly's (for a distributor, call 800-735-7019). It's a wiping varnish that's easy to apply, and it gives a lustrous finish in three coats. I used the gloss version. I tried to make sure that all the dust in my shop had settled before applying the final coat. I wanted to avoid having to rub out that last coat with anything but a polishing cloth. □

Gary Rogowski designs and builds furniture and teaches woodworking at his studio in Portland, Ore. He is a contributing editor to Fine Woodworking magazine.



THE CARCASE

In FWW #125, Gary Rogowski described the construction of this sideboard's carcass, including its two interior divider panels and the back.



DRAWERS AND DOORS

Final carcass glue-ups, construction of the web frames, and drawers and doors are described in FWW #126.



THE FINISHED PIECE

The sideboard is complete. Gary and Buck get ready to head home after finishing another successful project.

In Search of the Perfect Benchstone

The pros and cons of Arkansas stones, ceramic stones, diamond lapping plates and waterstones

by Brian T. Derber



The author checks a stone for flatness—To hone an accurate bevel on a cutting tool, such as a plane iron, a benchstone ought to be at least 0.001 in. flat over its surface, measured diagonally.

When I studied violin making in the early 1980s, the first lesson I learned was how to hone a block-plane iron. Honing my hand tools became a daily practice. I think I spent more time sharpening tools than working with wood that first semester.

Straight-razor hones, what barbers used before the advent of disposable razor blades, were the benchstones of choice at the school. A student could opt for ordinary oilstones, but they were frowned on by our teachers because of the risk of

cutting oil contaminating our violins. The razor hones used water as a cutting fluid. Several students had heard about Japanese waterstones, but these were new to the U.S. market. And none of us was willing to spend the money on a set, especially when a couple of dozen razor hones were the same price.

Last fall, I opened my own violin-making school. My first lesson, of course, was showing my students how to sharpen a block-plane iron. I offered them the use of my razor hones until they could buy

their own. But when I tried to order additional hones, I discovered they were no longer available. We had to look at other options and decided to sample a variety of benchstones.

We evaluated five types of benchstones

My students and I tried Arkansas stones, Japanese waterstones, Norton waterstones, ceramic stones and diamond plates. We judged the benchstones on flatness (see the photo above), ease of

use, speed of cut, how sharp they made our tools (see the story on p. 81) and how much maintenance they required.

Many different hand tools are used for violin making. We concentrated on sharpening plane irons, from small finger-plane irons to standard-sized bench-plane irons. These irons are made of high-carbon steel or high-speed steel, which is very hard. The benchstones were used for hundreds of sharpenings apiece over the course of a month. It soon became apparent that there wasn't one clear favorite. There were drawbacks to all the stones, but our favorites were the ceramic stones and the Norton waterstones.

My students and I liked the ceramic stones because they cut as aggressively as waterstones but weren't messy because they are used dry. The ceramics produce a nice polished edge on both high-carbon and high-speed steel tools. But the drawbacks are the stones are only 2 in. wide and aren't as flat as we'd like. Unlike waterstones, they can't be flattened.

We also really liked the Norton waterstones. They're big, about 3 in. wide, have a slightly harder bond than Japanese waterstones and can handle high-carbon and high-speed steels. But owning waterstones requires a disciplined personality. You need to flatten them frequently because they dish out rapidly.

Arkansas benchstones are good for high-carbon steel

Native Americans used the pure silica rocks from the Ouachita Mountains of Arkansas and Oklahoma for tools and weapons long before they had knives to sharpen. Beginning in the 1800s, large-scale mining began for these rocks of novaculite, which were found to be excellent for sharpening tool steel. They have been the benchstones of choice for generations of American woodworkers (see the photo at right).

Arkansas stones are graded according to grit size and assigned various trade names. Washita is the coarsest, and soft Arkansas is considered a medium grit. There's a difference of opinion about which stones are the finest grit. Some manufacturers rate black Arkansas as the finest grit, but others say that the translucent and true-hard are the finest. In either case, these three stones are not that far apart on the grit scale, ranging from 900- to 1,200-grit, depending on who you talk to.

The abrasive in all Arkansas stones is



Benchstones subjected to hundreds of sharpenings—Students Korinthia Klein, left, and Leslie Arendt helped the author evaluate four types of benchstones (above).

Arkansas stones are fine for high-carbon steel. But high-speed steel tools take too long to sharpen on these stones (left).



Benchstone comparison

Type	Uses	Pros	Cons	Cost
Arkansas stones	High-carbon steel tools	Stones are hard, don't dish out quickly.	Oil-cutting fluid can contaminate wood, won't cut high-speed steel.	\$20-\$75 each, depending on size and grit
Ceramic stones	High-carbon steel and high-speed steel tools	Stones cut aggressively, can be used dry.	Medium and fine stones are not as flat as other stones, can't be flattened.	\$30-\$52
Diamond lapping plates	High-carbon steel and high-speed steel tools	Laps have long life span, won't dish out.	Laps are not available in ultrafine grits.	\$25-\$75 each, depending on size and grit
Japanese waterstones	High-carbon steel and high-speed steel tools	Stones cut aggressively, can be flattened.	Stones must be used with water, frequent flattening required.	\$20-\$75 each, depending on size and grit
Norton waterstones	High-carbon steel and high-speed steel tools	Hard resin bond gives positive feedback when sharpening by hand, can be flattened.	Stones must be used with water, frequent flattening required.	\$20-\$70 each, depending on size and grit

primarily quartz. When you buy a specific grade of Arkansas stone, you get a hunk of natural material, and because of that, the grit size can vary slightly within the stone and from stone to stone. We tried Washita, soft Arkansas, black and true-hard.

A light oil is traditionally used as a cutting fluid with Arkansas stones. You can also use kerosene or some mixture of the two. Water can be used too, and some people add a drop or two of liquid soap to the water. Cutting fluid keeps the pores of the stones open and also acts as a lubricant to keep the tool from sticking. The stones we used were nice and flat, within 0.001 in. flat in any direction.

When we used an oil mixture with the fine Arkansas stones, the tool glided easily

across the stone; when we used water, the tool didn't rub smoothly across the surface. The drawback with using oil is that it gets on everything, even when we were trying to be neat. If any oil gets in contact with the wood of a project, it may show as a blotch on the final finish.

Arkansas stones can produce a good edge on high-carbon steel, but they cut slower than the others we tried. It's pointless to sharpen high-speed steel on these stones because of the slow cutting action.

Maintenance of Arkansas stones is a breeze. They stayed flat after repeated use. Unlike waterstones, they are very hard and don't require constant flattening. They will, however, eventually dish out. To flatten them, it's best to use 34-grit to

96-grit silicon carbide powder on a lapping plate. If cost is a factor and you are only honing high-carbon steel, these stones are fine.

Japanese waterstones can sharpen the hardest steels

In the mid-1970s, Japanese waterstones began to catch on with American woodworkers. You can buy natural waterstones, but they are becoming rare and cost hundreds of dollars apiece. Most Japanese waterstones sold in this country are aluminum-oxide particles bonded with resins. They are priced competitively with other benchstones. The bond in a waterstone is designed to be relatively soft; that allows the abrasive particles to



Japanese waterstones cut aggressively and are good for sharpening all bench tools. Water is used as a cutting fluid and the stones quickly break down, creating a messy slurry.

spall off the surface easily, constantly exposing a fresh, sharp surface. Aluminum oxide is just hard enough to handle high-speed steel and some carbides.

We tried the King brand waterstones in four grits: 800, 1,200, 6,000 and 8,000. A coarser, 220-grit is available too, and the abrasive is silicon carbide rather than aluminum oxide. This is the stone to use if you need to remove nicks in a tool's edge.

Out of the box, the waterstones were about 0.003 in. to 0.004 in. out of flat. We flattened them to about 0.001 in. tolerance using 220-grit silicon carbide wet-or-dry paper on a piece of flat marble (see the photo at right). A piece of plate glass will work just as well. We found that it was best to keep up the maintenance of these stones, flattening them with a few swipes across the wet-or-dry paper after every sharpening or two. Ownership requires a disciplined personality. They also require a lot of water and can create quite a mess.

The 800-grit and 1,200-grit stones need to be soaked for about five minutes before use. These two stones also felt a bit soft. It is fairly easy to round the bevel of a small tool when using them because it takes a while to get the feel for keeping the tool's bevel perfectly flat while sliding it back and forth across the stone. With larger plane irons, it's easier to sense whether the bevel is positioned flat on the stone. It's also easy to gouge the surface of these stones when sharpening small tools because their edges can catch. But the stones cut very quickly. Japanese stones cut better if you maintain a muddy slurry on their surface. Moving up to the higher



All waterstones require frequent flattening. That's done with a sheet of 220-grit sandpaper placed on a flat surface, such as a slab of marble.

Norton waterstones are slightly harder than Japanese stones. When sharpening by hand, a hard stone makes it easier to sense whether you're keeping the bevel flat.



Ceramic stones glaze over quickly. But the residue can easily be scrubbed off with a dish pad and water.



grits will produce a razor-sharp edge and mirror finish on metal. The 6,000-grit and the 8,000-grit stones don't have to be soaked, just wetted down. We couldn't see a quality difference in edges sharpened on the 6,000-grit stone and the 8,000-grit stone.

Norton waterstones are an improvement

The American-made Norton stones are the counterpart to the standard Japanese waterstones (see the bottom photo on p. 79). They are also comprised of bonded aluminum oxide particles. The bonding agent, however, is slightly harder than what's used in the King stones.

We tried three different grits: 1,000, 4,000 and 8,000. (A 220-grit coarse stone is also available.) The stones came out of the box 0.001 in. flat across their surfaces.

The 1,000-grit and 4,000-grit stones need to be soaked in water before use, just like the Japanese waterstones. The Norton stones are slightly harder than the Japanese stones, so they provide greater feedback and, therefore, better control when sharpening. But the speed and quality of the cut are indistinguishable from the Japanese waterstones.

Even though the Norton stones are an improvement over the Japanese stones, they seem to dish out almost as rapidly and can be nicked just as easily, especially by small tools. Like Japanese stones, they are messy and require periodic flattening.

We did have a problem with the 1,000-grit stone. After it had been flattened, the stone didn't cut as aggressively as it had initially. The company assured us it was part of a batch of stones manufactured with an overly hard bond, and we could send it back for a replacement.

Ceramic stones are narrow but cut well

Ceramic stones are made of aluminum oxide particles mixed with a ceramic bonding agent, compressed at high pressure then fired in a kiln. This process makes them extremely hard. We tested three stones from Spyderco: medium, fine and ultrafine (see the photos at left).

The medium and fine stones were within the company's specification of 0.010-in. deviation from flat across any direction. For my needs, that's not flat enough. The ultrafine stone is manufactured to higher standards, and it was within 0.001 in. of flat, what I consider acceptable.

We all liked the fact that these stones are used dry. They did not dish out and seemed to be impervious to surface nicks. They excel at honing the smallest of cutting blades. The ultrafine stone clogs up quickly with metal particles and tends to glaze over. But it, as well as the others, can be scrubbed clean with an abrasive dish pad and water.

Ceramic stones cut fast, much like waterstones. The ultrafine stone will produce a highly polished and extremely sharp edge, as good as the 4,000-grit or 6,000-grit waterstones. Because these stones are so hard, they cannot be flattened. We tried flattening the medium stone anyway, and sure enough, it no longer cut aggressively.

Diamond lapping plates are best for initial honing

Diamonds are the hardest natural material and will cut any type of metal. We tried two different kinds of laps, both graded at 1,200-grit (U.S.). One is manufactured by Diamond Machining Technology (DMT); the other is by Eze-Lap (see the photo at right). The DMT lap uses monocrystalline particles, and the Eze-Lap uses polycrystalline. Some experts say the monocrystalline diamonds will last longer, but in our short evaluation, we couldn't detect any difference in wear.

Both laps are available in various sizes and grits ranging from 220-grit to 1,200-grit. The Eze-Lap plate is just that, a plate of steel with diamonds bonded to one face. The DMT stone, however, is perforated steel and nickel plate glued onto a plastic base. The plastic is nearly flush with the perforations, which the



Two types of diamond plates—The DMT plate, top, has a perforated surface. The surface of the Eze-Lap is solid. Both can handle high-carbon and high-speed steel tools.

manufacturer says act as reservoirs to hold metal shavings. DMT recommends water as a cutting fluid; the Eze-Lap plate can be used dry or with water.

The Eze-Lap we used was very flat, but the DMT had a minor twist in it. Although the 1,200-grit stones are described as extra-fine, for our purposes, we consider them medium stones, good for initial honing. Sharpening with only a 1,200-grit diamond plate leaves fine serrations on a plane iron's edge, which then get telegraphed to the wood being planed.

Gliding a tool across the Eze-Lap feels similar to using a ceramic stone. When honing very small tools over the DMT stone, however, the edges of the tools sometimes catch on the perforations.

For ease of use, maintenance and portability, the diamond laps are superior. They will cut any steel put to them, cut dry or with a bit of water and will never dish out. Both stones cut quickly. □

Brian T. Derber is a professional violin maker in Oconomowoc, Wis.

How sharp is sharp enough?

To get a tool razor sharp, you have to hone and polish the cutting edge to a mirror finish. The quickest and most accurate way for me to check sharpness is to slide my finger gently across a tool's cutting edge (see the photo at right). When I feel a smooth drag, that tells me that the edge is free of nicks and sharp enough to effortlessly slice a very thin layer of skin. If the edge is dull, my finger will glide right across the edge. A semisharp blade will drag and skip across the skin, which means it still has some rough spots.

If you don't wish to risk cutting yourself, you can substitute your fingernail and look for the same qualities. There's also the time-honored method of shaving hair off your arm, although I don't think it's as accurate as using a fingertip. A very sharp blade will cleanly shear hair off. A semisharp blade will burn as it cuts, like a dull razor. —B.T.D



The author uses a fingertip to judge blade sharpness. A finger passed lightly over a razor-sharp tool will drag smoothly. Catches indicate rough spots.

A Game Plan for Big Cabinet Jobs



Good shop drawings, the right materials and accurate machine setups are the keys to success

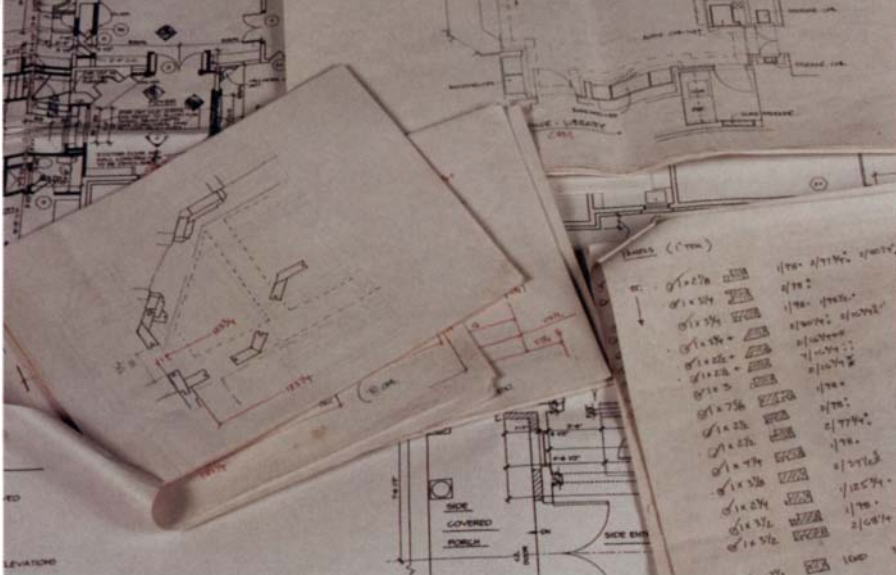
by John W. West

Over the years, I've built close to 20 libraries for residential clients. To me, these rooms of cabinetwork and millwork are interesting for their variety. A library—more than any other room in a house—brings together a lot of different components. Case work, shelving, drawers and pull-outs, frame-and-panel doors, glass doors, paneling, and unique

moldings all make up the finished job. Case work may vary from simple bookcases to more elaborate storage units for television and audio equipment. But in the end, they're all just plywood boxes dressed up to look good.

For a large and complicated job like this one (see the photo above), I always measure the room twice, on two separate days,

to reduce the chance of making a mistake in laying out and sizing the work. By checking the two sets of measurements against one another, any discrepancy will show up readily and may have to be resolved with a third visit to the job site. I used story poles (scraps of lumber on which all the job-site conditions are marked) for many years because they're almost foolproof. (For more



LAYOUT AND DESIGN

Several stages of paperwork—From an architect's original drawing, the author makes a large-scale version. Next come shop sketches, a parts lists and full-sized details (below).



on story poles, see *FWW* #105, pp. 66-69.) But lately, I've developed another system that works more efficiently for me.

To lay out and design a room like this one, I start with a set of drawings from the architect that have been approved by the clients. The drawings show scaled elevations, or front views, of how they want the room to look. To figure out exactly how cabinets and paneling and moldings will all fit together, I use those drawings to make my own in a larger scale based on the measurements taken at the site. From my first set of drawings, I make another set of free-hand shop sketches where I figure out the joinery details and the actual cut size in overall dimensions of every cabinet, door, wall panel and piece of molding that will make up the job. From those shop sketches, I make cut lists that show every piece of plywood or lumber by finished size—thickness, width and length—and the number of pieces of each. There are still many times when I will draw out some details full-sized, especially when I deal with angles or curves or I want to be sure something is going to look right.

Choosing materials and tuning up equipment

For all open bookcases and wall and door panels, my shop buys the best quality (an A-1 grade), sequence-matched, veneer-core plywood. I stay away from particleboard and fiberboard cores. I'm getting too old to hoist the extra weight. We use 3/4-in.-thick material for all the case work parts and large panels, 1/2 in. for smaller wall panels and flat door panels, and 1/4-in. (A-3 grade) plywood for cabinet backs and drawer bottoms (see the photos at right). We make everything else, including drawer cases, from solid lumber. By using se-



MATERIALS

Plywood for panels and case work—The 18 cases and scores of panels that went into this library required 45 sheets of veneer-core plywood of varying grades and thicknesses.

A-1 grade, 3/4 in.

Sequence-matched sheets used for large wall panels and most of the cases.

A-1 grade, 1/2 in.

Also sequence-matched, used for small wall panels and flat door panels.

A-3 grade, 1/4 in.

Good one side only, used for cabinet backs and drawer bottoms.

Shop grade, 3/4 in. (not shown)

Plywood with one good face, used where panels are less prominent, like a cabinet interior. Shop-grade ply costs about half as much as premium-grade plywood, but can be stained and finished for a close match.

FIRST, TUNE UP YOUR TOOLS

To get off on the right foot, make sure tools have sharp knives, and choose a single tape measure for the job.



One tape, start to finish

Tape measures aren't all the same. Using one tape, what the author calls a master tape, ensures accuracy in cutting cabinet parts. For quick identification, the author scratches a symbol into the tape's case (like the triangle on this one), so it won't be confused with any other tape.



Change and set planer knives

After installing a sharp set of knives, the author sets them with a gauge. The process is fast, and knives are accurate to within a few thousandths of an inch.



Calibrate tablesaw rip fence

Using a scrap piece of plywood, the author checks the rip fence setting against the master tape. The tablesaw should be checked again with each blade change.

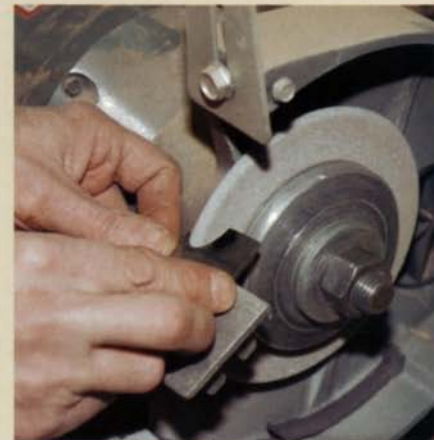
Jointer

New jointer knives are set flush to the outfeed table. Table surfaces are cleaned and waxed and checked for alignment. Depth-of-cut gauge is reset if necessary.



Shaper knives

The author grinds his own shaper knives for all of the molding that must go into a job. He sharpens previously made knives and sets them aside for quick access.



quenced-matched panels, we get the same color and grain patterns throughout the room. For cases that are sunken into a closet alcove or hidden by doors, we use a lesser shop-grade plywood (costing about half as much as the A-1 panels) because the cases are not seen, and you can still get a similar color once they are stained and finished.

Before we start a project like this, we perform a major tune-up on all the equipment

(see the photos above). The time spent on tune-up is critical because one thing we do that's different from many cabinet shops is cut all the plywood and mill all the lumber for a given job before assembling any cabinets. That means shelves and door stiles and drawer parts are all machined and cut to size before case work or paneling goes together. The machining has to be accurate.

We change knives on the jointer and the

planer and reset the thickness gauges to be accurate within a tolerance of less than $\frac{1}{100}$ in. We also install freshly sharpened blades on the saws. All the machines are calibrated to agree with one designated tape measure we'll use throughout the job.

When we cut plywood sheet stock, we always cut off the factory edges, usually taking at least an inch from all sides. We may not cut as much off the long edges,

FACTORY FRESH DOESN'T MEAN IT'S SQUARE

You cannot trust that any sheet of plywood from the factory will have square corners, and you cannot make square cabinets with out-of-square parts.

Before I owned a panel saw, I worked in a shop where we used a jig over a regular cabinet saw fence, like the one shown below, for squaring up sheet goods. By tacking an additional straightedge to one edge of the plywood (left) and running it under the jig (right), we were able—simply and fairly quickly—to square up sheets of plywood.

When I'm getting ready to make the plywood cuts for a job at

hand, I look through the sheets for the important pieces, the ones that will be most prominent. I rough cut those pieces first, a little bigger than the final size, to make them more manageable. I also make any necessary repetitive cuts of similarly sized pieces, like base cabinet sides. It's better to crosscut first and rip last, so I cut all those oversized pieces to the finished length first. To guarantee that you get square corners on all your plywood pieces, always place a freshly cut edge against the fence with each new cut, until all four sides have been trimmed off. —J.W.



1. Clamp the jig to the saw fence with the outside of the sawblade flush with the edge of the jig. Tack a straightedge onto the workpiece to a square line marked in pencil.



2. Run the workpiece through the saw, keeping even pressure on the straightedge against the jig.



3. Leave plenty of space between blade and saw fence to prevent the offcut from binding.

but we always remove at least an inch from the ends because they are sanded over and thinner than the center of the panel. The sanding machines at plywood factories often leave a pronounced bevel on the ends (sometimes even sanding through the face veneer). Also, edges are often torn up from handling, and you cannot count on the corners being square. Unless you have a panel saw, you may have to spend some extra

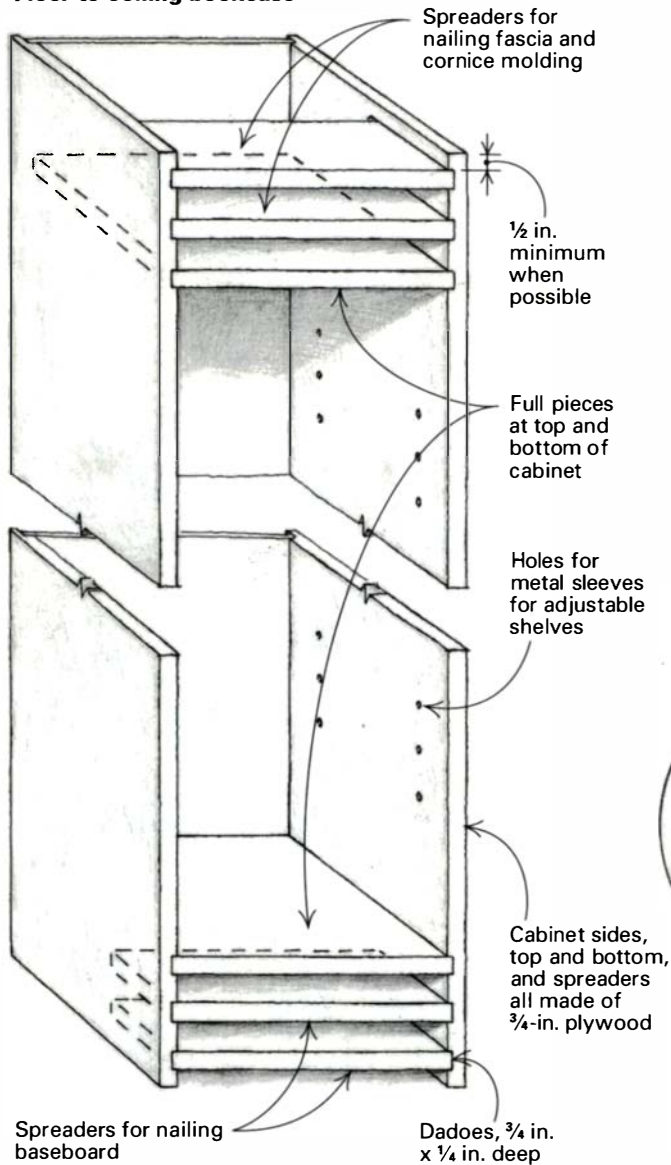
effort making a jig to guarantee square corners when you cut up the plywood (see the box above). It's worth the time.

Build for the outside dimension of the box

With the cases we build, all the horizontal pieces are let into the verticals by the full thickness of the material, usually $\frac{3}{4}$ in., in either rabbet or dado joints (see the draw-

ing on p. 86). One important chore that rabbets and dados do is to locate things. And your biggest enemy in making boxes is the assembly time. The machining and preparation of all the parts is worth the extra time it takes when you get to assembly. Jobs will go together better, faster, easier, squarer and truer. Anything that you can do that helps you to index or locate parts for assembly, the better off you are, espe-

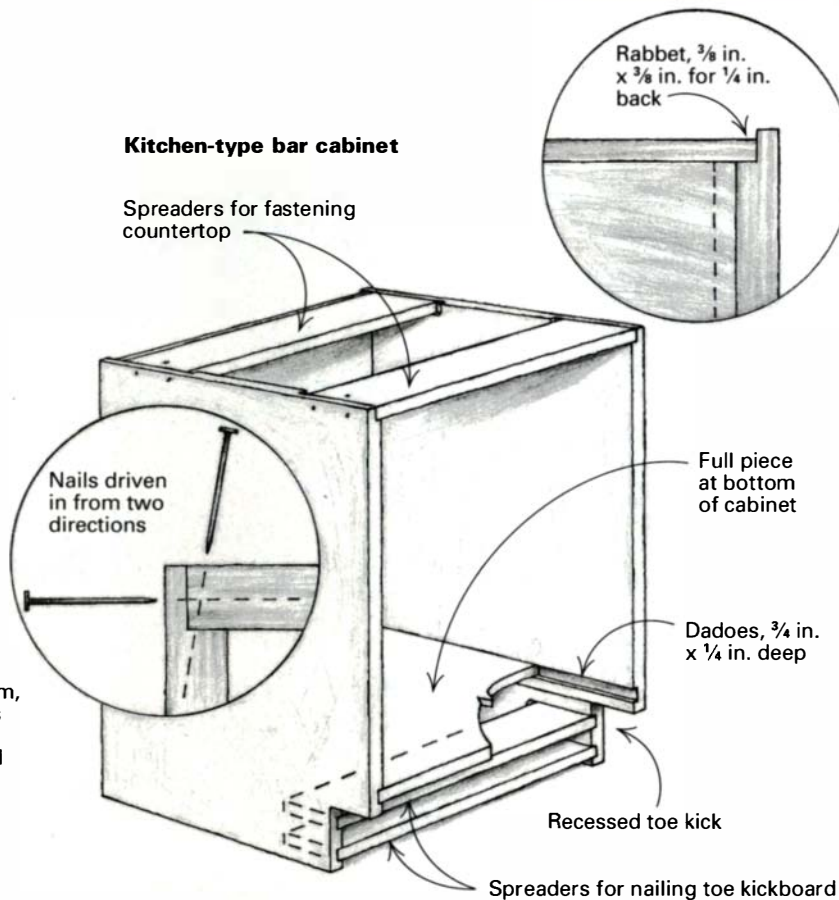
Floor-to-ceiling bookcase



SIMPLE PLYWOOD BOXES

Cabinets for this library were built to store books, audio and video equipment, a large television and glassware for a wet bar. Although some of the details (doors and face frames) and all of the sizes varied, the cases were all made using the same basic construction methods for 3/4-in. plywood parts.

Kitchen-type bar cabinet



cially if you are working alone.

If there's a place where we need additional support or a means of keeping a box straight, we put in additional pieces we call spreaders (see the drawing above). The tops of base cabinets serve as spreaders and also provide a way of fastening a counter from underneath. If there is a fascia piece, which serves as a background for cornice molding, above the solid top of an open bookcase, then we'll put spreaders across the top.

For cases like a kitchen cabinet, where you have a recessed toe kick, we notch the sides of the cabinet and add a spreader or two as a nailing surface for the toe kickboard. In cabinets where there is a baseboard across the bottom of the cabinet, we may add one or two spreaders to stiffen the bottom of the cabinet and to act as nailers

for the baseboard. All spreaders, no matter where they are, are always let into a dado the same depth as the cabinet top and bottom or a fixed shelf.

We cut a 3/8-in. by 3/8-in. rabbet to affix the 1/4-in. back to the cabinet. When cabinets go against a wall with bulges in it, that extra 1/8 in. of space usually provides enough clearance so that the cabinets will go flat to the wall.

We use an overhead router to cut all our plywood joints because it's easier to control the overall dimension of cases. Overhead routing leaves a consistent thickness of material in plywood parts because the router bit is fixed in space above the work surface as the plywood is run underneath it. Routing with a hand router is the opposite: The depth of cut remains the same, but the final width of the case work will vary

with different thicknesses in the plywood. You can make an overhead router from scraps of plywood, it's not that hard. Or you can simply measure the thickness of each piece of plywood and adjust the depth of the router cut accordingly, but the job will take more time that way.

We cut a full rabbet, about 1/4 in. deep, depending on the actual thickness of the plywood, for all the top and bottom pieces. We also cut matching dadoes for any fixed shelves. We developed this system for two reasons: strength and accuracy. I'm convinced that having the horizontal pieces sitting on a rabbeted or dadoed ledge at full-thickness makes a stronger joint. And by using the overhead router with the cutting depth set to leave exactly 1/2 in. of material after the cut is made, we can always trust that the overall outside dimension of

the cabinet will be accurate. It doesn't matter that the $\frac{3}{4}$ -in. plywood we ordered actually came from the factory anywhere from $\frac{1}{16}$ in. to $\frac{25}{32}$ in. thick, as it sometimes does. By building to the outside dimensions of boxes, we can control the overall length of a string of connected boxes. We have put together strings of six or seven large cases and have been off less than $\frac{1}{16}$ in. for spans of more than 20 ft.

Pre-finish case work before assembly

Except for the occasional odd box, we usually apply finishes before putting the cases together. The finishing process goes faster and we get better results, without any overspray buildup in the corners. With the cabinets for this library, we applied a pigment-based oil stain, sealed and sanded that, then topcoated all the cabinet parts with two coats of nitrocellulose lacquer. (We usually don't bother to apply masking tape to the joints, unless the glue joint is an important structural factor. That would be the case with a cabinet that will be hung on a wall and loaded with a lot of weight.) On-site, once all the cabinets are installed, we finish up with a coat of Butcher's wax.

When we put boxes together, we most often use glue and nails, through-nailed from the side of all the rabbets and dados and toenailed on an angle from the top and bottom of the rabbets (see the drawing at left). The nails mechanically reinforce the glue joint and keep the pieces from pulling apart under the stress of handling when cabinets are delivered and installed.

I'm partial to coated nails. We use 5-penny resin-coated box nails. The diameter is only a little larger than a 4-penny, but the length is almost that of a 6-penny nail. The nails penetrate deeply, and the shank does not split the plywood. Coated nails hold better than any gun-driven nail of the same length, and I can always stop hammering when a nail starts to come out the other side of the cabinet piece. It doesn't take much longer to put the boxes together this way, and it's worth it.

With some case work, especially if there are many parts that have to go together at the same time, we use screws instead of nails and glue. An example would be a case with a lot of drawers that has dust board dividers between each drawer. For that, we use No. 6 trim-head screws with a square-head drive. When spreaders are spaced every 6 in. or so along the full height of the cabinet, there will be plenty of fasteners



Installing the case work—Job-site conditions usually require shims to make cases level and plumb (above). The result is a beautiful library and plenty of sawdust back at the shop (right).

and glue isn't really necessary.

In most cases, if your plywood pieces and their edges have all been cut square, then the box goes together square. (That's another reason why I like a full-width rabbet; it gives you a full surface on the bottom of the rabbet as a square surface to draw the two pieces together.) When we finish assembling a box, we check it for square. If there's any problem, and there rarely is one, we true it up with clamps before the glue sets in the joints. □

John West operates Cope and Mould Millwork, Inc., in Danbury, Conn.



Pneumatic Die Grinders in the Woodshop

These versatile tools solve a host of small shop cutting, grinding and sanding problems

by Greg Scholl

I first saw a pneumatic die grinder in action on one of those Saturday morning television shows for backyard mechanics. The host was removing metal from an engine block with incredible speed and control. His knuckles weren't white. He wasn't cursing. I'm a professional woodworker, not a mechanic, but I knew I had to have one of these tools. And I've never regretted buying my first pneumatic die grinder—or the second, or the third or even the fourth. I now have a good selection of straight grinders, angle grinders and even microgrinders (see the photo below). They have proven their great usefulness in my woodshop on countless occasions. I rarely put in a day's work without using one of them.



Grinders for virtually any job—Air-powered die grinders are an unlikely ally in the woodshop, excelling at jobs like evening up chair legs (right). The author's arsenal includes (from left) an angle grinder, straight grinder, microgrinder and a variety of abrasive discs, wheels and burs.



I have owned electric die grinders, but pneumatic die grinders have a number of advantages. To begin with, pneumatic machines don't carry their motors around with them, making them far smaller, lighter and easier to control. They generally spin at a higher speed and are capable of variable speeds, producing smoother cuts. They are also cheaper to buy and maintain. Where a good electric grinder can cost \$100 or more, a pneumatic straight grinder should run about \$40. Angle and micro-grinders are about twice as much. The tooling is generally inexpensive, from less than a dollar for a cutoff wheel or \$5 for a high-speed-steel burr to \$20 to \$30 for a carbide bit. The largest expense is a compressor. To run an average die grinder, you will need one that can generate from 3 to 8 cu. ft. of air per minute at 90 psi.

The only real drawback to pneumatic die grinders is that they require frequent oiling. A few drops of air-tool oil in the coupler end of the tool before each use will keep a good grinder running smoothly for many years. Be aware that the tool will occasionally spit some oil. It rarely happens, but keep an eye on the exhaust port for any signs of oil drool that be-



A carbide burr roughs out a spoon blank in no time. Burrs grind wood more than they cut it. This makes them easy to handle for freehand shaping. Wear gloves: If you ever touch a spinning bit, you'll know why.

gins to collect, and wipe it off (but not on your shirt).

A jack-of-all-trades

Pneumatic die grinders fill a niche in a collection of more traditional woodworking tools. With a carbide burr, a die grinder shapes quickly and easily where a gouge or rasp would be slow. With an abrasive pad, angle die grinders aggressively sand places a belt sander can't. And with cutting wheels and grinding stones, they shape and cut metal better than any other hand tool.

Designed for cutting metal, carbide burrs have very short teeth. Consequently, they cut the hardest wood very rapidly and without clogging or catching, even if they take a little practice to master. I rough out spoon blanks in no time with a straight 1/2-in. carbide burr (see the bottom left photo). This set-up works and feels like a small hand-held router. The micro-grinder is fantastic for the delicate side of this kind of work. I have used it to shape new wood patched into a damaged carving. I can hold it as I would a pen and literally write away the wood.

For sanding, I prefer the angle grinder because I can get two hands on it easily. This improved control is a big help when using a Rolock mandrel, which is a small, pliable rubber pad with a threaded hole in the center that accepts resin-backed abrasive discs. The Rolock is excellent for sanding spots inappropriate for a belt sander. One of my favorite uses is for evening up chair legs. To cut down an uneven leg takes just a few touches with a sandpaper disc. For this kind of end-grain task, a belt sander would be unwieldy, an orbital sander wouldn't be aggressive enough and a block plane might chip out the edges.

