BUILD THIS FIRST-RATE BENCH FOR YOUR SHOP

Page 46

SEPTEMBER 1990 • ISSUE NO. 37
Display until September 11

1990 BUILD-A-TOY™ CONTEST WINNERS
See page 54

LOG TO LUMBER
Machine found wood into usable stock

CRAFT A CLASSIC
4” TRY SQUARE for less than $4

PLEASING PROJECTS
Toy tractor
Toddler’s learning board
Turned weed pots
Scrollsawned necklace
Carved coyote
ZAR. Don't let anything else come between you and great wood.

Whether you're restoring a family heirloom or creating one, you're looking for the ideal: a do-it-yourself job that looks professional.

Which is exactly what ZAR® wood stains are all about. ZAR brings wood to life while it brings confidence to you. It wipes on easily. Penetrates evenly. Colors consistently. And covers more surface than leading competitors. Time after time after time.

The ZAR family of fine products is at your hardware store, paint store, home center or lumber yard. Don't put anything else between you and timeless wood.

For a free booklet on how to refinish wood, call 1-800-UGL-LABS

The fine line between you and beautiful wood.

ZAR WOOD STAIN
116 CHERRY

DANGER! HARMFUL OR FATAL IF SWALLOWED
SKIN IRRITANT - COMBUSTIBLE
See caution on back pane

1 Qt. (946 ml)
Test Our Bits & Cutters
At no obligation with our no-risk 30 day trial

Order the tool you want to try out. If it is not exactly to your satisfaction, send it back and we will replace it or immediately refund your money. You pay only a small non-refundable shipping charge on items returned.

Discount prices on industrial quality carbide tipped router bits & shaper cutters

FREE
Complete catalog sent upon your request

HORIZONTAL PANEL RAISING
5" O.D. 3/4" Bore
3mm Carbide

We stock more than 50 types of 3-wing shaper cutters

Top of the line
Nicholson
10" GUTT
$30.99
10" AR
$18.10
10" LRT
$26.89
Retail values up to $60

NEW PRODUCTS
2-piece Stile & Rail -- $69 a set

CUTTER ORDER # CUT DIA. CUT L. SNK D. PRICE
ST206 1/4 3/4 1/4 5.50
ST210 3/8 1 1/4 5.50
ST213 1/2 1 1/4 5.50
ST215 3/8 1 1/4 5.50
ST213E 1/2 2 1/2 14.00
ST216 5/8 1 1/4 5.90
ST219 3/4 1 1/4 8.50
ST425 1 1/4 1/2 8.80

Straight
FT210 3/8 1 1/4 6.50
FT213 1/2 1 1/4 6.50
FT413 1/2 1/2 1/2 6.50

Dovetail
DV210 3/8 3/8 1/4 4.60
DV213 1/2 1/2 1/2 4.60
DV413 1/2 1/2 1/2 4.60
DV19 3/4 7/8 1/2 6.50
DV425 7/8 1/2 7.50

Core Box
CB206 1/4 1/4 1/4 8.00
CB210 3/8 5/16 1/4 9.00
CB213 1/2 3/8 1/4 11.00
CB219 3/4 1/4 1/4 14.00
CB425 1 5/8 1/2 16.00

45° Chamfer
CH213 1 3/4 1/2 12.00
CH216 1 1/4 1/4 13.00
CH422 1 1/2 7/8 1/2 18.00

Rabbot
RB232 1 1/4 1/2 1/4 12.00
RB432 1 1/4 1/2 1/2 12.00

RADIUS
CR203 1 1/2 3/8 1/4 10.00
CR205 3/4 3/4 1/4 10.00
CR206 1 1/2 1/4 1/4 11.50
CR210 3/8 5/8 1/4 14.00
CR213 1/2 1/2 3/4 1/4 16.00
CR419 3/4 1 1/2 20.00
CR425 1 1/2 1 2/2 32.00

Roman Ogee
RO204 1/4 3/4 1/4 15.00
RO206 1/4 3/4 1/4 16.00
RO406 1/4 3/4 1/4 18.00

Cove
CV203 1/8 3/8 1/4 11.00
CV206 1/4 1/2 1/4 11.00
CV210 3/8 5/16 1/4 12.00
CV213 1/2 3/8 1/4 13.00
CV419 3/4 1/4 1/4 25.00

FREE Handy plastic calipers with any order
Call us toll free with your credit card order today
1-(800) 782-6629 or 1-(619) 535-8940

Call us anytime with your questions. Tell us what you need. We are always happy to help good woodworkers become even better.
Hours 7 a.m. to 6 p.m. Pacific Coast Time Monday - Friday.
SAME DAY SHIPPING Shipping is FREE for orders over $60 and is only $2 for smaller orders.

SAME DAY SHIPPING Count on us!

AmMax
Precision tools for skillful woodworkers
Send your check to: 12655 Danielson Court, Suite 310
P.O. Box 520, Poway, CA 92064
Member, Better Business Bureau
Life is what you make it... we help make it better.

There's nothing more satisfying than stepping back and looking at the project you've just completed. It's exactly the way you had dreamed it would be... the wood, the finish, the detail. Everything is right. Some folks might say that it takes a master to complete a project like that... but you know it's just a matter of having the right tool. But more than a power tool, The Hawk is an investment in yourself and your family.

Because of the safety and precision built right into every Hawk, the entire family can be a part of your hobby. From creating simple projects like puzzles and country crafts to finely detailed marquetry inlays, the Hawk is the tool to build your workshop around.

Don't wait another day to find out how to make it better for you and your family with the Hawk Precision Scroll Saw.

There's a full range of styles and sizes... one to fit your family and workshop. Call today and we'll rush you a free Fact Kit with all the details telling about The Hawk.

rbi industries, inc.
PO. Box 369
1801 Vine Street • Harrisonville, MO 64701
Call toll free:
1-800-535-8665

YES! Please send me a FREE Fact Kit giving me all the details on how I can make things better with the famous Hawk Precision Scroll Saw.

NAME

ADDRESS

CITY  STATE  ZIP

PHONE

Another quality rbi product.

SW990
Better Homes and Gardens.

WOOD

THE #1 MAGAZINE FOR HOME WOODWORKERS

This issue's cover wood grain: yellow birch

SEPTEMBER 1990 ISSUE NO. 37

WOOD PROFILE

Cottonwood: The Great Plains' guidepost 31
During the westward expansion, a cottonwood grove signaled nearby water. Today, the same wood means good lumber at a great price.

COLLECTOR'S EDITION

Pocket-sized try square 33
You can pay a lot more if you want, but here's a homemade tool that gets the job done in fine style... for about $4.

CRAFTSMAN CLOSE-UP

New Mexico mountain menagerie 36
From Los Angeles to New York, galleries clamor for the cottonwood creatures Max Alvaréx sculpts in his studio near Santa Fe.

Warm up to Southwest 40
What's all the fuss about Southwest designs, anyway? Read why some experts think this style will be around for years to come.

TOOL BUYMANSHP

Woodworking vises 42
A good woodworking vise should last a lifetime—or two. To help you purchase wisely, we tested 18 models in our shop.

Labor-of-love workbench 46
This design from WOOD magazine has it all: a simple-to-build base, three worktop suggestions, optional doors and drawers, a bench-dog-and-vise system, plus a nifty panel jack. And, it disassembles easily.

BUILD-A-TOY™ CONTEST

And the winners are... 54
... kids across the U.S. Thanks to a good-hearted core of readers, we will give 580 terrific handmade toys to the Toys for Tots program.

Blue-ribbon tractor 56
Our judges fell in love with Jack Rowland's blemish-free finish, and we think you'll like his down-to-earth design, too.
Board of education 58
We know you’ll enjoy building and giving this toy. It teaches colors and shapes.

SHOP-TESTED TECHNIQUES
Transform found wood into usable stock 60
Come with WOOD magazine staff members as they learn how to transform a downed tree into top-grade stock for their own shops.

Turned weed pots 64
Join Rus Hurt, a professional woodworker from Wisconsin, and follow along at his side for a fail-safe turning lesson.

The lowdown on Asian plywood 68
Thanks to a reader tip, we now have information to pass along about paper-thin hardwood veneers that barely cover imported plywood.

How safe are your woodworking habits? 70
Let’s see how quickly you recognize dangerous woodworking situations we set up in our shop. Hope you pass the test with flying colors!

The lure of the laser 74
Adding laser details to wood can really dress up a project. Here’s your chance to learn how easily craftsmen accomplish the task.

WOODEN NECKLACE
Autumn delight 76
Whip up this design on your scrollsaw just in time for someone’s favorite fall outfits.

DEVELOP YOUR SHOP SKILLS
Router basics 77
Don’t miss these five basic tips that will help you make better use of your router.

CARVING PATTERN
Carve a coyote 78
Max Alvarez, the same carver featured on page 36, shares the pattern for one of his hottest-sellers. Then, carve our howling friend in one of two sizes.

SHORT-SUBJECT FEATURES
Editor’s Angle 7
Ask WOOD 82
Talking Back 8
Great Ideas for Your Shop 86
Tips from Your Shop (And Ours) 16
Yesterday’s Tools 87
Products That Perform 26
Tool-Industry Insider 88
Toy Contest Winners 80
Wood Anecdote 90
Workshop Emergency Chart 96
CONTROL THE SPEED OF YOUR ROUTER - ROUT AT THE SPEED THAT GIVES THE BEST RESULTS WITH THE WOOD AND BIT YOU ARE USING!

NOW ONLY $39.95 Order item #200

FEATURES:
- Speed Adjustable from Full Speed to 0 RPM
- Full Horsepower and Torque at All Speeds
- Go Back and Forth from Any Pre-Set Speed to Full Speed at the Flip of a Switch
- Works with All Routers 3/4 HP or Less
- 120V 15 Amp
- Gives Your Router a Feature Only Available on Routers Costing Hundreds of Dollars!
- Less Tear Out
- Feed at Comfortable Rate
- Better, Safer Results with Large Diameter Bits
- Less Wear on Bits
- Less Noise and Softer Starts at Lower Speeds

EASY TO USE - Simply plug in Speed Control and plug your router into the Speed Control - turn dial for best results. (Speed Control has a clip that can be worn on your belt or hung on wall or left loose.)

- Reduces speed electronically without reducing torque; electronic feed-back maintains speed by increasing voltage to motor as load increases.