Rolock mandrels also accept Scotch-Brite nylon pads. The fine grades are perfect for re-



Spoil the nails and spare the table. After carefully prying up the batten on the underside of a table, the author uses a large cutting wheel to cut through rusted nails.

moving rust from old tools. A nylon pad saves me hours of handwork with a wire brush and steel wool.

Die grinders really come into their own when cutting and grinding metal. In my furniture restoration work, I often have to separate parts that have been nailed or screwed together for 100 years or more. The hard part is not leaving traces of my work. What would take hours of careful prying, coaxing and cursing takes seconds with a die grinder. Spinning a cutoff wheel at 20,000 to 30,000 rpm and slicing through old nails, screws and bolts like a hot knife through butter is an exhilarating experience (see the photo above). When I need to re-slot a corroded screw that's in a tight place, I use the micro-grinder with a small, thin grinding wheel (see the bottom right photo). If this does not work, I can always grind off the entire screwhead with a burr.

A word of caution

Pneumatic die grinders spin tooling at very high rpms. The straight and angle grinders spin up to 25,000 rpm, and my microgrinder tops out near 60,000 rpm, though somewhat less under load. Check the rpm rating of every bit before use. A lot of tooling that has not been designed to fly that fast will fit the pneumatic grinders' standard 1/4-in. and 1/8-in. collets. I have seen small cutoff wheels fly apart. It might be tempting to chuck a wire wheel meant for a drill in a pneumatic grinder, but a stray wire sunk into your face is a painful way to learn not to. Always wear gloves and a full face shield. □

Greg Scholl makes and restores furniture in Fairfield, Conn.



Cut a new slot in an old screw. Without marring the hinge, a microgrinder fitted with a thin grinding wheel cuts a short, deep slot.

Making Wood Look Old

Adding texture, dye stains and glazes transforms even lumberyard pine

by Jeff Jewitt

From a magnificent specimen of Cuban mahogany to a humble piece of white pine, wood looks better as it ages. All woods mature with use and time, developing the patina so valued in antique furniture. In my conservation and restoration business, I need to match the look of old wood to new when I'm fabricating missing parts for antique furniture.

I try to simulate the order in which the

wear and tear would have happened naturally. I start by matching the surface texture of the new wood with the old. I follow that with a dye stain, distress marks and glazing coats to add more color. Then I apply a finish to match the original.

Match the original surface texture first

Furnituremakers of two centuries ago prepared wood differently from the way

we do it now. Lumber was dressed, shaped and made ready for finishing solely by hand. Their tools left distinctive marks on the wood very different from those left by modern milling and sanding methods. Edges and moldings were shaped with molding planes or carved with gouges and chisels. After planing, surfaces that would show were smoothed and evened out with scrapers or glass paper (made by pulverizing glass and sifting it over glue-sized parchment).

Even on some very fine, more formal antique furniture, you'll often find marks from tools such as rasps and files that were used to clean up the ridges left by sawblades and chisels. Molding planes produced crisp, deep profiles unattainable with many modern shaping bits. Although results may seem somewhat crude by today's standards, the goal then was the same as it is now—to produce as flawless a surface as possible.

Flat surfaces on many country-style antiques have a slightly scalloped appearance produced by fore planes, or scrub planes, and scrapers. The scallops are readily apparent under a finish and when viewed in backlighting. To re-create this effect, I ground a very slight convex profile on the blade of an old jack plane (see the photos at left), making sure to relieve the corners of the blade. A very small relief is all that's necessary. Flexing a scraper with your fingers will create a similar pattern. When you use any of these tools, small tearouts or other imperfections in the wood—a sign of handwork—should be left alone.

Patina is more than an old finish

Patina is the surface appearance of something that has grown beautiful with



Match the tool marks



Period tools match the surface texture. Handplaning with a re-ground blade in an old jack plane produces the same pattern left by a scrub plane on the original hutch.

age or use. The much desired patina on antique furniture involves alteration of both the surface color and the texture of the piece as it ages.

Wood contains natural dyes and pigments responsible for the characteristic color of each species. A change in color, a result of exposure to light and air (photo-oxidation), may be the most obvious effect of age. As a rule, light-colored woods darken, and dark-colored woods lighten.

Another kind of patina develops as stains and finishes age and as wax builds up on the surface of the wood. Photo-oxidation causes dyes and pigments to fade and finishes to yellow and darken. Over the years, polishes and waxes build up in corners, cracks and crevices and act as a magnet for dust, which accumulates on surfaces that are not regularly cleaned.

Most old furniture ends up soiled, dented, scratched, eaten by insects or worn-out from normal use and handling. Oils from skin produce a grimy buildup around hardware and other areas where furniture is handled. The bottoms of legs get banged up the most. Sharp edges and corners that are regularly handled become rounded. Everyday contact with clothes and shoes will eventually wear finishes and stains down to bare wood.

Use dyes, bleach and light to change the color of wood—You can duplicate the effect of light on wood with either dyes or chemicals. Both produce a color change within the structure of the wood. Although their effects are similar, one very subtle difference is that dyes tend to accentuate figure and grain and chemicals do not. Dyes are, by far, easier and safer to use. They can be soluble in alcohol or water. Some alcohol dyes are extremely light-sensitive, and they will not hold their color over time. Water-based dyes tend to be less vivid than alcohol dyes and produce a more believable color. Although water-based dyes raise the grain in wood, producing a rough texture, the problem can be minimized by applying a wash coat of plain water and sanding off the fuzz after the surface dries before the dye goes on.

In almost all light-colored species, a yellowish-brown dye stain will simulate the color of aged wood. This stain color is sold pre-mixed by many companies, often called honey or amber, but you can make your own from powdered dyes in primary

Recreate the patina



Four hours in the sun show a dramatic color change in this piece of cherry. The center of the board was covered with duct tape to keep the light out, and the right half was coated with thinner to approximate a clear finish.



Test the stain on scrap first. The author used a cutoff from the new pine shelf to fine-tune his custom-mixed dye. By adding small amounts of red dye to his initial mix, he was able to get a better match.

Add some wear and tear



Wire brushes abrade the surface and mimic the wear and tear of two centuries of use. Glass can also be used to make similar scars.



Counterfeit wormholes—After applying a shellac finish but before the final coat of dark, tinted wax, the author uses a small drill bit and the point of an awl to match damage done by worms.



colors. The formula I use most is 10 parts lemon yellow, one part red and one part black by weight, not volume. Use this color on birch, maple and oak. It also works well for warming up the cold tones of kiln-dried walnut. Used on Honduras mahogany, it will kill the pink tone in preparation for subsequent coloring layers. With one or two more parts of red added, a nice aged pine color is the result (see the bottom photo on p. 91).

Some dark woods—rosewood, teak, walnut and old Cuban mahogany—lighten considerably after being exposed to light

for a long time. To match these woods, you may need to bleach the new wood first and then treat it with a dye stain. Use a two-part bleach of sodium hydroxide and hydrogen peroxide (for more on bleaching wood, see *FWW* #124, pp. 62-65). Avoid using any other chemicals on woods that have been bleached: A chemical reaction may create harmful fumes.

Some woods, such as poplar and cherry, darken considerably after only limited exposure to sunlight (see the top photo on p. 91). Cherry will darken in ambient

room light after a few years to a dark, reddish orange. To hasten this process, finish it with a light coat of boiled linseed oil followed by the finish of your choice. After several months, you will have a color that would normally take longer to achieve.

Distressing: when and how to alter the surface—You can imitate dents by using the tang of a file after the first coat of stain but before the glaze goes on. Scratches can be made with a piece of glass or a wire brush (see the photo at left). Very small drill bits and the point of an awl will mimic damage done by worms (see the bottom photos at left). Drill the wormholes after the finish has been applied but before the last coat of tinted wax.

To wear away edges, wrap some thick twine or thin rope around your fingers, and pull it back and forth, shoe-shine style, across the edges of tops and stretchers. To round off corners, use a brick, and then burnish the wood smooth with a piece of hard maple. Anything goes, except overdoing it. Too much wear will look contrived.

Finish the job with a glaze

The best way to duplicate the depth of color in old wood is with a glaze. Glazes are thin, transparent layers of color applied over another color. Before applying a glaze, it is best to seal in the first layer of color with one or two coats of finish. I prefer shellac. To match most old furniture, the best glazing colors are brown, umber and sienna—sometimes called earth colors. You can use a pre-mixed glaze, or you can make your own if you want better control over the color.

I prefer to use a clear glaze medium (like Behlen's heavy-bodied glazing stain, which is thick and has a long open time). I tint the glaze with dry pigments. Unlike dyes that dissolve into water or alcohol, pigments are suspended in the glaze medium. I also tint with Japan colors, a kind of concentrated paint that will mix easily with oil-based products.

Normally, I do all the distressing before I apply the glaze because the glaze will collect in dents and scratches and provide a very convincing effect. I brush the glaze over the entire piece (see the top left photo on the facing page) to add an overall color effect or selectively dab it in crevices and corners where wax is likely

Apply a glaze to add depth



A glaze adds depth and color. After applying a glaze with a brush (left), the author controls the amount of color left on the surface as he wipes it off with a clean rag. When he highlights some areas more than others (above), he dabs on the glaze selectively and blends it in with a dry brush. This technique will also add extra color to distress marks.

to build up (see the center photo above). The oils in glaze mediums never dry fully, so it's normal to feel some tackiness, even after several days. Glazes and dry pigments are available in many woodworking supply catalogs. Japan colors can be found at professional finishing suppliers or at some paint stores.

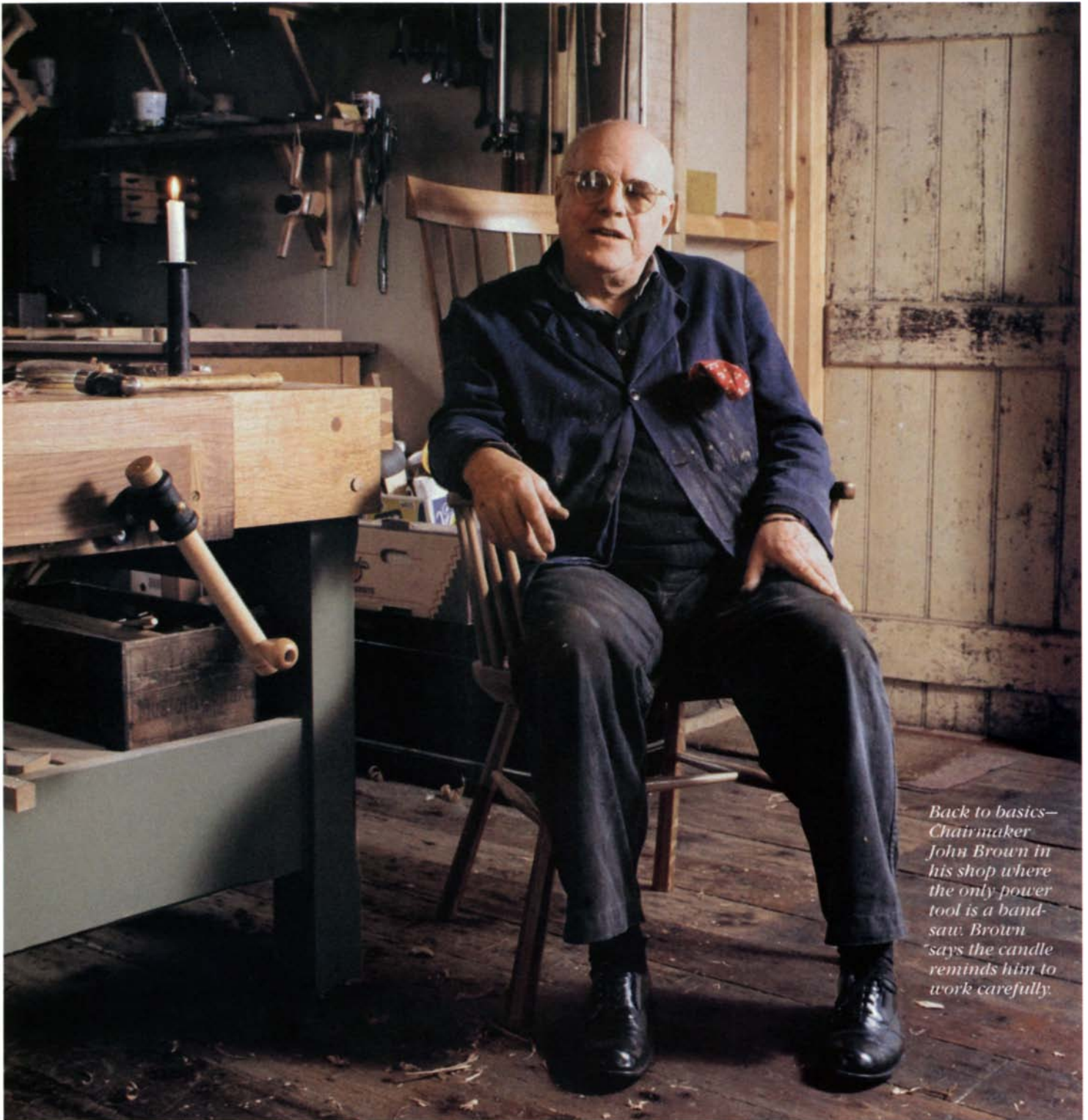
Glazes should be sealed with at least one coat of clear finish. It's best to spray on shellac or lacquer. If you have to use a brush, flow on a thin, 1-lb. cut of shellac without applying too much pressure. You can follow that with a varnish. The seal-coat of shellac is important because the varnish may not bond well to the glaze.

As a final step, I rub it out with steel wool and a dark wax, such as Liberon or Behlen's brown wax. My favorite is Antiquax brown wax. It's tinted with oil-soluble dyes and pigments and matches the look of built-up old wax beautifully. I apply the wax by unraveling a piece of 0000 steel wool and refolding it into quarters. I squirt some mineral spirits onto the pad, dip it into the can of wax and smear it all over the wood surface, working the wax into corners and distress marks. After the wax hazes over, I buff the surface with a clean cloth. □

*When he's not competing in bicycle races, Jeff Jewitt restores furniture in North Royalton, Ohio. His book, *Hand Applied Finishes*, and two companion videos are available from *The Taunton Press*.*



Final adjustments before the finish goes on. The author wedge-fit the new shelf into this antique dry sink and added another coat of glaze to adjust the color. When the color was right, he removed the shelf and applied a sealer coat of shellac.



*Back to basics—
Chairmaker
John Brown in
his shop where
the only power
tool is a band-
saw. Brown
says the candle
reminds him to
work carefully.*

Good Work

Outspoken and unapologetic, a Welsh chairmaker makes a plea for hand tools

by John Brown

My grandmother used to tell me that most of life's ills were caused by men chasing money. Even 50 years ago, the poor old dear could not understand what all the rush was about. She had a theory that the heartbeat hadn't altered since time began and that the pace of life should be regulated by this fact. I didn't take any notice of her at the time, but recently, I've had cause to recall her words. The speed of modern life is out of synchronization with the human body. If we could slow our lives down a little, think of quality before quantity, there would be more time to savor the pleasant things before we are forced to rush on to something else.

Woodworkers are not excused from this malady. Every bit of literature, every handbill or periodical to do with the craft is packed with advertisements for machines. A young man interested in making things out of wood can be forgiven for believing that machines are a fundamental necessity. Hand tools have been relegated to the small advertisement section or antique dealers, as though they were relics of the past whose use went out with grandfather.

Save materials, and stay comfortable

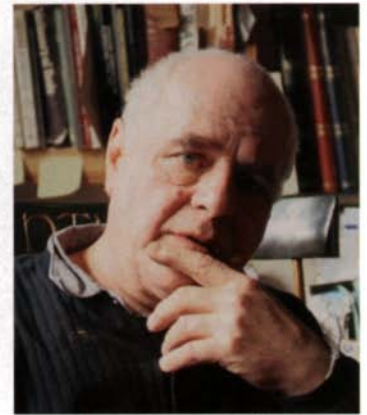
The price of timber once seemed of little consequence. Now, with rain forest problems and a general scarcity, this has become a very

against these ills. But to mummify yourself in this way can only be to the detriment of careful work. Picture, if you will, a cabinet-maker working on a fine piece of oak furniture clad in a hard hat. I am sure the sense of control of the operator is impaired by wearing all this safety equipment.

Machines aid quantity, not quality

The reason for the introduction of machinery in the 19th century was to speed up the production in the factories. Water, then steam and, finally, electricity provided ample power, and in that great age of innovation, machines were invented to cope with more and more process. The owners cared not a jot for design or quality unless it affected sales. Quantity was the main criterion. "How can we make more profit?" they asked. Unskilled people could be trained to work a single-operation machine in days. The fact that these operators had no interest in their work and did the job for what money they could get interested no one, except people like John Ruskin, C.R. Ashbee and William Morris.

Since the last great war, it seems that these same principles have been adopted by modern woodworkers. Yet the motivation is entirely different. I have never known a craft woodworker who does the job only for money, or at least admits to this. Woodworkers pur-



"Tools talk to the craftsman. You will know when they are right. What the machine does by noisy, brute force you will be able to do with quiet cunning."

expensive raw material. A return to the use of hand tools, apart from being less wasteful, would add more value to this precious material. I fully appreciate the average woodworker cannot render tree trunks into planks. Handsawing huge bulk is pure sweat, so the use of a power saw is necessary. That is all that is required to lead a full and satisfying woodworking life.

Power machines are unfriendly, for they are very noisy and make a lot of unpleasant dust. Craft woodworking should be a creative activity, with the practitioners as artists. Surrounded by ugly, noisy, dusty machines, the woodworker does not have the environment in which to do good work.

There are two main health hazards from frequent use of machinery, apart from cutting off the fingers: dust and noise. Neither is instantly apparent, as is an amputation, but nevertheless they are just as dangerous. The most frightening is nasal cancer, which is closely associated with wood dust. And constant exposure to high levels of noise can damage the ears and lead to deafness.

Of course, you can wear protective clothing and apparatus

sue the craft because they love it. They enjoy working with wood, and they get great satisfaction from seeing a well-finished piece. They try their hardest to do fine work and to produce an artifact of delight. I don't suppose there has ever been a time when so much effort has gone into producing good work.

Unfortunately, a large part of the works on show are made by machines. And at what cost! Many thousands of dollars are spent on these machines, saws and re-saws, lathes, planers, thicknessers, spindle molders, mortising machines, doweling machines and biscuit joiners, dovetail attachments, belt sanders and portable machines of all kinds. New ones every week. Apart from the initial expense of this armory, there are attachments to buy, numerous cutters for different profiles and sawblades to be bought. Few of these things can be satisfactorily sharpened by the user. They have to be sent away. The operator becomes a mechanic producing precision engineered works. This has little to do with woodworking.

What about the extra time it takes to do a piece by hand? Well, it can take a little longer, that's true. You need to be well organized,

the workshop needs to be laid out properly and, above all, you must have a first-class bench. You must know your tools. Everything must be clean and sharp. Tools talk to the craftsman. You will know when they are right. What the machine does by noisy, brute force you will be able to do with quiet cunning.

I doubt there's much of a saving in machine work over hand work for the small, one-off maker. If you're an amateur, it doesn't matter, and the quality will be so much better. A professional will have to charge a little more. People will pay it. With the saving in capital cost, bank interest and the time-consuming business of setting up machines, you could be better off anyway.

It is difficult to know whether machine-mania was led by the woodworking press or the craftsman. I am inclined to the former opinion. It looks as though the machinery manufacturers have the technical press in a vise-like grip, leaving the humble hobbyist to believe that unless he buys the machines, he will be a second-class woodworking citizen. I was always led to understand that machines were there to do the tedious work and that the craftsman's skills should actually do the making. Gradually, the idea of what is tedious has been updated, for it is now possible to make compli-

cated pieces entirely with machinery. The only handwork left to be done is to lift the wood to the machine. I am sure the manufacturers will cope with this in time!

Classroom is no substitute for apprenticeships

It's a pity the apprenticeship system has gone, when young people were exposed for five years to good practices, working alongside skilled men. Pride in work, pride in a fine set of tools, I know this is now unfashionable, but there is nothing wrong with being proud of one's achievements. It is between a man and his God whether that pride is false or not. Some woodwork is quite tricky and needs a lot of practice. The wonder and joy as each hurdle is leaped has to be experienced to be believed. The material you work with is not uniform. It is moody, it can be deceptive, sometimes hiding faults until the very last moment of finishing, and you have to start all over again. Handwork breeds patience.

The kind of accuracy you can achieve cannot be measured in "thous." It's not necessary. I have heard of micrometers being used on tenons. Frankly, I find this ridiculous. Author Norman Potter tells the story of a visit to his workshop by a Gimson-trained cabinetmaker named Rex. Rex recalled how the famed English Arts-and-Crafts furnituremaker would run his finger along the under edges of a newly finished piece, saying, "Kindly, Rex, keep your edges kindly." You will find no specification called kindly edges in the standard woodworking textbooks.

I would not go so far as to say that there are no skills necessary to working machines. It is important to be able to read and interpret complicated instructions. What you end up with is engineering skills—precision engineering in wood. As a substitute for apprenticeship these days, we have training colleges. These young people, having been taught design and machine skills, feel they should come out of college and



The form is simple. John Brown's traditional Welsh chair in oak has simple lines and an elegant shape. Surfaces worked by hand have an unmistakable texture.



A delicacy no machine can match—A chair leg takes shape under a deftly used spokeshave. In skilled hands, the process is surprisingly quick. Brown lives and works in the coastal hills of southwestern Wales (right).

jump straight into the first division. One or two cheekier ones do just this. The main skill required is in hiding machine marks. I suspect these young people never feel that wonderful, solid confidence of the apprentice who has just finished his five years, and with his beautiful handmade toolbox full of fine tools is about to set out in the world to do good work.

This piece was made by a person

Handmade work has soul, it has verve, a sparkle that a machine cannot reproduce. The apparent “perfection” of some machined operations has trapped the craftsman into feeling that this is the way it should be. There is no excuse for lazy or shoddy work, hand or machine, but it is nice to think that this table or this chair was made by a human being.

You often see people inspecting furniture minutely to see if all the joints are tight or if there is any slackness in the dovetails. Perhaps they are looking for graving pieces that cover a mistake. This annoys me. Do these people do the same to a painting in an art gallery? A firm I know makes one-off pieces, things like Welsh dressers and furniture in the Georgian style. The joinery is impeccable. This company has the latest in machines. Yet the furniture is so ugly it is possible to detect their work from a good distance.

When they first started, organic farmers were ridiculed by the establishment as “mud and muck” freaks. Now, demand for their product far outstrips supply, and with farming problems as they are, I think they will have the last laugh. No one has grasped this particular nettle when it comes to woodworking. I often feel that the craftsman of today is recreating in his little heaven the very hell that the industrialists of the last century were so soundly drubbed for. Woodworkers should look anew at their hand tools. Take the meanest, rustiest plane you have. Clean it, grind and sharpen the blade like a razor, and then set it up. Now, with the plane set very fine, run it over a scrap of oak. Hear the sound it makes, and feel the perfect finish. What a thrill!




I have worked with machines in other people's employ. I have owned some machines myself. Years ago, I examined what I was doing and went organic. I haven't regretted it once. It was a renewal of my love affair with wood. We must do our best to turn things round. We must educate ourselves and our customers to realize what quality really means, quality in making, quality in design and, finally, quality in life.

Craftsmen who agree with these sentiments should, at a certain date, give up their machines. Then they should tell everyone what they are doing, broadcast the message, print it on their note paper, make a statement. But what I have said is about as fashionable as advising people to sell their cars and take a bus or even walk. Real progress can only be spiritual progress. The calm and unhurried atmosphere in my workshop makes enough to pay the bills for a simple life, no more. □

John Brown lives and works near Newport, on the south coast of Wales. He is the author of Welsh Stick Chairs. Last year, he made 23 chairs by hand.

WOODWORKER'S MART

The PECK TOOL since 1929
company



Fine German & Japanese Hand Tools
for The Discerning Woodworker

Please Call
for a Free Catalog! 1.800.454.TOOL

READER SERVICE NO. 167

FURNITURE KITS - COMPONENTS



Our Heirloom-Quality kits are produced from the finest grade 100% SOLID Maple, Oak, Cherry, and Mahogany. Many varieties of tables, desks, computer hutches and more are available, and there's even a design-your-own-kit program.

Table



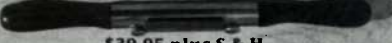
We also offer many separate component parts such as legs to use on your own projects. Delivery is fast and satisfaction is guaranteed.

Queen Anne • Contemporary • Ball-N-Claw
HICKORY FRAME CORPORATION
P.O. BOX 11585
Lynchburg, VA 24506-1585

Call or FAX today
FREE LITERATURE
(804) 847-8489
(804) 847-8984 • FAX

READER SERVICE NO. 165

Kelly Tool Works No. 1 Spokeshave
An heirloom quality remake of the Miller Falls 1887 patent, No. 1 spokeshave.



\$39.95 plus S & H.

We also specialize in restoring woodworking tools. Write or call for particulars on our tools and services. P.O. Box 1813, Kernville, CA 93238 (760) 376-4804

READER SERVICE NO. 24

Quality German Workbenches
at factory outlet prices
Call 1-800-322-3624



Diefenbach Benches
P.O. BOX 370043
DENVER, CO 80237

READER SERVICE NO. 74

SELF-ADHESIVE FELT
70% WOOL FELT
TAPES • STRIPS • TABS • RIC-O-BAC
DOTS • SOFT BOTTOMS

1-800-796-2333

APPROX. 1/8" & 1/4" THICK
BROWN, GREEN, BLACK,
WHITE, AND SILVER GRAY

3905 W. 64TH PLACE
CHICAGO, IL 60629
773-735-2344 • FAX 773-735-2390

UBADAWN
PRODUCTS, INC.

READER SERVICE NO. 656

FINE TOOL
JOURNAL



Quarterly magazine for the user & collector of hand tools. Articles on tool history, use, and preservation. Auction of hundreds of hard to find hand tools in every issue. Tool sales twice a year.


Fine Tool Journal
Dept. FWW97
27 Fickett Rd.,
Pownal, ME 04069
(800) 248-8114
http://www.wowpages.com/ftj/

Subscription: \$27.00 one year or \$50.00 for 2 yrs. Canada, \$33.00 or \$62.00US Sample \$5.00

VISA/MC

READER SERVICE NO. 152


Humidor, Hygrometers and Humidifiers
Free 42 page catalog of Humidor Supplies, Weather Instruments, Clock Movements and Clock Making Supplies



11869 Teale St., Dept. 65
Culver City, CA 90230
1-800-421-4445

READER SERVICE NO. 202

DOVETAILED DRAWERS
Reasonably priced method to distinguish your cabinets.



- Custom-sized width and depth
- 1/2" solid maple, assembled and sanded
- 2-coat catalyzed finish available
- Quick service, shipped UPS

EAGLE WOODWORKING
1130 East Street, Tewksbury, MA 01876-1459
FAX (508) 640-1501 (800) 628-4849

READER SERVICE NO. 23

Dunham Hardwoods
Specializing in Red Oak



Kin Dried Exotics & Domestics;
22 Species in various thicknesses & grades.

- Example: 4'-6" clear selected for color 4/4.
- Red Oak surfaced & straight lined one edge.
- \$2.48 Bd/Ft (20' orders) \$2.38 Bd/Ft (100' orders).
- Finishes, wood pegs, buttons, hardwood dowels, etc.
- Ship UPS or common carrier.

www.dunham-hardwoods.com
Call or Write For Free Information
Phone: 712-643-5320 3385 130th St.
FAX: 712-643-2142 Dunlap, IA 51529

READER SERVICE NO. 119

The Woodworker's Dream
Repair and restore fine furniture fast.

Quikwood® Epoxy - when fillers, putty, or glue won't do:

- Shapes like modeling clay; sets like wood in 1/2 hour
- Easy to sand/carve, drill/tap, paint/stain/finish
- Solvent-free; won't stink or shrink!
- Quikwood® will make your next project easier!

Request free literature Polymeric Systems, Inc.

READER SERVICE NO. 157

HARDWOODS
Over 100 Quality Hardwoods from Around the World
LUMBER • VENEER • TURNING STOCK

- Timbers from Protected Forests •
- Quantity Discounts •
- Prompt Shipping Arranged Worldwide •
- Custom Milling - Lumber Cut to Size •
- All Inquiries Welcome •
- Satisfaction Guaranteed •

Call or Write for a Free Catalog

Visit us on the World Wide Web
www.woodworkerssource.com
for Specials, Current Prices & Complete Wood Descriptions
e-mail: wood@woodworkerssource.com

1-800-423-2450
WOODWORKERS Source
5402 S. 40th St. • Phoenix, AZ 85040

READER SERVICE NO. 664

QUALITY ANTIQUE TOOLS
THE CATALOGUE OF ANTIQUE TOOLS All New 1997 Edition!
160 Pages/3000 Tools PRICED FOR SALE to Woodworker or Collector
Fully Photo Illustrated • Only \$20.00 Ppd. • Satisfaction Guaranteed!
THE BEST PLACE TO BUY is also THE BEST REFERENCE!

MARTIN J. DONNELLY ANTIQUE TOOLS
P.O. Box 281 Bath, NY 14810 • (800) 869-0695 • VISA/MC

READER SERVICE NO. 183

SHORTS PACKAGES **Sale Price**

This nearly clear lumber is a popular choice for shops producing small projects on a limited budget.



36" Shorts - 25bf
Cherry \$68
Red Oak \$58
Hard Maple \$68

Order Toll Free

800 292-5937
ALSO AVAILABLE IN 200 & 400 BF PKGS

THIS IS A LIMITED TIME OFFER SO CALL TODAY!

36" Shorts Specifications: +6-8% moisture content +25 bf ft per package • +3"8W, 12"-36"L • Surfaced two sides to 3/4" and ripped one edge. • Pkgs are 18"X36" perfect for UPS shipment. *Some of these packages may have less than 25 bf ft to meet the 70 pound maximum UPS shipping limit. L.L. Johnson Lumber 563 N Cochran Charlotte MI 48813 or Fax us at 517-543-7180.

Visit us on the eb @ <http://www.theworkbench.com>
L.L. JOHNSON LUMBER CHARLOTTE MICHIGAN

READER SERVICE NO. 39

HAND FINISHED WITH CHERRY BODY
+-. .002" IN - OUT



ST- 6.5" \$40

Also Available:
ST- 4.5" at \$35
ST- 8.5" at \$50
add \$5 shipping
Complete set \$110 +\$7 SHP


Send Check or Money Order to:
SCHREIBER TOOL CO.
P.O. Box 851, East Aurora, NY 14052
NY resident add 8% tax

WEST PENN HARDWOODS, INC.
CHECK OUT OUR "BEST VALUE" ROUGH PACK
100 BF, ROUGH, 3'-5" L, 3"-10" W, CLEAR 1-FACE,
RED OAK \$200, CHERRY \$215, SOFT MAPLE \$165,
WALNUT \$270, POPLAR \$135, ASH \$155
NO MIN. ORDER CALL FOR OTHER SPECIALS
CALL FOR SHIPPING RATES
FREE CATALOG 1-888-636-WOOD (9663)
117 S. 4TH STREET, OLEAN, NY 14760

READER SERVICE NO. 118

SAWMILL \$3795.

FREE INFORMATION
Norwood Sawmills
90 Curtwright Dr., Unit 3
Amherst, N.Y. 14221
1-800-661-7746



READER SERVICE NO. 86

ANTIQUE & USED TOOLS
for COLLECTORS & WOODWORKERS ©

Quality scarce, older and complete ready to use handtools of all kinds. Many planes & other edge tools. Hundreds of items on each list.
SUBSCRIPTION > \$12.00/yr-5 ILLUSTRATED LISTS
(CURRENT LIST > \$3.50) **Satisfaction Guaranteed**

BOB KAUNE



specializing in
Stanley Tools
buy and sell

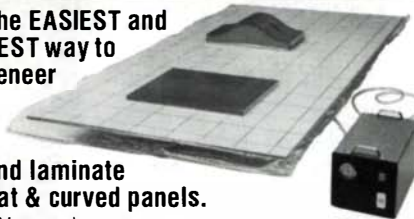
511 W. 11th,
Dept. FW97
Pt. Angeles, WA
98362
(360) 452-2292

www.olympus.net/bktools

WOODWORKER'S MART

VACUUM PRESSING

The **EASIEST** and **BEST** way to veneer



and laminate flat & curved panels.

- Vacuum bags
- Vacuum pumps
- Venturi generators
- Vacuum clamps

MERCURY VACUUM PRESSES

1-800-995-4506

Box 2232, Fort Bragg, CA 95437

Fax 707-964-7606

Call for a catalog

READER SERVICE NO. 660

GENERAL WOODWORKING EQUIPMENT

QUALITY AND PERFORMANCE FEATURES REQUIRED FOR SERIOUS WOODWORKING MADE IN CANADA.

WITH WORKMANSHIP AND PERFORMANCE GUARANTEED. *special pricing*

To order your own copy of the **GENERAL WOODWORKING EQUIPMENT CATALOGUE**

Write or Call:

ASHMAN TECHNICAL LTD.

351 Nash Rd, N. Hamilton, Ontario, CANADA L8H 7P4
Phone 905-560-2400 • FAX: 905-560-2404 • 1-800-668-5721

READER SERVICE NO. 120

NORTHEND HARDWOODS

Stocking Cabinet Hardwoods and Plywood
Ash, Birch, Cherry, Maple, Oak, Walnut, Pine, Basswood

Plywood • Specialty Panels • Custom Millwork

We Ship Any Amount - Anywhere
Lyndonville, Vermont

1-800-626-3275

READER SERVICE NO. 148

"Our First Choice in Rust Preventatives"

There's no better product for rust protection on saw tables, blades, bits and tools. Will not pick up on wood and contains no silicones.

Available at most woodworking shops - call us for nearest dealer.

BOESHIELD T-9®
285 JAMES STREET
HOLLAND, MI 49424
1-800-962-1732



READER SERVICE NO. 158

Sandy Pond Hardwoods, Inc.

AMERICAN EXOTICS

Birdseye & Tiger Maple
Curly Cherry, Flame Birch
Lumber & Flooring

800-546-9663

717-284-5030

Visit us at our new Web site:

<http://www.figuredhardwoods.com>

or e-mail us: sph2prlg@ptdprolog.net

READER SERVICE NO. 19

ShopBot \$2495.00

Make your own...
jewelry boxes • puzzles • bird houses • cabinets

ShopBot Tools, Inc. 919-933-2993

www.ShopBotTools.com

Affordable Computer-Controlled Tools

READER SERVICE NO. 142



Use Reader Service # to obtain our video

NEUBANK

Remote Control Door Mechanisms

Call us! (800) 408-4782

READER SERVICE NO. 658

BRAZILIAN ROSEWOOD (DALBERGIA SPRUCIANA)

75 SPECIES HARDWOOD LUMBER & FLOORING
IN STOCK

RARE EARTH HARDWOODS

IMPORTER/MANUFACTURER

Tel 1-800-968-0074 email: rare.earth@traverse.com
Fax 1-800-968-0094 Website: rare-earth-hardwoods.com

READER SERVICE NO. 81

WEST SYSTEM

BOATBUILDERS SWEAR BY IT,
and so will you.

Strong, waterproof WEST SYSTEM® Brand epoxy is more than a 2-part adhesive. It's a complete system of resin, hardeners, fillers and additives from which you can easily create the perfect bonding, coating and sealing agents for your wood or composite project.

For a free copy of the 33-page WEST SYSTEM® Technical Manual & Product Guide, write:

Gougeon Brothers, Inc.
Dept. 44, P.O. Box 908
Bay City, MI 48707
517-684-7286

READER SERVICE NO. 98

FASTENERS BOATBUILDING AND WOODWORKING SUPPLIES

JAMESTOWN DISTRIBUTORS

FREE CATALOG

PO BOX 348 **800-423-0030** RT 1, BOX 375
JAMESTOWN, RI FAX 800-423-0542 SEABROOK, SC
02835 29940
LOCAL 401-423-2520 US & CANADA LOCAL 803-846-9500
FAX 401-423-0542 FAX 803-846-9005

READER SERVICE NO. 193

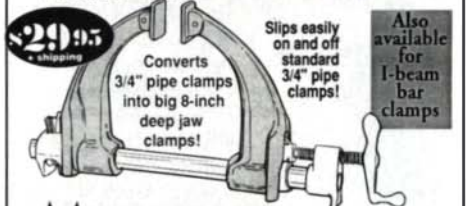
"These chisels are a treat to look at, a pleasure to hold, but using them is the ultimate woodworking experience."

Chris Becksvoort, Contributing Editor, *Fine Woodworking*
Truly hand-forged chisels, adzes, scorpis, slicks and more...

BARR SPECIALTY TOOLS 1-800-235-4452

READER SERVICE NO. 166

CONVERT PIPE CLAMPS INTO... DEEP JAW CLAMPS!



\$29.95
each

Converts 3/4" pipe clamps into big 8-inch deep jaw clamps!

Slips easily on and off standard 3/4" pipe clamps!

Also available for I-beam bar clamps

MASTODON Call 800-222-7246
INNOVATIVE CLAMPING TOOLS to order or for FREE literature
Wade Mfg. Co. - Tualatin, Oregon Web: www.waderain.com/mastodon

READER SERVICE NO. 127



WORLD'S FINEST VENEERS

(716) 655-0206
Fax: (716) 655-3446

certainly wood

America's Premier Source of Hardwood Veneers and Exotic Lumber

11753 Big Tree Road
East Aurora, NY 14052

"Our Wood Certainly Makes A Difference"

READER SERVICE NO. 50

CUSTOM ROUTER BITS CUTTERS & KNIVES

2 Week or less delivery

RIDGE CARBIDE TOOL CO.

"Industry Leader in Custom Router Bits"

FAX us your custom drawings toll free at
1-888-RCT-TOOL (728-8665) or
Mail drawings or wood samples:

RIDGE CARBIDE TOOL CO.

595 New York Ave., Dept. FW, Lyndhurst, NJ 07071

Send \$3 for complete 100 page Stock Tool Catalog

800-443-0992

READER SERVICE NO. 21

A Toolbox Christmas

Your favorite carols played on your favorite hand and power tools!



Gourd Music (408) 425-4939


www.gourd.com ■ neal@gourd.com

Post Office Box 585 ■ Felton, California 95018

Cassettes \$9.98/CDs \$14.98

Shipping \$2.50 per order. CA res. add 8% sales tax.

SUPER HEAVY STEEL BUILDINGS
TAKE AN EXTRA
40-50% OFF
 Limited time only
800/465-1544



READER SERVICE NO. 147

DUST BOY, INC.
 Portable • 1 & 2 HP Dust Collectors



- Cast Aluminum Blowers
- High Efficiency
- Extremely Quiet
- American Made
- 5 Year Warranty

"We Stand Behind OUR Product With Pride"
DUST BOY, INC.
 205 So. Walnut St.
 Arcanum, OH 45304
 (513) 692-8838
800-232-3878

READER SERVICE NO. 52

OAKWOOD VENEER Co.
 • Specializing in exotic and burl wood veneer
 • Flexible paper-backed wood veneer
 • 75 species in stock • Sheet sizes up to 4' x 12'
CALL FOR FREE SAMPLE!!
(800) 426-6018 • (248) 542-9979
 3642 W. 11 MILE, BERKLEY, MI 48072

READER SERVICE NO. 661

Northern Hardwoods
 A Mead Company

Curly, BIRDSEYE, Flame
for the Craftsman and Woodworker

Figured Woods

From the Glacial Forests of Michigan's Upper Peninsula

P.O. Box 189 Toll Free: (800) 285-TREE
 South Range Phone: (906) 487-6400
 Michigan 49963-0189 Fax: (906) 487-6415

http://www.northernhardwoods.com
 E-mail: sales@northernhardwoods.com

READER SERVICE NO. 150

C.P. JOHNSON **Tiger Maple**
 EXTRA-ORDINARY LUMBER & FLOORING

- Quarter Sawn Sycamore
- Wide Cherry • Walnut • Oak

11 So. Sixth St., Warrenton, VA 20186 • (540) 341-2881

READER SERVICE NO. 44

CUSTOM BRANDING IRONS
 DRILL PRESS or HANDHELD
 250 to 800 watts
 send \$1.00 for brochure

ENGRAVING ARTS
 P.O. Box 787 (800) 422-4509
 Laytonville, CA 95454 Fax (707) 984-8045



READER SERVICE NO. 67

CATALOG for...
WOODTURNERS 
 Call Toll Free...
1-(800)-683-8876 "The Woodturners' Source"
 Packard Woodworks,
 PO Box 718, Tryon, NC 28782
 Fax-1-(704) 859-5551 E-Mail...PACKARDWW@AOL.COM

READER SERVICE NO. 196

The Fine GoldLeaf People

- Genuine, Composition and Variegated
- In Sheets and Rolls
- Brushes, Supplies and Tools
- Technical Literature and Videos

Work with the best in the business!!

3 Cross Street, Suffern, NY 10901
Tel: 800-283-5323
 Canadian Affiliate Tel/Fax: 416-787-7331



North America's Largest Selection of Clock Kits

- Clock movements; Dials • Plans; Hard-to-make parts
- Kit Furniture; Unique Items

COLONIAL TIMES CLOCK COMPANY
 564 Weber St., N. Unit 2, Waterloo, ON Canada N2L 5C6
 (P) 519-884-2511 (F) 519-884-2512
 (E) colonial@inforamp.net
 www.colonialtimes.com **SEND FOR YOUR FREE 32 PAGE CATALOG**

READER SERVICE NO. 701

Power Visor
\$139⁰⁰ Includes Battery Charger (\$5 Freight Charge)
 Ideal for Wood Dust.

Airware America
 Hwy 54 S - Box 975, Elbow Lake, MN 56531-0975
TOLL FREE 1-800-328-1792 or 218-685-4457



READER SERVICE NO. 67

Traditional Beauty
 Modern Technology

OXFORD HYBRID VARNISH SERIES



Our new Oxford Hybrid Varnish Series is an oil/water hybrid that provides the craftsman with the deep, rich color tones of oil-modified varnish, and the safety of waterborne urethanes. The final results of Oxford Hybrid Varnish is a depth-of-image and clarity never before seen in a water-based finish. For a hand-rubbed effect try our HYBRID SATIN, or for a stunning gloss, try HYBRID GLOSS. Our HYBRID SPAR is perfect for fine marine applications. Quarts start at \$19.95. Quantity discounts available.

TARGET ENTERPRISES
 PO Box 1582, Rutherford, NJ 07070
 800-752-9922 • 201-804-0993
 Dealer Inquiries Invited



READER SERVICE NO. 65

THE ANTIQUE & COLLECTIBLE
STANLEY TOOLS GUIDE

Values on 2,500 Tools & Variations
 14 Type Studies • 885 Pages
 Over 1,500 Illustrations

\$35 soft cover • \$45 hard cover ppd.

John Walter - The Tool Merchant
 208 Front St., Marietta, OH 45750
614-373-9973
 wholesale inquiries welcome



An Education in Craftsmanship

For careers in:

- CARPENTRY
- PRESERVATION CARPENTRY
- CABINET & FURNITURE MAKING
- PIANO TECHNOLOGY
- VIOLIN MAKING & RESTORATION

Financial aid for qualified students. Accredited member ACCSCT. Short workshops also offered.

NORTH-BENNET-STREET-SCHOOL
 39 North Bennet Street, Box A, Boston, MA 02113 (617) 227-0155

READER SERVICE NO. 103

WESTERN HARDWOODS
Highly Figured
Turning Blanks, Burl, Lumber

- Claro Walnut • Pacific Maple • CA Bay Laurel
- Redwood Burl • Black Acacia • Red Eucalyptus

Monthly Specials
 check us out **Call For Our Free Brochure**

PETER LANG COMPANY
 PH: (707) 579-1341 FAX: (707) 579-8777
1-800-616-BOWL (2695)

READER SERVICE NO. 59

Domestic Figured Wood

Finest Quality, all dimensions including Micro-cut to your specifications.

1-800-238-8036
 WEB PAGE ADDRESS
 http://www.nwtimber.com
 Satisfaction Guaranteed
 Northwest Timber • Lewis Judy, Mgr.



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
 38 1/2" high and 38 1/8" deep.



- Plan # 724 (postpaid) \$19.50
- Catalog (free with order) 3.00

Fine Furniture Plans Since 1968
FURNITURE DESIGNS, INC., Dept. KM-117
 1827 Elmdale Ave., Glenview, IL 60025
1-800-657-7692



READER SERVICE NO. 751

Good Hope Hardwoods, Inc.
 Fine Lumber - Personal Service

Tiger Maple
 4/4 - 16/4 RWL & Matched Sets
 Figured Cherry
 Highly Figured Claro Walnut
 Quarter Sawn White Oak
 Figured Mahogany
 Plain Cherry and Walnut
Plank Flooring
 (610) 274-8842
 1627 New London Road
 Landenberg, PA 19350

READER SERVICE NO. 141

CURE 5™ SEALER G-2™ EPOXY

Find out what everyone is raving about. Call for your free sample of G-2 Epoxy Glue for oily and acidic hardwoods, and the name of your nearest dealer

1-800-778-0833 **INDUSTRIAL FORMULATORS OF CANADA LTD**
40 yrs. of success stories

READER SERVICE NO. 83

Remote Control Doors

Call 800-408-4782 ext. 11 for our free video


EUBANK
ask for offer #FW125



READER SERVICE NO. 82

WETZLER CLAMP
Route 611, P.O. Box 175
Mt. Bethel, PA 18343
FAX: 717-897-5891 800-451-1852

MADE IN U.S.A.



READER SERVICE NO. 200

First Choice of Restoration Authorities

Exclusive Licensee for *Millersburg* Buttermilk Paint Colours
CALL OR WRITE FOR COLOUR CARDS AND DESCRIPTIVE LITERATURE.

Old Village
PAINT COLOURS

P.O. Box 1030, Fort Washington, PA 19034 • (215) 654-1770 • FAX: (215) 654-1976
Fifth generation paintmakers - since 1816

READER SERVICE NO. 80

The Landing School

LEARN WOODEN BOAT BUILDING & YACHT DESIGN

Two full-time residential programs that offer intensive training in a creative but disciplined environment. VA approved. Accredited member, ACCSCT. Financial aid available to qualified students.

The Landing School Equal opportunity enrollment
Box 1490, Kennebunkport, ME 04048 207-985-7976

READER SERVICE NO. 199

OLD GROWTH
Quartersawn White & Red Oak
Wide Quartersawn & Curly Sycamore
Precision sawn figured lumber and bookmatched flitches

610-775-0400
RD#3, Box 3268
Mohnton, PA
19540-9339
TALARICO HARDWOODS VISA / MasterCard

READER SERVICE NO. 72

PANEL SAWS AND PANEL ROUTERS

- Quick change from cross-cut to rip
- Fully assembled and aligned
- Standard industrial-duty saw motor
- One-person operation
- Easy to use, quick setup



SAFETY SPEED CUT
Building professional panel saws for over 35 years
Safety Speed Cut Mfg. Co., Inc.,
13460 Highway 65, Anoka, MN 55304
1.800.599.1647 FAX 1.612.755.6080
www.panelsaw.com

READER SERVICE NO. 114

THE TOOL CHEST MORE THAN JUST BOOKS!

Craftsman Library Catalog for both the Professional and Amateur.

1000's OF BOOKS COVERING

- Woodworking - All Aspects • Home Remodeling & Maintenance
- Tools & Their Uses • Contracting • Projects For Home & Recreation

\$2 refundable with first order
THE TOOL CHEST • 45 Emerson Plaza East • Emerson, NJ 07630
201-261-8665 1-800-617-TOOLS FAX: 201-261-3865
FREE SHIPPING • ALL BOOK ORDERS

READER SERVICE NO. 707

KREMER PIGMENTS

Lightfast Dyes and Pigments, Dry Shellac, Oils, Casein, Glues
and other fine finishing supplies.

Kremer Pigments Inc.
228 Elizabeth Street • New York NY 10012
(212) 219 2394

READER SERVICE NO. 102

THE ST. JAMES BAY TOOL CO.

Norris Style Planes
Finished or Castings
Lutherie Planes
45 & 55 Parts
Squares & Bevels

122E Main St. Mesa Az
85201, (602)-835-1767



READER SERVICE NO. 48

S. LaRose, Inc.
Worldwide Distributors to Horologists

World's largest supplier of clock parts and tools.
Order your FREE catalog, #W2, today!
P.O. Box 21208 • Greensboro, N.C. 27420
For assistance: Phone: (910) 621-1936 Send E-mail to: SLAROSE@worldnet.att.net

READER SERVICE NO. 145

DOWELS - PLUGS - PEGS

MANUFACTURER DIRECT
Largest & finest selection Oak, Walnut, Hickory, Maple, Cherry, Mahogany, Teak, even Treated Dowels. Shaker pegs, spindles, plugs & toy parts. Quantity discounts • Longer lengths available

MIDWEST DOWEL WORKS
4631 Hutchinson Road
Cincinnati, Ohio 45248
(513) 574-8488
Catalog on requests



READER SERVICE NO. 95

HIGH GLOSS EPOXY
...the "amazing" finish

- HIGHEST QUALITY "TABLE TOP" RESINS
- WHOLESALE PRICING

BRUMCO N.E. ~ 800 273 0037



READER SERVICE NO. 27

WINTERWOODS
TIGER & BIRDSEYE MAPLE
TOP QUALITY GUARANTEED
Kiln Dried Lumber - No Minimum Order

(Phone & Fax) **906-387-4082**
N7475 Miners Castle Rd., Munising, MI 49862




READER SERVICE NO. 123

Classic Cabinet Hardware
Quality, Value & Same Day Shipping

Premier Source for Cabinet Makers & Restorers

76 Page Catalog \$4.00
1-800-241-9741

DAXTON HARDWARE, LTD
PO Box 256, Dept FW11, Upper Falls, MD 21156




READER SERVICE NO. 803

FLAMINGO
SPECIALTY VENEER CO., INC.

THE FINEST VENEERS AVAILABLE.

364 Glenwood Ave. East Orange, NJ 07017
201-672-7600



READER SERVICE NO. 162

WIDE SELECTION OF HARDWOODS
Cherry, maple, curly, bird's-eye, walnut, oak, poplar. 3/8 to 12/4

Turning Squares
Quartersawn White Oak
800-758-0950
P.O. Box 582, Buffalo, NY 14207
http://www.blueoashardwoods.com



READER SERVICE NO. 652

COLLEGE OF THE REDWOODS
Fine Cabinetmaking

- with James Krenov, Director and Michael Burns

Apply March 1 - 31

for further information:
College of the Redwoods
440 Alger Street
Fort Bragg CA 95437
707-964-7056

READER SERVICE NO. 181

We make the world plane



For expanded list of E.C. E. tools and prices write to David Warren Direct, PO Box 542, Crystal Lake, IL 60039-0542. (800) 724-7758. 40 different planes, European workbenches, frame saws, and more.

READER SERVICE NO. 97

We also make it fancy

Humidor Supplies

Humidifiers • Hygrometers
Hardware • Spanish Cedar

For information, call or write: Dept. FW

THE BEALL TOOL CO.

541 Swans Road., N.E. Newark Ohio 43055
Toll Free 1-800-331-4718 Fax 1-614-345-5880
E-Mail Address: jbeall@alink.com

READER SERVICE NO. 201

The SandDevil

A HOT New Idea For Hand Sanding!

\$14.99
plus \$3.00 P&H



**Quick Change Sanding Block
Uses Standard 3"x 21" Sanding Belts!**

- New-easy snap insertion
- Tough thermoplastic rubber
- 1 free sanding belt
- Easy belt rotate & advance
- Multiple angles
- Use even in tight places
- Outlasts sandpaper 12 times

Beloff-Pappas Co.

133 Eaton Ave., Meriden, CT 06451
1-800-974-3557 & Fax 203-235-1343



READER SERVICE NO. 20

CLASSIFIED

The Classified Text rate is \$6.00 per word, 15 word min., WEB Classifieds available. Orders must be accompanied by payment, all are non-commissionable. Wood & Tool Exchange and Situations Wanted are for private use by individuals only; \$10/line. min. 3 lines, max. 6 lines, limit 2 per year. Send to: *Fine Woodworking Advertising*, PO Box 5506, Newtown, CT 06470-5506. Deadline for the Jan/Feb '98 issue is October 24, 1997. (800) 926-8776, ext. 562.

Business Opportunities

BROOKLYN WOODWORKERS CO-OP seeks new members. Professionals sharing fully-equipped shop; private space. Greenpoint, Brooklyn, NY. Joe (718) 349-3610.

SHOP SPACE. Includes use of panel saw, 20-in. planer, 17-in. jointer, Northfield saws, etc. Full dust collection. Brooklyn, NY. (718) 499-2954.

Help Wanted

EXPERIENCED CRAFTSMEN needed for high quality door, cabinet and moulding company. Near Telluride, CO. Call (970) 327-4429.

PERIOD FURNITURE FINISHER/RESTORER. Experienced restoration finisher for high-end studio work. Savannah, Georgia. (912) 233-5238.

ASSEMBLE CRAFT products at home for best companies. Great extra income idea! Info.: 1-800-377-6000, ext. 8910.

SPECIALTY WOODWORKERS

Requires fine woodworking assembly & fine cabinetry skills, excellent blueprint reading ability & solid fine woodworking references.

Southern Architectural Woodwork
7402 Fairfield Road • Columbia, SC 29203
1.800.866.4619

Instruction

BLUE RIDGE MOUNTAINS, VA. One year apprenticeship available to motivated individual. Saturated learning environment. Accommodations available, tuition. For more information call: Michael Maxwell, (540) 587-9543.

NEW ENGLAND SCHOOL of Architectural Woodworking. 37 week training program in architectural woodworking. Job assistance. (413) 527-6103. (MA)

ONE YEAR PROFESSIONAL PROGRAM in fine furniture construction. Maximum of 3 students. Wm. B. Sayre, Inc., One Cottage St., Easthampton, MA 01027. (413) 527-0202

THE THOMAS CHIPPENDALE SCHOOL OF FURNITURE, formerly Myreside International School. See our display ad on page 127.

PHILIP C. LOWE—Makers of Fine Furniture—now offering full and part-time instruction. Learn the craft of building traditional furniture at the workshop featured in *Fine Woodworking's* video *Measuring Furniture for Reproduction*. Inquiries: 116 Water St., Beverly, MA 01915. (508) 922-0615.

THE HYMILLER SCHOOL of Fine Furniture Finishing/Repair and Hand Joinery. 1 & 2-week courses, with award winning 3rd generation master craftsman. Past president and board member of woodworkers' guild. Send \$3 for testimonials and information package. 385 Born St., Ste. C, Lawrenceville, GA 30045, (Atlanta). (770) 682-8046.

Study Carving in Vermont

with Thomas Golding

Week-long Intensives in Traditional Woodcarving. Year round.



P.O. Box 302, Newfane, VT 05345
(802) 365-7255

APPRENTICESHIP 1 YEAR hands-on fine furniture making, designing and marketing in rare solid woods. Tuition Jeffrey Greene. (215) 348-5232. (PA)

Hands-on Workshops

1- & 2-week Basic & Advanced Courses
Twelve-week Intensive
In beautiful Maine

CENTER FOR FURNITURE CRAFTSMANSHIP

25 Mill Street, Rockport, ME 04856
207-594-5611 www.woodschooll.com
Peter Korn, Director

APPRENTICE WITH MASTER CRAFT ARTIST

in-shop experience
furniture design
production and marketing

CALIFORNIA CONTEMPORARY CRAFT ASSOC.

Box 2060, Sausalito, CA 94966
Phone/FAX (415) 927-0321

THE SCHOOL OF CLASSICAL WOODCARVING

Learn or improve hand carving skills from British Master Carver, Ian Agrell.

Training videos also available

2745 Sixteenth Street
San Francisco, CA 94103

carving@slipnet.net www.agrellandthorpe.com
Tel: (415) 626-2180 Fax: (415) 626-2140

MAKE A WINDSOR CHAIR

with Michael Dunbar

Classes Year-round

44 Timber Swamp Road
Hampton, NH 03842
603-929-9801



FINE CABINETMAKING

Cabinetmaking degree program emphasizing versatile artistry in design and employing traditional techniques in construction of fine custom furniture.

Individualized instruction focused on problem resolution and development of creativity. SACS accredited. Affordable tuition.

Rodger Haines, Instructor Southern Union State CC
(334) 745-6437 1701 Lafayette Pkwy
Fax: (334) 742-9418 Opelika, AL 36801



EDUCATING AMERICA'S WOODWORKERS
18125 Madison Rd.-P.O. Box 679-Parlman, OH 44080
ph. 216-548-3491 fax 216-548-2721

Finishes

SPRAY-ON-SUEDE. Free brochure with sample. Donjer Products, Ilene Ct. Bldg. 8F, Belle Mead, NJ 08502. 800-336-6537.

Lighting

FURNITURE LIGHTING. Custom assembly, lowest prices, high quality, no minimum order. Buy the same fixtures used in major furniture manufacturers' pieces made to your order! Heuer Woods. (803) 689-5505, fax 803-689-9805. (NC)

Plans & Kits

BUILD: "THE ULTIMATE EXERCISE MACHINE" from wood! Provides years of fun and fitness. Free brochure. Call now! 1-888-508-6900. (NJ)

SOUTHWESTERN STYLE FURNITURE PLANS. Classic construction techniques. High Desert Design, Box 26674-F, Birmingham, AL 35226.

FULL-SIZE PROFESSIONAL PLANS catalog \$3. Over 200 professionally-designed plans for building fine furniture. Furniture Designs, Inc., CK-1197, 1827 Elmdale Ave., Glenview, IL 60025. (847) 657-7526.

Accessories/Miscellaneous

ATTENTION WOODWORKERS and antique tool collectors. Detailed original drawings printed on quality T-shirts of: Davis level; Stanley #42 plane or Chapman plow-plan. Large, extra-large or 2X. \$22.95 prepaid. Sketchpad, 9 Northern Pkwy East, Plainview, NY 11803-2007.

BRANDING IRONS. Names, signatures, logos. Any size, design. Norcraft Custom Brands, 99 Bailey Rd., W. Hopkinton, NH 03229. Ph/Fax 800-538-4831.

BRIAR PIPE-MAKING SUPPLIES. Briarwood, tools, instruction book. Catalog—PIMO F.W., PO Box 2043, Manchester, VT 05255.

MAPLE BENCH TOPS
Kiln-dried 1 3/4" thick laminated maple. From 24x48" to 48x144", very competitive prices, freight collect.

BRANDING IRONS
Signatures, Logo, Names. Any size/design. Drill Press Mount. LOWEST CUSTOM PRICES.

BrandNew® www.geminineb.com/brandnew

pb/fax 800-964-8251

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!

Ebac Incorporated
Call Today! 1-800-433-9011
Phone (757) 229-3038 • Fax (757) 229-3321

Glues & Adhesives

HIDE GLUE, all grades including wood sizing and glass chipping. Bjorn Industries, Inc., 551 King Edward Rd., Charlotte, NC 28211. (704) 364-1186.

Clocks Parts/Plans

CLOCKMAKING SUPPLIES. Complete source for discount clock movements, hands, dials, fit-up inserts, weather instruments and more. Free Clockmaker Component Catalog. Box 5526, Culver City, CA 90230. 800-421-4445.

Hardware

MORE & MORE PRODUCTS coming to a computer near you! Professional Hardware & Supply. www.prohfdwr.com

Musical Supplies

GUITAR, BANJO, MANDOLIN and violin building materials. Repair tools, replacement parts, tone woods and finishing supplies. Free 104-page catalog. Stewart MacDonald's Guitar Shop Supply, Box 900F, Athens, OH 45701. 800-848-2273.

HAMMERED DULCIMER PLANS! By noted builder Charlie Alm. Best book on subject. \$19.95. Woodworks, Box 428, Dept. FW, Brookston, IN 47923. (317) 563-3504.

PLANS KITS & SUPPLIES FOR musical instruments; harps, dulcimers, psalteries, banjos and more. Musicmaker's Kits, Dept. FW, PO Box 2117, Stillwater, MN 55082. (612) 439-9120. www.musikit.com/kits

GUITARMAKING SUPPLIES: Send \$2 for our catalog of quality tonewoods, kits, accessories, books, tools, and finishing supplies. Guitarmaker's Connection, Martin Guitar Company, Box 329, Nazareth, PA 18064. 800-247-6931.

LUTHIERS' SUPPLIES: Imported tone-wood, tools, varnishes, books, plans, parts, accessories, strings. Assemble-yourself violin and guitar kits, white instruments, violins, violas, cellos, basses and cases. Call or write for your FREE catalog. International Violin Co., Ltd., 1421 Clarkview Rd., Ste. 118, Baltimore, MD 21209. (410) 832-2525, or 800-542-3538.

Blades & Bits

BAND SAW BLADES. Swedish silicon steel: 3/8-in. through 1 1/4-in. Timber Wolf bands. FREE catalog. Suffolk Machine: 800-234-7297. www.timberwolf1.com

TOOLSTEEL PLANE BLADES, extend-a-blades and lathe Tools. Free brochure. Far-rar Technology, 8213 Wesley Rd., Bloomfield, NY 14469. (716) 657-7663 or E-mail fartech@frontiernet.net

Hand Tools

ANTIQUÉ EUROPEAN HAND TOOLS. Range of moulding and profile planes, brakes, saws, plane irons and chip-breakers. For pamphlet write: Dutch Masters, Bosboom Toussaintst. 6111, 1054 AR Amsterdam, The Netherlands.

BEST JAPANESE HANDTOOLS at discount prices. Only at Nippon/4/Less. Call or write for free catalog. (415) 917-0706. PO Box 854, Los Altos, CA 94023.

TASHIRO'S SHARP JAPANESE TOOLS since 1888. Free ZETA™ saw system catalog. 2939 4th Avenue South, Seattle, WA 98134. (206) 621-0199. FAX (206) 621-0157.

Power Tools

LAMELLO BISCUIT JOINERS and Accessories/Parts/Repairs. Best prices-most knowledgeable. Call Hank 1-800-789-2323. Select Machinery, Inc.

Machinery New/Used

MOTORS from PLAZA MACHINERY. Unisaw replacement 3hp 1ø \$288. ppd. Used American drill presses, etc. Machinery list. (802) 234-9673. (VT)

CALL SAWMILL EXCHANGE to buy/sell used portable sawmills (Wood-Mizer™, Timberking™, etc.) Also, "Portable Sawmill Encyclopedia", only \$14.95! (205) 969-3963. (AL) http://www.sawmill-exchange.com

VINTAGE AMERICAN WOODWORKING Machinery. Restored Oliver, Yates, etc. Call for price and availability. (253) 857-5088. (WA) e-mail vintage@seanet.com

Wood

HEART LONG LEAF PINE and heart red cypress. Valuable old-growth timber milled from river recovered logs. Very dense grain. Available in select, vertical and rare early grades—flooring paneling, siding, etc. Will cut to order. Call for information (850) 835-4833. (LA)

SAWMILL DIRECT: Ebony, cocobolo, chac-te-koke, bocote, tulipwood, kingwood, lignum vitae and 70 other species. Quantity discounts, good freight rates. Quality at a fair price. SASE: Tropical Exotic Hardwoods, PO Box 1806, Carlsbad, CA 92018. (619) 434-3030. Visa/MC. Mitch Talcove.

FINEST QUALITY, WESTERN WALNUT quilted & figured maple, micro-lumber and more. Northwest Timber. 1-800-238-8036. www.nwtimber.com

RARE HARDWOODS WHOLESALE PRICES. Black (gabun) ebony low as \$24/bd. ft. Striped (Macassar) \$22.50/bd. ft. Pink ivory lumber, \$11/lb. Lignum vitae, low as \$3.75/lb. cants or lumber. Unfigured snakewood \$3.50/lb. Over 100 rare species in stock. Finest quality. Best selection. Guaranteed. (310) 542-3576. Eisenbrand, Inc., CA.

CALIFORNIA'S FINEST QUALITY EXOTIC figured burlwoods. 30,000 pieces redwood, maple, buckeye, manzanita, madrone, myrtlewood, walnut, other burls. Any size/use/guaranteed/direct. Established 27 years. VISA/MC. BURL TREE, Bruce Remington. 800-785-BURL.

HOMESTEAD HARDWOODS. Great domestic selection. 800-241-3770, (330) 889-3770. Alva Hardwoods, 7307 Rte. 80, Alva, FL 33920. (941) 728-2484, 888-894-6229 (Florida only.)

ATTENTION VA/MD AREA WOODWORKERS. K/D quartersawn sycamore, red & white oak. Cherry, walnut, elm, apple, and other domestic hardwoods. Herbine Hardwoods, Leesburg, VA. (703) 771-3067.

CALIFORNIA BLACK WALNUT & elm. Highly-figured, crotches, fiddleback. Wide boards & slabs; KD/AD sequentially sawn, 4/4, 8/4, 12/4. Gilroy, CA (408) 842-0784.

DOMESTIC AND IMPORTED EXOTICS. For musical instruments, pool cues, knife handles and custom furniture. Price list. Exotic Woods, 1-800-443-9264. www.exoticwoods.com

SPANISH CEDAR. Hardwoods cut to order. 120 species in stock from 1/4-in. to 4-in. thick, burls for turners, wood ID kits; \$59.95. Veneers, woodworker's supplies. Colonial Hardwoods, Springfield, VA. (800) 466-5451.

CHESTNUT LUMBER, Wormy or clear, furniture grade. Antique woods and antique wide board flooring. Oak, pine, hemlock. T&G, custom millwork. CHESTNUT WOODWORKING (860) 672-4300, fax 860-672-2441. (CT)

BIRD'S-EYE AND CURLY MAPLE, 4/4 to 12/4 lumber, flitches, turning squares and blocks. Black walnut, cherry and quartersawn and curly oak lumber. Dunlap Woodcrafts, Vienna, VA (703) 631-5147.

CHESTNUT SPECIALISTS, INC. Antique chestnut, oak and pine lumber for cabinetry, furniture, flooring. (860) 283-4209. (CT)

REDWOOD BURL, RARE EXOTIC burlwood. Direct from logger. Table and clock slabs, turning blocks, box-wood! Burl Country: (707) 725-3982. (CA)

FIGURED WALNUT SLABS, planks, blocks available dimensions 5/4 - 24/4, random length, random width. California Walnut Designs, 12681 Wolf Rd., Grass Valley, CA 95949. (916) 268-0203. www.ca-walnutdesigns.com

GUARANTEED CLEAR COCOBOLO squares, lumber, bocote, ebony, lignum. cirocote. Ebony fingerboard special. Tropical Timber Corporation. (503) 621-3633. (OR)

MAPLE AND REDWOOD BURL. Highly figured, bird's-eye and lace. Specializing in box wood and carving materials. Any size or thickness. Quality. (503) 394-3077. (OR)

LONGLEAF (HEART) PINE LUMBER. Resawn from salvaged timbers. Lumber, flooring and stair-tread material. Lee Yelton: (706) 541-1039. (GA)

QUALITY NORTHERN APPALACHIAN hardwood. Custom milling. Free delivery. Bundled, surfaced. Satisfaction guarantee. Niagara Lumber, 800-274-0397.

TURNING BLOCKS, BURLS, AND CROTCHES -exotic and domestic hardwoods—write or call for price list. Wood-Ply Lumber, 100 Bennington Ave., Dept. F, Freeport, NY 11520. 800-354-9002.

DOMESTIC HARDWOODS K/D. Cherry, figured walnut, quartersawn sycamore, osage-orange elm, ash, etc. Middletown, MD. (301) 639-1790.

FREE CATALOG OF HARDWOOD lumber, plywood, veneers and woodworker's supplies. Stocking 60 species of KD domestic and exotic lumber. Delivery anywhere in USA. Call Appalachian Millwork & Lumber today. 800-849-9174.

QUARTERSAWN OAK
Horse logged quartersawn white and red oak. Wisconsin grown tight grain export quality lumber. The most sought after oak in the world.
Available for you.

HISTORIC WOODWORKS
1-800-213-4584
151 Hwy 23, St. Cloud, WI 53079

GILMER WOOD CO.
503-274-1271

Rare & Exotic Woods

- in logs, planks & squares
- over 50 species in stock
- also cutlery, turning & musical instrument woods

2211 NW St. Helens Rd., Portland, OR 97210

TECH-WOOD, INC.
Domestic & Imported Hardwoods

Holly, Persimmon, Apple, Koa
+ 50 other species, 4/4-16/4
Burls, Slabs, Thin Lumber
717-933-8989

EXOTIC HARDWOODS of HAWAII
KOA • MANGO • NORFOLK PINE
Over 40 Unique Species
Lumber • Turning Blocks
1-808-961-6411

WINKLER
WOOD PRODUCTS
www.interpac.net/~winkler
E-mail: winkler@interpac.net
261-A Kekuanooa St. Hilo, Hawaii 96720

Oregon Black Walnut

Wide lumber - 1/8 through 16/4 • High Quality
Figured • Large Selection
Web Site www.dnc.net/users/nwmb/gwp

GOBL
WALNUT PRODUCTS
5016 Palestine Rd.
Albany, OR 97321

ORDERING BY
APPOINTMENT ONLY
(541) 926-7516

WOOD & TOOL EXCHANGE

Limited to use by individuals only.

For Sale

Fine Woodworking 1-123; (missing 13,14,15,26,58 & 61) plus Design Book #1. \$400. FOB for lot. (941) 775-9266. (FL)

Stanley #1 plane excellent condition, minor rust. \$1400./ OBO. Evenings (508) 366-0054. (MA)

General #350 10-in table saw with Biesemeyer 52-in fence, legs, Excalibur 60-in sliding table. Never used. \$2300. FOB (614) 637-7077. (OH)

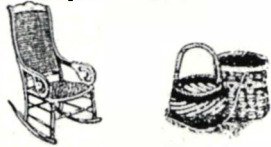
Wanted to Buy

RECORD MULTI-PLANE #405 with hollow and round bases. Record Combination Plane #050. Bill (712) 258-3194. (IA)

OAK. Tablemaker seeks gray weathered oak barn siding. (915) 585-7693. (TX)

WANTED: Skil #100 or #676 electric hand planer and any parts. Will pay top dollar plus shipping. John: (562) 433-3903. (CA)

Basketry & Seat Weaving Supplies
 RETAIL/WHOLESALE
 Reeds • Hoops • Cane • Rush
 Repair • Restoration



CALL (800) 462-6660
H. H. PERKINS CO.

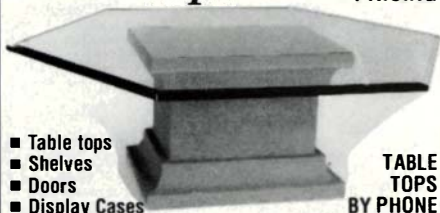
Established 1917

10 South Bradley Road, Woodbridge, CT 06525
 (203) 389-9501 FAX (203) 389-4011

READER SERVICE NO. 56

Heavy Glass Table Tops

FACTORY
 DIRECT
 DISCOUNT
 PRICING



- Table tops
- Shelves
- Doors
- Display Cases
- Entertainment Centers
- Tempered Glass

TABLE
 TOPS
 BY PHONE
 SATISFACTION
 GUARANTEED!

WGB ■ SHAPES ■ THICKNESSES ■ EDGE DESIGNS
 Use Reader Service For FREE Catalog

SALES 1-800-288-6854

READER SERVICE NO. 6

BLUE TORNADO CYCLONES

MADE
 IN USA



- HIGHEST QUALITY/VALUE
 - SATISFACTION ASSURED
 - 16 GA. DOMESTIC COLD ROLL STEEL, MIG WELDED
 - SIMPLE INSTALLATION
 - SIZED FOR A SMALL SHOP
- 1-800-292-0157
 PO Box 156 • BUCKNER, KY

READER SERVICE NO. 139

Protect Your Back Issues



SLIPCASES FOR *HOME FURNITURE*. Bound in dark green and embossed in gold, each case holds at least 8 issues of *Home Furniture* (two year's worth), and costs \$8.95 (\$24.95 for 3, \$45.95 for 6). Add \$1.50 per case for postage and handling; outside the United States, add \$3.50 each (U.S. funds only). PA residents add 7% sales tax. Send your order and payment to the address below, or call toll free, 1-800-825-6690, and use your credit card (minimum \$15).
 Jesse Jones Ind., Dept. 95 HF, 499 E. Erie Ave., Philadelphia, PA 19134 (No P.O. boxes, please).

Visit our workshop on the web.