CARBIDE TIPPED ROUTER BITS

PROFESSIONAL PRODUCTION QUALITY GUARANTEED WHEN ORDERING ANY THREE OR MORE DEDUCT $1.00 EACH. ALL PRICES ARE POSTAGE PAID

ITEM NO.     BEST CUT BEST PRICE   DESCRIPTION   ANGLE/EPHRAIMOS CIRCLE/ DIAMETER   LARGE DIA.   CUTTING LENGTH   SHANK SIZE   PRICE
-----       ----------  -----------------  ---------------  -----------  -------------  -----------  ----
#601       1"    Spiral Cutter   1/4"  1/4"  1/4"  $3.00
#602       1/2"  Spiral Cutter   1/8"  1/8"  1/8"  $12.00
#603       5/8"  Spiral Cutter   1/4"  1/4"  1/4"  $12.00
#604       1"    Spiral Cutter   1/2"  1/2"  1/2"  $24.00
#605       1-1/2" Spiral Cutter   5/4"  5/4"  5/4"  $39.00
#606       2"    Round Over   5/8"  5/8"  5/8"  $11.00
#607       1-1/2" Round Over   7/8"  7/8"  7/8"  $22.00
#608       3"    Round Over   1"  1"  1"  $15.00
#609       3-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $17.00
#610       1-1/2" Round Over   5/4"  5/4"  5/4"  $21.00
#611       2"    Round Over   1"  1"  1"  $17.00
#612       3"    Round Over   1-1/2"  1-1/2"  1-1/2"  $17.00
#613       3-1/2" Round Over   2"  2"  2"  $17.00
#614       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#620       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#667       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#682       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#684       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#686       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#688       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#689       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#690       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#691       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#692       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#693       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#694       1-1/2" Round Over   1-1/2"  1-1/2"  1-1/2"  $15.00
#696       1-1/2" Pattern   1-1/2"  1-1/2"  1-1/2"  $15.00
#697       1-1/2" Pattern   1-1/2"  1-1/2"  1-1/2"  $16.00
#698       1-1/2" Pattern   1-1/2"  1-1/2"  1-1/2"  $17.00
#699       1-1/2" Slot Cutter   1-1/2"  1-1/2"  1-1/2"  $14.00
#700       1-1/2" Slot Cutter   1-1/2"  1-1/2"  1-1/2"  $14.00
#701       1-1/2" Rabbeting   1-1/2"  1-1/2"  1-1/2"  $13.00

New 24-page catalogue now available, featuring hundreds of bits.

MAKE BEAUTIFUL RAISED PANEL DOORS... WITH YOUR 1/4" ROUTER!

Professional production quality bit makes it quick and easy to produce matching rails and stiles - the panel raising bit with ball bearing guide makes the raised panel perfect every time.

Regular value Over $150.00
SALE PRICE $69.95 FOR COMPLETE SET

RAIL & STILE SHAPE CUTTER
Item #540 - $49.95

RAISED PANEL BIT
Supplied with Ball Bearing
2" Large Diameter
1/4" Shank

RAISER PANEL BIT
Supplied with Ball Bearing
(For making matching rails and stiles in raised panel doors, etc.) Works with stock from 1-1/2" to 7/8" thick
1/4" Shank

To order by Master Charge or Visa Call Toll Free, 7 Day - 24 Hour Order Service,
1-800-533-9298 or send check to: MLCS Ltd., P.O. Box 4053, A, Rydal, PA 19046

©1990
The Prestigious

WOODY

A • W • R • D

It Stands for Outstanding Effort

Every two months, shortly after you receive the current issue of WOOD® magazine, the staff and I get together in our conference room to appraise our latest effort. It's a time for us to share with one another which articles we think worked well both editorially and graphically and also to discuss things we would do differently next time around.

It's also the time when our managing editor Carl Voss and I announce the recipients of a Prestigious WOODY Award. We've been doing this for four years or so to recognize—in a small way—outstanding effort by members of the WOOD magazine team.

During this time, everyone on the staff has received several of them—for a particularly well-written article, a great project design, a terrific-looking layout, or some such accomplishment. But no one has hauled down more WOODYs than Perry McFarlin, the magazine's senior graphic designer, who, along with Lee Gatzke, our art director, does a super job of designing and laying out each issue. That's Perry in the photo above with his 26 certificates.

Most WOODY Awards go to staff members—but not all. For example, I found out recently that reader Doyle McGinnis, left, an over-the-road truck driver from Hastings, Nebraska, had invested 280 hours in building 14 of the 1930 Ford wagons featured in the October 1989 issue. I just had to send him an award. Oh, by the way, if you happen to know any woodworkers who have done a lot of good for others using their woodworking skills, I'd sure like to hear from you about their accomplishments. There are plenty of WOODYs left to recognize outstanding effort.

Write to: WOODY Award

c/o WOOD Magazine

P.O. Box 11454

Des Moines, IA

50336-1454

Larry Clayton
TALKING BACK

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Letters Editor, Better Homes and Gardens® WOOD® Magazine, P.O. Box 11454, Des Moines, IA 50336-1454.

Standing up for alder

First off, let me say thank-you for the hummingbird pattern in the April 1990 issue. To date, I've made 28 of these projects using alder and ash. I think you should add alder to your list of favorite hardwoods. It cuts and sands well, stains perfectly, and is free to us from the local mill. That's why I use alder for all my scrollsaw work. If any woodworkers travel through Longview, I'll be more than happy to load them up with alder!

—Vern Feezell, Longview, Wash.

Thanks for the offer, Vern. Here's hoping you like having visitors. (Note: We featured alder in a "Wood Profile" in our February 1988 issue.)

Updates on our handscrew clamps

Our instructions for the collector's edition hand-screw-clamp project in the June 1990 issue call for a ¾" brad-point bit to drill the holes for the pivot nuts. If you have a problem locating a ¾" bit, you can order a carbon-steel one with a ½" shank for $10 ppd. from: The Morris Wood Tool Company, P.O. Box 249, Morristown, TN 37815. Or, call 615/586-0110. Also, Leichtung's special price for the ppd. hand-screw hardware kits will remain in effect until Nov. 1, 1990.

Reader solves a turning problem

I have worked on a project from your April 1989 issue—the turned acorn birdhouse. But no matter how careful I was, the drive spur from my lathe would tear and spin in the pine end grain. But then I found a cure for the problem.

I set the drive spur and dead center with a hammer, and then treated the immediate area of both ends with Minwax High Performance Wood Hardener as directed on the product label. After letting it set overnight, I turned the wren house the next day with no problems. This technique also keeps the dead center from wearing as quickly. The only drawback is the treated area won't take a stain.

I am a faithful subscriber and enjoy every issue of WOOD magazine.

—George G. Linn, House Springs, Mo.
Compare this offer with any other book club for Price • Quality • Benefits • Selection!

An absolutely no-risk guarantee.

Select 5 Books for only $3.95
(values to $124.70)
and get a FREE Gift!

HOW-TO BOOK CLUB

FREE when you join!

15 Practical Woodworking Projects From Percy Blandford
Fascinating projects from master
craftsman Percy Blandford include
toys, furniture, a go-cart and more!

Membership Benefits • Big Savings. In addition to this introductory offer, you keep saving substantially with members' prices of up to 50% off the publishers' prices. • Bonus Books. Starting immediately, you will be eligible for our Bonus Book Plan, with savings of up to 90% off publishers' prices. • Club News Bulletins. 15 times per year you will receive the Book Club News, describing all the current selections—main, alternates, extras—plus bonus offers and special sales, with scores of titles to choose from. • Automatic Order. If you want the Main Selection, do nothing and it will be sent to you automatically. If you prefer another selection, or no book at all, simply indicate your choice on the reply form provided. You will have at least 10 days to decide. As a member, you agree to purchase at least 3 books within the next 2 years and may resign at any time there-after. • Ironclad No-Risk Guarantee. If not satisfied with your books, return them within 10 days without obligation! • Exceptional Quality. All books are quality publishers' editions especially selected by our Editorial Board.

©1990 HOW-TO BOOK CLUB Blue Ridge Summit, PA 17214-5800

If card is missing, use this address to join: 01980 THE HOW-TO BOOK CLUB Blue Ridge Summit, PA 17214-5800

A shipping/handling charge and sales tax will be added to all orders.
Solid Carbide and Specialty Bits

Carbide bits are the ultimate in performance and long life. These bits take the heat and are especially suited for routing laminates, particle board, MDF board and other wood composites.

Solid Carbide Spiral — 2 Flutes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1441-4</td>
<td>1/4”</td>
<td>3/8”</td>
<td>2”</td>
<td>2”</td>
<td>$15.00</td>
</tr>
<tr>
<td>C1442-2</td>
<td>3/16”</td>
<td>5/8”</td>
<td>2”</td>
<td>2”</td>
<td>$15.00</td>
</tr>
<tr>
<td>C1443-2</td>
<td>1/2”</td>
<td>3/4”</td>
<td>2”</td>
<td>2”</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

1/2” Shank

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1446-3</td>
<td>1/8”</td>
<td>1”</td>
<td>3”</td>
<td>2”</td>
<td>$20.00</td>
</tr>
<tr>
<td>C1447-2</td>
<td>1/2”</td>
<td>1-1/2”</td>
<td>2”</td>
<td>3”</td>
<td>$30.00</td>
</tr>
</tbody>
</table>

Due to the nature of Solid Carbide, these bits are not warranted against breakage.

Solid Carbide Straight — 2 Flutes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1450-2</td>
<td>1/4”</td>
<td>3/8”</td>
<td>2”</td>
<td>2”</td>
<td>$15.00</td>
</tr>
<tr>
<td>C1451-2</td>
<td>1/4”</td>
<td>3/4”</td>
<td>2”</td>
<td>2”</td>
<td>$15.00</td>
</tr>
</tbody>
</table>

Due to the nature of Solid Carbide, these bits are not warranted against breakage.

Straight — Single Flute

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1471-4</td>
<td>1/4”</td>
<td>3/8”</td>
<td>2”</td>
<td>2”</td>
<td>$12.00</td>
</tr>
<tr>
<td>C1472-2</td>
<td>3/16”</td>
<td>3/8”</td>
<td>2”</td>
<td>2”</td>
<td>$12.00</td>
</tr>
<tr>
<td>C1473-2</td>
<td>1/8”</td>
<td>3/8”</td>
<td>2”</td>
<td>2”</td>
<td>$12.00</td>
</tr>
</tbody>
</table>

Due to the nature of Solid Carbide, these bits are not warranted against breakage.

HSS (Cobalt) Roundnose — 2 Flutes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1457-1</td>
<td>1/4”</td>
<td>3/4”</td>
<td>2”</td>
<td>2”</td>
<td>$12.00</td>
</tr>
</tbody>
</table>

You'll place this bit next to your favorites!

HSS Rough Cut

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1458-3</td>
<td>1/4”</td>
<td>3/8”</td>
<td>2”</td>
<td>2”</td>
<td>$12.00</td>
</tr>
</tbody>
</table>

For Fiberglass, Plastics and other Phenolic materials.