Taunton's carving out an on-line community of woodworking enthusiasts. Come inside and browse our book collection. If you like what you see, you can order with a click. View the work of master woodworkers and collect articles and tips from recent issues. Swap information with fellow artisans. Vote in our opinion polls. And, back at the home page, you can check out *Fine Homebuilding*, *Home Furniture*, *Fine Cooking*, *Kitchen Garden*, *Threads* and *Fine Gardening*. Log on and join in!

www.taunton.com



Shop for books.



Post your questions.



E-mail our editors.

Subscribe...
 Give holiday gifts!



Preview how-to videos.

PORTER CABLE

693PK 1-1/2hp Router with 1002 base & 6931 Plunge base & case for only \$198

90690 1.5 hp Router w/ case 158
100 7/8 hp Router 106
310 Laminate Trimmer 146
334 4 1/2" Trim saw 159
333 RO Sander 5" H&L 63
334 RO Sander 5" PSA 63
335 NEW! 6" RO Sander 84
352VS 3X21 Sander VS 163
360 3X24 Sander w/ bag 211
360VS NEW! VS Sander 228
362 4X24 Sander w/ bag 217
362VS NEW! VS Sander 238
548 Wormgear Jigsaw 229
5116 D'overal Jig 226
656 Buscut Joiner 179
656 1.5hp Plunge Router 179
6931 Plunge Base 79
697 Router Table & motor 227
698 Router Table only 133
7304 4" RO Sander 109
7519 3hp Router 254
7537 2 hp D-Handle Rtr 224
7538 3 hp Plunge Rtr 259
7810 Vacuum 257
9118 Door Planer Kit 234
9345 Saboss w/ case 136
9444 Profile Sander 95
9444VS VS Profile Sander 109
97310 Trimmer Kit 187

NEW NAILGUNS!!!

BN125 1 1/4" Brad Nailer 86
BN200 2" Brad Nailer 133
FN250A 2 1/2" 16g Finish 189
DA250A 2 1/2" angle Finish 245
NS150 1 1/4" crown Stapler 156
FR350 Framing Nailer 299
CF1540 1-1/2 hp Compressor 293

NEW CORDLESS!!!

9662 12V T-style Drill kit 173
9662F 12V kit w/flashlight 188
9663 12V Push handle Kit 184
9663F Kit w/flashlight 194
9672 14V Drill Kit 188

AP10 Replacement Blades 24.95

HT20VSK MULTI TOOL 54
DBJ50 Mini Biscuit Joiner 68
SS5450 Sander Sander 158

It's Christmas! Forget the socks and underwear....BUY TOOLS!

BOSCH

B4200 \$129 VS

Orbital Jigsaw 189
1587/SKB Jig Saw Kit 159
1604AKX 1-3/4 hp Router 179
1606A D-Handle Router 179
1609KX Trim Kit 233
1943LED Heat Gun 109
3283DVS 5" RO Sander 99
3915 Compound Miter 577
B1350 1 3/4 hp Router 109
B1450 2hp VS Plunge Rtr 179
B1550 3hp Router 199
B4050 Inline Jig Saw 99
B7001 VS Detail Sander 59
B7100 1/3 sheet Sander 59

DEWALT

DW682K Biscuit Joiner \$198

DW1006 3/8" Keyless Drill 73
DW306K Recip Saw 163
DW321K Jigsaw Kit 163
DW420 7 1/4" Circ. Saw 129
DW364 7 1/4" Circ. Saw 161
DW420 5" PSA RO Sand 74
DW431 3X21 Belt Sander 187
DW443 6" H&L RO Sand 144
DW444 6" PSA RO Sand 148
DW610 1 1/2 hp Router 149
DW615 1 1/4 Plunge Rtr 166
DW621 2hp Plunge Rtr 217
DW625 3hp Plunge Rtr 277
DW670 Trim Router 187
DW673K Trimmer Kit 98
DW705 12" Comp Miter 354
DW935 14V Cordless Saw 158
DW935K Cordless Saw Kit 228
DW972K 12V Cordl drill 179
DW991K 14V Cordl drill 138
DW991K2S 14V Combo Kit 199
DW995K2S 18V Combo Kit 379

Milwaukee

6496-6 10" Compound Si de Miter \$568

6497 Dlx 6496 648
0234-6 1/2" Magnum Drill 128
0375-6 3/8" Close Qtr Drill 147
0379-6 1/2" Close Qtr Drill 164
0415-21 12V Cordless Kit 243
0479-6 12V R/Angle Cordless 210
0511-21 14V Cordless 233
3107-1 VS Ft Angle Drill 233
5882 2 hp Router 164
6020-20 6" RO Sander 153
6025-20 5" RO Sander 134
6101-6 NEW Bandfile 193
6215 Elec. Chainsaw 230
6266 NEW! Jig Saw 157
6494-6 10" Compound Miter 314
6517-20 New! Quick Sawzall 154
6537 VS Super Sawzall 174
6546-1 Cordless Screwdriver 69
6767-1 Screwdriver Kit 135

RYOBI

AP10 Replacement Blades 24.95
HT20VSK MULTI TOOL 54
DBJ50 Mini Biscuit Joiner 68
SS5450 Sander Sander 158

HITACHI

C8FB2 COMPOUND SLIDE SAW \$477

C10FA 10" Miter Saw 299
C10FB 10" Slide Miter 737
C15FB 15" Miter Saw 658
NF83A Framing Nailer 388
EC12 2hp Compressor 286

SENCO

SLP20 Brad nailer \$249

SL520 Light Duty Stapler 249
2-Finish Gun 297
SFN1+ 2 1/2" Finish Gun 347
SFSL 1 1/4" Crown Stapler 274
SN5C NEW! Framing Nail 397
CN200R Coil Router 357

ALTRA

NAIL GUNS 241SNK \$96

18 G 3/8-1/2" Kit 69
0232SP 18G 1-1/4" Kit 69
E22 shoots pins & staples 137
249SNK 18 G 3/4-2" Kit 129
566TP 2-1/2" Finish Gun 202
626SNK 1 1/4" Crown 1" Stapler Kit 99
350NK 2" 16G Brad Gun 169

Abr-Mate

AIR COMPRESSORS \$299

AM7BHC4V 1 1/2 hp-2 tank 305

Rol-Air

COMPRESSORS \$299

D1500HP5 1.5 hp 4.5 gal tank

freud

94-100 5 pc Router Bit Cabinet set \$167

LUB5M010 10" 80T Finish 35
LUB4M011 10" 50T Combo 36
LM72M010 10" 24T Pig 36
LUB5M015 15" 108T Finish 99
LUB2M010 10" 60T Conan 58
LUB6M010 10" 80T Lamates 67

Construction Master IV

The NEW!!! world's best feet-inch-metric-fraction calculator. Solves reaters hips, valleys, stairs

\$69

Pocket hole maker \$109

KREG JIG for joining facelrames, butt joints and other pocket hole applications

Makita

LS1211 12" Compound Miter Saw \$757

LS1013 NEW! 10" Slide Compound Miter 2-Rail System 577
3606 1 hp Router 106
3621A 1 1/4 hp Plunge Router 159
4200H 4 3/8" Trim Saw 169
4304 Jig Saw 159
4305 Jig Saw 156
6213DWAE 3/8" 12V Cordl 178
6233DWAE 3/8" 14V Cordl 196
6313DWAE 1/2" 12V Cordl 196
6333DWAE 1/2" 14V Cordl 213
9924DB 3X24 Belt Sander 188
AN8300 Framing Nailer 326
LS1000 10" Miter Saw 199
LS1040 10" Compound Saw 258

STABILA

LEVELS - Hand holds

Two vertical vials. Two milled faces. Yellow coat.

2464 24" w/ hand hole 42
2469 36" w/ hand hole 46
2467 48" w/ hand hole 54
2468 72" w/ hand hole 56
2559 NEW Laser Level 326
2700 6 ft 6" -3vial 115
2701 8 ft -3vial 125

7pc Forstner Bit Set or 7pc Countersink Set regular \$17.95

just \$9.95 with purchase

DELTA

37-070 \$257

6" Table Top Jointer

14-650 Hollow Morse Chisel 238
22-660 NEW!12" planer 397
23-710 Sharpening Center 168
31-080 1" Belt 5" Disc Sander 86
31-480 4" Belt 6" Disc Sander 133
31-780 Oscillating Sander 254
32-100 Platio Joints 254
36-040 8" Compound Miter 149
36-090 Sidekick 10" Miter Saw 218
36-210 10" Compound Mk 248
40-150 15" Scroll Saw 115
40-560 16" Scroll Saw 159

BIESEMEYER

78-900 Commercial T50 324
78-930 Homeshop 28 238
78-931 Homeshop 40 258
78-935 Homeshop 52 268

Detail Sander

Kit w/case & paper \$179

18 Mx636-2 \$179
Scraper Blade attachment 15.95
30 pc assorted PSA paper 6.95

STABILA

LEVELS - Hand holds

Two vertical vials. Two milled faces. Yellow coat.

2464 24" w/ hand hole 42
2469 36" w/ hand hole 46
2467 48" w/ hand hole 54
2468 72" w/ hand hole 56
2559 NEW Laser Level 326
2700 6 ft 6" -3vial 115
2701 8 ft -3vial 125

7pc Forstner Bit Set or 7pc Countersink Set regular \$17.95

just \$9.95 with purchase

1175 N. EAST, ANAHEIM CA. 92805
OPEN 8 5:30 WEEKDAYS 9 2 SATURDAY
Calif. residents add 7.75% state sales tax
SERVING YOU FOR OVER 20 YEARS

USE VISA, MC, DISCOVER FREE SHIPPING on orders from this add over \$50. to the 48 states. HI and AK extra. Sales limited to stock on hand. Prices subject to change without notice.

800-225-6321

READER SERVICE NO. 109

Econ-Abrasives

WE MANUFACTURE ABRASIVE BELTS ANY SIZE, ANY GRIT!

ABRASIVE SHEETS: (9X 11)

CABINET PAPER

Size	50/blk	100/blk
40D	\$18.90	\$35.60C
50D	17.80	32.25
60D	16.70	30.00
80D	15.60	27.80
100 thru 150C	14.50	25.60

FINISHING PAPER

80A	\$11.15	\$18.90C
100 thru 280A	10.00	16.70

NO LOAD PAPER

180 thru 400A	\$12.25	\$21.25C
---------------	---------	----------

*C = 100 SHEETS

STEEL BAR CLAMPS

Quick release feature. available in four different lengths, these clamps are fast adjusting with cast iron jaws.

Size	Price
2-1/2 x 6	\$6.50**
2-1/2 x 12	7.00
2-1/2 x 24	7.75
2-1/2 x 36	9.50

HEAVY DUTY SPRING CLAMPS

Clamps come with PVC tips and grips.

Size	Price
4"	\$1.75 ea.
6"	2.25
8"	3.50

OTHER PRODUCTS

*ROLLS*FLAP WHEELS*PUMP SLEEVES*ROUTER BITS*WOOD GLUE*WOOD BITS*SANDING BLOCKS*DRAWER SLIDES *HINGES*TV SWIVELS

*Check or COD
*SATISFACTION GUARANTEED
*Texas add sales tax
*Continental US Shipping Charges add \$5.50.

Econ-Abrasives

P.O. Box 1628
Frisco, TX 75034
(972)-377-9779

CALL FOR FREE CATALOG!

Toll-Free (800)367-4101

READER SERVICE NO. 4

RAISED PANEL DOORS

✓ Check Out Our Features:

- ✓ Superior Quality
- ✓ 135 Door Designs
- ✓ 10 Wood Species
- ✓ No Order Too Small
- ✓ Dovetail Drawers

✓ Fast Delivery
✓ Great Prices
✓ Drawer Fronts

Order our brochure, please enclose \$2.00 for shipping.

Scherr's Cabinet & Doors, Inc.

5315 Burdick Expressway East • Minot, ND 58701
Phone 701-839-3384 • Fax 701-852-6090
email: doormker@minot.com
www.scherrs.com

READER SERVICE NO. 706

NEW VIDEO TAPE

AMERICAN MADE, HEAVY DUTY!

DRUM SANDER

THE BEST DRUM SANDER IN THE WORLD!

MODELS UP TO 37 INCH CAPACITY

It has quality features not found on other brands. Sand boards, frames, doors, veneer, knots, wild grain perfectly flat and smooth every time!

Reduce sanding time from hours to minutes!

Delivers sanding precision equal to large wide belt sanders at an affordable price!

EXCALIBUR MACHINE CORP.

P.O. Box 82
Anderson, MO 64831
PLEASE SEND ME A FREE BROCHURE 1-417-223-4031

ROSS

READER SERVICE NO. 168

NEW! Inca Rules

A NEW Concept in Precision Steel Rules

Precision Marking Rules

INCRA has re-invented the steel rule by putting micro-fine marking holes at every scale position to *instantly* locate a sharp pencil or scribe *exactly* on target! Now, instead of squinting at that blur of lines along the edge of your old steel rule, you can instantly put your mark precisely where you want it with zero uncertainty and no eye strain. Even if the lighting is less than perfect or your eyes are tired at the end of the day, you can still be sure that the precision built into every **INCRA RULE** actually shows up in your finished work!

When accuracy counts ... INCRA RULES!

Available in 6", 12" and 18" lengths. *Patents pending*

To learn more about this extraordinary line of precision Marking Rules, Bend Rules and T-Rules, call, write, or fax:

Taylor Design Group, Inc.
P.O. Box 810262, Dallas, TX 75381
Tel: (972) 484-5570 Fax: (972) 243-4277

Stainless Steel

READER SERVICE NO. 170

Discount Prices on
**BOOKS
& VIDEOS**

Credit Card Orders Call Toll Free 1-800-243-0713
FREE SHIPPING IN US FOR ORDERS OVER \$35
OTHERS ADD \$3, CANADA & OVERSEAS ADD 15% SHIPPING CHARGE
(FAX) 606-255-5444. PHONE INQUIRES (606) 255-5444
Complete Catalog Sent FREE with Order or Send \$2

**Manny's
Woodworkers
Place**
555 South Broadway
Lexington, KY 40508

**FREE GIFT FOR ORDERS
OVER \$75 IN NOVEMBER**

12" Center Finder Rule by Fairgate Rule, NY

CHRISTMAS SPECIALS

- The Wood Sanding Book (Nagyszalanczy) \$18
- Chairmaking & Design (Miller) \$21
- The Handplane Book (Hack) \$29
- Boxmaking Basics (Freedman) \$18
- Router Joinery (Rogowski) \$21
- Kitchens that Work (Edic) \$32
- Artistic Scroll Saw Patterns & Projects (Spielman) \$14
- The Art of Making Small Boxes (Lydgate) \$19
- The Picture Framing Course (Bingham) \$23
- Understanding Woodturning (Phillips) \$17
- Lettercarving in Wood (Pye) \$18
- Sharpening with Waterstones (Kirby) \$14
- Refacing Cabinets (Kimbal) \$18
- Wonders in Wood - 47 Puzzles \$10

SPECIAL PRICING ON BOOK SETS

- 4 Books by James Krenov \$65
- 5 Books by Roy Underhill \$80
- Tag Frid Book 1, 2, and 3 \$45
- 4 Books by Norm Abrams \$75
- Understanding Wood & IDing Wood (Hoadley) \$58
- 3 Books by Sandor Nagyszalanczy \$55

"BEST OF FINE HOMEBUILDING"

- List \$14.95; Special \$12.00 ea; Any 4 for \$45
1. Kitchens
 2. Masonry
 3. Porches, Decks
 4. Foundations
 5. Finish Carpentry
 6. Framing
 7. Framing Roofs
 8. Roofing
 9. Windows & Skylights
 10. Doors
 11. Stairs

"BEST OF FINE WOODWORKING"

- List \$14.95; Special \$12.00 ea; Any 4 for \$45
1. More Finishes
 2. Beds & Bedroom Furniture
 3. Shop Accessories
 4. Tables and Chairs
 5. Wood
 6. Small Wood Shop
 7. Router Projects
 8. Power Saw (10 more titles available)

**LOWEST PRICES ON 4 OF
"FINE WOODWORKING'S" BEST**

- Only \$26 ea; all 4 for \$100
1. Built-In Furniture
 2. Workshop Book
 3. Workbench Book
 4. Toolbox Book

STICKLEY CRAFTSMAN FURNITURE

- The Stickley Craftsman Set - 3 Books \$30
- Furniture of Gustav Stickley (Bavaro) \$19
- Building Arts and Crafts Furniture (Kenner) \$18
- Mission Furn. from Arts & Crafts Movement (Royka) \$65

BOOKS BY DAVID PYE

- Nature & Aesthetics of Design \$19
- The Nature and Art of Workmanship \$19

SPECIAL PRICES ON OTHER FAVORITES

- World Woods in Color (Lincoln) \$45
- American Furniture of the 18th Century (Greene) \$39
- Furniture by Design (Blackburn) \$29
- Building Doors and Entryways (Weil) \$18
- Make Traditional Wooden Planes (Whelan) \$19
- Antique & Collectable Stanley Tools Price Guide (Walter) \$30
- Soul of a Tree (Nakashima) \$40
- Understanding Wood Finishing (Flexner) \$14

VIDEOS

FINE WOODWORKING & FINE HOMEBUILDING VIDEOS - only \$16 ea
Hand-Applied Finishes (2 Videos) • Installing Trim Woodfinishing • Handplanes in the Woodshop • Turning Wood • Turning Projects • Bowl Turning • Mastering the Bandsaw • Mastering Machines Dovetail a Drawer • Router Joinery • Framing Roofs • Laying Hardwood Floors • Make Kitchen Cabinets • Basic Stairbuilding • and Many More!

- Roger Cliffe: Set of 7 Cabinetmaking Videos \$175
- Bob Rosendahl: 8 Router Technique Videos \$185
- Mark Adams: Set of 5 videos \$110
- Videos by Dennis White, David Springett, Jim Kingshott, Mike Darlowe \$24 ea

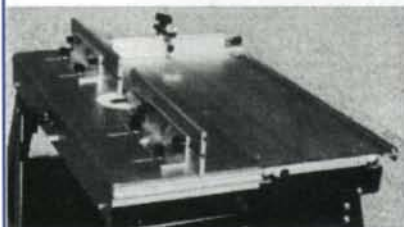
READER SERVICE NO. 705

WOODLINE ARIZONA, Inc.
P.O. Box 1530 • Payson, AZ 85547
1-800-472-6950
The Place for Router Bits and Shaper Cutters

• All Major Credit Cards Accepted
• Shipping is only \$3.75 per order
• 24 hours a day • 7 days a week

Check our NEW FREE 40-PAGE CATALOG with OVER 60 NEW ROUTER BITS AND CUTTERS including terrific items not found anywhere else, like: exterior and passage door cutters, flooring tongue & groove cutters, shear cutting straight bits and flush trimmers, plus many more!

All bits feature: • Anti-kickback design • Super-slick coating
• Lowest prices anywhere for bits of this quality!



Your shops' most useful tool - Woodline's "Does-It-All" **ROUTER TABLE**

\$499. plus \$40.00 for packaging, handling, and freight.

Check these Features:

- Tough heavy duty steel - weighs 106 lbs.
- A sliding table with more than 26" of table travel
- Multi-positioned mitre and hold down clamp.
- Table can be locked making a 32"x24" fixed table.
- Micro-precision calibrated cross feed.
- Tall split fence positionable front & back, & side to side.
- Featherboard positioned anywhere along the work area.
- 2 inserts for table router bit up to 3-1/2" diameter
- Starting pin. • Dust collection hood.
- Tilt & lock capacity for full view of the workpiece

Router Table shipped Complete with:

- Heavy duty stand
- 2 table inserts
- Featherboard
- Spacers
- Starting Pins
- Fences
- Holding Clamp
- Mitre
- Switch & Outlet
- Micro-calibrated cross-feed

READER SERVICE NO. 46

22 Years And Going Strong

THE BOTTOM LINE

WHERE QUALITY, SERVICE AND LOW PRICES MEET

FREE FREIGHT in the continental U.S.

FREE U.P.S. GROUND SHIPPING Anywhere in the Contiguous U.S. on Any Order Over \$75

1-800-411-5571
CALL NOW FOR FREE FULL-COLOR CATALOG!

Model DW92X **\$197⁹⁷** DeWALT Plate Joiner Kit

Model DW901K-2 **\$199⁹⁷** DeWALT 14.4 Volt 3/8" Driver-Drill Kit

Model 1507AVSK-90 **\$149⁹⁷** BOSCH Variable Speed Jigsaw Kit

Model 0275-6 **\$138⁹⁷** 3/8" Close Quarter Drill

Model 023PM **\$194⁹⁷** PORTER-CABLE 1-1/2 HP Router

Model 000 **\$139⁹⁷** 1-1/2 HP Dual Base Router Kit

VISA, MasterCard, American Express, Discover

READER SERVICE NO. 43

VAN DYKE'S RESTORERS
Supplies for woodworkers and antique restorers!

- Caning & veneers
- Curved & bubble glass
- Roll top accessories
- Hoosier accessories
- Carvings & moldings
- Furniture components
- Over 1,000 Brass, Glass & Wooden Hardware items
- Much, Much More

Over 8,000 items
Call or Write For Your **FREE** Catalog

1-800-843-3320
Dept. 60017 • PO Box 278
Woonsocket, SD 57385

READER SERVICE NO. 9

We Manufacture & Service
**SHAPER KNIVES
MOULDER KNIVES**

Williams & Hussey
Profile Knives

We now distribute
FREEBORN
Cutters

FOLEY BELSAW • MOULDER HEADS
RBI & WOODMASTER KNIVES
LOCK EDGE COLLARS
ROSETTE CUTTERS
CUSTOM ROUTERS &
CUSTOM CUTTERS

Quick Turnaround Time
Top Quality Products
at Competitive Prices

W. Moore Profiles LTD.
1 Commercial Drive,
P.O. Box 752, Florida, NY 10921 **1-800-228-8151**

Serving the Industry for over 10 Years - Fax (914) 651-1097

READER SERVICE NO. 68

NEW! Ingra RULES
A NEW Concept in Precision Steel Rules
Precision T-Rules

PRECISE, versatile, and easy to use are the words which best describe the **NEW INGRA T-Rule**. Think of it as a combination square for marking or measuring that's *simultaneously* set to every scale position with perfect, instant accuracy. Why? ... Because like all **INGRA RULES**, we put micro-fine marking holes and slots at every scale line to *instantly* locate your sharp pencil or scribe *exactly* on target with zero uncertainty and no eye strain!

When accuracy counts ... INGRA RULES!
Available in 6", 12" and 18" lengths. *Patents pending*

To learn more about this extraordinary line of precision Marking Rules, Bend Rules and T-Rules, call, write, or fax:

Taylor Design Group, Inc.
P.O. Box 810262, Dallas, TX 75381
Tel: (972) 484-5570 Fax: (972) 243-4277

Stainless Steel

READER SERVICE NO. 170

RIP AW

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. Maximum width, 14". Start-up video available.

Better Built CORPORATION
789 Woburn Street, Dept. FW
Wilmington, MA 01887

(508) 657-5636
fax (508) 658-0444
Call or write for free brochure

READER SERVICE NO. 198

Oscillating Spindle Sanders
for discriminating woodworkers who demand the best

FREE Color Catalog
1-800-971-5050

CLAYTON
MADE IN USA

READER SERVICE NO. 151

Free Catalog

The Highest quality woodworking tools and supplies from The Garrett Wade Tool Catalog.

- Hand Tools
- Power Tool Jigs
- Multico Mortisers
- Inca Machines
- Finishing Supplies
- Hardware
- And much more...

For a Free Catalog call Toll Free or write to:

Garrett Wade Co.
161 6th Avenue
NY, NY 10013

800-221-2942
800-566-9525 fax

From Garrett Wade

READER SERVICE NO. 8

Like Having A Lumberyard Right in Your Shop!

NOW! Plane, Mold, Sand & 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!

Infinitely 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. Converts to Drum Sander or Gang Rip Saw in under five minutes. Call today for **FREE FACTS**.

1-800-821-6651 ext. PE67
Woodmaster Tools, Inc.
1431 N. Topping Ave. Dept. PE67
Kansas City, MO 64120

READER SERVICE NO. 111

Sunhill Baby Power Feeder



An entry-level power feeder—Sunhill's Baby Feeder has a 1/6-hp variable-speed, reversible motor.

There's a good reason that power feeders are found in most large, commercial woodworking shops. These machines keep hands away from cutters, and they produce better results because they feed wood quickly and smoothly. Scorching and milling marks are reduced or eliminated. For small cabinet shops, the relatively high cost of these units has made them an im-

practical investment. Not any more.

Sunhill Machinery of Seattle, Wash., recently introduced a mini power feeder. The M-3 Baby Power Feeder is made by Co-Matic Machinery Ltd. of Taiwan, one of the world's largest producers of power feeders for the woodworking industry. (Delta just introduced a small power feeder, too. Co-matic manufactures the machine, which

differs slightly from Sunhill's.) The Baby Feeder is suitable for router tables, shapers and tablesaws, but because of its size, I wouldn't put it on a tablesaw unless I only planned to work stock $\frac{3}{4}$ in. thick or less.

The Baby Feeder is powered with a $\frac{1}{6}$ -hp reversible, variable-speed motor. Stock is fed by three urethane rollers. I mounted the feeder to my router table; it was easy to ad-

ASK WOOD-KOTE

REMOVING GRIME FROM WALLS

Q: I have tried to clean the "washable" latex paint on my walls. The appearance of the paint is worse after washing than before. The dirt still on the wall just moved around in streaks. Is there a paint that is truly washable or is there a product I can use that will actually clean my walls?

K. Reide, Seattle, WA

A: Interior flat latex wall paint provides a cleaning challenge. We have found, however, LIN-SOAP™ Linseed Oil Soap is by far the most effective product for cleaning any type of painted surface, including flat latex paint. Excellent results will be achieved on painted walls, cabinets and



woodwork. LIN-SOAP™ will even remove waxy substances such as crayon or lipstick marks. Unlike soaps made with vegetable oil, LIN-SOAP™ will not leave your walls dull or gray. Little or no rinsing is required after using LIN-SOAP™. A clear imperceptible film will be left on the painted surface which will make subsequent cleaning even easier.

A few reminders are in order: LIN-SOAP™ will not be effective in removing the "baked" on dirt above electric base-board heaters. Generally, the higher the quality of paint and the glossier the paint surface, the easier it is to clean.



"The Professional Woodworker's Choice Since 1945"

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 <http://www.woodkote.com> E-mail: woodkote@teleport.com

ASK FOR WOOD-KOTE PRODUCTS AT PAINT STORES, HARDWARE STORES AND HOME CENTERS.

READER SERVICE NO. 25

NEW! **Incro RULES**
A NEW Concept in Precision Protractors

Precision Marking Protractor

- One-half degree increments
- Removable T-Bar
- Centering Rule
- And more...

This 21st century Marking Protractor has micro-fine guide holes at every 45°, 30°, 22.5°, 5°, 1°, and 0.5° interval to plot any angle with ease and absolute accuracy. A metal T-Bar and see-through crosshairs provide perfect alignment against the edge of your workpiece. Remove the T-Bar to work on flat surfaces or to use the 6" centering scale. FOUR angle scales, including one for marking narrow stock, suit every need. It's easy on the eyes, incredibly accurate, and just plain fun to use! *Patents pending*

To learn more about INCRA's extraordinary NEW line of precision Marking Protractors, Marking Rules, Bend Rules, T-Rules, and Centering Rules call, write, or fax:

Taylor Design Group, Inc.
P.O. Box 810262, Dallas, TX 75381
Tel: (972) 484-5570 Fax: (972) 243-4277
E-Mail: TDGIncro@AOL.com

Stainless Steel

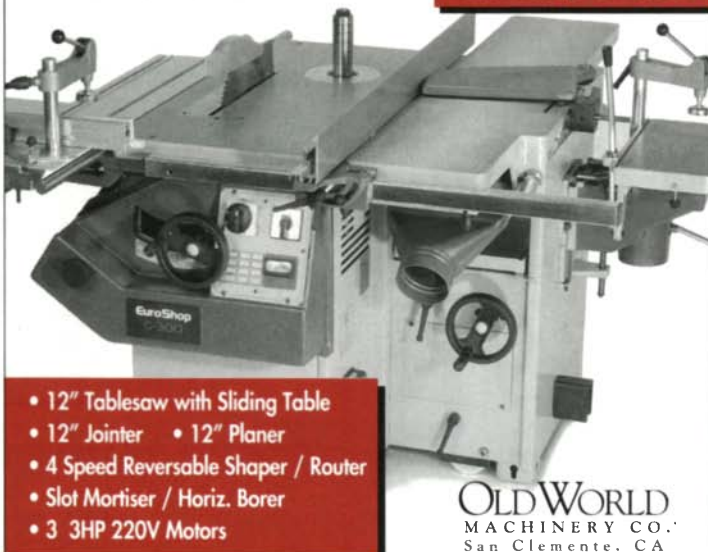
READER SERVICE NO. 170

The Right Combination

Europe's finest line of combination woodworking machines is now customized for the American woodworker. Whether you're a beginning woodworker or a seasoned pro, we have a machine to fit you and your budget. Call now to receive more information.

800-203-0023

EuroShop C-300



- 12" Tablesaw with Sliding Table
- 12" Jointer • 12" Planer
- 4 Speed Reversible Shaper / Router
- Slot Mortiser / Horiz. Borer
- 3 3HP 220V Motors

OLD WORLD MACHINERY CO.
San Clemente, CA

READER SERVICE NO. 662

Revolutionary price. Revolutionary machine.

Curve Feeder
Exclusive adjustable rear roller for feeding curved or straight workpieces on shapers and table saws
Curved or straight workpieces

LB-21

21" Spindle Single Line Boring Machine
For vertical & horizontal boring
• The new standard for quality & price

AF-C3

1-800-929-4321

Celebrating 19 YEARS

SUNHILL MACHINERY

ALL MACHINES BACKED BY A FULL 1 YEAR WARRANTY

Innovative Machines for Demanding Woodworkers.™

Sunhill Machinery, 500 Andover Park East, Seattle, WA 98188
toll-free: 1-800-929-4321 • fax: 206-575-3617 • e-mail: sunhill@sunhillnic.com

READER SERVICE NO. 177

just and very rigid. Like its bigger brothers, the Baby Feeder can be articulated to bear against stock in either a horizontal or vertical position. The feed rate is adjustable from 6 feet per minute (fpm) to 40 fpm. The best way to determine proper feed rate is to look and listen. If the wood scorches, increase the feeder's speed. If the motor sounds like its lugging, slow it down.

Once I adjusted the feeder, there was no scorching or scalloping and only minor milling marks. The only time the machine balked was when I set the router bit to take a bigger bite than I normally would.

The M-3 Baby Power Feeder is available for less than \$300 from Sunhill Machinery, 500 Andover Park E., Seattle, WA 98188; (800) 929-4321. —*Jim Tolpin*

Combination nail/staple gun from Airy



Two guns in one—Airy's EZ-2 combination stapler/nailer can handle brads from $\frac{5}{8}$ in. to $1\frac{1}{4}$ in. long and staples $\frac{1}{2}$ in. to 1 in. long.

Two-for-one deals are hard to resist, which was what intrigued me about Airy's model EZ-2 combination 18-gauge nailer/stapler. Here's a tool that shoots brads from $\frac{5}{8}$ in. to $1\frac{1}{4}$ in. long and staples from $\frac{1}{2}$ in. to 1 in. long. Both nails and staples fit in the same magazine.

I fired several hundred nails and staples of various lengths into a variety of softwoods, hardwoods and plywoods, and the gun drove them in without complaint. It never jammed, even when I fired it rapidly. But because the driver blade has to be wide enough to hammer both nails and

staples, which are wider, the blade may leave a shallow dent in the workpiece when firing brads. To avoid this problem, the tool must be leaned slightly to the right when firing nails. The instructions that come with the tool explain this, and for the most part, I got used to the quirk.

If you do a lot of finish nailing, you'd be better off with a dedicated brad gun. But if you mostly require a staple gun and occasionally need to drive some finish nails, albeit carefully, the EZ-2, available through mail-order catalogs for about \$150, will do double duty. —*Anatole Burkin*

Circular sawblades by Tenryu

The name Tenryu is not synonymous with sawblades, but if you own a power saw made by Makita or Hitachi, chances are the stock blade that came with the tool was made by Tenryu. In 1996, the company began selling blades in the United States under its own name.

Tenryu sells a range of blades, from contractor's models to heavy industrial blades. I tried several samples recently on my table saw and miter box and was impressed with their Pro Series line (see the photo below).

The first blade I tried was a 48-tooth industrial-model rip blade (RS-25548CBN). I used it to rip some $8\frac{1}{4}$ oak. The strips still needed a pass over the jointer to produce a good glue edge. The triple-chip, 60-tooth blade (PR-25560D) is meant for composites and laminates, which I don't use, but I found it ripped through $8\frac{1}{4}$ oak like a dream. The cuts were so quiet and effortless that I thought I had forgotten to raise the blade. Moreover, the surface was of glue-line quality.

Next I tried an 80-tooth crosscut blade (PR-25580CBN) in my miter box. Most blades leave a slight convex area at the center of a miter cut due to blade flutter as well as a bit of fuzz on the exit side of the cut. With the Tenryu blade, I got dead-flat miters and no tearout, even when cutting against the grain at a steep angle.

I crosscut a lot of oak and maple veneer



Japanese sawblades—Tenryu, which makes blades for other companies, recently began selling under its own name.

SAVE Free Sale Flyer SAVE
Cabinet and Furniture Hardware

Woodworker's **HARDWARE** has a *Huge selection* of hardware for cabinets, entertainment centers, computer work-stations and countless other applications *available from stock* for next business day shipment.



Call or fax us for a **FREE** copy of our *Sale Flyer* featuring selected products from our 200 page specification catalog.

Offer# 530

**Woodworker's
HARDWARE**

PO Box 180
Sauk Rapids, MN
56379

Call 800-383-0130

READER SERVICE NO. 129



POWERMATIC
HOT SHEET SPECIAL!

New York State's Largest
POWERMATIC dealer
Call for special pricing!

Over 50 different machines in Stock.

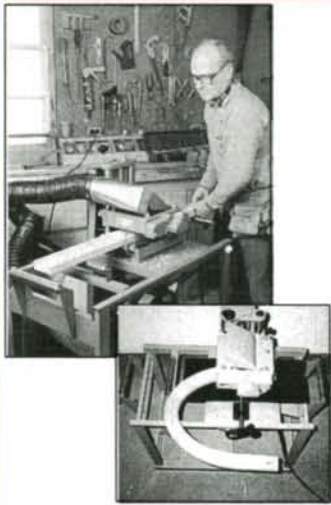
Syracuse Industrial Sales

(division of Northland Woodworking Supply, Inc.)

315-478-5751 713 E. Fayette St., Syracuse, NY 13210 Fax: 315-472-0855

READER SERVICE NO. 172

**MOLDER / PLANER
FOR
STRAIGHT, CIRCULAR, ELLIPTICAL* MOLDINGS**
(Casings, Crowns, Picture Frames, Raised Panels)



Our **W•7S** Model offers
Versatility and Durability

FEATURES:

- Duplication of historic profiles up to 3/4 in. deep
- Solid cast-iron base & head
- Molder-to-planer in less than 2 minutes
- Portable – on site or in the shop
- 7,000 rpm/two-knife system produces 78 cuts per inch.
- 100 standard knives
- Custom knives
- Five-year warranty
- Fully American-made!

*Elliptical jig required

EJ Elliptical jig allows radii as small as 7 in.



Williams & Hussey Machine Co., Inc.

Dept. 137KB P.O. Box 1149 Wilton, NH 03086

Tel: (603) 654-6828 • Fax: (603) 654-5446

1-800-258-1380

READER SERVICE NO. 71



.... The Ultimate Feeder

Design Breakthrough... Total Concept.



THE MOST
LIGHT WEIGHT, VERSATILE POWER FEEDER
FOR AN
EFFICIENT, PRECISION JOB

SYMBOL OF EXCELLENCE
WINNER

M-3 "BABY" FEEDER

- ◆ Variable Speed from 2 to 12 M/Min.
- ◆ Can easily be reset from a vertical to a horizontal position.
- ◆ Dust-Hood.
- ◆ Easily attached to shapers, circular saws, jointers, and router tables.
- ◆ Quick cutter and blade replacement.
- ◆ Reversible Feeding.
- ◆ Durable PU Roller.
- ◆ Fine Sliding Adjustment.
- ◆ Emergency Switch.