Solid Carbide Flush Trim Laminate Bit

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1455-8</td>
<td>1/4”</td>
<td>5/16”</td>
<td>1-1/2”</td>
<td>6”</td>
<td></td>
</tr>
</tbody>
</table>

Works great in hand held laminate trimmers.

Solid Carbide Bevel Trim Laminate Bit

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shank</th>
<th>Dia.</th>
<th>Cl.</th>
<th>D.C.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1456-3</td>
<td>1/4”</td>
<td>1-1/2”</td>
<td>2”</td>
<td>6”</td>
<td></td>
</tr>
</tbody>
</table>

Works great in hand held laminate trimmers.

ORDER TOLL FREE
1-800-235-0272

---

**TALKING BACK**

Continued from page 8

**Safety first: Radial-arm modification may save your life**

A short time ago, I experienced an incident that could have inflicted serious—if not fatal—injury. Here's what happened:

The switch on my 30-year-old De Walt radial-arm saw, wired for 220-volt service, was giving me some problems. I stood to the right of the machine, turning the switch off and on several times, when I heard a great noise. When I looked at the saw and then around my shop, I couldn't believe my eyes. Three blades from a dado set mounted in the saw were embedded in the wall of my shop—about 12' away from the saw! When I gathered my thoughts, I felt quite ill. I realized that if I had been standing in front of the saw, I would have been badly injured, maybe killed.

After inspecting the saw, I noticed that there was a gap of approximately 3/16" between the end of the shaft and the inside face of the guard—plenty of room for the arbor nut to drop off the shaft if it came loose. To ensure that this near catastrophe didn't happen again, I installed a section of steel plate on the inside face of the guard, leaving only 1/16" clearance between the end of the shaft and the steel plate.

It is my hope that someone will be saved from injury by recognizing the same condition on their saw and making the modification.

Wilf Farrance, London, Ontario

---

Wilf, right in our backyard we have an expert on De Walt saws. Chuck Wolfe, owner of Wolfe Machinery, has built a nationwide business of reconditioning De Walt radial-arm saws. His company even recasts De Walt parts for older models. As far as Chuck can tell, the accident you describe shouldn't have happened with a properly installed dado set and saw guard. He argues that a blade can't slip through the guard even if the nut falls off when an electrical malfunction reverses the motor. Chuck then showed us a newer De Walt saw with a modified guard that minimizes the clearance between the blade shaft and guard—exactly what your steel insert accomplishes.

If you need more information about American-made De Walt radial-arm saws, contact Wolfe Machinery, 6107 Merle Hay Road, Johnston, IA 50131. Phone 515/270-2766.

Continued on page 12
New! Super V-15" Scroll Saw with Variable Speed
- Dial any speed from 400 to 1600 cuts/min!
- Saws with similar features sell for over $700
- Special introductory price...
only $189.95 (item #SVS, UPS $10)

Cut intricate patterns in many different types of materials with this versatile machine. Purchase includes many FREE extras.
This new model features a powerful, high quality electronically controlled universal motor that gives full power and torque at all speeds. Similar in design to our Super-15" model, the cutting action has been re-engineered to give smoother cutting and performance equal to saws many times the price.

Dial any speed from 400-1800 cuts/min to set the speed specifically for the job at hand. Use slower speeds for cutting plastics, metals and hardwoods.

FREE ACCESSORIES:
- Dust blower - 10 blades, -2 jet, permanent top arm blade holder - 4 standard blade holders - 2 Jig for attaching standard blade holders - Neptune 1-1/2" lettering guides w/6 patterns

Specifications:
- Motor: Universal motor electronic speed control 110V, 1.5HP, sealed ball bearings, 240V, 60Hz, 1/8" max. depth of cut - 2 HSS knives Item #PLA......$349.95 (UPS $15)

---

Super 15" Scroll Saw

Our most popular model. Same specs as Super V-15 model with single speed 1650 rpm motor, dust blower optional. Same free accessories as listed above.

#SAW......Only $119.95 (UPS $10)

Dust Blower (option for Super 15" saw)

#BKT.............$15.00/kit (+)

Variable Speed Motor Upgrade

Convert your saw to variable speed! This quality motor will fit our Super-15" model and others of similar design. Also fits Sears®/16", and "C Arm" Superscroll® styles - 18", 22", and 26" sizes. Limited 90 day warranty on non-Penn State Saws.

#SVM......Only $99.00 (UPS $4)

---

Magnifier Lamp

Great for magnifying scroll work or close-up work of any kind.

#ML1.......(reg. $29.95) On Sale...$22.95 (UPS $3)

---

Foot Switch

For hands-free operation. Installs in line w/power cord. Easy hook-up, 7 amp, 6 ft.

#FSW.............$20.00 (+)

---

Wood Lathe XL-40

Reg $299.95, On Sale $249.95

Includes FREE 8 piece Wood Chisel Set...$34 Value

Our new XL-40 Wood Lathe surpasses every lathe in its price range with quality & features you would expect from machines many times its price. FEATURES...

Heavy Duty cast iron construction provides smooth turning action. 40" Centers, 16" Swing for turning larger bowls. Smooth toolrest movement on 1" solid steel rails. "Live" center on tailstock. Motor mounted for easy positioning and belt changes. Sturdy heavy-duty base mounts on table top or optional stand.

PURCHASE INCLUDES:
- Lathe with Motor & Base - Toolrest - 8 pc wood turning chisel set

SPECIFICATIONS:
- MOTOR: 1720 RPM, 1.25 HP, 8AMP, 110V
- 3 Speeds: 650, 1500, 2800 RPM
- Headstock thread: 3/4" x 10 tpi
- Overall length: 60" - Weight: 600 lbs.

Item #LA0......On Sale $249.95 (UPS $29)

---

Quality Woodworking Machines At Affordable Prices

From: Penn State Industries - W 2850 Comly Road • Phila. Pa 19154 Order Toll Free 1-800-288-7297

Visa, Master, & Discover Card accepted Pa residents add 6% Sales Tax

When ordering - Add UPS Shipping Charges as noted

(*) No freight charge for accessories ordered with a machine; add $3 if ordered separately.
UPS charges are for Continental U.S. only (Call for shipping charges to other locations)
TALKING BACK
Continued from page 10

Rash of bad luck with cocobolo
Concerning toxic wood...wow, was that article ever right! A friend shares his magazine with me, and I had read with interest the October 1989 article on making duck calls. My friend and I make a few calls for hunting buddies—I do most of the turning and my buddy does the tuning—and cocobolo was our choice of wood. For a while, that is.

Twice, within about a three-month interval, I turned some cocobolo and got a rash on my arms, neck, and chest like you wouldn't believe. The second time, I wore a face mask and long-sleeved shirt and taped the cuffs. I still got a bad rash.

I had been thinking about writing to your magazine after reading the duck-call article and giving you a warning about cocobolo.

Another thing that might interest you is my buddy’s experience with finishing some of the calls with tung oil. Once he was in a hurry to test-blown the call and the oil wasn’t dry. He blew it quite a lot. The results were his losing all the skin on his lips. Webster’s New World Dictionary says that tung oil is a yellow, poisonous oil.

I now intend to subscribe to WOOD magazine.

—Herman H. Fasnacht, Pontiac, Ill.

How to locate hard-to-find books
After Paul Noel of Oak Harbor, Washington, read about two interesting—but out-of-print—woodturning books mentioned in the October 1989 “Talking Back” department, he asked his local library to check for the titles through the interlibrary loan system. Through his library, he was able to borrow The Art of Polychromatic and Decorative Turning from a Seattle library. The University of South Dakota Library in Brookings loaned him Polychromatic Assembly for Woodturning. Does this sound difficult? It’s not, according to Paul.

“The services provided by the interlibrary loan system are not widely known or understood,” he says. “Perhaps your readers would be interested.”

Right. If you’re a card-carrying library patron, you can ask your local librarian to inquire about borrowing titles from other libraries. Most systems allow the book to be checked out for two weeks. Normally, libraries don’t charge for this service; however, your librarian may suggest that you help pay the postage/handling charge. In most cases, you can’t renew (extend) the loan period.

Continued on page 14
Your workshop can PAY OFF
...BIG!

SAVE ... convert low cost rough lumber for use in your home projects

OR

EARN EXTRA INCOME by supplying custom Planed Lumber, trim, and molding to lumberyards ...

contractors ...

cabinetmakers ... home hobbyists and others ...

FOUR BIG ADVANTAGES ...

You can plane, mold, saw & sand All with Automatic Power Feed!

From the Day It Arrives ... the Planer will make and save you money. With shortages and inflation driving lumber prices sky-high, this versatile power feed tool quickly pays for itself by easily converting low-cost rough lumber into high-value finished stock. In just one pass turn out your own quarter round, door and window stop, casing, tongue-and-groove ... all popular patterns. Other operators are making cases for grandfather clocks, furniture, picture frames, bee hives, bed slats, surveying stakes ... all kinds of millwork.

Built For Pros ... Priced For Home Craftsmen ... it is engineered and built to industrial standards, but factory-direct selling keeps the price low. Handles tough oak and walnut as easily as pine, and so simple to operate even beginners with no experience can use it.

Start Your Own Business ... with just this one low cost power feed machine in a corner of your garage or basement, you're set up to supply lumberyards, cabinetmakers, carpenters, remodelers, contractors and hobbyists in your area with custom-planed lumber, trim, molding ... All of their millwork requirements. You can supply picture frame moldings to art shops, hardware and department stores, or sell direct to framing shops. All standard patterns are available from stock, or we'll custom grind a knife to your own special design or sample.

FREE BOOKLET!
Get FREE BOOK with facts and full details ... RUSH COUPON TODAY!

Just Mail Coupon ... 30-DAY FREE TRIAL OFFER!!!
ACT NOW!
Coupon Brings Full Details!

SAVE!!! FACTORY PRICES DIRECT TO YOU!
Indiana readers has his own finishing system

In his "Ask WOOD" advice to M. L. Metz on refinishing an oak school desk in the June 1989 issue of WOOD magazine, I believe Homer Formby prejudiced himself by the desire to sell his own product.

For the final finish, I would use a high-quality tung oil spar varnish instead of a polyurethane product. This would more nearly approximate the original finish. It should be a flat finish so that when rubbed out, the cuttings initials and gouges will not show up shiny. Thin the first coat by about one-third with a recommended thinner, and then lightly sand with #320 wet/dry paper. The second coat should be full-strength varnish, and rubbed out when dry with #400 or #600 wet/dry paper to remove surface irregularities. A final rub with 0000 steel wool followed by a good furniture wax will produce a beautiful luster and highly useful finish.