DISTRIBUTOR:

SUNHILL MACHINERY

Sunhill Machinery, 500 Andover Park East, Seattle, WA 98188
U.S.: 1-800-929-4321 / CANADA: 1-800-544-1361

READER SERVICE NO. 121

**Stop getting by.
Get real.**

The Laguna Tools 16.



- ✓ 9" resaw capacity
- ✓ 1.5 HP motor
- ✓ Cast iron table
- ✓ Cast iron flywheels
- ✓ Dynamically balanced
- ✓ Optional mobility kit
- ✓ Optional miter-gauge
- ✓ Rip fence included
- ✓ Tilting table
- ✓ Made in Italy

LAGUNA TOOLS

(800) 234-1976

(714) 494-7006

<http://www.lagunatools.com>

2265 Laguna Canyon Road

Laguna Beach, CA 92651

Call now for a free
video!

READER SERVICE NO. 187

plywood on my tablesaw, and I've gotten used to working slowly to avoid tearout. With Tenryu's 100-tooth veneer blade (PR-255100 AB), I was able to make the cuts faster and still get a clean cut.

A blade that doesn't vibrate will produce a flatter cut. These blades have a vibration dampening compound in the expansion slots, and the steel plates are hand-hammered to balance the tension. The clean-cutting nature of these blades also may be attributed to the way the teeth are ground. For example, the 100-tooth veneer blade combines a hook angle of 15° and a top

bevel of 15° with a face bevel of 15°. I've never used a sawblade with such an aggressive tooth angle. The 80-tooth crosscut blade has a 15° alternating face bevel and a 20° hook, also very steep.

I've had to clean the resin off these blades several times already, but I haven't sent them out for sharpening. The miter box cuts are not quite as crisp as they were at first, but they are still very good. The composite and veneer blades are still cutting like new. Pro Series blades range in cost from \$85 to \$105. For a dealer near you, call Tenryu (800-951-7297). —Lon Schleining



Tenryu's Pro Series circular sawblades have expansion slots filled with a vibration-reducing compound.

Vac-U-Fence tablesaw guide



Ripping made safer—The Vac-U-Fence attaches to a stock rip fence. A shop vacuum provides suction to hold stock steady when ripping.

It was 1978. I had just bought my first new pickup truck with a really great stereo system. I backed the truck into my garage workshop, opened the doors and cranked up the tunes. Then I went to work on my tablesaw. The first piece of molding I ripped shattered on a knot and shot out of the saw, just missing me. When I turned around, there it was, quivering like an arrow in the

door of my truck, just above a speaker.

A new tablesaw attachment, developed by RRR Safety Products, does a lot to eliminate the danger of kickback, especially for thin pieces of stock. Vac-U-Fence uses suction from a shop vacuum to hold stock steady against a rip fence (see the photo above). This fence attachment is a 2-in.-wide, 3-in.-high, 40-in.-long hollow alu-

minum tube. Two rows of holes along the fence deliver the vacuum pressure. Despite the suction, stock can be pushed easily along the fence.

I spent about 15 minutes mounting the Vac-U-Fence to my Biesemeyer rip fence. I drilled two 3/8-in. holes through my beautiful fence and hoped that this new gizmo wouldn't make me sorry. To complete the connection, I had to buy some threaded rod. The fence kit comes with all the other hardware needed to install it on most stock fences and to attach it to most shop vacuum hoses.

I made some trial cuts using a scrap of 2x4 redwood with the fence set 1/4 in. from the blade. As the instructions and videotape claimed, I didn't need a push stick. I pushed on the left side of the 2x4 until it cleared the blade. The 1/4-in. strip remained steady against the fence, held by vacuum pressure. After I pulled it clear of the blade, I noticed there were no chatter or burn marks. The manufacturer recommends using a vacuum drawing at least 11 amps.

Vac-U-Fence sells for \$179. It's available from RRR Safety Products, 3756 E. 22nd St., Tucson, AZ 85713; (888) 822-8336. Or you can see the fence on the company's Web site (www.vac-u-fence.com). —Gary Katz

Jim Tolpin is a woodworker and author in Port Townsend, Wash. Anatole Burkin is an associate editor of Fine Woodworking. Lon Schleining builds wooden staircases in Long Beach, Calif., and teaches woodworking at Cerritos College in Norwalk, Calif. Gary Katz works as a carpenter in Reseda, Calif.

FREE Booklet!

Get the Facts on Drying Your Own Lumber

Find out more about affordable, quality lumber drying right in your shop with this free booklet!



Kilns start at 300 board ft.



Drying your own lumber is easy with a compact, energy efficient Nyle kiln. And this booklet can show you how.

To learn more about drying your own lumber, call for your FREE booklet today!

800-777-NYLE

(207)989-4335 FAX (207)989-1101
http://www.nyle.com

- ▣ Kilns from 300 Board Feet
- ▣ Precise & Easy to Operate
- ▣ Outstanding Drying Power

nyle
DRY KILN SYSTEMS

EASY PAYMENTS AVAILABLE

PO Box 1107 Bangor ME 04402-1107

READER SERVICE NO. 69

from LOG to LUMBER

An innovative attachment that easily clamps onto your chain saw. Safe and easy to use. Make your own lumber, beams, decks, fences, even your own cabin!

Contact us for free information.

GRANBERG INTERNATIONAL
P.O. BOX 425
RICHMOND CA.
94807-0425

As seen in cover article
WOOD® magazine June 1997



ALASKAN MKIII
SAW MILL
ATTACHMENT

PHONE 510.237.2099
OUTSIDE CA. 800.233.6499
FAX 510.237.1887
E-MAIL granberg@aol.com
www.granberg.com

READER SERVICE NO. 105

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>

READER SERVICE NO. 173

FREE WOODWORKING CATALOG!

OUR BIGGEST CATALOG EVER!

From high-tech euro style kitchen hardware to finely crafted humidor components, hardwoods, plans, tools and much more!



Dept. 98009

Call 1-800-403-9736

<http://woodworkerstore.com>

Since 1954

The Woodworkers' Store

Hardware, Wood, Tools & Know How

READER SERVICE NO. 18

You should own a DML™
Thoroughbred™ because
its the finish that counts!



The leading name in cutting tools is setting the pace again with the 8" Thoroughbred adjustable flat bottom dado. This new dado provides flat bottom cuts, splinter and chip free finish and easy on machine adjustment from 1/4" to 13/16".



For a local distributor call 1-800-242-7003

READER SERVICE NO. 194

HOT CHRISTMAS DEALS

1904
MARLING
LUMBER COMPANY
TOLL FREE 1-800-247-7178

DEWALT SUPER SALE

DW-621	2 H.P. Plunge Router w/Dust Collection ...	\$209.95
DW-625	3 H.P. V.S. Plunge Router w/Free Fine Depth Adjuster.....	\$264.95
DW-974KQ-2	12 Volt Cordless Drill Kit w/15 min. charger and 2 batteries	\$189.95
DW-991K-2	14.4 V. Cordless Drill Kit w/2 Batteries	\$199.95
DW-991KS-2	14.4 V. Cordless Drill/Saw Kit	\$329.95
DW-995KS-2	18 V. Cordless Drill/Saw Kit	\$349.95
DW-321K	5.8 Amp. V.S. Jig Saw w/Case	\$159.95
NEW DW-938K	18 Volt Cordless Recip Saw Kit.....	\$287.95
DW-705	12" Compound Saw w/Free Dust Bag	\$349.95
NEW DW-708	12" Dual Slide Compound Miter Saw	\$674.95
NEW DW-733	12" Planer	\$449.95
NEW DW-788	20" Scroll Saw	\$484.95
NEW DW-744	10" Table Saw	\$549.95

*CALL FOR PRICING ON OTHER
MAKITA, DEWALT, AND HITACHI TOOLS
FREE FREIGHT ON ORDERS OVER \$50.00 IN 48 STATES

HOURS: 7:30-5:00 Monday-Friday
5.5% Sales Tax for Wisconsin Residents

VISA • MasterCard • Money Order • Check • NO C.O.D.S.

MARLING LUMBER CO.

P.O. 80x 7668 • 1801 E. Washington Ave. • Madison, WI 53707

Prices Subject To Change Without Notice

Phone: 608-244-4777 • Fax: 608-244-1364

READER SERVICE NO. 138



More Power Means More Freedom...



#DW682K Heavy Duty Plate Joiner Kit

Nothing performs like the
DeWalt Plate Joiner



\$199.95

THE
POWER
OF THE
PROS



#22-560 12-1/2" Portable Planer



\$399.95



\$214.95*

#DC-650 1 HP 650 CFM Dust Collector

*Price after mail in rebate



\$199.95

#693PK
1-1/2 HP
Router Kit
When you can't decide which
to buy, get both!



BOSCH



BOSCH

#1587AVSK 50th Anniversary Jig Saw w/Case

\$154.95

#LS1013 10" Slide Dual Compound Miter Saw

Includes 60 Tooth Carbide
Blade



#6527-6 Dual Range/VS Super Sawzall®

•Smooth Operating •Vibration Free

\$169.95



Economy Two-Day™
service for \$5.00
more! Ask for
details.



TOOL CRIB

OF THE NORTH

1-800-358-3096

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

"Serving Satisfied Woodworkers & Contractors Since 1948"



For a FREE Year Subscription
to our Catalog Call
1-800-582-6704

There's More!

Best Selection, Service, Price!

Hours: M-F 7:00-9:00 CST
Saturday 8:00-5:00 CST
Sunday 12:00-5:00 CST

SAME DAY SHIPPING **FREE FREIGHT!**

HONDA
EG2500XK1A
2500 Watt Generator
\$799

EG3500XK1A 3500 w gen 1049
EG5000XK1A 5000 w gen 1399
EB6500SX 6500 w generator 2479
EX1000A 1000 w generator 599
EM3500SXK1A 3500elec str1629
EM5000SXK1A 5000elec str1999
ES6500K1A 6500 elec str 2679

For optimum safety & performance we recommend you read the owner's manual before operating your Honda Power Equipment. Connection of generators to house power requires transfer device to avoid possible injury to power company personnel. Consult a qualified electrician.

BIESEMEYER
78-900
50" Commercial w/12" Left
\$329

78-907 30" commercial fence 299
78-934 52" homeshop fence 279
78-931 40" homeshop fence 259
78-930 28" homeshop fence 249

POWERMATIC
1660760
66 Saw 3 HP
w/50" Accu-fence
\$1999

1791223 64 Artisan w/Accu-fnc 749
1791208 osc. spindle sander 299
1791209 New 15" planer 1329
1791056" jointer with stand 549
1791215 14" 1hp bandsaw 649
1791070 1200 cfm dust col. 399
1791071 1900 cfm dust col. 679
1610050 8" long bed jointer 1749
1270100 3hp wood shaper 2099

DELTA
36-800
3 HP White Unisaw w/50" Biesmeyer
\$1599*

36-820 3hp unisaw w/52" unit 1499*
36-820L unisaw left tilt 3hp 1499*
36-821L unisaw left tilt 3hp 1499*
36-830 3hp unisaw 30" unit 1399*
36-8213hp unisaw w/50" Bies 1499*
36-8313hp unisaw w/30" Bies 1399*
34-445Z
10" Cont. Saw w/30" Unifence
\$799*

36-460 10" cont saw 28" Bies 729*
36-470 10" cont saw 40" Bies 779*
36-480 10" cont saw 52" Bies 799*
34-444 10" cont saw 519
28-280Z
14" 1 HP Bandsaw
\$799*

28-275 14" 3/4hp op st bnds 499*
17-90016-1/2" floor drill prss 399
23-710 sharpening center 169
43-379 3 hp hd 2 spd shapr 1349
36-220 10" cmpnd mitre saw 209
22-675Y
15" Planer
\$1149*

37-350A 8" jointer w/stand 1599*
37-190 6" jointer w/stand 449
31-280 sanding centr w/stand 749*
40-650 New 18" vs scroll saw 429*
22-560
12-1/2" Portable Planer
\$399

22-540 12" port planr & knives 329
31-780 osc spindle sandr 194
36-250 10" sliding comp. 499
36-235 12" cmpnd mitre saw 309
36-210 10" cmpnd mtr saw 219
11-990 12" bench drill press 189
46-700 12" vs wood lathe 469
43-505 router/shaper 299
11-090 radial drill press w/std 309
14-650 mortising machine 249
37-070 6" vs bench jointer 259
*Price after mail in rebate

Makita
LS1011
10" Compound Mitre Saw
\$419

LS1013 10" dual slide saw 549
6233DWAE 14.4v drill kit 194
5007NBK 7-1/4" saw w/case 119
2708W 8-1/4" tbl saw ct blade 289
2012 12" portable planer 529
3612C 3hp plunge router 269
LS121112" cmpnd mitre saw 749
6311DWHE 12v drill kit, 2 bt 179
9820-2 blade sharpener 229
3901 New plate joiner 209

Emglo
AM78-HC4V
1-1/2 HP Vertical Twin Tank
\$309

AM79-HC4V 1-1/2 hp v ank 329

HITACHI
CBFB2
8-1/2" Compound Mitre Saw
\$449

C10FS 10" slide compound 689*
P12RA 12" planer/6" jointer 999
C10FC 10" cmpnd mitre saw 199
C10RA 10" table saw w/stand 319
C7BD 7-1/4" circ. saw w/bk 139
DN10DYK vs 9.6v R.A. drill 159
M12V 3-1/4 hp pl. router 214*
CB75F resaw bandsaw 2399
NR83A full head stick nailer 369
NR83AA clipped head stick nlr 349
NV45AB coil roofing nailer 399
NT65AA angled finish nailer 329*
EC12 2hp air compressor 299
*Price after mail in rebate

JDS COMPANY
AT2000
Air Filtration System
\$259

8-12 air filtration system 489
10-16 air filtration system 689
18-34 accu miter gauge w/bar 149

STANLEY BOSTITCH
N60FN-2 Kit
1-1/4" - 2-1/2" Finish Nailer
\$299

N80S-1 16d stick nailer 339
N80C-1 New coil nailer 339
RN45B-1 New roofing nailer 369
MI11FS floor stapler 539
S32SX 1/2-1-3/8 stapler kit 149

Wap
60113
Turbo Vacuum
\$479

776RDF-Dturbo drywall vac 579

TORMEK
2004T
Wet Sharpening System
\$389

freud
FT-2000E
3.25 HP VS Router
\$179*

JS102 plate jner cs &adj fnc 129
TR215 8-1/2" slide saw 269
*Price after mail-in rebate

PORTER+CABLE
The Woodworker's Choice
9444 P
Profile Sander Kit
\$99

9444VS vs profile kit 119
333 5" Quicksand dstls sander 65
332 5" Quicksand PSA sander 59
334 5" dustless PSA sander 65
97355 5" vs sander w/case 145
97366 6" vs sander w/case 149

DA250A
1"-2-1/2" Finish Nailer Kit
\$249

FN250A16g 2-1/2" fnc nail kit 189
BN200 18g 2" finish nail kit 149
BN12518g 1-1/4" finish nail kit 99
NS10018g 1/4" crown splr kit 99
NS150 18ga 1-1/2" finish stplr 169
FC350 2 - 3-1/2" clip hd nailer 289
FR350 2 - 3-1/2" full hd nailer 289
RN175 coil roof nailer 299
CF2400 2 hp oil free comp 329

3x21 VS Belt Sander
\$175

7810 tool triggered vacuum 269
556 plate jointer w/cs & fnc 139
360 3x24 sander with bag 214
362 4x24 sander with bag 229
360VS 3x24 vs belt sander 229
362VS 4x24 vs belt sander 239
9862 12v 3/8" dr kit w/2 bat 174
9872 14.4v drill kit w/2 bat. 199
743K 7-1/4" 15 amp saw w/cs 129
843 LH 7-1/4" saw w/bk 144

693PK 1-1/2 HP Plunge Router Kit
\$199

90690 1-1/2hp router, case 159
97310 laminate trimmer kit 189
7539 3-1/4hp 5 spd plng rtr 289
691 1-1/2 hp D handle router 169
697 router table w/router 234
75183-1/4 hp 5 speed router 289
7538 3-1/4 hp plunge router 259
7403 paint remover 179

Quick Change Tiger Saw Kit
\$159

7499 New cut-out tool 69
97549 top handle vs jigsaw 144
7800 drywall sander 339
693 1-1/2 hp plunge router 184
6931 plunge router base 84

PRICE GUARANTEE
Our Prices Won't Be Beat!

Panasonic
EY6100FQKW
12 V 3/8" Drill Kit w/2 Batteries
\$179

EY6230 15.6v 1/2" drill kit 219

JET
EQUIPMENT & TOOLS
JTAS-10X
10" Jet Saw
3 HP w/50" XACTA Fence & Motor Cover
\$1299*

JPM-13 13" planr/moulder 769*
JWTS-10JF10" saw w/Jet fnc 569*
JWBS-14CS 14" hp wd bds 549*
JJ-GCSX 6" long bed jointer 469*
JWP-15HO 15" 3hp w/plnr 1129*
DC-650 1hp 650cpm clectr 214*
DC-1200 2hp 1200cpm clectr 379*
*Price after mail in rebate

David White
LP6-20
20X Sight Level Package
\$219

LP6-20XL sight level pkg. 279
ML200 visible beam laser 899
ALTP6-90018 auto lvl trnst pk 509
LT8-300 26 x transit 499
LT8300P 26 x opt. transit 579
ALP6-18HD18x auto package 399

BOSCH
1587AVSK VS Top Handle Jig Saw w/Case
\$154

1584VSK barrel jigsaw w/case 164
1634VSK vs recip saw kit 184
3107DVSX 5" rmdm sndr kit 114
3107DVS dstls rdm orb sndr k199
3310K 12v T-handle w/2 bat 174
3610K 14.4v 3/8" vsr 2/bat 194

11224VSR 7/8" Bulldog SDS Rotary Hammer
\$224

11304 Brute breaker hammr 1249
1194VSRK1/2" hmr drill w/cs 159
1276DVS 4x24 vs belt sander 219
1275DVS 3x24vs sndr w/bg 214
1274DVS 3x21 vs sndr w/bg 169
1615EVS 3-1/4hp vs plng rtr 289
1604 1-3/4 hp router 144

1613EVS 2 HP, VS, Microfine Plunge Router
\$199

3725DVS 5" H&L vs sander 144
3727DVS 6" H&L vs sander 149
B3915 10" slide compnd saw 549
1609KX laminate trimmer kit 229
B4050 in-line jigsaw 99
3296K 3-1/4" planer kit 179

Serving You For 49 Years!

DEWALT
DW708
12" Sliding Dual Compound Miter Saw
\$679

DW744 10" portable table saw 549
DW733 12-1/2" port plnr 449
DW788 20" vs scroll saw 489
DW938K 18V recip saw kit 269
DW937K 14.4v recip saw kit 259

DW995KS-2 18 Volt Contractor's Combo Kit
\$389

DW936K 18 v crdls saw kit 249
DW935K 14.4 cdl saw kit 239
DW621 2hp vs plng router 219
DW625 3hp vs plunge router 279
DW673K laminate trimmer kit 189
DW321K VS Jigsaw With Case
\$164

DW705 12" cmpnd mitr saw 349
DW364 7-1/4" saw w/brake 159
DW675K3-1/8" planer w/case 164
DW682K Plate Jointer Kit
\$199

DW421K 5" h&l rand sndr w/cs 74
DW423KS vs rmdm sander w/cs 94
DW443 6" RA H&L rdm sndr 144
DW431 3"x21" vs belt sander 189
DW995K
18 Volt 1/2" VSR Drill Kit
\$229

DW991K-22 14.4v3/8" dv/dr k 219
DW991KS-214.4v drill/saw kt 349
DW991KC-214.4 v dr/recip kit 379
DW995KC-2 18v dr/recip kit 399
DW997KC-2 18v hm dr/recp k419

PERFORMAX PRODUCTS, INC.
16-32 Plus 16" - 32" Bench Drum Sander
\$899

YEM
MSXE-636-2 VS Triangular Oscillating Sander w/Case & Paper
\$179

9-55-13 turbo II vacuum 259

To Order or for Technical Support Call TOLL-FREE
1-800-358-3096
Box 14040 • Grand Forks, ND • 58208-4040

FedEx MOST PORTABLE TOOLS SHIPPED FEDEX \$10.00 MORE
FAX US YOUR ORDER!
1-800-343-4205

TOOL CRIB
OF THE NORTH

*Any comparable National ad in this issue. We reserve the right to verify competitors price and stock. Limited to stock on hand.

MasterCard VISA DISCOVER NOVUS

FWW #127 Nov./Dec. Visit Our Web Site at <http://www.toolcribofthenorth.com>

•• FULL LINE DISTRIBUTOR •• FREE FREIGHT IN 48 CONTIGUOUS USA •• FACTORY AUTHORIZED SERVICE •• ERRORS AND PRICES SUBJECT TO CHANGE ••

READER SERVICE NO. 3

Make your SHAPER and MOULDER KNIVES

WITH THE NEW VIEL PROFILE COPYING GRINDING MACHINE



VHS VIDEO \$9.95 (credited against machine purchase)

- Grinds knives directly in the toolholder
- Makes distortion-free profiles
- Diamond dresser forms and dresses the grinding wheel
- NEW BALDOR® 1/3 H.P. motor
- 2 years warranty. (1 year on motor)

VISA **\$649.00** only **MasterCard**
Call 1-800-915-2601

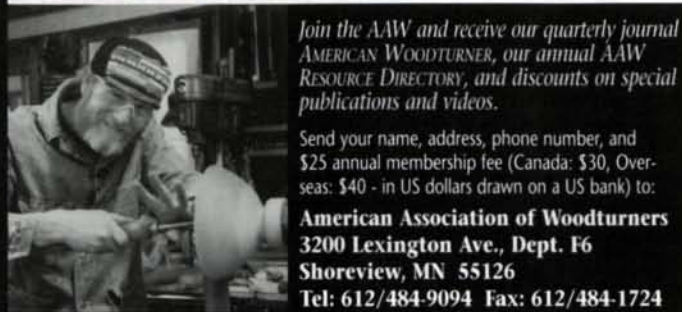
VIEL TOOLS INC.
P.O. BOX 660, MADAWASKA, ME. 04756-0660

READER SERVICE NO. 53

Save \$10* on this video and become a member of the American Association of Woodturners

An Introduction to Bowl Turning with Rus Hurt

• From chainsawing and mounting blanks to sanding and applying finish, this 20-year professional turner will give you guidance in getting started in woodturning, tool choice, and design.



Join the AAW and receive our quarterly journal AMERICAN WOODTURNER, our annual AAW RESOURCE DIRECTORY, and discounts on special publications and videos.

Send your name, address, phone number, and \$25 annual membership fee (Canada: \$30, Overseas: \$40 - in US dollars drawn on a US bank) to:

American Association of Woodturners
3200 Lexington Ave., Dept. F6
Shoreview, MN 55126
Tel: 612/484-9094 Fax: 612/484-1724

READER SERVICE NO. 130

FREETOOL 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
Helping You Make Wood Work™

www.woodcraft.com
210 Wood County Industrial Park Dept. 97WW11
PO Box 1686, Parkersburg, WV 26102-1686



READER SERVICE NO. 91

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 U.S.A. AND CANADA

Wood-Mizer Products, Inc. 8180 W. 10th St. Dept. 283, Inpls., IN 46214-2400

READER SERVICE NO. 704

NORTHSTATE 15" PLANERS

- Model 315: \$889
- Same features as the Model 310 plus:
- Magnetic extension

- Model 310 Planer: \$859
- Powerful 3 hp motor
- Cast iron construction
- Magnetic switch
- 1 year warranty
- Dust hood
- Anti-kickback
- Stand included
- 2 speeds

RAISED PANEL ODDER MACHINES

UNIQUE: Machine all five components with only one operator

Prices Subject to Change Errors Subject to Correction

LENEAVE QUALITY—SINCE 1957

NORTHSTATE PLANERS

- 20", 5 hp, \$1,395
- 24", V Speed \$2,995
- 5 hp & 7-1/2 hp

NORTHSTATE BANDSAWS

- 14", 1 hp, \$425
- 18", 2 hp, \$795
- 20", \$1,495
- 24", \$2,465

NORTHSTATE 8" CABINET SHOP JOINTER

- Heavy cast iron const.
- 2 hp, single phase
- 3 knife cutter head
- Dual bit fence
- Magnetic controls
- SALE: \$795
- 6" jointer: \$395
- 12" jointer: \$7" bed
- Delta 8" jointer: CALL!

MOULDERS

- Four and Five Head Models
- Variable speed
- All cast-iron construction
- 2-1/4" x 6" capacity
- Designed to make high quality moulding at the lowest possible cost

NORTHSTATE WIDE BELT SANDER

- Best buy in the industry!
- Variable speed
- Platen head
- Dual motors
- Heavy cast iron & steel
- Plate construction
- 25" List: \$969
- SALE: \$6300, 15 hp
- 37" List: \$13,300
- SALE: \$9100, 20 hp
- 43" SALE: \$13,000, 25 hp
- Phase converter avail.

NORTHSTATE OUST COLLECTORS

SALE PRICES

- 2 hp, 2 bag: \$295
- 3 hp, 4 bag: \$485

PANEL SAWS & ROUTERS SAFETY SPEED CUT CALL!

EMGLO 1-1/2 HP compressor.....CALL

WILLIAMS & HUSSEY MOULDER / PLANERS

SALE! NORTHSTATE CABINET SHOP SHAPER

- 2 & 3 hp/1 ph, 5 hp/3 ph
- 2 speed-reversible
- 2 spindles: 3/4", 1-1/4"
- 1/2", 1" available
- Router collets avail.
- Cast iron table
- Spring hold down & miter gauge
- Extra heavy duty
- 1 year warranty
- FROM \$650 - \$1,295
- Tilt spindle model avail.
- Sliding Table model avail.
- *** FREEBORN *** Shaper cutters available

SCMI / MINI MAX MACHINERY ADJUSTABLE CLAMPS

BIESEMEYER VEGA EXCALIBUR UNIFENCE fences available

We try not to be undersold, tell us our competitors' prices

PORTER CABLE complete line available

- 330: Sander: \$66
- 332: Orbital Sander: \$75
- 333: Orbital Sander: \$93
- 334: Sander: \$154
- 380: Sander: \$213
- 361: Sander: \$203
- 362: Sander: \$218
- 363: Sander: \$213
- 505: Sander \$132
- 555: Plate Jointer: \$138
- 638: Router: \$125
- 690: Router: \$143
- 9444: Pro Sdr. Kit: \$124 NEW!

STRAIGHT-LINE RIP SAWS

WOODMASTER DRUM SANDERS

HITACHI-RYOBI

- CP9-2 Side Comp Saw CALL
- CB79-2 Rebar-and-saw CALL
- PR-13-PI Planer: \$187
- MR-2V 3 1/4 hp, vs router: \$229
- TSS-220: 8 1/2" slide comp. saw \$669

14" Radial Arm Saw \$449/2hp, 449/1 1/2hp

25" Cross Cut Capacity

Extra Heavy Cast Iron Arm

Saw Head Built on 8" Heavy Duty Sealed Ball Bearings

FROM \$1,800

LENEAVE MACHINERY & SUPPLY COMPANY

305 West Morehead St., Charlotte, NC 28202 800-442-2302 (704) 376-7421; FAX: 704-333-1017

The SELF-ALIGNMENT VISE

Wide capacity jaw opening holds non parallel as well as parallel work \$28900

Free brochure: Robert Wilson Co
P.O. Box 1691 - Cortez, CO 81321 - 970 564 0469

READER SERVICE NO. 134

KING

KING DELUXE SHARPENING STONES

Superior Quality Water Stones

Complete set of three (\$105 value) **\$94.00**

KING Deluxe stone 800 grit

KING Deluxe stone 1000 grit

KING Polish stone 6000(S-1)

Free freight to the 48 states, HI, AK & CAN. add \$20.

Tool Catalog \$4.

HIDA TOOL, INC.

1-800-443-5512

1333 San Pablo Ave., Berkeley, CA 94702

FAX 510-524-3423

倉

KING

KING DELUXE SHARPENING STONES

Superior Quality Water Stones

Complete set of three (\$105 value) **\$94.00**

KING Deluxe stone 800 grit

KING Deluxe stone 1000 grit

KING Polish stone 6000(S-1)

Free freight to the 48 states, HI, AK & CAN. add \$20.

Tool Catalog \$4.

HIDA TOOL, INC.

1-800-443-5512

1333 San Pablo Ave., Berkeley, CA 94702

FAX 510-524-3423

倉

READER SERVICE NO. 801

LEIGH ROUTER JIGS

Isoloc "Key" joint with inlay. One of six patterns.

Leigh Isoloc™ Joints

Introducing The Most Innovative New Joinery In Over A Century

Organically-inspired joints have forever eluded even the finest hand-tool craftsmen. Now you can create "impossible" joints like these with only a straight cutter in your router and the Leigh Dovetail Jig equipped with a new Isoloc Template.

For years, woodworkers worldwide have recognized the patented Leigh Dovetail Jig as the undisputed leader in precise, easy-to-use router joinery tools. Now three new patented Isoloc Templates, each with two unprecedented joint patterns, along with the tradition-inspired Multiple Mortise and Tenon Attachment and F1 Finger Joint Template, make the Leigh Router Joinery System the most versatile and innovative joinery tool in your shop.

Mastering a full spectrum of strong and strikingly beautiful joints is now dramatically easy—from design to finish—and it all begins with your telephone. Call toll-free today for a copy of our free 40-page, information-rich catalog.

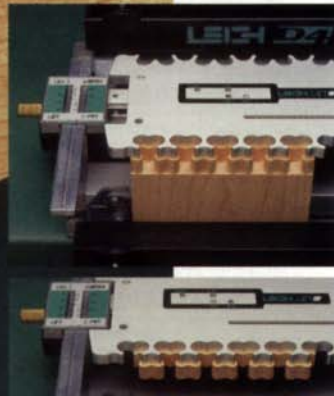
Call For Your Free 40-Page Catalog Now!

1-800-663-8932



Joining Tradition With Today

Leigh Industries Ltd., PO Box 357, Port Coquitlam, BC, Canada V3C 4K6
Tel. 604 464-2700 Fax 604 464-7404



Isoloc "Clover" joint in jig.

NEW!

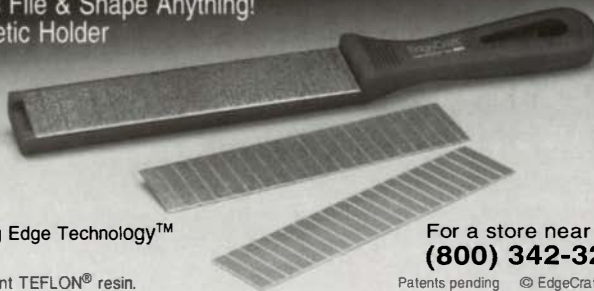
Revolutionary File Makes Steel Files Obsolete!

- 3 Powerful Files in One: Coarse, Medium & Ultrafine!
- 100% Diamond Abrasives File & Shape Anything!
- Unique Magnalok™ Magnetic Holder

EdgeCraft™
Diamond File Set 420

EdgeCraft World Leader in Cutting Edge Technology™
Avondale, PA 19311

Many EdgeCraft products include DuPont TEFLON® resin.



For a store near you:
(800) 342-3255

Patents pending © EdgeCraft 1993

IMPORTED and DOMESTIC LUMBER

widths to 18", lengths to 16'

- Architectural Plywood
- Veneers • Mouldings
- Turnings • Trims
- Custom Millwork

M.L. CONDON
COMPANY Inc.

248 Ferris Ave • White Plains NY 10603
Call 914-946-4111 • FAX 914-946-3779

Call for a FREE price quote!



Send \$9 for NEW LUMBER Catalog

READER SERVICE NO. 702

Imported European Hardware

a Division of Woodworker's Emporium

5461 South Arville • Las Vegas, NV 89118

PH. 800-779-7458 FAX 702-871-0991

CATALOG \$3⁰⁰



READER SERVICE NO. 752

Operate 3-phase shop motors from single-phase power



DIFFERENT MODELS TO FIT YOUR NEEDS

The Ronk ROTO-CON® Rotary Phase Converter will provide 3-phase power from single-phase sources to operate single or multiple motor applications found in woodworking shops.

Ph. 1-800-221-RONK, Ext. 216

RE ROK
ELECTRICAL INDUSTRIES INC

P.O. Box 160, Dept. 216 • Nokomis, IL 62075 • Ph. 217/563-8333, Ext. 216 • Fax 217/563-8336

READER SERVICE NO. 12

The Ronk Phase-Shifter is a medium-duty static-type converter for shop applications such as drill presses, mills, saws, etc., where continuous full load use is not required, but low initial cost is important.

Wood Moisture Meter

pocket-size
MINI-LIGNO

Range: 6-20%
in 1% steps

Size: 1"x2 1/4"x5 1/2"

\$110
only

Including Case, Battery, Pins for 3/16" or 7/16" measuring depth.

Also available as Mini E, 6-36%



Lignomat USA Ltd.

503-257-8957 800-227-2105

P.O. Box 30145 fw
Portland, OR 97230

READER SERVICE NO. 186

HOT CHRISTMAS DEALS

1904
MARLING
LUMBER COMPANY
TOLL FREE 1-800-247-7178

Makita
Power Tools

SUPER SALE

LS-1011	10" Slide Compound Saw.....	\$399.95
NEW LS-1013	10" Slide Dual Compound Saw.....	\$579.95
LS-1040	10" Compound Miter Saw.....	\$249.95
LS-1211	12" Slide Dual Compound Saw.....	\$749.95
2708W	8 1/2" Table Saw.....	\$297.95
122700-A	Porta Table for 2708W.....	\$199.95
6233 DWAE	14.4 Volt Cordless Drill Kit.....	\$187.95
6213 DWAE	12 Volt Cordless Drill Kit.....	\$169.95
↓ Makita Timber Framing Specials ↓		
7104 L	Chain Mortiser.....	\$1295.95
3800 NA	Groove Cutter.....	\$379.95
5402 A	16 5/16 Circular Saw.....	\$639.95

***CALL FOR PRICING ON OTHER
MAKITA, DEWALT, AND HITACHI TOOLS
FREE FREIGHT ON ORDERS OVER \$50.00 IN 48 STATES**

HOURS: 7:30-5:00 Monday-Friday

5.5% Sales Tax for Wisconsin Residents
VISA • MasterCard • Money Order • Check • NO C.O.D.S.

MARLING LUMBER CO.

P.O. Box 7668 • 1801 E. Washington Ave. • Madison, WI 53707
Prices Subject To Change Without Notice

Phone: 608-244-4777 • Fax: 608-244-1364

READER SERVICE NO. 70

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



READER SERVICE NO. 16

HEARNE HARDWOODS, INC.

Specializing in
Pennsylvania Cherry

Plain & Figured Cherry from 4/4 to 16/4
Also: Premium Walnut, Figured Maple, wide
planks & a large variety of exceptionally fine
domestic & imported woods including free form
slabs, turning blanks, burls, & instrument lumber.

200 Whiteside Dr., Oxford, PA 19363
Toll Free 1-888-814-0007 phone 610-932-7400
fax 610-932-3130

National & International Shipping



READER SERVICE NO. 78

IF YOU DEMAND FAST, ACCURATE
MOISTURE MEASUREMENT,
RAISE YOUR HAND.



Get a grip on our J-Series wood moisture
meters with convenient one-hand operation
and the flexibility of using the integral con-
tact pins. Available in three models to meet
your needs and your budget.

Best of all, these are pin-type meters. The
only instruments that can help you identify
surface and core moisture content. The
result? Readings you can rely on, fewer de-
fects and better quality control.

Delmhorst Instrument Co., 51 Indian Lane
East, Towaco, NJ 07082 FAX 201-334-2657
Call us toll free at 800 PINS DIC (746-7342).

DELMHORST
INSTRUMENT CO.

PINPOINTING MOISTURE PROBLEMS FOR 50 YEARS

READER SERVICE NO. 96

Looking for THE REAL THING?

made in Italy

The easiest way to recognize a
genuine CMT bit is by its orange
color. Only CMT applies an exclusi-
ve orange non-stick PTFE coating at
750°F to protect and prolong the
life of your bits and it's just another
way to let you know that you are
getting a CMT bit.

Just to be sure, we've trade-
marked it.

So now you know, if you want only
the highest quality router bits,
boring bits and saw blades in your
workshop, you want CMT. Look for
the orange ones, made in Italy.

Available only from authorized dealers
of CMT Utensili and CMT USA.

CMT
the only ORANGE one™



800.517.11

Making raised panels is easier than ever before with this new
three-piece set designed by Marc Sommerfeld and CMT.
Includes the new 3-1/2" diameter raised panel bit with back-
cutter to mill the front and back of the panel in one pass. Call
or e-mail CMT USA now for a **free full-color catalogue!**

CMT USA, Inc. 307-F Pomona Drive Greensboro, NC 27407 Toll free 1-888-CMT-BITS Free fax 1-800-268-9778 e-mail: cmtusa@aol.com www.cmtutensili.com
CMT Utensili Srl Via della Meccanica - 61020 Chiusa di Ginestreto PS - Italia - Tel. ++39 721 482204 Fax ++39 721 481021 - e-mail: cmtsrl@pesaro.com
READER SERVICE NO. 79

S M O O T H E S T

F I N I S H E R

**Powerful yet
Lightweight**
(2.6 lbs.)

Palm Grip Design
for easy and
comfortable
handling

**Adjustable 12 Position
Dust Bag** for more
convenient operation

**Efficient Through-the-Pad
Dust Collection System**
for cleaner sanding and
extended sandpaper life

**Uses 5" Hook-and-Loop
Abrasive Discs** for quick
and easy changes

Pad Control prevents
gouging and swirl
marks

Fast Random-orbit Action
(12,000 OPM) for super
smooth sanding.



THE MAKITA ADVANTAGE

Model B05010

Makita's 5" Random Orbit Sander is ideal for woodworkers, cabinet makers, carpenters and serious do-it-yourselfers. It's the perfect combination of Makita muscle (2.0 AMP) and random orbit refinement. No swirl marks. No gouges. Just fast, smooth and dustless sanding for an ultra-fine finish. A finish you can only get with Makita.

For more information, call 1-800-4-MAKITA
READER SERVICE NO. 117

Makita
POWER TOOLS FOR THE *LONG RUN*

Work smarter, safer and cleaner

DESIGN BREAKTHROUGH

"You can either buy a filter or you can be a filter."

WoodMark's new ceiling-mounted air filtration system has been created for maximum efficiency in air movement for filtration.

By placing 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.



Introductory Offer
\$499.95 + S&H

- 1100 CFM Motor
- Fluorescent Light
- 15' Power Cord
- 360° Air Collection

**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

The Dust Eliminator workbench collects dust from sanding before it becomes airborne and dust created by other shop tools.



Original • 30" x 54" x 1 1/2"
Only \$389.00 + S&H
Workbenches shown with some options

A generous select and better grade hard maple work surface sits atop a powder-coated, heavy gauge steel cabinet.

- Powerful motor (930 CFM)
- Optional 1600 CFM motor • Locking casters
- GFI convenience outlet • 20' power cord

Other Sizes & Options Available



WOODMARK

P. O. Box 211434 • Bedford, TX 76095

Call toll-free for our FREE Color Brochure
1-800-845-4400

READER SERVICE NO. 192

12" PLANER-MOLDER



Using the Belsaw 12" Planer/Molder by Powermatic, you can turn rough lumber into valuable moldings. You can even earn extra money selling these profiles to contractors or cabinet shops. Also, substantial savings can be realized by milling the trim for your home. Call today for more information and the authorized "Belsaw by Powermatic" distributor nearest you!

POWERMATIC®

McMinnville, TN 1-800-248-0144

READER SERVICE NO. 203

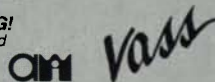
COMPONENTS

- SAVE the CAPITAL INVESTMENT of MACHINING
- INNOVATIVE, READY-TO-ASSEMBLE COMPLETE 32mm SYSTEM
- RESIDENTIAL • COMMERCIAL
- DOWELS INSERTED in TOPS • BOTTOMS • RAILS
- SHELVES and DRAWER PARTS INCLUDED by CABINET
- OPTIONS: FLAT DOORS & DRAWER FRONTS, SALICE HINGES, ALFIT SLIDES and CUSTOM BANDING
- THERMOFUSED 2-SIDED MELAMINE

plus
COMPLETE COMPONENT SYSTEM



SIMPLIFIED ORDERING!
Just fill out the spec form and order form. VASS will do the pricing for you.



CALL FOR A BROCHURE
3838 EUDORA WAY
DENVER, CO 80207
PH: 303-321-5320
FAX: 303-321-5333

READER SERVICE NO. 58

TOOL GUIDE CORPORATION presents FESTO TOOLTECHNIC

THE FINEST POWER HAND TOOLS
- uniquely quiet - dust extracted
- sophisticated guide system

opening new horizons for the American artisan



Contact us for the catalog

tel: 888-337-8600

E-mail: toolguide@internetMCI.com

fax: 805-966-6425

READER SERVICE NO. 179

THE SCHOOL FOR PROFESSIONAL CRAFTS

clay • fiber • metal • wood



At the Worcester Center for Crafts, you'll have one-on-one instruction from nationally recognized craftspeople and 24-hour studio access.

We also offer workshops, residencies & on-going classes. Call, fax or email for information on all our programs.

Worcester Center for Crafts

25 Sagamore Road Worcester, MA 01605
508-753-8183 • fax: 508-797-5626
email: craftcenter@worcester.org
www.craftcenter.worcester.org

READER SERVICE NO. 161

RAZOR SAW
It cuts FASTER! EASIER! MORE ACCURATELY!

Order now, only \$24.95 post paid!
Craftsmen around the world have discovered the secret of better quality work. The Razor Saw cuts by pulling, and will give a cleaner, more accurate cut in half the time.

Purchase a RAZOR SAW now and we will include our 72 page catalog of the world's finest woodworking tools. Or send \$1.50 for a two year subscription to our Catalog.

The Best handsaw for ALL woodworkers!
Dealer Inquiries Invited.
Dept D2

THE JAPAN WOODWORKER
1731 Clement Ave. • Alameda, CA 94501 • 1-800-537-7820

READER SERVICE NO. 703



System One[®]

Modular Truck Equipment
Awarded 16 U.S. Patents

- Extruded Aluminum Alloy
- Recessed T-Slots
- Ratchet Tie-Downs
- Inserts in 66 Colors

3 Systems In One

- ✓ Carries Overhead Cargo on Rubber Wear Strips
- ✓ Secures Interior Cargo with Sliding Cargo Anchors
- ✓ Organizes Equipment using Over 30 Accessories

Call For Free Brochure **1-800-627-9783** P.O. Box 248 Pennington, NJ 08534

READER SERVICE NO. 84



Grip-Tite[™] magnetic featherboard

3 second, one-handed setup
No clamping!
Helps prevent kickback.
Lexan[®] springs push wood down and against the fence.
"Tremendous Power"
Fine Woodworking
Use it on tablesaws, jointers, shapers.

Call for your nearest dealer

Mesa Vista Design • 804 Tulip Road
Rio Rancho, NM 87124 1-800-475-0293

READER SERVICE NO. 63



Take it to the Job in One Trip!

THE Mitre Saw Stand

- Supports to 168"
- Accepts all saws

Stands up folded

PORT-A-MATE
Made in USA

FREE CATALOG **1-800-624-2027**

READER SERVICE NO. 17



PAUL BUNYAN HARDWOOD CENTRE

3240 Wireton Road • Blue Island, IL 60406
(708) 389-7667 • 1-800-871-8306

DELTA

22-560	NEW 12-1/2" Portable Planer with FREE DUST CHUTE	\$399.00
31-780	B.O.S.S. Sander with Sanding Spindle Kit (\$67 value)	\$189.00 \$219.00
36-865	NEW Versa-Feeder Stock Feeder with Mounting Base	\$249.00 \$299.00
40-650	Q-3 18" V.S. Scroll Saw	\$409.00*
*After \$50 Mail-In Rebate		
43-379	3HP Shaper (1/2" and 3/4" Spindles) ...	\$1259.00

\$1499.00*
10" Special Edition Unisaw-3HP 230V
Your choice of 52" Unifence or 50" Biesemeyer Commercial Fence System and Right Blade Tilt or Left Blade Tilt
*After \$100 Mail-In Rebate

PORTER-CABLE
PROFESSIONAL POWER TOOLS

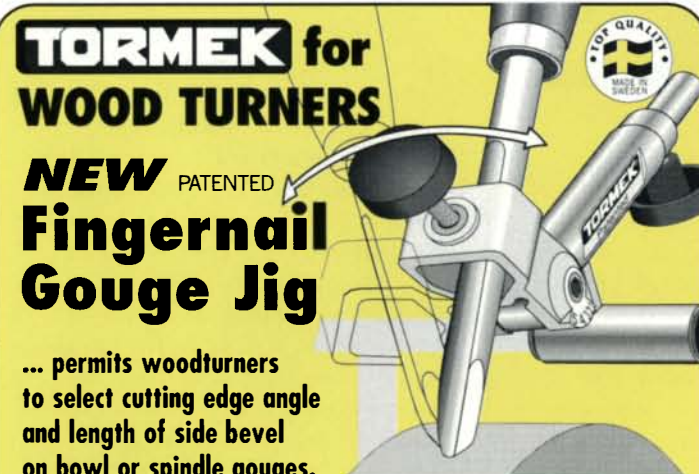
FN250A	18GA 3/4"-2-1/2" Finish Nailer	\$179.00
NS100	18GA 1/2"-1" Narrow Crown Stapler	\$91.00
BN200	18GA 3/4"-2" Brad Nailer	\$139.00
9444	Profile Sander Kit	\$99.00
333	5" Random Orbit Sander, Dustless	\$64.00
335	NEW 6" Random Orbit Sander, Dustless ..	\$83.00
690	1-1/2HP Router	\$140.00
	with Case	\$155.00

freted

LU84M011	10" x 50 T Combo Blade	\$38.00
LU82M010	10" x 60 T TCG Blade	\$42.00
LU87M010	10" x 24 T Thin Kerf Rip Blade	\$40.00
LU88M010	10" x 60 T Thin Kerf Crosscut Blade ...	\$43.00
SD508	8" Super Dado	\$165.00

Free shipping in continental U.S.

READER SERVICE NO. 163



TORMEK for WOOD TURNERS

NEW PATENTED Fingernail Gouge Jig

... permits woodturners to select cutting edge angle and length of side bevel on bowl or spindle gouges.

Plus other jigs for

- Skew chisels
- Roughing gouges
- Parting tools
- Scrapers (curved or straight)

THE ONLY COMPLETE WATER COOLED GRINDING AND SHARPENING SYSTEM

- for plane irons, chisels, spoke shaves, planer/jointer blades, knives, scissors, axes, turning tools and carving tools.

For full information and nearest stockist:

United States:	TORMEK	1-800-5-TORMEK
United Kingdom:	BriMarc	01926 493389
Australia:	PROMAC	07-3279-4811
New Zealand:	W & R JACK	03-546-7479
South Africa:	RECORD	011-422-2340



READER SERVICE NO. 94

The Intelligent One-Man Shop.



FIVE PROFESSIONAL QUALITY MACHINES IN ONE.

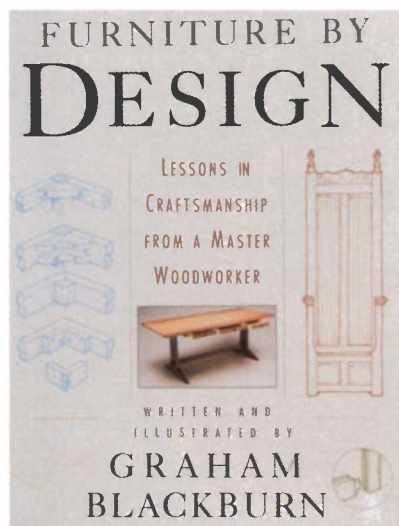
- ✓ 3 HP 10" tablesaw with 50" crosscut sliding table and 38" rip capacity.
- ✓ Cast iron mortiser
- ✓ Cast iron tables
- ✓ 3 HP shaper
- ✓ 12" jointer
- ✓ 12" planer
- ✓ 20-second function change

Call now for a free video!

LAGUNA TOOLS
(800) 234-1976
(714) 494-7006
<http://www.lagunatools.com>
2265 Laguna Canyon Road
Laguna Beach, CA 92651

READER SERVICE NO. 188

Furniture by Design by Graham Blackburn. *Lyons & Burford, Publishers, New York, N.Y. (212-620-9580); 1997. \$30, hardback; 138 pp.*



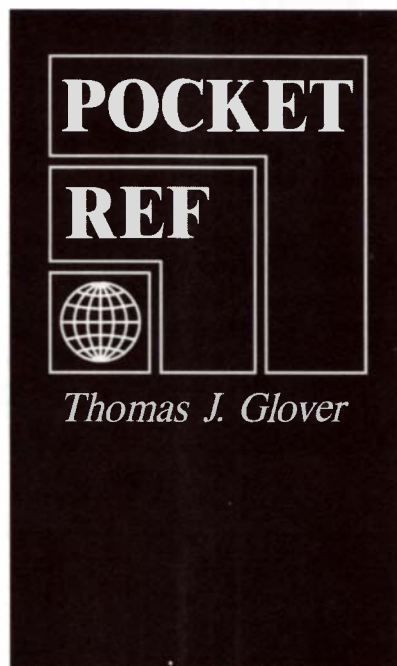
The first furniture design book I ever opened was James Krenov's *The Impractical Cabinetmaker*. I was new to woodworking and had few tools and even fewer skills. I was sure Krenov's book would give me the quantum leap I needed to make some really cool stuff. Instead, the text encouraged me to "listen" to the wood. Huh? This sounded like something out of *The Wizard of Oz*. I wasn't ready to start a dialogue with lumber. It was years before I appreciated what Krenov was saying (or hearing).

Graham Blackburn's new design book is easier to digest. Blackburn walks the reader through a variety of projects and raises issues of design along the way. The book starts with a simple project and some basic concepts. Subsequent chapters challenge the reader with increasing intensity. Beginners and advanced woodworkers alike can benefit.

Blackburn includes the meat and potatoes of furnituremaking: cutting lists and primers on joinery. Then he garnishes the text with the delicate issues of design, asking questions such as, Does the piece have balance, grace, charm or soul? The answers to these questions are never easy. Woodworking is less a science than an art, and mathematical formulas will give you only a crude road map to where beauty may lie. Blackburn, a furnituremaker and prolific author, is a

good tour guide who will help you keep form and function from clashing.
—Anatole Burkin

Pocket Ref by Thomas Glover. 2nd ed. *Sequoia Publishing, Inc., Littleton, Colo. (800-873-7126); 1996. \$9.95, paperback; 544 pp.*



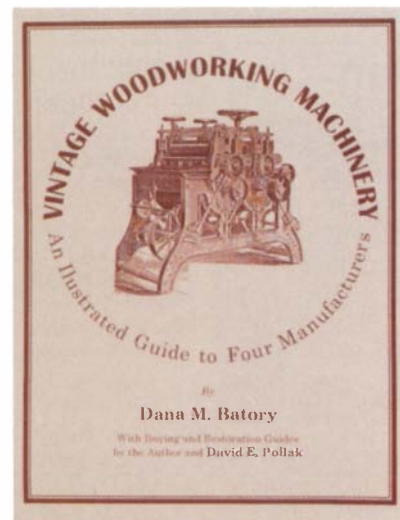
Several years ago, while designing a sailboat, I needed to know the weight of a cubic foot of sea water. I looked everywhere, but found no information on the subject. I finally had to figure it out the hard way, on a scale.

Not long ago, I discovered the *Pocket Ref* in my favorite local lumber store. It contains 542 pages of the most obscure and useful reference material on the widest variety of subjects—including the weight of a cubic foot of sea water (64.3 lbs.). Thousands of charts, formulas and lists cover literally everything from automotive wiring and the human body's chemical composition to woodworking finishes. If you need to know the shank diameters for wood screws to three decimal places, it's in the *Ref*.

I turn to the 73-page section of conversion tables often. It lists multipliers to convert one unit of measure to another. Along with conversions for furlongs into fathoms and microfarads into picofarads, the woodworker will find an easy

conversion for centimeters to feet. It's also fun to just page through and discover trivia such as the mean radius of Jupiter (44,423 miles) or the specific gravity of fish meal (0.59).
—Lon Schleining

Vintage Woodworking Machinery by Dana M. Batory. *Astragal Press, Mendham, N.J. (201-543-3045); 1997. \$21.95, paperback; 145 pp.*



This book is destined to become a standard reference for anyone who might want to buy vintage woodworking machinery. It's a thoroughly researched history of the machines made by the major companies operating around the turn of the century. It covers Faye and Egan, Yates-American, Defiance, Oliver.

Looking at the illustrations, you will understand why national safety standards became necessary. Few of these old machines have guards over their blades or other moving parts. A swing saw made by Defiance looks like something out of a tale by Edgar Allan Poe. I shudder to imagine standing near one of those machines when it's running.

Batory also tells you where to find parts for, and information about, old machines. This information isn't easy to come by and makes the book well worth the price.

—Robert M. Vaughan

Anatole Burkin is an associate editor of FWW. Lon Schleining is a designer and stair builder in Long Beach, Calif. Robert Vaughan is a contributing editor to FWW.

Can't decide which router to buy?



Fixed Base

Plunge Base



Get Both.

Porter-Cable answers the oldest question in routing by introducing the 693PK, the only kit that gives you two routers in one. Each 693PK comes with Porter-Cable's 1-1/2 HP, 10 Amp router motor, long recognized as the standard of the industry. Also included is our machined-aluminum fixed router base and smooth-as-silk plunge router base. So now, with just one purchase, you get the versatility of owning the two most popular types of routers. You also get our 1/4" and 1/2" collets thrown into the deal, and a heavy-duty plastic carrying case with room for everything including your own 1/4" and 1/2" bits. So cover all your bases and visit your Porter-Cable retailer now. Because this limited time offer will disappear *fast*. Or call us at 1-800-487-8665 (519-836-2840 in Canada), for the dealer nearest you.

PORTER-CABLE

Professional Power Tools Since 1906

<http://www.porter-cable.com>

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

READER SERVICE NO. 45



MILWAUKEE TOOLS

Model	Description	List Sale
9068	1/2" Impact Wrench with case	457 269
5455	7/9" Polisher 1750 rpm	280 164
6078	7/9" 3" angle grinder	295 159
0230-1	3/8" Drill 3.5 amp	231 132
5936	Belt Sander 4 x 24 w/bag 10 amp	495 269
6747-1	Drywall Gun 0-2500 rpm 5 amp	205 115
6016	1/4 sheet Palm Grip Sander	99 56
6017	6016 Sander with dust bag	101 62
6008	1/3 sheet 12,000 orb/min 5 amp	230 132
8975	Heat Gun 570° & 1000°	102 59
8977	Variable temp. Heat Gun	137 82
8980	8975 Heat Gun w/ case, & acc.	155 94
3102-1	Plumbers right angle Drill Kit	401 229
5960	Router 1-1/2 HP 10 amp	357 209
6256	Variable speed Jig Saw 3.8 amp	278 149
6266-6	Top Handle Jig Saw	315 159
6527	Super Sawzall with case	343 169
6528	above Sawzall with wired cord	339 189
6537-22	6527 w/quick lok blade charge	224 175
6516-21	NEW cordless Sawzall	550 299
0406-1	9.6V Drill Kit with 2 batteries	315 172
0415-21	Drill w/keyless chuck & 2 batt	380 175
0502-21	NEW 12V Drill Kit w/2 batteries	436 235
0231-1	3/8" Drill 0-1700 rpm	170 88
0224-1	3/8" Drill 4.5 amp magnum	236 132
0225-1	Same as 0224-1 w/keyless chuck	236 132
0234-1	1/2" Drill 5.4 amp mag 0-850 rpm	255 129
0236-1	0234-1 drill with steel case	288 158
0235-1	Same as 0234-1 w/keyless chuck	255 135
0244-1	1/2" Drill 5.4 amp mag 0-600 rpm	255 129
0222-3	3/8" Drill 3.5 amp 0-1000 rpm	213 119
0228-3	3/8" Drill 3.5 amp 0-1000 rpm	207 109
0375-3	3/8" close quarter Drill	255 148
0379-1	1/2" close quarter Drill	288 165
6539-1	cordless Screwdriver 190 rpm	139 78
6540-1	6539-1 with bits & case	175 99
6546-1	cordless Screwdriver 200 & 400 rpm	150 89
6547-1	6546-1 w/bits 1/4" chuck, & case	185 109
5399	1/2" D-handle Hammer Drill Kit	356 218
1676-1	Hole Hawg with case	54 129
6507	Original SawZall with case	278 155
6517	6.5 amp Sawzall with case	296 159
6175	1/4" Chop Saw 15 amp	415 279
6100	Orbital Sander 12 sheet	235 135
5397-1	3.8" var. speed Hammer Drill Kit	275 145
5371-1	1/2" var. speed Hammer Drill Kit	360 194
5377-1	5371-1 with keyless chuck	360 209
3107-1	1/2" var. speed right angle Drill	411 234
3300-1	1/2" var. speed right angle Drill	378 219
5682	Router 2 HP - 1/4" & 1/2" collets	367 165
6145	4-1/2" Grinder 10,000 rpm	179 94
6142	6145 with case & accessories	224 119
6749-1	Drywall Gun 0-2500 rpm 5 amp	235 135
6755-1	Drywall Gun 0-4000 rpm 5 amp	183 105
6767-1	Screw Shooter Kit	252 142
5353	Eagle 1-1/2" Rot. Hammer w/ cs	464 275
6365	7-1/4" Circular Saw 13 amp	229 125
6367	above Saw - double insulated	224 138
6366	6365 with fence & carbide blade	237 134
6369	6365 w/fence, carbide blade, & cs	259 142
6377	7-1/4" Worm Drive Saw	345 198
6369	7-1/4" Circular Saw with brake	280 155
6490	10" Mitre Saw	496 265
6494	10" Compound Mitre Saw	585 315
0422-1	12V Hammer Drill w/2 batt.	441 259
0431-1	12V Drill w/2 batteries	441 265
6496	10" Slide Compound Saw	1050 569

PANASONIC CORDLESS

Model	Description	List Sale
EY6181CRKW	9.6V Drill Kit with 2 batteries, 1 hour charger, & case	307 169
EY6100EQKW	12 volt Drill kit with 2 Ironman batteries, 15 min. charger & cs.	379 179
EY6100SEKQ	Same as above but has 1 Ironman battery and 1 diagnostic battery	346 169
EY6101SQK	12V 1/2" Drill with 15 minute charger, diagnostic battery, & case	438 249
EY6101EQKW	Same as above but has two Ironman batteries	346 169
EY3503FQWKW	NEW 5-3/8" 12V Wood Cutting Saw Kit	500 259

MAKITA TOOLS

Model	Description	List Sale
5090DW	3-3/8" Saw Kit 9.6 volt	280 155
DA391D	3/8" angle Drill 9.6 volt	166 114
DA391DW	3/8" angle Drill Kit 9.6 volt	341 189
ML900	9.6 volt flashlight	9.95
6095DWE	9.6 volt Drill Kit w/2 batteries	125
6095DWLE	6095DWE w/flashlight	139
6095D	6095DW Drill only & case	65
6011DWE	12 volt Drill Kit w/2 batteries	365 168
632007-4	9.6 volt Battery	47 30
6203DWAH	9.6V 3/8" Drill Kit w/2 batt.	351 159
6211DWH	12V 3/8" Drill Kit w/2 batt.	368 175
6311DWH	12V 1/2" Drill Kit w/2 batt.	399 205

BOSTITCH AIR NAILERS

Model	Description	List Sale
N80S-1	Stick Nailer	339
N80C-1	Coil Nailer	339
NR45	Coil Roof Nailer 3/4 - 1-3/4	845 369
N60FN-2K	Finishing Nailer 1-1/4" - 2-1/2" w/ case, oil, & nails	618 275
T504-1	Decking Sheathing Stapler	618 365
MIFRS	Flooring Stapler 15 gauge	902 529
S325X-1K	Finishing Stapler 1-1/2" - 1-3/8" w/ case, oil, & brads	269 145
BT35-2K	Brad Tacker 5/8" - 1-3/8" w/ case, oil, & brads	279 125
BT50-2K	Brad Tacker 1-3/16" - 2" w/ case, oil, & brads	335 175
PC5000-1	Power Crown Stapler	242 155
CWC100	1 HP Pancake Compressor	440 289

FREUD

NEW Teflon Coated Red Blades

Model	Description	Teeth	List Sale
LU98R010	Ultimate 10"	80	128 89
LM72R010	Ripping 10"	24	78 44
LU84R011	Combo 10"	50	89 55
LU85R010	Super cut-off 10"	80	114 74
LU85R015	Miter saw blade 15"	108	179 115
LU87R010	Thin kerf 10"	24	72 54
LU88R010	Thin kerf 10"	60	88 59
LU91R008	Compound miter 8-1/2" 48"	59	75

The following Freud tool has a rebate! The price shown is before rebate.

FT2000E Plunge Router - \$30 rebate! Sale 205

Model	Description	List Sale
FJ85	Top Handle Jig Saw	99
JS102	Biscuit joiner	125
TR215	8-1/4" Mitre Saw	249
FD88	3-1/4" Planer	99

Freud Carbide Dado Blades

Model	Description	List Sale
SD608	8" dial-a-width dado	389 199
SD606	6" dial-a-width dado	369 189
SD208	8" economy dado	155 85

1997 TOOL CATALOG AVAILABLE
Call Toll-Free 1-800-328-0457 In Minnesota Call (612) 224-4859
FAX (612) 224-8263
SEVEN CORNERS ACE HDW. INC.
CHECK • MONEY ORDER • VISA • MASTERCARD • DISCOVER
216 West 7th St. • St. Paul, MN 55102 • Est. 1933

NEW Dewalt Bench Top Tools

- DW708**
12" Dual Compound Slide Mitre Saw
Sale 679
- DW788**
20" Scroll Saw
Sale 489
- DW733**
12" Planer
Sale 459



TOOLS ON SALE
AMERICA'S LOWEST PRICED TOOLS
FREE FREIGHT TO THE CONTINENTAL STATES ON EVERY ITEM
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

ACCU-MITER

Model	Description	List Sale
13-34	Professional Mitre Gauge	145

JDS AIRTECH AIR CLEANERS

Model	Description	List Sale
350	12"x24"x28" 1/3 HP - 350 CFM	249
10-12	20"x24"x44" 1/3 HP - 800,1200 CFM	479
8-16	20"x24"x44" 1/3 HP - 1000,1600 CFM	679

PORTA NAILER

Model	Description	List Sale
401	Porta Nailer complete	295 209
501	Face Nail complete	295 209
1,000	Genuine Porta Nails - 1000 qty.	16.50
5,000	Genuine Porta Nails - 5000 qty.	74.95
10,000	Genuine Porta Nails - 10000 qty.	129.95

BIESEMEYER FENCES

Model	Description	List Sale
B-50	50" Commer. Saw Fence	443 235
Above fence has \$50.00 rebate!		
T-SQUARE 52	52" Homeshop Fence	360 275
Above fence has \$20.00 rebate!		
T-SQUARE 40	40" Homeshop Fence	335 255
Above fence has \$20.00 rebate!		
T-SQUARE 28	28" Homeshop Fence	325 245
Above fence has \$20.00 rebate!		
REBATES EXPIRE 12/31/97		

BOSCH

Model	Description	List Sale
1567VVS	Top Handle "CLIC" Jig Saw	292 139
1567AVSC	1567VVS 50th Anniversary Saw with case	149
1567DVS	above saw w/dust collection	317 178
1584VS	"CLIC" Barrel Grip Jig Saw	288 139
1584DVS	above saw w/dust collection	306 178
Bosch Metal Case	for above Jig Saws	34 24
Bosch 30	blade assortment for Jig Saws	28.99

Super Special

1584VVS or 1567VVS with steel case and 30 Bosch blades Sale 175

1422	Heat Gun 600°-900° temp.	132 78
1899D	1/4 sheet Sander	113 68
1003VSR	3/8" Drill 0-1100 rpm	167 78
1194VSR	1/2" var. speed Hammer Drill	272 155
1194VSRK	above Hammer Drill w/ case	303 169
1295DH	5" Random Orbit Palm Sander	145 89
1608T	5.6 amp tilt base Trimmer	189 110
1608U	Underscribe Laminator	239 139
1609K	Laminate Installers Kit w/ 1609 Trimmer	355 199
1609KX	Deluxe Installers kit	425 229
1604A	1-1/4 HP D Handle Router	269 142
1604AK	Same as above w/ case & acc.	337 185
1606A	1-3/4 HP D-handle Router	300 179
1274DVS	3"x21" v/spd Belt Sander w/bag	301 175
1613EVS	3 HP v/spd Plunge Router	369 199
1615EVS	3 HP v/spd Plunge Router	536 289
1614EVS	1-1/4 HP v/spd Plunge Router	295 169
3054VSRK12	volt cordless drill kit	323 185
1370DVS	6" Random Orbit Sander	446 248
B1650K	Biscuit Joiner	154 89
B7001	Corner Detail Sander v/spd	89.95
B4050	In Line Jig Saw	206 119
3272K	3-1/4" Planer with case 4.2 amp	205 119
1347AK	4-1/2" Grinder w/ case & acc.	172 89
1348AE	5" Grinder 1-3/8" diameter	237 135
11304	"The Brute" Breaker Hammer	124.99
11305	Demolition Hammer 10 amp	1328 739
11314EVS	Demolition Hammer	921 539
1123EVS	1-1/2" Spine Hammer Drill	890 525
11224VSR	7/8" SDS Rotary Hammer Drill	404 224
1634VSK	Recipro Saw 10.5 amp	335 189
1278VSK	NEW 1-1/2"x12" Belt Sander	218 129
1276D	4" x 24" v/spd Belt Sander	379 219
1275DVS	3" x 24" v/spd Belt Sander	379 214
1276DVS	4" x 24" v/spd Belt Sander	408 229
3107DVS	5" Random Orbit Sander	165 99
3107DVSK	5" Random Orbit Sander with case	195 115
3275DVS	5" Random Orbit Sander	256 149
3272DVS	6" Random Orbit Sander	266 154
B3915	10" Slide Comprd Saw	1050 559
11230EVS	SDS-max 1-1/2" Rotary Hammer	910 529
11231EVS	SDS-max 1-3/4" Rotary Hammer	1363 815
11223EVS	SDS-max 2" Rotary Hammer	1595 945
11311EVS	Demolition Hammer variable speed	1328 785

BOSCH CORDLESS DRILLS

Model	Description	List Sale
3300K	12V Drill Kit with 2 batteries	285 169
3310K	12V H-Handle Drill Kit with 2 batteries	345 175
3110K	9.6V H-Handle Drill Kit with 2 batteries	318 185
3610K	14.4 volt Drill Kit	354 195

SKIL TOOLS

Model	Description	List Sale
HS0825	6-1/2" Worm Drive Saw	313 179
5510	5-1/2" Circular Saw	196 119
5860	8-1/4" 60° Worm Saw	350 198
5660	8-1/4" 60° Circular Saw	292 169
5657	7-1/4" Circ Saw - pivot foot	220 129
5525	6-1/2" Circ Saw - big capacity	189 115
3400	10" Table Saw - Bench Top	360 189
77	Famous 7-1/4" Worm Drive Saw	158
77M	77 Mag Worm Saw	168

RYOBI SPECIALS

Model	Description	List Sale
JP-155	6-1/8" Joinder/Planer	700 319
Above jointer comes with extra blades		
BE301	3 HP Plunge Router var. speed	500 235
RE320	3" x 21" var. speed Belt Sander	310 139
Above sander comes with sanding frame		
BT3000	10" Table Saw with stand	1125 539
Above saw comes with router kit		
TR30U	3/4 HP Trimmer	174 88
AP12	12" Bench Planer	884 379
Above planer comes w/ extra blades & dust hood		
JS45	Top Hide Jig Saw var. spd	98 49
OS45SD	Oscillating Spindle Sander	340 159
Above sander comes with spindles		
SC162VS	16" var. speed scroll saw	298 165
ML618	Mini Lathe variable speed	418 214
WDS1600	16" x 32" Drum	

DELTA BENCH TOP TOOLS		List Sale
23-700	We/Dry Grinder.....	206 155
23-680	6" Bench Grinder 1/4 HP.....	80 69
23-680	8" Bench Grinder 1/2 HP.....	134 109
31-460	4" Belt/6" Disc Sander.....	198 125
31-340	1" Belt/8" Disc Sander.....	270 225
31-080	1" Belt/5" Disc Sander.....	113 89
40-560	16" 2" speed Scroll Saw.....	230 155
11-990	12" Bench Drill Press.....	255 184
43-505	1/2" Bench Router/Shaper.....	398 289
22-540	12" Bench Top Planer.....	557 329
36-220	10" Compound Mitre Saw.....	294 199
14-650	Hollow Chisel Mortiser.....	380 239
37-070	6" var. speed Bench Jointer.....	351 265
36-285	8-1/4" Builders Saw with stand.....	346 268
36-210	10" Compound Mitre Saw.....	344 219
36-040	8-1/4" Compound Mitre Saw.....	190 139
36-070	10" Mitre Saw.....	217 165
34-182	Tenoning Jig.....	113 89
34-555	Sliding Table.....	487 289
31-780	Oscillating Spindle Sander.....	253 194
23-710	Sharpening Center.....	217 169
28-185	Bench Band Saw.....	213 168
37-190	6" Deluxe jointer.....	603 445
36-250	10" Slide Compound Saw.....	346 289
31-695	6" Belt/9" Disc Sander.....	441 299
40-540	16" var/spd Scroll Saw.....	249 179
28-195	NEW 10" Band Saw.....	390 309
22-560	12-1/2" Bench top Planer.....	557 329

DELTA TOOLS		List Sale
36-865	NEW Versa Feeder Stock Feeder.....	325 249
17-900	16-1/2" Floor Drill Press.....	490 339
33-990	10" Radial Arm Saw.....	981 799
36-540	10" Table Saw.....	229 178
32-100	Stationary Plate Jointer.....	351 279
36-905	30" Unifence.....	346 245
36-906	50" Unifence.....	444 325

Above fences have \$30.00 rebate.
Price shown is before rebate!

46-700	12" Wood Lathe.....	575 465
43-355	3/4" Shaper 1-1/2 HP.....	799
37-154	DJ5 6" Jointer.....	Sale 1289

The following Delta tools have \$50.00 rebates
Take \$50.00 off price shown.

34-444	10" Contractor's Table Saw.....	Sale 659
34-452	10" Table Saw w/ 30" fence, castiron wing.....	Sale 659
34-914	table board & 35-032 blade.....	839
28-275	14" Band Saw 3/4 HP.....	Sale 639
28-280	14" Band Saw 1 HP w/ 50-274 mobile base.....	639
28-843	rip fence, 28-266 cool blocks.....	839
40-650	Q3 18" Scroll Saw.....	Sale 479
22-675	DC380 15" Planer.....	Sale 1175
31-280	Sanding Center w/stand.....	Sale 789

REBATES EXPIRE 12/31/97

DEWALT TOOLS		List Sale
DW321K	Top Handle Jigsaw Kit.....	300 164
DW364	7-1/4" Circ. Saw w/broke, 13 amp.....	294 162
DW306K	8.0 amp Recip Saw v/s w/ case.....	291 155
DW610	1-1/2 HP 2 handle Router.....	266 152
DW411	1/4 sheet Palm Sander, 1.7 amp.....	88 58
DW705	12" Compound Mitre Saw.....	734 359
DW704	12" Mitre Saw.....	570 329
DW100	3/8" Drill, 4 amp, 0-2500 rpm rev.....	118 68
DW274	Drywall Gun, 0-4000, 6.3 amp.....	160 95
DW268	Tek Gun, 0-2500 rpm, 6.5 amp.....	288 159
DW482	4-1/2" Grinder 6 amp.....	166 89
DW682K	Biscuit Joiner with case.....	448 199
DW625	3 HP Electronic Plunge Router.....	520 279
DW625	router comes with DW6913 edge guide.....	520 279
DW621	NEW 2 HP Plunge Router.....	400 218
DW621	comes w/ FREE fine height adjuster.....	400 218
DW675K	3-1/8" Planer with case.....	292 164
DW431	3-1/2" var. speed Belt Sander.....	338 188
DW420	Palmgrip Random Orb Sander.....	124 69
DW421	above Sander with dust collector.....	144 74
DW423	Palm Random Orbit Sander.....	170 94
DW935K	14.4V 5-3/8" Trim Saw kit.....	444 237

DEWALT CORDLESS DRILLS		List Sale
DW952K	2-3/8" v/spd w/two 9.6V batt.....	284 129
DW972K	2-3/8" variable speed w/ two 12V XR batteries.....	362 182
DW904	12 volt flashlight.....	29.95
DW972K	2-drill & DW904 flashlight.....	Sale 199

DW991K	2-3/8" v/spd w/ two 14.4V XR batteries.....	415 209
DW994K	1/2" variable speed w/ one 14.4V XR battery.....	458 239
DW996K	2-1/2" v/spd Hammer drill w/ two 14.4V XR batteries.....	396 259

Above drill kits come w/charger & steel case!