I have been doing this sort of work for more than 40 years, both as a hobbyist and professional. The system outlined here is simple and extremely practical.

—John E. Hoover, Cambridge City, Ind.

Homer Formby replies, "I've been a fan of tung oil varnish for a long time. And, in fact, I would recommend a tung oil varnish for this school desk if it is going to be decorative, and not get a lot of use. I would apply tung oil varnish designed for hand rubbing, since spar varnish could be too thick if thinned improperly."

Big woodworking show hits Des Moines Sept. 13-16

Don't miss a great opportunity to see some of your favorite projects from WOOD magazine while you rub shoulders with top-notch craftsmen at the World's Fair of Woodworking in Des Moines. The show, open to the public, will be held September 13-16 at Veterans Memorial Auditorium. In addition, we will exhibit some of the best entries from our two toy competitions, including the Build-A-Toy winners featured on pages 54-55 of this issue. Speakers scheduled for the show include Sam Maloof, Tage Frid, Pietro Dintoffi, Kelly Mehler, Rude Osolnik, Harley Reifsnal, Dale Nish, and Richard Raffan. The show also features about 100 exhibitors and a juried woodworking show. For more information, call 800-441-0399 or 515/278-2126.

CHRISTMAS PROJECTS & GIFTS

Over 50 musical projects to choose from!

BULK PRICES available for most popular turnings.

WELCOME
A boutique best-seller! Not only does it say "Welcome" but it plays a Christmas melody with lights blinking in time to the rhythm. Tree is adorned with miniature ornaments.

#01570 Plans $4.00
#04570Z Plans & Parts Kit $10.50

"BABY" GRAND
This stylized design features a 15 note electronic keyboard. Compose and play your own songs! About 9"x10", replaceable batteries.

#01565 Plans $5.95
#04565Z Plans & Parts Kit $8.95

BI-PLANE
Take a fantasy flight on our fantastic flyer! Full size bookshelf (4-1/2) and 1/2 size souvenir shelf. Amused by the attention getters.

#01078 Plans $6.95
#04078Z Plans & Parts Kit $11.95

SOUND SHELF:

#01081 Plans $4.95
#04081Z Plans & Parts Kit $7.75

FR-R-OSTY
Put this character on your door or wall. Push his belly or nose and he plays "Pistols".

#01520 Plans - Belly $3.50
#04520Z Plans & Parts Kit $7.25
#01511 Plans - Nose 3.50
#01551Z Plans & Parts Kit $7.45

RUDY
Push his nose and he plays a Christmas Medley while lights in his horns blink in time with the music.

#01559 Plans $3.50
#04559Z Plans & Parts Kit $5.95

PRANCER
When you push his tail he plays "Rudolph" while his red light nose blinks in time with the music.

#01566N Plans $3.00
#01566NZ Plans & Parts Kit $7.25

NURSERY BEAR
Wow! This balloon laden forest critter plays 12 tunes! 2 movements play 4 each, the other plays 4 more. A great boutique seller.

#01540 Plans $3.00
#04540Z Plans & Parts Kit $5.95

MUSIC HEADQUARTERS
Over 150 music movements to choose from! Mix styles to get quantity discounts. Most popular tunes available. Over 35 Xmas movements available. Call 1-800-10-25-89-100+

Touch N Play 1.69/ea 2.55/ea 1.59/ea 1.30/ea
Twinkle Tone 2.55/ea 2.55/ea 2.55/ea 2.55/ea
Bank Slot 1.69/ea 1.75/ea 1.69/ea 1.30/ea
Plus Light Activated, Motion Activated, Accessories, etc.

CRAFTER'S MART
P.O. BOX 2342W • GREELEY, CO 80632

48-page catalog: $2.00 with credit against first order, FREE with any order. MIN. ORDER: $20.00. Check, MasterCard or VISA (include card no., exp. date, signature and daytime phone). CO residents add 5% tax. No C.O.D.s. PROCESSING CHARGE: $4.00 for UPS street address. Alaska, Hawaii, APO & FPO add $10 Processing Charge; Canada add $16. Foreign orders pay US funds plus 20% and $10 Processing Charge. PHONE ORDERS: 8 am - 5 pm - Mon.-Fri. M.S.T.

Special Xmas Hours: Aug. 16 - Dec. 1
Mon-Fri 8 am-8 pm - Sat 9 am-4 pm
Safe & Simple™ Environmentally Responsible Finishes

- No toxic vapors, nonflammable, odorless.
- Dries in 30 minutes to a hard, crystal clear finish that never yellows.
- Easy water clean up.

$5 Introductory Rebate Offer per gallon
Carver Tripp Super Poly per gallon

Complete this coupon and mail, together with cash register receipt (with Carver Tripp Super Poly circled) and the UPC code from the back label, to Parks Corporation, PO. Box 3102, Lowell, MA 01853-3102. Please allow 6 to 8 weeks for payment.

Name ___________________________
Address ___________________________
City ______________________ State __________ Zip ______

Offer expires 12/31/90. Limit one rebate per individual or household.

Proud Sponsor of "This Old House" & "The New Yankee Workshop"
Parks Corporation, Somerset, MA 02726, 1-800-225-8543

"We do custom carpentry but mostly we do floors. So you can imagine the fumes that I and my father before me have had to breathe in over the years. Not any more."

Jeff Hosking
Hosking Floor Refinishing
& Home Improvement
Walpole, Massachusetts
**TIPS FROM YOUR SHOP (AND OURS)**

**EARN CASH, PRIZES FOR YOUR TOP SHOP TIP**

Do you have a great shop tip (or two) you'd like to share with other WOOD® magazine readers? For each published submission, you will get at least $25 from WOOD magazine (up to $200 if we devote a page or more of space elsewhere in the magazine to your idea). You also may earn a woodworking tool for submitting the top shop tip for the issue.

We make every effort not to use shop tips that have appeared in other magazines, so please send your tip to only one publication. We cannot return shop tips. Mail your tips, address, and daytime phone number to:

**Top Shop Tip**
Better Homes and Gardens®
WOOD Magazine
P.O. Box 11454
Des Moines, IA 50336-1454

---

**This jig quickly straightens edges**

Attempt to rip a straight edge onto a board with irregular edges can be dangerous or downright impossible. One solution: Tack a straight board to the irregular board with finishing nails. Unfortunately, this method leaves small nail marks in the top surface of the workpiece.

**TIP:** Construct a carrier board from 3/4" plywood to a width and length to accommodate most of your boards (14"x7" works for me). As shown above, you can quickly clamp the workpiece to this carrier board, then rip one edge. Remove the workpiece from the carrier board, place the jig aside, and position the just-ripped edge along the fence to straighten the other edge.

—Thomas Bruzan, Des Plaines, Ill.

---

**A simple guard for your router-table's router**

A router table can be an indispensable tool, but if a router-bit shank breaks, look out! Any pieces falling into the router housing can cause damage to the router's cooling fan and motor.

**TIP:** Place a piece of fiberglass window screen over the bottom of the router to block any broken bit pieces. Small drops of cyanoacrylate (instant) glue will hold the screen in place.

—Roger Ronald, Sachse, Texas

---

**A sticky solution for a screwy problem**

Sometimes, tight quarters restrict you from steadying a screw or bolt with one hand while you turn a screwdriver or ratchet with your other hand. Hopefully, the fastener will stay attached to the tool as you position it and attempt to drive it in. If the fastener falls, you might be in for an aggravating experience.

**TIP:** Drop a small dab of hot-melt glue onto the head of the fastener, and attach the screwdriver or ratchet. When you finish driving the fastener, the tool will release easily. A little scraping removes any residual adhesive.

—David J. Casolino, Milford, Conn.

---

**An end to loosened drill-press handles**

Drill-press handles seem to loosen by themselves. Constantly retightening the handles because of machine vibration can unnerve even the calmest woodworker.

**TIP:** Remove the handles and wind two revolutions of plumber's teflon tape around the threads. Now, replace each handle and tighten it for a no-slip fit.

—Dave Godlewski, Sparks, Nev.

Continued on page 18
What You Should Know About Making $1,000 a Week in Your Spare Time.

Be your own boss,
Choose your own hours.

We'll show you how to be a Professional Chimney Sweep! You can join thousands of men and women in this fast growing service business. And you can do it in your spare time!

With August West's state-of-the-art equipment and proven techniques, you'll quickly learn how to clean a chimney in less than an hour and walk away with an average of $65 every time.

You could be earning as much as $1,000 a week working part-time. Many August West sweeps earn twice that each week when they work full-time.

Why Clean Chimneys?
There are nearly one hundred million chimneys, flues and stoves across the continent. Whether they are burning gas, oil, coal or wood, they all need to be cleaned. According to the National Fire Protection Association, they should be cleaned at least once a year to prevent disastrous fires.

So there is an urgent need for this service. And there are very few sweeps. The potential is enormous. Get your share!

Fabulous Earnings
Here's what your part-time weekly income could look like:
- 3 chimneys x $65 = $195 Mon
- 3 chimneys x $65 = $195 Tues
- 3 chimneys x $65 = $195 Wed
- 2 chimneys x $65 = $130 Thurs
- 5 chimneys x $65 = $325 Sat
- $1,040 weekly

14 Years of Service
August West has been outfitting men and women for chimney sweeping for more than fourteen years. We're a national company and 90% of the chimney sweeps in the U.S. and Canada use our system.

No Strings Attached
You keep all you earn. With August West there are no franchise fees, no commission payments.

For an investment of under $2,500 you get the tools and equipment you need to start earning money immediately.

That includes the famous, high-powered Sootsweeper®, the dust collector Mother Earth News calls "The Height of Technology".

Most important of all: August West backs you up, provides you with training and support, workshops, newsletters, technical and marketing advice, advertising and promotion manuals and continuing access to the growing chimney sweep community. You have all the advantages of a franchise without any of the drawbacks!

Free Information Kit
Join the many thousands who have found personal freedom, success and the time to do the important things. Learn more about this extraordinary business. Write for our Free Information Kit today.

Better still, pick up the phone and call us at this Toll-Free number:
1-800-225-4016
Ask for Extension 828
(In MA: 508-753-5544)

Send to: August West Systems, 38 Austin St., Box 658, Dept. 4502, Worcester, MA 01601

Yes, please rush me your FREE Information Kit.

Name __________________________
Address _______________________
City ____________________ State __
Zip ___________ Phone ( ) ______

Copyright © 1990 August West Systems, Inc.
MICROWAVE DOWELS FOR A BETTER FIT

Just the moisture in the air can swell dowel pins so they’re practically impossible to fit into the holes drilled to receive them. Forcing them into place runs the risk of splitting the bored pieces.