DW991KS	2-DW991K drill, DW935 saw, & case.....	345
---------	--	-----

DeWalt 18 volt Cordless Tools		List Sale
DW938K	NEW Recipro Saw Kit.....	520 289
DW995K	1/2" Drill Kit.....	428 229
DW997K	1/2" Drill / Hammer Drill Kit.....	454 249
DW936K	5-3/8" Saw Kit.....	458 249
DW995KS	2-DW995K Drill, DW938 Saw, and case.....	Sale 385

DW991K	2-DW991K 14.4V drill kit, DW937 14.4 volt recip saw, & case.....	349
DW995K	2-DW995K 18 volt drill kit, DW938 18 volt recip saw, & case.....	395
DW997K	2-DW997K 18 volt drill kit, DW938 18 volt recip saw, & case.....	405

WAPVACUUMS		List Sale
766RF	10 gallon turbo vacuum.....	845 465
766RD	O'Drywaller "10 gal turbo vac".....	815 448
766RF-DAS	Same as above w/autostart.....	950 589

CLAYTON OSCILLATING SPINDLE SANDERS		List Sale
140	Portable sander w/ 4-1/2" spindle.....	625 559
146	Portable sander w/ 9" spindle.....	685 609
100	Floor mount sander w/4-1/2" spnd.....	785 709
106	Floor mount sander w/ 9" spindle.....	845 759

DREMEL TOOLS		List Sale
3955	Moto Tool Kit with bits & case.....	134 75
3956	Super Moto Tool Kit w/ acc.....	152 85
1672	16" Scroll Saw - 2 spd "Best buy".....	302 174
1695	16" var. speed Scroll Saw.....	408 209
290	Electric engraver with point.....	25 16
1731	5" Disc 1" x 30" Belt Sander.....	189 114

JORGENSEN ADJUSTABLE HANDSCREWS		List Sale			
Item#	Jaw Length	Capacity	List	Sale	Box
#3/0	6"	3"	17.05	9.90	56.50
#2/0	7"	3-1/2"	18.30	10.70	60.95
#1	8"	4-1/2"	20.35	12.10	66.95
#1	10"	6"	23.30	12.90	71.95
#2	12"	8-1/2"	26.75	14.90	83.95
#3	14"	10"	33.85	18.55	105.75
#4	16"	12"	44.05	24.65	140.95

JORGENSEN STYLE 37		List Sale		
Item#	Jaw Length	List	Sale	Box of 6
3706	6"	10.85	6.20	33.50
3712	12"	12.05	6.80	37.20
3718	18"	13.25	7.60	41.05
3724	24"	14.55	8.15	43.95
3730	30"	16.20	9.05	48.85
3736	36"	17.70	10.20	54.95

JORGENSEN STYLE 45		List Sale		
Item	Jaw Length	List	Sale	Lots of 6
4512	12"	34.50	20.75	114.95
4518	18"	36.35	23.20	122.95
4524	24"	38.50	23.65	129.95

JORGENSEN STEEL "I" BAR CLAMPS		List Sale		
Model	Size	List	Sale	Lots
7224	24"	35.75	20.30	112.95
7236	36"	38.95	22.35	124.75
7248	48"	42.15	24.45	134.95
7272	72"	48.50	29.60	168.75

PONY CLAMP FIXTURES		List Sale		
Model	Description	List	Sale	Lots of 12
50	3/4" Pipe Clamps	15.45	8.10	92.50
52	1/2" Pipe Clamps	12.65	6.95	74.95

MKTILE SAWS		List Sale	
Model	Description	List	Sale
MK270	1/2 HP - 7" blade, light.....	300 164	
MK770	1/2 HP - 7" blade.....	795 589	
MK650	3/4 HP - 7" blade.....	795 589	
MK880	1 HP - 8" blade.....	986 859	

We stock replacement blades for above saws.

Mxsx6362	FEIN Triangle Sander v/spd.....	Sale 175
Mxsx625	FEIN NEW Air Triangle Sander.....	Sale 195
LPN672	PONY Air Palm Nailer w/glove.....	Sale 89
LPN672K	LPN672 w/ case & 3 special bits.....	Sale 109
RTM01	ROTOZIP Drywall cutout unit.....	Sale 68.95
SC502	ROTOZIP NEW cordless unit.....	252 169

BLACK & DECKER		List Sale
1166	3/8" Drill 0-2500 rpm 4 amp.....	118 68
2600	3/8" Drill 0-1200 rpm 4.5 amp.....	173 98
WM425NEW	Workmate 425.....	101 109
1350K	1/2" Timberwolf Drill 2 speed.....	573 335
1180	3/8" Drill rev. 0-1200 rpm 5 amp.....	215 119
2670	1/2" Impact Wrench w/ detent pin.....	298 169
2038	Drywall Gun 0-2500 rpm 5 amp.....	178 95
2054	Tek Gun 0-2500 rpm 5 amp.....	289 159
2750	4-1/2" Grinder 10,000 rpm 6 amp.....	159 89
2694	7-1/4" Super Sawcut Circ Saw.....	294 149
2695	8-1/4" Super Sawcut Circ Saw.....	328 169
3339	ELU 3 HP v/spd Plunge Router.....	520 269

CRAIN FLOOR COVERING TOOLS		List Sale
800	Super door jamb saw kit.....	Sale 275
520	Swivel-lock stretcher.....	Sale 489
499	Junior power stretcher.....	Sale 419
507	Stairway stretcher.....	Sale 135
600	Adjustable deluxe knee kicker.....	Sale 93
612	Knee kicker 17-1/2" to 21-1/2".....	Sale 86
505	Economy adjustable knee kicker.....	Sale 69
506	Mini knee kicker.....	Sale 65
785	Toe-kick saw - 110 volt.....	Sale 188
890	6" S/C pro iron 250° - 375° F.....	Sale 125
920SC	Deluxe heat bond iron - 800 watt.....	Sale 83
245	Deluxe carpet trimmer.....	Sale 49

DURA III ADJUSTABLE STILTS		List Sale
D1422	Model Description.....	List Sale
D1422	14"-22" extension.....	270 209
D1830	18"-30" extension.....	288 229
D2440	24"-40" extension.....	304 249

SIOUX TOOLS		List Sale
8030	3/8" variable speed Drill.....	263 165
8000	3/8" variable speed close quarter Drill.....	0-1300rpm..... 211 135
8005	Same as 8000 but is 0-2500 rpm.....	211 139
690	5" Air Random Orbit Sander.....	228 132
790	NEW lightweight 5" Sander.....	235 138

1997 TOOL CATALOG AVAILABLE
Call Toll-Free 1-800-328-0457 In Minnesota Call (612)224-4859
FAX: (612)224-8263
CHECK • MONEY ORDER • VISA • MASTERCARD • DISCOVER
SEVEN CORNERS ACE HDW. INC.
216 West 7th St. • St. Paul, MN 55102 • Est. 1933

Call for Federal Express 2 day shipping charge!



TOOLS ON SALE!
AMERICA'S LOWEST PRICED TOOLS
FREE FREIGHT TO THE CONTINENTAL STATES ON EVERY ITEM
PRICES SUBJECT TO CHANGE WITHOUT NOTICE
48 CONTINENTAL STATES ON EVERY ITEM • GIFT CERTIFICATES NOW AVAILABLE

Introducing a full range of Werner brand ladders at discounted prices! Werner quality. Werner ladders - A name you can stand on.

ALUMINUM LADDER JACKS		List Sale
Model	Description	List Sale
10-14-02	14" 2 rung 2 rungs	83.95
10-20-02	20" 3 rung 2 rungs	89.95
10-20-03	20" 3 rung 3 rungs	99.95

ALUMINUM ARTICULATED LADDERS		List Sale
Model	Description	List Sale
M7-14	7' 43#	159.95
M8-16	8' 46#	179.95

FIBERGLASS STEP - TYPE 1- 250# RATED		List Sale
Model	Description	List Sale
6004	4' 13#	57.95
6005	5' 16#	67.95
6006	6' 18#	69.95

ALUMINUM FLAT STEP TYPE 11- 225# RATED EXTENSION		List Sale
Model	Description	List Sale
D1224-2	24" 21" 33#	184.95
D1228-2	28" 25" 50#	239.95
D1322-2	32" 29" 62#	268.95
D1336-2	36" 32" 77#	328.95
D1236-2	36" 32" 62#	279.95

ALUMINUM FLAT STEP TYPE 1A- 300# RATED EXTENSION		List Sale
Model	Description	List Sale
D1224-2	24" 21" 33#	209.95
D1328-2	28" 25" 50#	239.95
D1332-2	32" 29" 62#	268.95
D1336-2	36" 32" 77#	328.95
D1342-2	40" 35" 85#	369.95

ALUMINUM FLAT STEP TYPE 1A- 300# RATED EXTENSION		List Sale
Model	Description	List Sale
D1520-2	20" 17" 37#	199.95
D1524-2	24" 21" 45#	234.95

Listings of gallery shows, major woodworking fairs, lectures, workshops and exhibitions are free but are restricted to happenings of direct interest to woodworkers. Only workshops sponsored by not-for-profit groups are listed. We list events (including entry deadlines for future juried shows) that are current with the time period indicated on the cover of the magazine, with overlap when space permits. We go to press three months before the issue date of the magazine and must be notified well in advance. For example, the deadline for events to be held in March or April is January 1; for July and August, it's May 1, and so on.

ALABAMA: Meetings-The Alabama Woodworkers Association meets the second Thursday of each month at 7 p.m. Acton Moulding & Supply Co., Helena. For info, contact Leonard Sanders (205) 822-6876.

ALASKA: Meetings-Alaska Creative Woodworkers Association meets at 7 p.m. on the fourth Monday of each month August to May. Anchorage Museum. For info, contact Arnold Geiger (907) 345-3077.

ARIZONA: Exhibitions-Bent-wood sculpture with Barbara Cooper and Furniture with Tommy Simpson, Nov. 1-31. Joanne Rapp Gallery, 4222 N. Marshall Way, Scottsdale (602) 949-1262.

Call for entries-Desert woodcarving show, Feb. 21-22. Phoenix Civic Plaza. Deadline: Feb. 20. For info, contact Mel Donahoe, Grand Canyon State Woodcarvers, P.O. Box 9112, Scottsdale, 85252-9112. (602) 935-5648.

Exhibition-Turned Wood Sculpture by Dennis Elliott, thru Nov. 19. Select Art Gallery, Dry Creek Plaza, 3150 W. Highway 89A, Sedona, 86336. (800) 585-3199.

ARKANSAS: Meetings-Woodworker's Association of Arkansas meets the first Monday of each month at 7 p.m.; Central Arkansas Woodcarvers meets the second Tuesday at 7 p.m. and the fourth Tuesday at 6:30 p.m. Arkansas Arts Center. (501) 985-1118.

Exhibition-Moving Beyond Tradition: A Turned Wood Invitational, thru Nov. 19. Decorative Arts Center, 7th and Rock, Little Rock. (501) 372-4000.

Meetings-Ozark Woodturners meets the third Saturday of each month in Mountain Home. For more info, call Michael Kornblum (870) 424-5893.

CALIFORNIA: Exhibition-Expressions in Wood: Art of John Cederquist, thru Nov. 30. Oakland Museum of California, 1000 Oak St., Oakland. (510) 238-2200.

Shows-The San Francisco Bay Area Woodworking Show, Nov. 7-9. San Mateo Exposition Center; The Greater Los Angeles Woodworking Show, Nov. 21-23. Orange County Fairgrounds, Costa Mesa. For more info, call (800) 826-8257.

COLORADO: Show-Woodworker's Guild of Colorado Springs 13th annual juried exhibition of fine woodworking, thru Nov. 8. The Colorado Springs Museum, 215 S. Tejon St., Colorado Springs. Contact John Lewis (719) 636-1257.

CONNECTICUT: Exhibition-Woodworkers Guild 10th annual fall members exhibition, thru Nov. 30. For further information, contact Randy Bemont (860) 653-0316.

Workshops-Woodworking workshops held year-round. Brookfield Craft Center, P.O. Box 122, Route 25, Brookfield, 06804. (203) 775-4526.

DISTRICT OF COLUMBIA: Show-16th annual Smithsonian craft show, April 23-26. Smithsonian Institution. For info, call (202) 357-4000.

FLORIDA: Meetings-South Florida Woodworking Guild meets every second Monday at 7 p.m. Constantine, 1040 E. Oakland Park Blvd., Ft. Lauderdale. For information, contact Charlie Womack (954) 561-0941 or (561) 447-8016.

Meetings-Central Florida Woodworkers Guild meets the second Thursday of each month. American Legion Hall, 2101 Lee Road, Orlando. Contact Bob Lamprey (407) 292-8324.

Meetings-St. Petersburg Woodcrafters Guild meets the fourth Thursday of each month at 7 p.m. P.V.T.I., 6100 154th Ave. N., St. Petersburg. Contact Wally Hebel, 1200 19th St. N., St. Petersburg, 33713. (813) 898-0569.

Meetings-Capital City Woodcarvers meets every Monday at 7 p.m. Senior Citizen Art Center. For further information, contact Lee Roberts (904) 893-4293.

Meetings-North Florida Woodturners meets the first Tuesday of each month. Contact John Penrod (904) 385-0608.

Meetings-Tallahassee Woodcrafters Society meets the second Tuesday of each month. For info, contact Walt Behrle (904) 668-6653 or Austin Tatum (904) 386-6876.

Call for entries-Woodcrafters Club of Tampa's 12th annual fine furniture show, Feb. 5-16. Deadline: Jan. 15. Florida Expo Park, Tampa. Contact John Fischer (813) 645-8933.

GEORGIA: Meetings-Woodworkers Guild of Georgia meets the second Monday of each month. Southern College of Technology, 1100 S. Marietta Parkway, Marietta. (404) 299-3972.

ILLINOIS: Meetings-Chicago Woodturners meets the second Tuesday of each month. York High School, Elmhurst. Contact Harris Barbier (630) 964-0354.

KENTUCKY: Meetings-Kyana Woodcrafters meets the first Thursday of each month. Bethel United Church of Christ, 4004 Shelbyville Road, Louisville, 40207. Contact Ray Thornton (502) 499-1388.

MAINE: Meetings-Guild of Maine Woodworkers meets the first Wednesday of each month. Call (800) 805-5100.

MARYLAND: Classes-Woodworking classes, thru December. Glen Echo National Park, 7300 MacArthur Blvd., Glen Echo, 20812. (301) 492-6266.

Exhibition-Meredith Gallery Tables and Chairs, Nov. 1-Dec. 20. Charles St., Baltimore. Call Terry Heffner (410) 837-3575.

MASSACHUSETTS: Classes-Woodworking classes, most of the year. Boston Center for Adult Education, 5 Commonwealth Ave., Boston, 02116. (617) 267-4430.

Classes-Year-round intensives in woodworking and wood carving. Horizons New England Craft Program, 108 N. Main St., Sunderland, 01375. (413) 665-0300.

Classes-Woodworking classes held year-round. North Bennet Street School, 39 N. Bennet St., Boston. (617) 227-0155.

Exhibition-Warm Contemporary Furniture with Arthur J. Stevens, Nov. 4-Dec. 12. Lichtenstein Center for the Arts, Berkshire Artisans, 28 Renne Ave., Pittsfield. (413) 525-6676.

Workshop-19th annual wood identification workshop, Jan. 13-16. For more info, contact Alice Szlosek, University of Massachusetts, 608 Goodell Building, Box 33260, Amherst, 01003-3260. (413) 545-2484.

MICHIGAN: Meetings-Metro Carvers of Michigan meets second Tuesday of each month (except July and August) at 7:30 p.m. Helen Keller High School, 1505 N. Campbell Road, Royal Oak. (810) 771-1040.

Show-Metro-Detroit woodworking show, Dec. 5-7. Novi Expo Center, 43700 Expo Center Drive, Novi. (800) 826-8257.

Show-Sixth biennial Midwest-Grand Rapids woodworking and furniture supply fair, Nov. 6-7. (704) 459-9894.

MINNESOTA: Meetings-Minnesota Woodworkers Guild meets the third Tuesday of each month at 7:15 p.m. Demonstrations each month. Contact Richard Gotz (612) 544-7278.

MISSOURI: Meetings-Kansas City Woodworkers' Guild meets the third Wednesday of each month. Contact Eugene Caples (816) 452-6379.

Meetings-St. Louis Woodworker's Guild meets the third Thursday of the month at 7 p.m. Woodcraft Store, Olive Blvd. Contact Barney Davey (314) 225-2357.

NEBRASKA: Meetings-Omaha Woodworkers Guild meets at 7 p.m. the third Tuesday of each month. Libert Christian Center, 60th and L St., Omaha. For info, contact John Cahill, Box 45494, Omaha, 68145. (402) 334-5550.

NEW HAMPSHIRE: Exhibition-Deeply Routed: New Hampshire Traditions in Wood, thru Dec. 14. Art Gallery, University of New Hampshire, Durham. (603) 862-3712.

NEW JERSEY: Meetings-Central Jersey Woodworkers Association meets the second Wednesday of the month (except July and August) at 7 p.m. Old Brick Reformed Church, Newman Springs Road, Marlboro. (732) 576-3052.

NEW YORK: Meetings and classes-New York Woodturners Association meets bi-monthly. YWCA, 610 Lexington Ave. (53rd St.), New York City. For more information, contact Howard Alalouf (914) 337-0226.

Meetings-Long Island Woodworker's Club meets at 7:30 p.m. the first Wednesday of the month September to June. Brush Barn, 211 Jericho Turnpike, Smithtown. For more info, contact Bill Hermanek (516) 360-1216.

Classes-Traditional and contemporary woodworking with

Maurice Fraser, Bill Gundling and Susan Perry. The Craft Students League at the YWCA, 610 Lexington Ave., New York City. For more information, call (212) 735-9731.

Call for entries-Woodworkers Showcase '98, Feb. 7-8. Contact Herm Finkbeiner, Northeastern Woodworkers Association, P.O. Box 246, Rexford, 12148. (518) 371-9145

NORTH CAROLINA: Meetings-North Carolina Woodturners meets the second Saturday of each month. For more info, contact Tom Fitz, North Carolina Woodturners, P.O. Box 1833, Hickory, 28603. (704) 890-4451.

Workshops-Country Workshops winter classes. Contact Drew Langsner, 90 Mill Creek Road, Marshall, 28753.

Juried Show-The Chair Show II, thru Jan. 4. Folk Art Center, Main Gallery, Asheville. Jurors include Sam Maloof. Contact Katherine Caldwell (704) 298-7928.

OHIO: Meetings-Cincinnati Woodworking Club meets at 9 a.m. on the second Saturday of each month. March, May, September and November. Reading High School, Reading. Contact the club at 10125 Montgomery, Cincinnati, 45242.

Meetings-Woodworkers of Central Ohio meets on the second Saturday of November, February, April and June. For more info, call Chuck (614) 457-3704.

OREGON: Meetings-Cascade Woodturner's Association meets every third Thursday. For more information, write 11575 S.W. Pacific Highway, #104, Tigard, 97223, or call (360) 834-6325.

Meetings-Guild of Oregon Woodworkers meets every third Wednesday (except December) at 7 p.m. For info, write P.O. Box 1866, Portland, 97207, or call (503) 492-1515.

PENNSYLVANIA: Exhibition-Turning in Context, thru Nov. 30. Wood Turning Center, Philadelphia. (215) 844-2188.

Call for entries-Philadelphia Furniture and Furnishings Show, April 17-19. Deadline: Nov. 14. Pennsylvania Convention Center. Contact Philadelphia Furniture and Furnishings Show, 162 N. 3rd St., Philadelphia, 19106. (215) 440-0718.

RHODE ISLAND: Juried show-Second annual fine furnishings: Providence, Nov. 14-16. Rhode Island Convention Center, Providence. For more info, call (401) 751-8989.

TENNESSEE: Workshops-Turning, carving and more, year-round. Arrowmont School of Arts and Crafts, 556 Parkway, Gatlinburg, 37738-0567. (423) 436-5860.

Classes-Lumber selection and more. Tennessee Valley Authority, 17 Ridgeway Road, Box 920, Norris, 37828-0920. (615) 632-1656.

TEXAS: Meetings-Woodturners of North Texas meets the last Thursday of each month, 7:30 p.m. Paxton Beautiful Woods Store, 1601 W. Berry St., Fort Worth. For more information, call (817) 927-0611.

Exhibition-East Texas Woodcarvers' Wooden Wonderland '97, Nov. 13-15. Tyler Rose Garden Center, Tyler. For more info, contact Charles or Kathy Brooks (903) 839-7042.

Meetings-North Texas Woodworker's Association meets the third Tuesday of each month. Contact Bruce May, P.O. Box 831567, Richardson, 75083. (972) 271-0125.

VIRGINIA: Workshop-16th annual oak drying workshop, Dec. 9-11. Airport Marriott, Roanoke. Contact Fred Lamb, Dept. of Wood Science, Virginia Tech. (540) 231-7256.

WASHINGTON: Meetings-Northwest Corner Woodworkers Association meets the first Tuesday of each month, year-round. For more info, call Mike Hess (360) 650-0964.

Show-The Seattle Woodworking Show, Nov. 14-16. Seattle Center, Exhibition Hall, Mercer St. at 3rd Ave. N., Seattle. For info, call (800) 826-8257.

Exhibition-Sculptural furniture with Wendell Castle, thru Nov. 8. Bryan Ohno Gallery, 155 Main St., Seattle. For more information, call (206) 667-9572.

WISCONSIN: Show-The Greater Milwaukee Woodworking Show, Dec. 12-14. Wisconsin Center, Great Hall, 500 W. Kilbourn Ave., Milwaukee. (800) 826-8257.

CANADA: Association-Canadian Woodturners Association, 12A-4981 Highway 7E, Suite 236, Markham, Ont. L3R 1N1. (905) 479-0755.

Association-Superior Association of Woodworkers meets 7 p.m. the last Monday of the month. Confederation College, Thunder Bay, Ont. Contact Vic Germaniuk (807) 767-5964.

Show-Fraser Valley Woodturners Association show, Nov. 22-23. Woodturning demonstrations. Fort Langley Community Hall, 9167 Glover Road, Fort Langley, B.C. (604) 931-5952.

THE WOOD SHOP

THE WOODSHOP AT WOODCRAFT
From Ash to Zircote, the Woodshop stocks over 40 different species of domestic and exotic hardwoods in sizes ranging from pen blanks and carving blocks to 12bf lumber packs. Satisfaction Guaranteed!

WOODCRAFT
Helping You Make Wood Work™

For a FREE Catalog Call 1-800-542-9115
www.woodcraft.com
210 Wood County Industrial Park Dept. 97W0WWT
PO Box 1686, Parkersburg, WV 26102-1686

READER SERVICE NO. 90

Free Workshops • Prizes • Hundreds of Products • Seminars by Mastercraftsmen

See the Widest Variety of Woodworking Products All Under One Roof!

★ THE WOODWORKING SHOWS ★
tools • supplies • education

THE NATION'S PREMIER WOODWORKING TOUR

VISIT THE SHOW NEAR YOU!

- Atlanta
- Baltimore
- Charlotte
- Chicago
- Cleveland
- Colorado
- Columbus
- Detroit
- Harrisburg
- Houston
- Indianapolis
- Kansas City
- Massachusetts
- Milwaukee
- Nashville
- New England
- No. California
- North Jersey
- Oregon
- Sacramento
- Seattle
- So. California
- St. Louis
- Tampa
- Twin Cities
- Washington, D.C.
- plus others!

Call for free brochure Monday - Friday 8:30 am - 5 pm Pacific Time
1-800-826-8257 or 310-477-8521 e-mail: woodshow@earthlink.net

READER SERVICE NO. 7

The Lion Miter Trimmer...

"The best tool for your mitering needs."

Cuts any angle: 45° to 90°—perfectly!
Cuts any wood: hard or soft.
—USED BY CRAFTSMEN SINCE 1900—
CALL or WRITE
POOTATUCK CORP.
P.O. Box 24 • Dept. FW9711
Windsor, VT 05089 • (802) 674-5984

READER SERVICE NO. 154

ONE-MAN SAWMILL
Turns Timber Into **CASH!**

Goes right to the trees!

Call NOW for FREE FACTS!
1-800-942-4406, ext. SB18
TIMBERKING, INC. Dept. SB18
1431 N. TOPPING, KANSAS CITY, MO 64120

READER SERVICE NO. 108

ARROWMONT
School of Arts and Crafts
P.O. Box 567 • 556 Pkwy • Gallinburg, Tennessee 37738
423-438-5860 • Fax: 423-430-4101 • e-mail: arrowmnt@aol.com

WOODCARVING - Ron Koehler, Frank Sudol/**FURNITURE** - John Grew Sheridan/**WOODTURNING** - Ray Key, Michael Hoslak, Michael Peterson, Bonnie Klein/**STONE CARVING** - CLAY/METAL/ENAMEL/POLYMER CLAY/WEAVING/FABRIC DESIGN/QUILTING/BEADING/COLLAGES/BOOKS/WATERCOLOR

Graduate/Undergraduate Credit
Assistantships/Scholarships/Residencies
Year-Round Gallery Exhibitions/Library/Bookstore - Open to Public
Elderhostel/Community Classes/Conferences

One Week Workshops
MARCH 2-27, 1998

READER SERVICE NO. 30

Maybe 30 bucks will get you off the fence.

If you've been thinking about getting rid of that old clunker of a fence, maybe this will get you going. Choose the premium fence that best fits your needs: A versatile, precision Delta Unifence® or a commercial-duty Biesemeyer® Fence. Make your purchase between August 1 and December 31, 1997, and we'll send you a check for \$30. That's one simple win-win situation. Call for the number of your nearest participating Delta dealer. Delta International Machinery Corp., 800-438-2486. www.deltawoodworking.com

THE POWER OF THE PROS
DELTA
WOODWORKING MACHINERY
A Porter Company

READER SERVICE NO. 189

The Thomas Chippendale School of Furniture
(formerly Myreside International School of Furniture)

MASTER THE TRADITIONAL SKILLS OF FURNITURE MAKING & DESIGN

Learn how to design, make and restore furniture at the internationally recognised Thomas Chippendale School of Furniture. Situated in the heart of the glorious Scottish countryside, the School offers a unique 30 week course with subjects ranging from the restoration of fine classic pieces to designing bespoke commissions.

Students learn in a stimulating workshop environment and have the rare benefit of access to some of the world's finest pieces of furniture. The intake at the School is restricted to guarantee individual tuition and to ensure high quality.

The School also recognises that in this highly competitive marketplace, you need strong business skills to succeed. The course will ensure that you gain the commercial knowledge and understanding to get ahead in the world of furniture.

For information on the course commencing in October 1998, please contact the Principal at:

**The Thomas Chippendale School of Furniture,
Myreside Grange, Gifford, East Lothian EH41 4JA Scotland
Tel: 01620 810680 Fax: 01620 810701.**

VEGA SAW FENCES

ARE SUPERIOR!

NEW COMMERCIAL MODEL AVAILABLE

Vega Fences will add unequalled accuracy, productivity, and convenience to your Table Saw ... Pro, Utility and Commercial Models are ideal for Cabinet to Contractors Saws.

Accessories are available for greater convenience and productivity. Vega uses only the finest materials available.



THE RESULT IS THE FINEST FENCE SYSTEM YOU CAN BUY

Call or write for free literature

Vega Enterprises RR3 Box 193 Decatur Il. 62526 800-222-VEGA (8342)

READER SERVICE NO. 112

Enjoy the benefits of HVLP with a SUPER System!



Our SUPER model offers you the most powerful 3-stage turbine motor made by Ametek-Lamb (Ohio).

"Quality of atomization rated 9.8 out of 10... This system includes an excellent three-stage turbine... the gun atomizes beautifully and has a full range of features."

- American Woodworker Magazine

FUJI
INDUSTRIAL SPRAY
EQUIPMENT LTD.

- High transfer efficiency
- Soft, easy to control spray
- Compact and portable

65 Martin Ross Ave, #5, Toronto, Ontario, Canada M3J 2L6 1-800-650-0930 Fax: (416) 663-6238

READER SERVICE NO. 14

TRADESMAN POWER TOOLS

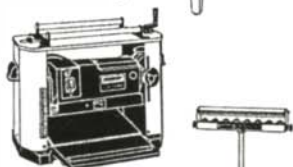
10" Heavy-Duty Table Saw

- ◆ 1-1/2 H.P. Induction Motor
 - ◆ Cast Iron Work Table
 - ◆ Micro-Adjusting Rip Fence
 - ◆ Cast Iron Extension Wings
 - ◆ Steel Stand and Caster Set
 - ◆ Five Year Warranty - Machine
- \$ 448** w/ 10" Carbide Blade



12" Auto-Planer

- ◆ 15 Amp Motor w/ Overload
 - ◆ Automatic Feed - 26 fee/vmin
 - ◆ Planes up to 12" w/d, 6" thick
 - ◆ Steel extensions for support
 - ◆ Two steel blades - 16,000 RPM
 - ◆ Five Year Warranty - Machine
 - ◆ One Year Warranty - Motor
- \$ 332**



"Helping Hand" II Work Support

- ◆ Two Stands In One !!!
 - Eight Ball Bearings
 - 16" Steel Roller
 - ◆ Adjustable Height up to 48"
 - ◆ One-piece Cast Iron base
 - ◆ Supports up to 200 lbs.
 - ◆ Five Year Warranty - Machine
- \$ 47**

FIVE YEAR WARRANTY ON TRADESMAN PRODUCT



ALL PRICES INCLUDE PREPAID FREIGHT

THE FACTORY STORE

ORDER BY MAIL OR PHONE

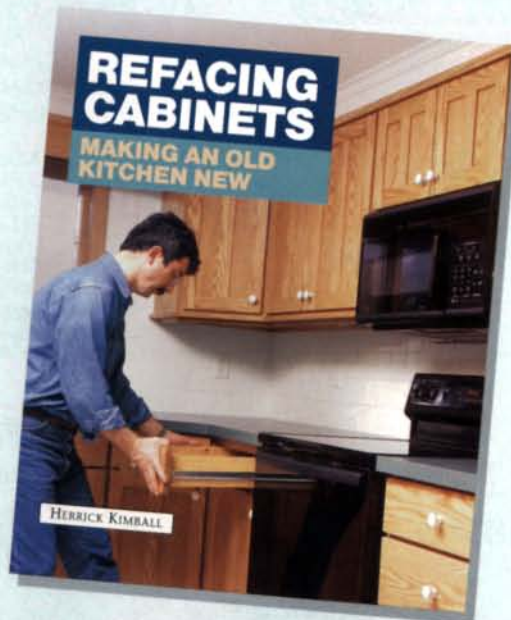
1-800-845-TOOL



P.O. Box 503
Agawam, MA 01001

READER SERVICE NO. 160

NEW... FROM THE PUBLISHERS OF FINE WOODWORKING



Refresh old cabinets with new materials.

There's never been a better time to think about refacing old cabinets. With the real wood veneers and other new materials available today, virtually anyone with basic skills can make any room look stunning and new. In *Refacing Cabinets: Making an old Kitchen New*, professional remodeler Herrick Kimball lets you in on all his refurbishing secrets. Learn to apply high-quality wood laminate and real wood veneers to look like solid wood and add new cabinet doors, door fronts and trim. Includes detailed illustrations, a full-color gallery of finished kitchens and sources of supply.

The professional results you get will make old cabinets new again!

SOFTCOVER, 160 PAGES, ISBN: 1-56158-197-6, ITEM 070307, \$19.95

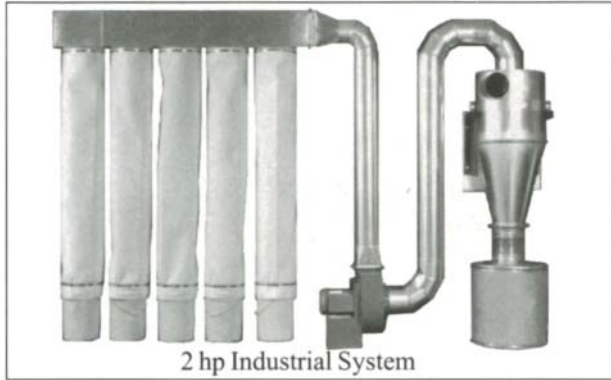


To order call
1-800-888-8286, operator W598.

Taunton Direct Inc.
63 S. Main St.
P.O. Box 5507
Newtown, CT 06470-5507

Taunton
BOOKS & VIDEOS
for fellow enthusiasts

Dust Collection



2 hp Industrial System

1.5 hp to 15 hp Industrial Systems

- 15 Years Experience in Air Filtration
- Custom Engineering & Technical Assistance
- Free Sizing & Duct Design
- Complete Ductwork Packages
- 100% U.S made

ONEIDA AIR SYSTEMS, INC.™

(315) 476-5151 FAX (315) 476-5044
1005 W. Fayette St. Syracuse, N.Y 13204

Email: oasinc@dreamscape.com www.dreamscape.com/oasinc

CALL or WRITE for a FREE BROCHURE

READER SERVICE NO. 37

Incredible Combination!

The new LX31 and
the totally
redesigned LT18.



Call now for a free video!

LAGUNA TOOLS

(800) 234-1976

(714) 494-7006

<http://www.lagunatools.com>

2265 Laguna Canyon Road
Laguna Beach, CA 92651

With this combination, you can make almost anything out of wood. The most economical way to set up a dream workshop and at the same time, save space and money!

READER SERVICE NO. 89

OWN THE COMPLETE HOME SHOP

Do the work of 10 tools
with one compact,
affordable machine

- Work on wood—and metal or plastic
- Easy and fun to use
- Built to last a lifetime



The perfect friend to relax with, the perfect partner to help get work done

SUPER SHOP 10 tools in 1

WOOD

34" Lathe
12" Table saw
12" Disc sander
Horizontal boring
Drill press
Router
Shaper

METAL

Lathe
Mill
Drill

Each machine includes:
✓ Premium Tool Pak
✓ Toll-free Helpline
✓ 2-year Warranty

FREE Info Pak

1-800-345-6342

Ask for operator FW711

or write **Smithy** Dept. FW711 PO Box 1517
Ann Arbor, MI 48106-1517

READER SERVICE NO. 122

FREE CATALOG!

Ready-to-finish furniture legs



Grain & Color Matched
Volume Discounts
Table Base Kits
Aprons & Stretchers
Money-Back Guarantee
Expert Advice

NEW! CHAIRS and BED POSTS



TOLL FREE 800-843-7405

Classic Designs

by MATTHEW BURAK

P.O. BOX 329-FW110, ST. JOHNSBURY, VT 05819

IN STOCK: FAST DELIVERY!

READER SERVICE NO. 106

Dovetail your next
drawer – in less
than 10 minutes...

including setup!

**only with the Keller
Dovetail System.**

All other jigs require endless
test cuts and wasted wood.

The Keller Dovetail System is
very different: it is easy, quick,
accurate and versatile.

Cut unlimited widths. Classic and variable
spacing. Angled and curved dovetails.
Box joints. Projects from jewelry boxes to
entertainment centers. Made in USA
since 1976. 20-yr. warranty.

VIDEO: \$8.95 + \$2 P/H

KELLER & CO. Dept. F117
1327 T Street, Petaluma, CA 94952
(800) 995-2456 (707) 763-9336

The Keller
Dovetail System
Simply the best.



READER SERVICE NO. 36

The Furniture Society holds its first conference



It can be challenging to design modern furniture and earn a living. This may not be the easiest career, but The Furniture Society's symposium this past July confirmed how exciting furnituremaking can be.

I was among nearly 300 furnituremakers, designers and educators who attended "Furniture '97: A Celebration of the Art of Furniture Making." The three-day conference, at the State University of New York (SUNY) at Purchase, included a long list of informative discussions.

There were many seminars on building techniques, the heady stuff of design, our role as furnituremakers and artists, and discussions on where we're headed. The conference gave me an opportunity to talk to many of my peers, including some very well-known furnituremakers.

Another highlight of the conference was



The Furniture Society exhibit in Purchase, N.Y. Pieces included (top photo from left): T-Bar Chair by Fred Crist; Adam and Eve Sharing an Hors d'Oeuvre Preceding Their New Career in Agribusiness by Clifton Monteith; ladder-back chair by Brian Boggs. Photo at left: chair and desk by Hank Gilpin and armoire by Tommy Simpson.

FROM THE PUBLISHERS OF FINE WOODWORKING MAGAZINE

The only magazine for inspiring furniture design.

INFLUENCES ON SHAKERS • BEYOND BASIC CABINETS • DESIGNERS' NOTEBOOKS

home furniture



BENT PLYWOOD BUILDS POSTURE

RISK-FREE INVITATION

Subscribe now and receive the next six issues for just \$32. (If you're not satisfied, we'll return your payment in full.)

To order, use the attached card, call us at **1-800-888-8286**, operator W627, or write

Taunton Direct, Inc.
63 S. Main St., P.O. Box 5507
Newtown, CT 06470-5507



Bold Color and Geometry Expand a Table's Horizons

BY HENRY TAYLOR



...making sure that the table is...
...the table is...
...the table is...



Striking designs



Classic styles



Fine details

To fuel your imagination, we've created a magazine devoted solely to fine furniture design. Inside you'll:

- find more examples of finished furniture than in any other magazine.
- learn about influential period styles and important elements of the artisan's designs.
- get intriguing angles on form and structure to use in your own projects.
- read articles by authors who are also the artisans.

Taunton
MAGAZINES
for fellow enthusiasts

One look and you'll feel the wheels of your imagination turning!

the exhibit "Survey of Contemporary North American Furniture" (see the photos on p. 130). For someone used to working in traditional forms, contemporary furniture can be perplexing: Is it art, sculpture or barely functional furniture? During the course of the conference, I visited the gallery several times and talked to some of the people whose work was displayed. The more I learned about the makers and what they were trying to accomplish, the more I began to appreciate their work.

—Garrett Hack, *Thetford Center, Vt.*

George Frank, 93

George Frank, an eloquent and curmudgeonly wood finisher who elevated his craft over a career of seven decades, died in his native Hungary on Sept. 2. He was two weeks short of his 94th birthday.

Frank left south Florida, where he had lived for 20 years, early in 1995 to return to Budapest after a brief and unsuccessful stint in a retirement home. His eldest daughter, Eva Frank, said he left the home complaining he couldn't live with "all those old people."

Frank first appeared on the masthead of *Fine Woodworking* in 1977 as a consulting editor, an association he continued well into 1994. He lectured widely about wood finishing in the United States and Europe. Ms. Frank said her father was active in his field until only recently.

As a 21-year-old, Frank moved to Paris in 1924 without knowing a word of French, his daughter said. He founded a finishing company called George Frank Vernissage (meaning French polishing). In 1939, he moved to New York City (without knowing a word of English) where he opened the George Frank Cabinet Corp.

Frank was a gifted storyteller. In *Adventures in Wood Finishing* (The Taunton Press, 1981), he regaled readers with tales of his job-site finishing adventures. He had no hesitation about using a client's swimming pool as a huge chemical stripping vat or sealing up a bank and pumping it full of ammonia fumes on the eve of its opening. He did what worked.

He leaves three daughters and five grandchildren, one of whom—Ms. Frank's daughter—is now a wood finisher in New York City.

—Scott Gibson, editor

Racing to glory



Gentlemen, start your belt sanders. Belt sander drag racing events are held year-round in many U.S. cities. Designs are often imaginative, like Belt Sander Barbie (below).



Three guys were sitting in Kiniski's Reef Tavern in Point Roberts, Wash., swapping stories about power tools. One of them, a cabinetmaker named Phil Lipton, recalled how as a 20-year-old apprentice he had set his unplugged belt sander on a countertop on a job site. His ever helpful client plugged in the machine without realizing that Lipton had left the trigger in the locked-on position. As they both watched, the belt sander tore across the counter, then the floor and, finally, into a freshly painted wall.

Before the three left Kiniski's that night, they decided lots of people would get a kick out of belt sanders that go fast. Lorne Nielson, the owner of a local lumberyard and one of the founding trio, hosted their first race two years later.

The event caught on. By the time the 1996 race rolled around, it included more than 30 competitors and attracted a crowd of 650. Nielson and Lipton have since formed the International Belt Sander Drag Race Association (IBDA as they call it) and are promoting sanctioned races all over North America. The organization has a new partner, Hardware Wholesalers Inc., and two corporate sponsors (Makita and Shop Vac). Winners at local events are in-

vited to the finals in Indianapolis next May.

Races don't take long. Two belt sanders connected to a common power source are lined up at one end of a 30-ft. chute. A switch is thrown. The belt sanders shoot down the track, their extra-long power cords trailing behind. A race ends abruptly with the machines crashing into a barrier.

The fastest recorded time is 1.42 seconds for a machine in the modified division. It's actually a Makita grinder attached to a belt sander body. In case you were wondering, the best combination is a coarse-grit belt (Lipton says 36 is the "grit of champions") and a heavy machine. The Makita or the Porter-Cable 4-in. by 24-in. machines seem to do best.

The organization can be contacted at 1649 Edwards Drive, Point Roberts, WA 98281; (360-945-3221).

There's even a Web page (www.iplus.net/ibda).



—S.G.

You Need Tree City USA

City trees add the soft touch of nature to our busy lives. Support Tree City USA where you live. For your free booklet, write: Tree City USA, The National Arbor Day Foundation, Nebraska City, NE 68410.

The National Arbor Day Foundation

A Cut **Above**,
But Priced **Below** Most Band Saws

S45 18" Band Saw

Added Value

- Tilting 20" x 20" cast iron table
- Quick set guides
- 1/8" to 1" blade capacity
- Adjustable rip fence

1-800-292-1850

For leasing information:
1-800-292-1837

In Canada call:
SCM/Cooper & Horton, LTD
(905) 670-5110



The S45 from MiniMax isn't your typical band saw. It's half the price of comparable 20" models. Yet it's packed with standard features for vibration-free rip cuts and dimensioning wood pieces to size. And when it comes to simplicity of operation and low maintenance, the S45 beats more expensive band saws head on.

MiniMax

2475 Satellite Blvd. Duluth, Georgia 30136
www.scmi-usa.com

READER SERVICE NO. 182

BED POSTS
IN STOCK
NO MINIMUM
VARIOUS WOODS
Free Color Catalog

A0802 PENCIL CANOPY
A0808 PLAIN POST
A0801 CANNON BALL
A0800 REEDED POST
A0807 RICE BED
A0803

Adams Wood Products™ LTD., L.P.
974 FOREST DR., DEPT. Q26
MORRISTOWN, TN 37814
TEL 423-587-2942 • FAX 423-586-2188

READER SERVICE NO. 42

Wide Selection of Wood Working Machines

MOVING SALE!

6" Jointer \$345
Air Drum/Brush Sander \$310
20" Planer \$1,225
10' Heavy Duty Table Saw \$1,075

LH-28-DS Auto Copy Shaper
28" Basic \$9600
28" Auto Feeding \$21,500
100" Two Head \$31,500

CS-18 18" Pneumatic Cut-Off Saw \$2550

SB-38 15" Belt Sander \$3350

Wide Belt Sander
24" x 60" CALL CALL
37" x 60" CALL CALL

TRANSPOWER

Tel: (626) 815-9897 • Fax: (626) 815-9807 • Order Desk: (800) 654-7702
CP Tools, Inc., 611 S. Duggan Ave., Azusa CA 91702

READER SERVICE NO. 61

North Bennet seeks alumni



Photo: Peggy Kutcher

North Bennet Street School graduates are looking for others to form an alumni association.

The North Bennet Street School in Boston is trying to track down far-flung former students for an alumni association. The school—which teaches woodworking, restoration carpentry and violin making, among other subjects—hopes the group will help the school attract new students

while making it easier for former students to contact each other.

If you're a graduate who's been out of touch for a while, you can drop a note to the school (39 N. Bennet St., Boston, MA 02113), call (617-227-0155) or e-mail your whereabouts (stuserve@nbss.org).

Made a good bed lately?

The Taunton Press is seeking photos of well-designed and well-crafted beds for an upcoming book. All submissions will be acknowledged and material that can't be used will be returned.

If you're interested, send photos (35mm slides or larger format transparencies) along with a description of your work to Joanne Renna, The Taunton Press, P.O. Box 5506, Newtown, CT 06470-5506. All materials must be received by Feb. 1.

Notes and Comment

We welcome news stories, anecdotes about the triumphs and pitfalls of woodworking, photographs of unusual work—anything that you think other woodworkers would like to know about. We pay for the material we use. Send submissions to Notes and Comment, Fine Woodworking, P.O. Box 5506, Newtown, CT 06470-5506.

**"2 TOOLS IN 1" NAIL IT!
STAPLE IT!
EZ-2 DOES IT ALL!**

- * USES STANDARD 18 GA BRADS
- * USES STANDARD 18 GA STAPLES

FEATURES

- ★ Use brads from 3/8" to 1-1/4"
- ★ Use staples from 1/2" to 1-1/8"
- ★ Easy loading magazine
- ★ Cushion grip handle
- ★ No mar double trigger safety
- ★ Easy depth adjustment

KIT includes carrying case with 2000 assorted brads, 2000 assorted staples, wrenches and oil.



"Quality You Can Afford"

Our customers have come to expect the best. The EZ-2 sets a new standard of excellence for the industry. Finally one tool that does it all - get the new EZ-2 and see for yourself.

<http://members.aol.com/airyez2>

AIRY SALES CORP
1425 S. Allec Street
Anaheim, CA 92805

AIRY
NAIL and STAPLE TOOLS

800-999-9195
562-926-6192 FAX 562-404-1400

READER SERVICE NO. 62

ODDS-N-ENDS TOOLS

1763 E. BUTLER AVE.

FLAGSTAFF, AZ 86001

TOLL FREE 1-888-779-6444

FAX 1-520-779-0499

HOURS- M-F 8-5 ARIZONA TIME
S 9-2 ARIZONA TIME
N CLOSED

DEWALT
High Performance Industrial Tools

FREE FREIGHT WITHIN CONTINENTAL U.S.
VISA, MASTERCARD, AMEX, DISCOVER
ERRORS SUBJECT TO CORRECTION
PRICES SUBJECT TO CHANGE AND AVAILABILITY

DEWALT TOOLS

DW101 3/8" HEAVY DUTY DRILL	\$59
DW130 1/2" SPADE-HANDLE DRILL	\$165
DW231 1/2" VSR DRILL	\$149
DW236 1/2" VSR DRILL W/KEYLESS CHUCK	\$159
DW245 1/2" VSR DRILL	\$149
DW251 DRYWALL SCREWDRIVER	\$85
DW257 DECK SCREWDRIVER	\$95
DW274 DRYWALL SCREWDRIVER	\$109
DW290 1/2" IMPACT WRENCH	\$185
DW377 7 1/4" WORM-DRIVE SAW	\$159
DW400 4 1/2" ANGLE GRINDER	\$68
DW402 4 1/2" ANGLE GRINDER	\$89
DW412 1/4" PALM GRIP SANDER	\$48
DW421 5" RANDOM ORBIT PALM SANDER	\$65
DW423 5" RANDOM ORBIT PALM SANDER	\$79
DW430 3" X 21" BELT SANDER	\$165
DW431 3" X 21" VS BELT SANDER	\$185
DW443 RT ANGLE RANDOM ORBIT SANDER	\$145
DW474 7" ANGLE GRINDER	\$149
DW610 1 1/2 HP ROUTER	\$147
DW621 2 HP VS PLUNGE ROUTER	\$219
DW625 3 HP PLUNGE ROUTER	\$259
DW705 COMPOUND MITER SAW	\$335
DW870 14" CHOP SAW	\$219
DW930 5 3/8" BLADE CORDLESS SAW	\$129
DW935 5 3/8" BLADE CORDLESS SAW	\$159
DW991KC-2 DRILL/RECIP SAW COMBO PACK	\$389
DW995KC-2 DRILL/RECIP SAW COMBO PACK	\$409

DEWALT KITS

DW106K 3/8" HEAVY DUTY DRILL	\$65
DW120K 1/2" RIGHT ANGLE DRILL	\$240
DW124K 1/2" JOIST & STUD DRILL	\$319
DW305K RECIPROCATING SAW	\$110
DW306K RECIPROCATING SAW	\$154
DW318K HEAVY DUTY JIG SAW	\$129
DW321K HEAVY DUTY JIG SAW	\$159
DW359K 7 1/4" CIRCULAR SAW	\$129
DW510K 1/2" HAMMERDRILL	\$199
DW514K 3/4" SDS ROTARY HAMMER	\$219
DW673K 7/8 HP LAMINATE TRIMMER	\$185
DW675K 3 1/8" PLANER	\$155
DW682K PLATE JOINER	\$189
DW930K 5 3/8" BLADE CORDLESS SAW	\$199
DW935K 5 3/8" BLADE CORDLESS SAW	\$229
DW936K 5 3/8" BLADE CORDLESS SAW	\$239
DW937K CORDLESS RECIPROCATING SAW	\$250
DW938K CORDLESS RECIPROCATING SAW	\$278
DW995K CORDLESS DRILL/DRIVER	\$215
DW997K DRILL/DRIVER/HAMMERDRILL	\$229

DEWALT SPECIAL KITS

DW972K-2 CORDLESS DRILL/DRIVER	\$179
DW972KS-2 SAW & DRILL/DRIVER COMBO	\$274
DW991K-2 CORDLESS DRILL/DRIVER	\$189
DW991KS-2 SAW & DRILL/DRIVER COMBO	\$339
DW995KS-2 SAW & DRILL/DRIVER COMBO	\$349
DW996K-2 DRILL/DRIVER/HAMMERDRILL	\$229
DW952K-2 CORDLESS DRILL/DRIVER	\$129

DEWALT NEW MACHINERY PRODUCTS

DW708 DOUBLE BEVEL SLIDING COMPOUND MITER SAW	\$675
DW733 12 1/2" PORTABLE THICKNESS PLANER	\$449
DW744 PORTABLE TABLE SAW	\$549
DW788 20" VARIABLE SPEED SCROLL SAW	\$485

YOUR
DEWALT
HEADQUARTERS

\$50 REBATE
Deluxe Edition 14" Band Saw with enclosed stand, includes mobile base, 18" Rip Fence and Cool Blocks™ Model #28-280Z

\$50 REBATE
Delta Sanding Center® Belt/Disc Sander. Model #31-280

\$50 REBATE
Deluxe Edition Contractor's Saw® with 30" Unifence® includes table board and legs, cast iron wing and 50-tooth combination blade. Model #34-445Z

\$50 REBATE
15" Planer with free stand and extension wings. Model #22-675Y



\$50 REBATE
Delta C-3 18" Variable Speed Scroll Saw. Model #40-650

\$50 REBATE
Delta Contractor's® Saw with Jet-Lock® Fence Model #34-444 (10" Contractor's Saw® II is not part of rebate offer.)

The check's in the mail.



Every tool you see here comes with a \$50 check in the mail from Delta. Opportunities like this don't come along every day. So if you've been wishing you had Delta Quality in your shop—you might want to get shopping, now. (August 1 through December 31, 1997.) You'll also find that we've snuck in a few extras on our 15" Planer and the Deluxe Editions of the Contractor's Saw and 14" Band Saw. Machines that will still be proving their worth for years to come. Call for the name of your nearest participating Delta dealer. Delta International Machinery Corp., 800-438-2486. www.deltawoodworking.com

Proud sponsors of *The New Yankee Workshop* on PBS.



INDEX TO ADVERTISERS

A & I Supply	37	Gilliom Manufacturing	40	H. H. Perkins Company	104
Abbey Machinery & Supply	105	Gilmer Wood Company	103	Pootatuck Corporation	127
Adams Wood Products	133	Goby's Walnut Wood Products	103	Porta Mate	121
Airware America	40, 100	Thomas Golding School	102	Porter Cable	123
Airy Sales Corp.	134	Good Hope Hardwoods	100	Power Tool Specialists	128
Amana Tool Company	14	Gougeon Brothers	99	Powermatic	30, 120
American Association of Woodturners	116	Granberg International	113	Racal Health & Safety, Inc.	43
Arrowmont School of Crafts	127	Groff & Hearne Lumber	38	Rare Earth Hardwoods	99
Art Essentials of New York	100	Hearne Hardwoods, Inc	118	ReiTech	28
Ashman Technical Ltd.	99	HerSaf/Safranek	7	Ridge Carbide Tool	99
Baklund-Hellar Inc.	30	Hickory Frame Corporation	98	Ronk Electrical Industries	117
Ball & Ball Hardware	12	Hida Tool	116	Ross Industries	105
Barr Specialty Tools	99	Highland Hardware	113	Ryobi America Corp.	39
The Beall Tool Co.	101	Historic Woodworks	103	Safety Speed Cut	101
Berea Hardwoods	30	Hitachi Power Tools USA	139	Sand-Rite Mfg. Co.	38
Better Built Corp.	107	Home Furniture Magazine	131	SandDevil	102
Blue Ox Hardwoods	101	Horton Brasses	40	Sandy Pond Hardwoods	99
Blue Tornado	104	HTC Products, Inc.	118	Scherr's Cabinet & Doors	105
Boeshield T-9	99	Hut Products For Wood	42	School Of Classical Carving	102
Bosch Power Tools	21	Imported European Hardware	117	Schreiber Tool	98
Bottom Line	106	Incra Rules	105, 107, 109	Senco Products	42
BrandNew	102	Indust. Formulators of Canada	101	Shaker Workshops	20
Brumco	102	Innovation Specialties	98	Shapes & Surfaces	12
Paul Bunyan Hardwood Center	121	International Tool Corporation	27	Shopbot Tool	99
CMT-USA	118	Ironwood Mill Right	40	Smithy	129
CP Tools	133	Jamestown Distributors	99	Southern Arch. Woodwork	102
Calif. Contemporary Craft Guild	102	The Japan Woodworker	120	Southern Union Comm. College	102
Cane & Basket	18	Jesada Tools	11	St. James Bay Tool	101
Carter Products	38	Jesse Jones	104	Stanley Works	41
Center for Furniture Craftsmanship	102	Jet Equipment	2-3	Sunhill Machinery	109
Certainly Wood	99	CP Johnson Lumber	100	Syracuse Industrial Sales	111
The Chippendale School Classic Designs	127	L.L. Johnson Lumber	98	SystemOne Modular Truck Equip.	121
by Matthew Burak	129	Jointech	137	Talarico Hardwoods	101
Classified Ads	102-103	Bob Kaune Antique Tools	98	Target Enterprises	100
Clayton Machine Corp.	107	Keller Jig	129	Taunton Press	98 A-L
Co Matic Machinery	111	Kelly Tool Works	98	Tech Mark Inc.	20
College of the Redwoods	101	Klingspor Corporation	20	Tech-Wood Inc.	103
Colonial Times Clock Company	100	Kreg Tool Company	42	Tenryu America, Inc.	7
M.L. Condon Lumber	117	Kremer Pigments	101	The Tool Chest	101
Conover Lathes	137	L.R.H. Enterprises, Inc.	43	Timberking	127
Conover Workshops	102	Laguna Tools	14, 111, 121, 129	Tool Crib of the North	115
Constantine	18	The Landing School	101	Tool Merchant	100
J.C. Conway Lumber	7	Peter Lang Co.	100	Toolbox Christmas	99
Craft Supplies	14	S.A. LaRose, Inc.	101	Toolguide Corporation	120
Craftsman Power Tools	19	Launstein Hardwoods	38	Tools On Sale	18, 124-125
Critter Spray Products	42	Lee Valley/Veritas	13	Toolz	9
DML/Primark Tool Group	113	Leigh Industries	117	Tormek USA	121
J.B. Dawn	98	LeNeave Supply Company	116	University of Rio Grande	42
Delmhorst Instrument Co.	118	Lie-Nielsen Toolworks	12	Vacuum Pressing System	40
Delta International	23, 127, 135	Lignomat Moisture Meters	117	Van Dyke's Restorers	107
Devine Marketing Group	127	Linden Publishing	30	Vass, Incorporated	120
DeWalt Power Tools	25, 29, 33	MLCS	18	Vega Enterprises	128
Diefenbach Benches	98	Makita U.S.A.	119	Viel Tools Inc.	116
Dunham Hardwoods	98	Manny's Woodworker's Place	106	WGB Glass	104
Dust Boy, Inc.	100	Marling Lumber Company	113, 118	Wade Manufacturing	99
Eagle Woodworking	98	Martin Donnelly Antique Tools	98	David Warren Direct	102
Ebac Lumber Dryers	102	McFeely's Square Drive	42	West Penn Hardwoods	98
Econ-Abrasives	105	Mercury Vacuum Presses	99	Wetzler Clamp Company	101
Edgecraft	117	Mesa Vista Design	121	Wilke Machinery Co.	43
Electrophysics	38	Michael Dunbar	102	Williams & Hussey	111
Engraving Arts	100	Midwest Dowel Works, Inc.	101	Robert Wilson Co.	116
Eubank, Inc.	99, 101	Miero Plane	18	Winkler Wood	103
Fein Power Tools	12	Mini Max USA	133	Winterwoods	101
Felder Machinery	7	W. Moore Profiles	107	Wood Mark	120
Fine Tool Journal	98	North Bennet Street School	100	Wood Write Ltd.	18
First Choice Steel Buildings	100	Northend Hardwoods	99	Wood-Kote	109
Flamingo Specialty Veneer	101	Northern Hardwoods	100	Wood-Mizer	116
Ford Truck	164	Northwest Timber	100	Woodcraft Supply 7, 42, 31, 127,	136
Forrest Manufacturing	35	Norwood Sawmills	98	Woodline Arizona	106
Forte Design Company	12	Nyle Standard Dryers	113	Woodmaster Power Tools	31, 107
Franklin Ace	137	Oakwood Veneer	100	Woodsmith Store	40
Franklin International	31	Odds-N-Ends Tools	134	Woodworker's Depot	14
Freud	15	Old Village Paint	101	Woodworker's Dream	98
Fuji Industrial Spray Equip.	128	Old World Machine	109	Woodworker's Hardware	111
Furniture Designs	100	Oneida Air Systems	129	Woodworker's Source	98
Garrett Wade Company	20, 107	C. R. Onsrud Inc.	30	Woodworkers Discount Books	137
		Packard WoodWorks	100	The Woodworkers' Store	113
		Paxton Hardware Company	101	Worcester Center for Crafts	120
		Peck Tool	98		

**Trade
your coat
and tie for a
WOODCRAFT®
shop apron!**

Now you can share your
passion for woodworking
with others while building
your own business. Invest in
your future by joining our
highly motivated team!

For information on investing in your
own Woodcraft store, please contact:
Bill Carroll, Franchise Director
Woodcraft Franchise Corporation
5300 Briscoe Road • PO Box 245
Parkersburg, WV 26102-245
Call Bill Today: 304-422-5412!

READER SERVICE NO. 204

Franklin ACE Hardware

TOLL FREE 800-662-0004

FAX 757-562-2577 Visa, MasterCard, Discover, American Express, Free Freight in Continental USA, Error Subject to Correction, Mail Order Hours: M-F 8-6 EST, SAT 8-5 EST
115 East Second Ave. Franklin, VA 23851
Visit our web site
<http://www.franklinace.com/>

\$139



PORTER-CABLE

- 9862 NEW 12V Cordless Drill Kit 2 Batt Charger and Case.....\$179
- 9872 NEW 14.4V Cordless Drill Kit 2 Batt Charger and Case.....\$189
- 333 R/O Sander.....\$72
- 352VS 3x21 Belt Sander.....\$164
- 693 1-1/2HP Plunge Router.....\$169
- 556 Plate Joiner.....\$139
- 7310 Laminate Trimmer.....\$139
- 347 7 1/4 Circular Saw Kit.....\$124
- 7539 3-1/4HP Plunge Router.....\$274
- 9444 Profile Sander Kit.....\$108
- 97366 6" R/O Sander Kit.....\$149
- BN125 18ga Brad nailer Kit.....\$89
- BN200 18ga Brad nailer Kit.....\$139
- DA250A 15ga Finish nailer.....\$229
- FR350 NEW Full Round Head Framing Nailer.....\$308

\$189



BOSCH

- 1657 7-1/4 Circular Saw w/brake.....\$134
- 1604A 1-3/4hp Router.....\$140
- 1613EVS 2HP Plunge Router.....\$195
- 1615EVS 3-1/4HP Plunge Router.....\$285
- 1608 Laminate Trimmer.....\$102
- 1609AKX Deluxe Installers Kit.....\$234
- 1584VS Jig Saw.....\$139
- 1587VSK Top Handle Jig Saw w/case.....\$149
- 3725DVS 5" R/O Sander.....\$149
- 3727DVS 6" R/O Sander.....\$154
- 1276DVS 4x24 Belt Sander.....\$229
- 1274DVS 3x21 Belt Sander.....\$164
- 1003VSR 3/8" Drill.....\$78
- 3054VSRK 12V 3/8" Cordless Drill.....\$179
- 3310K 12V 3/8" T-Handle Drill.....\$179
- 3610K New 14.4V Cordless Drill.....\$189
- 1634VSRK New Recipro Saw.....\$189
- 3294EVS In line Grip Jig Saw.....\$124
- 3915 New 10" Sliding Compound Miter Saw.....\$580

\$589



JET

- JWTS-10JF 10" Table Saw.....\$589
- JET Mobile Base.....\$89
- JTAS 10 Titing Arbor Saw W/ XACTA FENCE SYSTEM, FREE TABLE AND LEG EXTENSION.....\$1,399
- JET Mobile Base.....\$189
- JWTS-10CWPFX NEW 10" Table Saw with XACTA 52" Fence, ext. wings and legs....\$799
- JPM-13 Planer Molder.....\$799
- DC-650 Dust Collector.....\$229
- DC 1200 Dust Collector.....\$449
- IWBS14CS 14" Band Saw.....\$569
- JET Mobile Base.....\$89
- JDP17MF 17" Drill Press.....\$429
- JGCSX 6" Joiner.....\$489
- JET Mobile Base.....\$89
- JWS18HO Shaper.....\$510
- JET Mobile Base.....\$89
- DHC15T4N Air Compressor.....\$349

\$388



SENCO

- SN70 Framing Nailer 2"-3-1/2".....\$449
- M2+ Rugged Duty Stapler.....\$365
- SN60 Framing Nailer.....\$449

HITACHI

- C8FB2 8 1/2" Sliding Compound Saw.....\$489
- C10FS 10" Sliding Compound Saw.....\$739
- C10FC 10" Miter Saw.....\$199
- EC12 2HP Vertical Stack Compressor.....\$279

READER SERVICE NO. 140

JoinTECH

Presents the CabinetMaker's System



JoinTECH
P.O. Box 790727
San Antonio, TX 78279

TOLL FREE
(800) 619-1288
TEL: (210) 377-1288
FAX: (210) 377-1282

Call, Write or Fax for a Free Brochure and Special Introductory Offer Details.

CALL (800) 619-1288 FOR A FREE DEMONSTRATION VIDEO

This one can do it all. The CabinetMaker's System invented by JOINTECH, whose Dovetail Machine has already been recognized as the Best and Easiest to use, can perform all operations in Cabinet and Furniture making.

With the Cabinet Maker's System, you can make raised panels, rails and stiles, tongue and groove, do face frame construction, drawers, edgework and much, much more. It includes everything you need to make 48 beautiful dovetail and box joints.

JOINTECH's Cabinet Maker's System can do it all! It is simply the best investment in high quality performance and at a very affordable price.



One of 12 new JoinTECH projects built using the Cabinet Maker's System.

READER SERVICE NO. 128

THE CONOVER LATHE



Thinking of moving up? Need a machine with greater length, more horsepower and greater rigidity? Most of our customers have exceeded the capacity of smaller machines.

Heavy cast iron construction, precisely machined, produces a lathe with 16" swing. With user supplied 2"x6" timbers, this lathe can be sized to fit your workshop or project. Excellent for faceplate or spindle work. Guaranteed to please and compliment the craft of even the most discerning of craftsmen.

The Conover Lathe. A long tradition of pride in American-made quality.



CONOVER

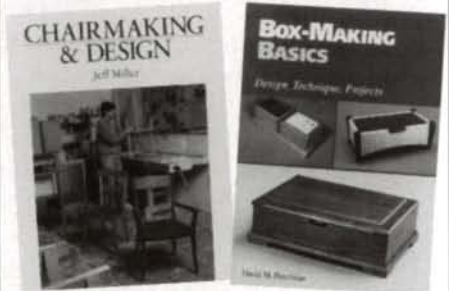
(440) 350-4545 • (800) 433-5221

www.conover-lathe.com
P.O. Box 418, Mentor, OH 44061

READER SERVICE NO. 654

Woodworking Books for LESS!

Woodworkers' Discount Books



BOOKS MAKE GREAT HOLIDAY GIFTS

NEW ADDITIONS ORDER NOW!!

- Applying Finishes Flexner.....\$19
- Box-Making Basics Freedman.....\$17
- Build Your Own Entertainment Centers Schultz.....\$19
- The Handplane Book Hack.....\$29
- Build Your Own Router Tables McPherson.....\$19
- Building Arts & Crafts Furniture Kemner & Zdila.....\$18
- Router Joinery Rogowski.....\$21
- Carving on Turning Pye.....\$14
- Chairmaking and Design Miller.....\$21
- Easy-to-Build Shelving and Storage Snyder.....\$16
- Encyclopedia of Joint Making Noll.....\$20
- Woodcarver's Guide to Furniture Design Graves.....\$24
- Furniture-Making from the Inside Out Lawrence.....\$17
- Shaker Style Wood Projects Sunday.....\$18
- Making Desks and Bookcases Engler.....\$18
- Porches, Decks and Outbuildings.....\$13
- Woodcarving for Beginners.....\$14
- Building Door and Entryways Weis.....\$18
- Table Saw Techniques (Revised Edition) Cliffe.....\$17
- The Wood Sanding Book Nagyszalanczy.....\$17

- Over 400 books, videos, plans
- Discounts up to 20%
- Free same-day shipping (3 or more items)

Woodworkers' Discount Books

800-378-4060

735 Sunrise Circle, Woodland Park CO 80863
Inquiries 719-686-0756, Fax 719-686-0757
e-mail: orders@discount-books.com
WWW Catalog: www.discount-books.com

Free Catalog

READER SERVICE NO. 184

Treasure of the Sierra Madre

In my chair shop in Tennessee, I try to minimize tools, especially power tools. One reason is economy. Another is my stubborn rejection of the massive tool-marketing establishment. The third, and perhaps the most compelling, is my preference for simple tools and ancient hand-tool processes. Last year, while teaching chairmaking in northern Mexico, I met a violinmaker who radically altered my idea of minimalist woodworking.

The Tarahumara are one of four aboriginal tribes living in the remote canyon lands of the Sierra Madre mountain range in the Mexican state of Chihuahua. The forest is life for the Tarahumara. They have retained much of their original language and culture, despite centuries of subjugation by Spanish soldiers and zealous missionaries, by moving deeper and deeper into the rugged canyons. More recently, a high-stakes drug trade and rampant logging have pushed these people to the edge of survival.

My three students lived four or five miles outside the sawmill town of Agua Azul (population 100), each in a different direction. Occasionally, I accompanied a student to his home after class, visiting other crafts people along the way. Setting out on these journeys, I knew little of where we were headed or what to expect when we arrived, and it was a challenge keeping up with people known as the long-distance runners of Mexico.

The high elevation makes the winters very cold and the summers very hot, but September is glorious beneath a crystal blue sky. The first few miles out of Agua Azul, we threaded paths through dry, rocky terrain and pine forests.

Mixed with the pines were cedar, madrone, oaks and a tree called fresno, which I saw only rarely. From time to time, the forest opened up to reveal large valleys, green from the recent drought-breaking rains and gold from ripe corn. Even the most affluent Tarahumara are subsistence farmers. They do not congregate in villages but are scattered among the canyons and along the riverbanks in small log or adobe homesteads, many with split-rail fences and split-plank roofs.

I learned to be patient on these outings, as my guides must have been with me. A student and I would approach a home, then stand back quietly, waiting to be noticed. There was little eye contact in conversation. In lieu of a handshake, one man's palm simply slid lightly past another's.

After purchasing some baskets on one of these outings, I followed Primitivo, my student, a few hundred yards upriver to another dwelling. He entered and returned moments later with a violin. The maker wasn't there, but Primitivo showed me his complete tool kit: a knife, a tapered boring tool for drilling peg holes (with a T-handle made of horn), an ice pick, an adze, a froe and a chisel made from a ground-down bolt. I was amazed to find no saw. Although the violin was crude by our standards, it certainly didn't look like it was made with a bolt.

The front and back had been hewn with the adze to the traditional arched shape of a violin, and the curved f-holes were cut with the knife. All the parts were pine, except for the neck, which was made of fresno and had a nicely carved scroll at the end. I was interested in buying it, but Primitivo told me to wait.

The next evening, a Tarahumara man, about 60 years old,

walked into the woodshed that served as our shop. He wasn't dressed in the traditional garb of headband and loincloth, like some of his peers, but in the mestizo clothing worn by most of the younger men. A few words were passed in their own language between my students and the stranger, but nothing was said to me. A little later, Primitivo asked if I wanted to make music. He then disappeared behind the shed with the newcomer. It took me a few seconds to realize that this was the violin maker we had been expecting since early that morning. In the back of the shed, I was introduced to Mariano, who unfolded a worn jacket to reveal the instrument I had seen the day before.

I had read about Tarahumara violins, about how the Spanish had introduced them in the 17th century and how they feature prominently in festivals. I tried to persuade Mariano to play, but he said there was no tequila or tezgüino, the fermented corn drink central to their culture.

I bought the violin, and since returning home, I have had the instrument played by a concert violinist and a bluegrass fiddler and lots of musicians in between. It has good tone, but a very strange sound, maybe due to its odd size. The body is as big as a viola, but the neck is shorter than that of a violin. The strings, of unknown origin, stand unusually high off the fingerboard.

On the evening I bought the violin, I broke a rule that I have kept while working in developing countries:

give away nothing but knowledge. I gave the violinmaker a coping saw, which I knew he could put to good use in shaping the curved neck, top and back.

His eyes lit up as he looked straight at me and smiled. A moment later, he was back to his old reserved self. As he walked away, he exchanged a few words of Tarahumara with the others. It sounded like they were whispering to the wind.

Curtis Buchanan makes Windsor chairs in Jonesborough, Tenn., and is a founding instructor of Good Wood Alliance's Greenwood Furniture Project in Honduras.



HITACHI® POWER TOOLS

The DS13DV2BH 12 Volt Cordless Drill Kit

Toughness counts, so we used the highest quality design and components to build a drill that will last.

A high performance rare earth magnet motor with cooling fan keeps the drill working even in overload situations, and a 1/2" chuck is designed for the most extreme industrial applications.

A powerful 12 volt, 2.0 amp hour battery – the product of advanced technology – provides 54% more run time.

And planetary gears will give you all the torque you need.

Drill straight and steady with a 22 position clutch that lets you adjust the torque to fit any application.

And use the stepless variable speed control for total command when working with intricate applications.

**CALL
1-800-546-1666
FOR YOUR NEAREST
HITACHI POWER TOOL
DEALER.**

SPECIAL OFFER FROM HITACHI!

When you buy our DS13DV2BH 12 volt cordless drill kit (comes with drill, two batteries and a case), we'll give you the drill holster absolutely FREE! That's a \$15 retail value. Call today . . . limited time offer while supplies last.

True Grit



Belt sanders do a lot more these days than level up tabletops. In a growing number of places, this indispensable woodshop fixture doubles as a drag racer, and the crowds love it. Modified sanders include speed machines like The Grinder (left). It's the reigning champ on the International Belt Sander Drag Race Association circuit and was caught here just moments before a race in Point Roberts, Wash., last year. The grinder's proud owner is Steve MacKenzie (above). For more, see p. 132.