—From the WOOD magazine shop

TIP: Shrink those dowels by placing them on a paper towel or plate inside a microwave oven set on “HIGH” for 30 seconds. Check the pins for fit and microwave them for an additional 15 or 30 seconds if necessary.

VISIT THE SHOW NEAR YOU!
- Free Workshops • Door Prize • Hundreds of Products • Seminars by Mastercraftsmen

The Woodworking Shows

See the Widest Variety of Woodworking Products All Under One Roof!!

HUNDREDS OF ITEMS NEW PRODUCTS!
Machinery • Power & Hand Tools • Supplies

COMING IN 1990-1991
- Atlanta • Milwaukee
- Baltimore • Nebraska
- Calgary • No. California
- Charlotte • Oregon
- Chicago • Pittsburgh
- Cincinnati • Richmond
- Columbus • Rochester
- Dallas • Sacramento
- Delaware Valley • Salt Lake City
- Detroit • San Diego
- Indianapolis • Seattle
- Kansas City • So. California
- Louisville • Twin Cities

1-800-826-8257 or 213-477-8521
Call NOW to be placed on mailing list for FREE Brochure & Discount Coupons
Phone Hours 8-5 Pacific Time Weekdays

File card prevents tiny pieces from vanishing
When cutting out small, delicate parts on a scroll saw, the miniscule results almost always fall through the table opening and into the debris below, requiring you to stop to search for them.

TIP: Make a cut in a 3x5" note card and tape it in place as shown below to keep those tiny cutouts on the table.

—Floyd Bartling, Mount Aukum, Calif.
ORDER YOURS TODAY!

WOOD SHOP APRON

Just Look At These Features:

• Tough, durable nylon material resists glue and abrasion
• 3 pockets designed to hold a tape, woodworker's folding rule, metal rule, and pencil
• Attractive beige color with a brown border and the WOOD® logo
• One size fits all
• Lightweight, comfortable

"A Great Gift Idea for WOOD® Magazine Readers!"

Simply fill out this coupon, include a check for $19.95 U.S. Includes shipping and handling, and mail to: WOOD® Apron P.O. Box 11454 Des Moines, IA 50336-1454

My Name ____________________________
Address ____________________________ Apt. # ______
City ________________________________
State ____________________________ Zip __________

☐ MasterCard ☐ Visa Expiration Date __________
Card No. ____________________________
Signature ____________________________

Only $19.95
Limited Supply.
ACT NOW!
STEVE WALL LUMBER CO.
Quality Hardwoods and Woodworking Machinery For
The Craftsmen and Educational Institutions

STEVE H. WALL
LUMBER CO.
BOX 287 • MAYODAN, N.C.
27027
919-427-0637
1-800-633-4062
FAX 919-427-7588

Call For
Best Price On
MiniMax

TIPS FROM YOUR SHOP
(AND OURLS)
Continued from page 18
Photocopies make for easy reference while working
Many fantastic plans for projects appear in periodicals such as WOOD magazine, but hauling them into the shop and referring to them as you work invariably damages the pages.

TIP: Photocopy the pages with the drawings, lists and other information you need and post them near your work area. The copies can get as tatty as they like; you simply toss them when finished.

—D. K. Bonisch
Wellington, New Zealand

Homemade fixtures make diagonal clamping easy
When gluing up the ends of rectangular projects, placing a bar or pipe clamp across opposite corners assures everything will be square after the glue sets—providing you keep the clamp from sliding off the corners. Besides, metal clamp jaws can mar or dent the work.

TIP: From ¼" plywood, make a pair or more of swiveling fixtures as shown below. Use dimensions that fit your projects and clamps. These fixtures work well without slipping or disfiguring the work.

—R. B. Morris
Louisville, Ky.

Wood Moisture Meter
• Avoid Moisture Problems
• Protect your Masterpiece
MINI LIGNO
Incl. Class, Batteries and Pen for "A" and "B" Measurement, only $110
also from Lignomat:
MINI-LIGNO E
Range: 0-100% Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist. Great for lumber, veneer, fiberboards. Ask for free catalog on the complete line of moisture meters and accessories for kiln drying.

Lignomat USA Ltd.
PO Box 80455
Fort Lauderdale, FL 33312

TROPICAL HARDWOOD EPOXY
Glues any wood we ever heard of
EPOXY FAIRING GEL
fills holes — sand's like wood
CLEAR PENETRATING EPOXY SEALER
consolidates softer woods
primes for paint or varnish

SMITH & CO.
Industrial and Marine Synthetic Resins and Specialties
5100 Channel Avenue
Richmond, CA 94804
NEW TOLL FREE LINE
(415) 237-5642
800-234-0330

BAND SAW BLADES
WELDED TO YOUR EXACT LENGTH
Complete Band Saw Blade Line
Including Saw Mill Blades
We also carry:
Scroll Saw Blades • Hand Saws
Circular Saw Blades • Hole Saws
Hack Saws • Sanding Belts
Sanding Disks • Router Bits
Files • Rasps • Scrapers

SEND $1.00 FOR CATALOG or TO ORDER PHONE OR WRITE TO:
BUCKEYE SAW COMPANY
P.O. BOX 14794
CINCINNATI, OHIO 45250-0794
1-800-543-8664 (Except Ohio)
1-513-621-2159 (In Ohio)

RIPSTRATE SAVES FINGERS®
AND PREVENTS KICKBACKS
The most compact, easy to use and adjustment free hold down you can buy, and it gives arrow straight cuts with no hands near the blade. Steel and cast iron construction.

YOURHANDS DESERVE THE BEST!
Used by thousands of hobbyists, professionals, schools, corporations, government and military installations.

One year guarantee. 30 day money back trial.
Only $69 delivered. Check, M.O., Visa or M/C. Free brochure.

WRITE OR CALL OUR TOLL FREE NUMBER: 1-800 421 0256
FISHER HILL PRODUCTS INC 4 FISHER HILL
FITZWILLIAM NH 03447
MADE IN USA

Continued on page 23
THE SANDER WITH
WIDE
APPEAL

44" TO BE PRECISE

Uniform thickness accuracy to within .010 of an inch-precision that you almost have to see to believe. Or take the word of thousands of woodworkers who are achieving flawless sanding results in their cabinet shops, craft shops, home workshops, custom furniture shops and in musical instrument making.

The Performax Component Sander appeals to such a wide variety of woodworkers because it allows you to select the components to fit your needs now with retrofitting options for potential heavier use later.

Plus, your sanding width won't ever be limited with the 44" wide sanding capacity, due to the open-end design of the Performax S/T Sander, which is just one of the many innovative features that makes the Performax Component Sander a wise investment and an excellent choice for all types of woodworking.

For a Free Brochure or the Dealer Nearest You Call or Write to:

1-800-334-4910

WOODCRAFT
The Leading Edge
in Woodworking Tools
FREE Catalog Subscription

Our complete woodworking tool catalog features over 4,000 of the finest quality woodworking tools, books, and supplies available today.

See the difference yourself.
FREE!

Order yours today!
Call 1-800-225-1153

Or write: Woodcraft Supply, Dept. 91 WBN09
210 Wood County Park, P.O. Box 1696
Parkersburg, WV 26101

WOOD PARTS FROM MIDWEST DOWEL WORKS

Compare Our Low Prices!

<table>
<thead>
<tr>
<th>Gty.</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;x1/8&quot; Hearts</td>
<td>$7.25/100</td>
</tr>
<tr>
<td>3/4&quot;x1/16&quot; Hearts</td>
<td>$4.50/100</td>
</tr>
<tr>
<td>1&quot;x3/16&quot; Hearts</td>
<td>$4.00/c</td>
</tr>
<tr>
<td>1/4&quot;x3/8&quot; Hearts</td>
<td>$6.00/c</td>
</tr>
<tr>
<td>1/2&quot;x3/8&quot; Hearts</td>
<td>$5.50/c</td>
</tr>
<tr>
<td>1/2&quot;x1/4&quot; Hearts</td>
<td>$7.50/c</td>
</tr>
<tr>
<td>1/2&quot;x1/2&quot; Hearts</td>
<td>$10/100</td>
</tr>
</tbody>
</table>

SMOOTH SANDED HEARTS

3/4"x3/8" Standard Dowels | $21/100 |
3/4"x1/2" Oak Dowels | $15/10 |
3/8" Maple Buttons | $2.15/100 |
2/3" Maple Buttons | $2.25/100 |
1-1/2" Maple Spindles | $9/100 |
2-1/8" Maple Spindles | $18/100 |

ORDER NOW

MC/Visa
Check Enclosed

Total Cost
Handling $3.00
Ohio residents add 5% sales tax
Final Cost

FREE 16-PAGE CATALOGUE

Circle this section for FREE Dowels
- mixed pack, Maple, Oak, Walnut, Cherry, from 1/4" up to 1/" Approximately 10 LFT. 14" long. $5.00 value with any order.

MIDWEST DOWEL WORKS
4831 Hutchinson Road
Cincinnati, Ohio 45248
(513) 574-8448

Same Day Service/Order before Noon
Factory Direct/Satisfaction Guaranteed
AMAZING OFFERS!
Forstner Bits • HSS Tapered Drill Sets • Carbide BradS
Quality Imported Tools That Work

16-pc. FORSTNER BIT SET
$89.99
plus $7.00 s/h
#10-1330
All bits 31/2" overall; Precision Ground; HRC50-52.
Sizes: 1/4" through 21/8" in Wood Case. 3/8" Shanks.
Sizes over 11/2" supplied with saw teeth to eliminate overheating.

7-pc FORSTNER BIT SET
$29.99
plus $4.00 s/h
#10-1325
All bits 31/2" overall; Precision Ground; HRC50-52. Sizes: 1/4" through 1" in Wood Case

22-pc
HSS TAPERED DRILL,
COUNTERSINK/BORE,
STOP COLLAR SET
$29.99
plus $4.00 s/h
#05-0007
For Screw Sizes #5, 6, 7, 8, 9, 10, 12.
Wood Case included.

7-pc. CARBIDE TIPPED
BRAD POINT DRILL SET
$34.99
plus $4.00 s/h
#10-7777
Clean entry holes. No overheating.

MINIMUM ORDER $29.99
"NO HASSLE 30-DAY MONEY BACK GUARANTEE"
VISA/MC

TOLL-FREE 1-800-666-7227
(Incl. Canada)
DOLLAR TRADING CORP., Dept. WM-90
P.O. Box 68666 • Indianapolis, IN 46268
(IN and CT Buyers Please Add Sales Tax)
Dept. WM-90

SUPPLE SUEDE LEATHER WORKSHOP APRON
$19.99
plus $4.00 s/h
#03-0003
21"x33", 4 pockets.
Brass rivets and grommets.
BUILDING OUR NAME...
BUILDING YOUR DREAMS...

TILTING ARBOR TABLE SAW
Cast aluminum guide rail. Quick lock fence.
3 HP Motor, 2 belt drive
HTS-0012 $859
3 HP Motor, 3 belt drive
TS-1010 $1,295

SPINDLE SHAPER
1 1/4" and 3 1/2" Spindle 3 HP
26" x 36" table F/R Switch
SK-305PA $849
SLIDING TABLE
SK-35ST $239

Providing high quality woodworking tools at low prices.
Start on your dreams now!
Call for:
• Free Brochure
• Complete Color Catalog
$3 ($5 refunded on order!)
• Video Catalog
$10 (refunded on $500 order)

LOBO POWER TOOLS
Dept 456, 9034 Bermudez Street
Pico Rivera, CA 90660
(213) 949-3747
Atlanta Showroom:
(404) 416-6006
Lobo in Canada:
Unit 3, 2375 Alpha Ave, Burnaby, B.C.
Canada, V5C 5L2
(604) 299-0911

FIND IT FAST
with the All-New WOOD® INDEX

You Get:
• Six Easy-Access Mini Indexes
• Finishing and Refinishing
• Projects
• Tools
• Turning
• Carving
• Wood—From Tree to Board
• An Extensive General Index—Issues 1 through 30
• A 3-Page Quick-Reference Wood-Species Guide

Only $4.95
Includes postage and handling (Foreign orders $5.95)

YES! Please send me the WOOD® Cumulative Index. Here is my check or money order for $4.95 (Foreign orders $5.95). Send to: WOOD® Cumulative Index, P.O. Box 11454, Des Moines, IA 50336-1454

My Name ________________________________ Apt. # ________________________________
Address ________________________________ Apt. # ________________________________
City ________________________________ State ________________________________ Zip ________________________________
Type of Payment □ MasterCard □ Visa
Card No. ________________________________ Expiration Date ________________________________
Signature ________________________________

WOOD MAGAZINE SEPTEMBER 1990 23
A World Of Value.

Take A Close Look...

"at a real deal"

GET A FREE "HOW TO USE" VIDEO TAPE...

when you purchase any of the woodworking machines shown here. After you have made your purchase, you'll receive this excellent video directly from JET! Learn set-up, adjustment and operating techniques for all of these machines. A $29.95 value FREE to the purchaser.

The JET 10" tablesaw features a 27" x 40" table, 10" blade capacity, and a 11/2 HP motor. The JET 14" bandsaw has a full 1 HP motor with three speeds for wood or non-ferrous metal cutting, and a 45° tilting 14" square table. The JET shaper has an 18" long table and 11/2" spindle capacity. The JET 6" jointer has a long 28" fence and 421/2" table and a three-knife cutter. The powerful JET 15" planer has a 3 HP, 1 Ph. motor which allows a maximum 7/8" full width cut. The JET portable dust collector may attach to a variety of machines and has a 2.12 C.F. capacity collector bag and a very quiet 55 D.B. noise level.

When you buy a JET machine from your local distributor you get a quality machine at a reasonable price, a full one-year warranty, parts availability and local technical assistance by your distributor—and now a free "How To" video!

For full details, see your local JET distributor today.
Tame that vacuum hose
You know the routine. After cleaning an area with your shop vacuum, you return the vac to its storage spot. Then, you try to wrap the hose around the motor cover. Without warning, the hose unwinds itself and sprawls across the floor. But now, Sears has a 99-cent solution to this misfortune.

To make the Sears 2 1/2" hose lock work, you simply hook one end of the double wishbone-shaped clip to the hose about one foot from the tank intake. When it's time to store the vacuum, just wrap the hose around the motor several times and then clip the loose end of the hose into the free end of the hose lock. I tried the hose lock on Shop Vac and Sears vacuums, and it worked perfectly.

—Tested by Bill Krier

Sears 2 1/2" hose lock, 99 cents at Sears stores.

Sanding Tadpoles that turn projects into princes
Just the mention of any product that promises to take some of the toil out of sanding—especially contour-sanding—is enough to make my ears perk up. So when the Tadpole contour sanding grips leapt into my shop, I jumped at the chance to try them out.

Unlike dowels, the four flexible Tadpoles for concave surfaces fit every project I tried them on, held the sandpaper snugly, and kept my fingers away from splinters. I highly recommend them.

—Tested by Steve Oswalt

Tadpole contour sanding grips, catalog No. 06E34, $5.50 ppd. from Woodcraft Supply Corp., 210 Wood County Industrial Park, P.O. Box 1686, Parkersburg, WV 26102. Call 800-225-1153.

Introducing the toughest sander in its class. A real kick to use.

SWITCH BLADE.

Introducing a 13" scroll saw that accepts 5" pin and plain blades.

BLACK BELT.

©1990 Dremel. Racine WI.
Indestructible scrapers

Unlike other scrapers I've seen, these Sandvik tools have carbide blades that, judging from my tests, refuse to wear. I scraped paint off metal, and glue and paint off wood, with no signs of dulling. As the ultimate test, I scraped the trim of my entire house and loaned the same scraper to my neighbor, Mark, who prepped his windows and trim. The blade stayed as sharp as ever. Replacement blades cost about $5 each, but they're worth every penny.

The plastic handles of all three models fit my hand perfectly and the tools' aluminum shaft held up under heavy abuse. I purposely left the tool out in the grass for a few days of rain and dew. Result: not a speck of rust. If I had to own just one of them, I'd pick the 2¼" model for all-around tasks.

—Tested by Steve Oswalt

Sandvik scrapers, 2¼" blade with knob, catalog no. 04M21, $14.95 ppd; set of 1" and 2" scrapers, catalog no. 14110, $15.50 ppd from Woodcraft Supply Corp., P.O. Box 1686, 210 Wood County Industrial Park, Parkersburg, WV 26102. Call 800-225-1153.

Continued on page 28
Continued from page 27

**No-nonsense screw chuck**

After testing the Glaser screw chuck, I rate it the best I've ever tried. It tenaciously held every workpiece I attached to, except for one piece of green wood. For a stronger hold, I found that it helped to screw green, lightweight, and other weak woods onto the chuck, then remove the blank and shoot some instant glue into the hole. After hardening the glue with accelerator spray, I reattached the screw chuck. The chuck's thin, stainless steel threads proved durable, as were the anodized aluminum body and collar. The reversible and removable collar changes the diameter of the chuck from 1½" to 2½" to 3½" for turning plates as large as 15" in diameter and 3" thick.

I could have used a second dismounting rod to increase my leverage while removing the collar. The manufacturer plans to include two rods in the future.

—Tested by Steve Oswalt

**Glaser screw chuck**, $72.50 ppd. from Glaser Engineering, 1661 E. 28th St., Signal Hill, CA 90806. Specify the make of your lathe.

**A simple way to get started in wood collecting**

If you would like to become a full-fledged wood-sample collector, or just own enough wood samples to help you decide what woods belong in your next project, here's a moderately priced way to start. After receiving my set of 42 wood samples from Worldwide Woods, I was impressed by the variety and quality of the ¼ x 2¼ x 5½" blocks. Species include domestics and exotics. A label on each block cites its common name, scientific name, source, and a brief description of its properties.

—Tested by Bill Krier

**Domestic and exotic wood samples**, $29.95 ppd. from Worldwide Woods, P.O. Box 1398, Arvada, CO 80001. Call 303/393-7441.
Electronic level gives you a new angle on tasks

It had to happen sooner or later—electronics have come to the level. The SmartLevel by Wedge Innovations clearly outperforms its bubble-type predecessors.

I found the SmartLevel extremely accurate and easier to read than a bubble level. In addition to displaying level or plumb, the tool also measures rise over foot of run (pitch), and degree and percent of slope. Also, fine craftsmanship shows throughout the tool, from the wedge-shaped teak and aluminum rail, to its LCD readout.

After leveling every machine in my shop, I tackled a few construction jobs. All the while, my greatest fear was dropping the tool, but the SmartLevel survived my clumsy workstyle like a champ.

—Tested by Perry McFarlin

SmartLevel, $119.95, $149.95, and $197.95 for 2', 4', and 6' models, plus shipping, from Wedge Innovations, 532 Mercury Drive, Sunnyvale, CA 94086. Call 800-762-7853.

---

**SANDPAPER**

NO' GIMMICKS — GREAT PRICES

<table>
<thead>
<tr>
<th>BELTS: GRITS ASSORTED</th>
<th>SHEETS: (9 x 11) PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNLESS OTHERWISE SPECIFIED</td>
<td>CABINET PAPER</td>
</tr>
<tr>
<td>1 x 30 .69 ea 3 x 24 .80 ea</td>
<td>50/pk 100/pk</td>
</tr>
<tr>
<td>1 x 42 .69 ea 3 x 27 .83 ea</td>
<td>40-D $16/pk $30/pk</td>
</tr>
<tr>
<td>1 x 44 .69 ea 4 x 21.5 .91 ea</td>
<td>50-D 15/pk 27/pk</td>
</tr>
<tr>
<td>2 x 16 .73 ea 4 x 24 .94 ea</td>
<td>60-D 14/pk 25/pk</td>
</tr>
<tr>
<td>3 x 18 .74 ea 4 x 36 1.14 ea</td>
<td>80-D 13/pk 23/pk</td>
</tr>
<tr>
<td>3 x 21 .77 ea 6 x 48 2.98 ea</td>
<td>100 thru 150C 12/pk 21/pk</td>
</tr>
<tr>
<td>3 x 23 x 3 x 80 2.47 ea</td>
<td></td>
</tr>
</tbody>
</table>

OTHER SIZES ON REQUEST

FINISHING PAPER

<table>
<thead>
<tr>
<th>NO LOAD PAPER</th>
<th>PRESSURE SENSITIVE ADHESIVE DISCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/pk 100/pk</td>
<td>50/pk 100/pk</td>
</tr>
<tr>
<td>80-A $9/pk $16/pk</td>
<td>100 thru 280A 8/pk 14/pk</td>
</tr>
<tr>
<td>180-A thru 400-A $10/pk $18/pk</td>
<td>220 thru 600A $13/pk $23/pk</td>
</tr>
</tbody>
</table>

WET/DRY PAPER

| 6" $1.06 ea | ★ OTHER ITEMS ★ | ★ JUMBO CLEANING STICK $8.80 ★ |
| 8" 1.99 ea | ★ WIDE BELTS ★ | ECON-ABRASIVES P.O. BOX 865021 PLANO, TX 75086 |
| 9" 2.46 ea | ★ ROLLS ★ | IN TEXAS 214-377-9858 OUTSIDE TEXAS 1-800-367-4101 |
| 10" 3.05 ea | ★ FLAP WHEELS ★ | TEXAS RES. ADD 7% SALES TAX |
| 12" 4.45 ea | ★ PUMP SLEEVES ★ | CONTINENTAL U.S. SHIPPING CHARGES ADD $4.25 |
| 15" 6.95 ea | ★ MINIMUM ORDER $25.00 ★ | ★ CALL FOR NEW 1990 CATALOG ★ |

---

**DRUM SANDER**

with Infinitely Variable Power Feed!

New! Conveyor Drive

At last! A complete power-fed Drum Sander at an affordable price! Choose from 26" and 38" models. SAVES TIME... IMPROVES RESULTS. Use this high-tolerance machine for light dimensioning as well as the finest finish work. Now you can add new beauty to each woodworking project... save hours of tedious hand sanding! In a matter of seconds you can produce a satin-smooth finish impossible to duplicate with hand methods or handheld power sanders... no more low spots, waves or cross-grain marks!

FREE FACTS! Send for complete facts on how you can try this low-cost tool in your own shop for one full month without risk. See how the sander can dimension and finish-sand cabinet pieces, resawn stock, paneling, toys, tabletops, knees, burls, crotches and much, much more! Made in U.S.A. Easy Terms.

Call Toll Free 1(800)821-6651, Ext. RW39

---

WOOd MAGAZINE SEPTEMBER 1990
FINALLY, IT'S YOUR TURN.

Maybe you've put off the lathe until you had all the other stuff. Or maybe you've been struggling along with a make-shift clunker that you've outgrown.

Any way you turn, you can't afford to pass on these special Delta deals.* Whether you're a homeshop turner or turning out mountains of production work we've got the lathe that'll fit your shop. You can turn stock up to 12" in diameter over the bed, 38" or 39" between centers; and 16" by 2½" or 16½" by 3½" (depending on model), over the bed gap. You've got an outboard spindle for turning extra large work and a choice of variable speed (340 to 3600 rpm) or 4-speed models (915 to 3260 rpm) to suit your particular needs. A two-panel safety shield is standard on all models.

Ruggedness and precision are also standard on a Delta Lathe. Now all you need is a less-than-standard price. And you'll find that at your nearby Delta distributor.

Call toll-free for the name of your Delta Distributor:
Delta International Machinery Corp., 800/438-2486.

*Offer good only on purchases from participating distributors in the continental U.S., Alaska and Hawaii from August 1 thru December 31, 1990.

Model 46-541
12" S.D. Variable Speed Wood Lathe
Reg. $3,599 Now $1,499

Similar savings on ten other models.
COTTONWOOD

Great Plains’ guidepost

Westward-bound wagonmasters of the mid-1800s scanned the horizon for the cottonwood because its presence always signaled water. That’s how groves of cottonwood became gathering places for weary travelers.

Pioneer homesteaders planted the fast-growing trees as windbreaks, cut them for fence posts and firewood, and worked the wood into baskets and boxes. Hollowed-out logs even served as canoes and cargo vessels.

To the Mohave Indians, the cottonwood was also a primary resource. They ate the tree’s raw catkins, consumed its inner bark as medicine, and wove baskets from its green twigs. The Hopi and Pueblo kachina dolls could only be carved from cottonwood roots—where good spirits lived.

Wood identification

Cottonwood claims 25 species around the world, from the Himalayan Mountains to the plateaus of Chile. The U.S. alone has 11 species. However, only two cottonwoods have commercial importance: Eastern cottonwood (Populus deltoides), native from the Midwest to the Atlantic, and black cottonwood (Populus trichocarpa), which grows in the valleys of the Pacific Northwest.

Cottonwood favors moist, well-drained soil along waterways. There, it quickly sprouts from tiny seeds, cut stumps, roots, and even branch cuttings. In these conditions, cottonwood can average 5' in growth per year for its first 25 years. During a tree’s 125-year lifespan, it may rise to a height of 150' with a diameter ranging from 7' to 8'.

You’ll recognize cottonwood by its thick, deeply fissured gray bark. But, perhaps more familiar will be its large, heart-shaped leaves and summertime tails of fluffy down, the “cotton” for which it was named.

The close-grained heartwood of cottonwood grows with gray or purple mineral streaks. Its thin sapwood is creamy white.

Uses in woodworking

Due to cottonwood’s light weight, lack of odor and taste, colorlessness, and nail-holding ability, about half of all the wood harvested becomes boxes and crates. The wood also holds printing inks better than most woods, making it ideal for shipping labels and logos. Although some cottonwood becomes commercial veneer for utility and low-priced furniture, most ends up as fruit and berry baskets or boxes.

All of cottonwood’s commercial qualities add up to make it perfect for children’s toys and games. Thin stock also adapts well to painted or stenciled scroll-saw projects. And, with qualities similar to basswood, cottonwood fulfills carvers’ needs.

Availability

More often sold as carving blocks than lumber, cottonwood costs less than basswood. Where available as lumber (sometimes in ½” thickness for drawer backs and bottoms), expect to pay about $1 per board foot. Veneer isn’t usually retailed, since demand is low.

Continued
Cottonwood
(Populus deltoides)

Machining methods
When woodworkers shun cottonwood—either from unfamiliarity or rumors of instability—they miss out on a good wood at a great price. It’s soft for a hardwood, but surprisingly strong, and it works easily with hand or power tools. The only fault cottonwood has is fuzzing. That is, hairlike wood fibers tend to lift—sometimes during machining, and always in finishing. Here’s how to make the best of this overlooked wood:
- Start with well-seasoned boards. Thick (over 1") stock should be examined and felt for spot dampness coming from water pockets that result when processors rush the seasoning. Avoid these. And, for best results, bring all cottonwood indoors before working so that it can equalize with house humidity.
- Plane cottonwood at high speed with sharp knives to lessen fuzzing (or at a high feed rate). Its tight, straight grain poses no jointing problems.
- Unlike many hardwoods, cottonwood won’t tear out or chip when crosscutting. Due to the wood’s density, however, ripping requires a rip-set blade with no more than 24 teeth.
- Although cottonwood doesn’t burn easily against a router bit in cuts with or across the grain, it will fuzz, especially with dull bits.
- Because this lightweight wood (at 28 pounds per cubic foot about a third lighter than walnut) doesn’t split easily, it’s not necessary to predrill for screws. And, all glues perform well.
- Sanding creates surface fuzz, too. So, for the best results, apply a sanding sealer after you’ve given the wood its first over. Then, sand again.
- Some cottonwood boards may have blueish-gray streaks. Under a clear finish, the streaks can look attractive. However, a pigmented stain will turn the streaks into a dark, unsightly discoloration. Note, too, that some cottonwood won’t accept stain evenly without first applying a wood conditioner.

Carving comments
Heavier, but of about the same softness as basswood, cottonwood usually carves with little effort. Some pieces, probably depending on where the wood grew or how it was dried, will be tougher. Its grain does not lend itself well to fine detail. Some advice:
- Cottonwood’s tendency to fuzz translates to stringiness in carving. That is, unless you keep your cutting edges sharp, cuts won’t be clean. Yet, a knife or gouge won’t stray in the grain.
- Since the wood has little color or figure, and lacks the luster that even basswood displays under the blade, carvings made from it usually require paint or stain.

Turning tricks
Approved by the FDA for food containers, cottonwood works well for bowls. However, only shearing cuts with sharp tools defeat fuzzing.

SHOP-TESTED TECHNIQUES

Any exceptions, and special tips pertaining to this issue’s featured wood species, appear under headings elsewhere on this page.
- For stability in use, always work wood with a maximum moisture content of 8 percent.
- Feed straight-grained wood into planer knives at a 90° angle. To avoid tearing, feed wood with figured or twisted grain at a slight angle (about 15°), and take shallow cuts of about 1/8".
- For clean cuts, rip with a rip-

COTTONWOOD AT A GLANCE

<table>
<thead>
<tr>
<th>Cost</th>
<th>$</th>
<th>$</th>
<th>$</th>
<th>$</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>🚬</td>
<td>🚬</td>
<td>🚬</td>
<td>🚬</td>
<td>🚬</td>
</tr>
<tr>
<td>Hardness</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>Stability</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Durability</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Strength</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Toxicity</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Workability</td>
<td>📈</td>
<td>📈</td>
<td>📈</td>
<td>📈</td>
<td>📈</td>
</tr>
<tr>
<td>Look-Alike</td>
<td>Yellow birch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compiled with woodworkers Robert McGuffie, Jack Settle, and carver Max Alvarez

Illustrations: Steve Schindler
POCKET-SIZED TRY SQUARE

There are few tools more indispensable in a workshop than an accurate square. That's why we're so pleased to be able to share this Jim Boelling-inspired project design with you. Are the squares accurate? You bet they are. Several of us on the WOOD® magazine staff spent a few hours in the shop building seven squares using the drawings and instructions shown here. Then, we sent our squares to the College of Technology at Bowling Green State University in Ohio for testing. All of the squares measured to within .008" of perfect square—well within the requirements of home woodworkers. And, here's more good news: Our squares cost less than $4 apiece to build.

Continued
TRY SQUARE

Begin by building the walnut body
1 Cut a piece of 3/4" walnut to 3/4" wide by 7 3/4" long. (We searched through our walnut stock until we found a piece with highly figured grain. Also, the piece is cut extra long for safety when routing the coves in the next step. If you want, rout coves on both ends before crosscutting and you'll have enough stock for two handles.)
2 Chuck a 3/8" core-box bit into a table-mounted router. Raise the bit 3/4" above the table surface where shown on the End Section Detail below. Position the fence 3/4" from the center of the bit.
3 Clamp two stops to your router table fence where shown. With one end of the walnut against Stop 1, lower the face-grain edge onto the bit and push the walnut to Stop 2 to rout the groove. Repeat the procedure on the opposite surface of the walnut.
4 Crosscut the routed end of the walnut to 3 1/4" long.

Cut the blade slot, and add the brass trim
1 Mark the blade-slot location on the end of the walnut where shown on the Exploded-View Drawing and the Slot Detail accompanying it.
2 Check that your bandsaw table is square with the blade. Cutting just inside of the reference lines, make bandsaw cuts to form the 3/8"-wide slot. (To ensure straight and accurate cuts, we used the fence and a stop on our bandsaw when cutting the slot where shown in the drawing at right.) Check the fit of the 3/8" brass (often referred to as .064" brass) in the slot; it should fit snugly.
3 Cut two pieces of 3/8 x 3/4" brass to 3 1/4" long each (the same length as your walnut handle) from one 12" length of brass for the top and bottom plates. See the Buying Guide for our source of brass.
4 For better adhesion with the quick-set epoxy, sand one surface of each brass piece with 80-grit sandpaper. With the edges and ends flush, epoxy and tape (we used masking tape) one of brass pieces, the top plate, to the walnut. Then, with the brass side down, use the previously cut slot in the walnut to bandsaw the same-sized slot in the brass.
5 Being careful not to get any epoxy inside the slot, epoxy the other piece of brass (the bottom plate) to the opposite surface.
6 File and sand the edges of the brass and walnut flush. (We used a file to round the edges, and then sanded the body on a stationary sander.) Be careful not to let the brass get hot. Otherwise the epoxy will soften, causing the brass to delaminate from the walnut.
7 Sand or file a slight round-over on each corner of the square body. (We used a disc sander.)

Here's how to install the blade accurately

Note: To position the blade as square as possible to the handle, we found it much better to start with a 12" brass blade and trim it to length after epoxying and pinning it in place.

1 Cut a piece of particleboard to 13" wide by about 10" long. Joint one edge of the particleboard.
2 Sand the bottom \(\frac{3}{4}\)" of a 12" length of brass for better adhesion. Using a toothpick, spread some quick-set epoxy into the slot in the body.
3 Slide the blade into the slot. Immediately wipe off excess epoxy. Before the epoxy hardens (in less than 5 minutes), use an existing square to position the blade at a 90° angle to the body. Being careful not to jar the blade out of alignment, position the square's body against the jointed edge of the board. Mark a line, the length of the blade, across the particleboard (see Step 1 of the drawing above). Use a sharpened pencil; the sharper the lead, the more accurately you can position the blade. Flop the square as shown in Step 2 of the drawing, and mark a second line. Repeat the process, adjusting the blade until the lines align perfectly. Let the epoxy cure. If after the epoxy cures your blade is not square with the body, file the blade with a mill bastard file, following the two-step drawing to check for square.
4 With an awl, mark indentations for the brass-rod holes where dimensioned on the Exploded-View Drawing. With a twist-drill bit, drill three \(\frac{3}{8}\)" holes through the body and blade. Cut three pieces of \(\frac{1}{4}\)" brass rod \(\frac{7}{8}\)" long. Epoxy a brass rod in each hole. File and sand the ends of the rods flush with the edges of the walnut as shown in the photo above right.
5 Crosscut the blade to \(\frac{4}{3}\)" long. (We supported ours on a \(\frac{1}{32}\)" thick block of wood and trimmed it to length on the bandsaw.)

File the ends of the brass rods flush with the surface of the walnut.

6 Sand the walnut with 220- and 320-grit sandpaper. Polish the brass with 600-grit paper or brass polish. Finish the brass and walnut with an aerosol lacquer.

Buying Guide

- Brass and file. Two pieces of \(\frac{1}{16}\times\frac{3}{4}\times12"\) brass, \(\frac{3}{8}\"-diameter brass rod \(6\" long. \$6.75 p/p. If you need the \(8\"\) mill bastard file, add \$4.50. Puckett Elec., 841 11th St., Des Moines, IA 50309.

Produced by Marlen Kemmet
Project Design: Jim Belling
Photographs: Hopkins Associates
Illustrations: Kim Downing, Bill Zaun
From Los Angeles to New York, galleries clamor for cottonwood creatures from Max Alvarez

NEW MEXICO
MOUNTAIN MENAGERIE
Naturally, most of the carved longhorn steers made on the mountain top find their way to Texas.

explains. "In Santa Fe, people were always dropping by."

The setting with its view of the valley and mountains, the quiet, the smell of juniper and pine, all contribute to Max's production.

Continued

The road to Sante Fe was a long, straight one for carver Max Al- varez. Born in Oakland, California, the second of nine children, he went to work for the railroad soon after high school. Eventually, Max, now 37, became a foreman for the Southern Pacific Railroad and traveled extensively in the Southwest. In 1979, travel lost its appeal and Max quit to move to New Mexico, where he discovered carving as a hobby. Soon, it was full-time.

"I was carving watermelons and cats," he recalls. "I had so many orders, it seemed right."

Finally, I took my work to the Elaine Horwich gallery in Santa Fe, then the Santa Fe Store." Discovered, yes. Famous? No.

"It was kind of slow those first couple years," Max remembers. "Then, an article came out on me in The New York Times, and that's when it took off. Galleries started looking for me." And they still do. We spotted some of Max's work on a visit to Santa Fe, and went to see how he, and Kathy, his wife, deal with wood and fame from their mountain top in Pecos.
Sometimes assisted by helpers, and by his brother, Rory, he turns out at least 10 animal carvings a week to meet commitments.

"These are already sold through the galleries," notes Max, pointing to the menagerie in view. A mother bear and her cub, awaiting sanding, stand just inside the shop. Beside the steps, another longhorn. Out between the pines, a coyote pair. By a boulder, a full-sized pig. Next to it, a porcupine.

Carved of cottonwood and painted in a stark, often bright, folk-art style, Max's animals have, in just a few years, become the rage. Max supplies a simple explanation. "They're just different. It's like years ago, everybody wore only white shirts, then colors became popular. Now, people like bright things."

Copycat coyotes

At prices that start in the $250 range and climb to $1,000, Max's folk-art carvings are liked a lot. But, as much a compliment to his work as its popularity, is its imitation—coyotes crowd Santa Fe.

The few first chainsaw cuts establish the body lines for a howling coyote. Max only uses air-dried wood.

Tourists now walk the streets of the old town between packs of coyotes—yellow coyotes, green coyotes, orange coyotes, polka-dot coyotes, small coyotes, tall coyotes, coyotes howling, even coyotes wearing knotted bandanas. Nearly every store offers them. Few places, though, carry the colorful carved coyotes Max made famous.

"In 1982, I started making coyotes with Alonzo Jimenez, a carver who had worked with Felipe Archuleta [Santa Fe's veteran folk-art carver]," Max relates. "Alonzo made one that was sitting down, and I liked it, so I said 'Let's start making them.' Then, everybody wanted a coyote, and it went on. Now, so many people have copied the coyote that they are all over the place."

The fact that other carvers imitate Max's coyotes bothers him not at all. He has confidence in the quality of his work. "I've seen the way they were made—they're so fragile," he says. "They use dowels, they slap them together and nail them. That's why they have to go store to store to sell them. My coyotes, the galleries order, even though my prices are higher."

Why does the coyote have so much appeal? "Coyotes are symbolic of the Southwest," says Max. "They are also a beautiful animal in the wild, and very intelligent. There's quite a few of them around here—I hear them howl at night."

Max's trademark coyotes, that make up 60 percent of his carvings, range from 12" tall to over 6', and come in an assortment of colors. "In folk art, the colors should be bright," says the carver. "But I try to stay away from very bright colors. I paint them gray, or tan, or something light, then streak them with red, yellow, or blue over the top coat. They look more real."

Real folk art means more than color. To an extent, the definition covers craftsmanship, too. Unfinished, rough, semi-finished. Max rebels at the thought. "I like to make my animals more refined, more finished, and I get recognition for that, too. I can even make an animal very realistic—not like folk art. I don't want to do that, though, and get off on a different track. I wouldn't enjoy it."

The wood of coyotes and kachinas

Santa Fe's climate and topography just doesn't produce a wide variety of woodworking stock. There's aspen, of course, but Max doesn't think much of it. "It cracks," he observes. In large trees, that only leaves cottonwood, and it happens to be the best, locally, for carving—and, it's rare. Max needs so much of it that he goes wood hunting days at a time.

Graceful lines and muted colors set Max's coyotes apart from others.
Frowning, he remembers how it used to be, before folk carving became the rage. "There was a lot of cottonwood right around here. The Indians were the first to use it, for their kachina dolls. Then, other carvers came in, and it's scarce close to Santa Fe now. I have to go farther and farther."

Max finds his trees along creeks and rivers on private ranches, open range land, and surrounding Indian reservations, where a tribal permit for wood gathering proves necessary. And, he likes his cottonwood standing dead or down-and-dry, as long as it has no traces of decay. Most of the seasoning has been taken care of by nature. Any remaining moisture the wind and sun will eventually retrieve.

**How a bear stacks up**

Max never measures. If he even owns a tape measure, you'll never see it in his powerful hands. He just matches, by eye, the many cutoff trunks and branches in his stockpile to the size of the animals he'll make.

"I guess I got used to relying on my eyes while working on the railroad," Max says. "We straightened and aligned track by eye. As an inspector, I was trained to look for broken bolts at 15-20 mph."

Speaking in the artistic sense, he adds, "I have a good eye for my animals, too. I've never sketched them. I just start roughing them right from the wood."

Without any formal art training whatsoever, Max managed to develop an uncanny sense of proportion. Although his carvings aren't meant to be lifelike, his coyotes look natural. His bears appear to be bears. His pigs are pigs. It doesn't take paint to give them identity. The image in his mind's eye, Max begins work. His standing creatures, such as a bear, have few separate parts.

"To make the body, I pull a good-sized log from the pile and shape it with my chainsaw," he explains, the saw beginning to whine and spew chips. "Once it's round, I notch-in for each leg, like a mortise. Zip. Zip. Zip. Then, I form a tenon at each end of the smaller logs I want for legs." Brrt. Brrt. "The legs fit tightly in the notches, but I make them more sturdy with white glue, and tap small wedges in. I figure on shaping later."

A bear receives ears cut on the bandsaw, as does a pig. When Max has tapped and glued in the add-ons, he goes over the entire body with the chainsaw, shaping and smoothing. In his hands, the tool performs like grassclippers. The initial smoothing done, Max grabs an electric drill and drills nostrils. For eye sockets, he entrusts the sharpened bit of a screwdriver. Then, he fills cracks and mortise joints with a mixture of sawdust and white glue. "The joints have to be flawless," he notes, carefully smoothing the fill.

Max still fusses over his animals' final sanding: "The face I make a lot smoother than the rest of body, so they look good. People look at the face and eyes first."

Still, Max often turns that work over to his assistants. They go over and over the heads and bodies with grinders, then disc sanders carrying 60-grit paper, until their boss approves.

For a bright finish, Max's wife, Kathy, applies common, ordinary latex flat housepaint, which she has on hand in a spectrum of colors. "We've never used a sealer, or a primer under the paint," Max advises. "Yet, it holds up."

Standing there on his mountain top, surrounded by his folk animals, Max doesn't realize the true meaning of his words. "It holds up" applies to much more than paint. His carvings keep exiting Glorieta Pass at an astonishing rate. He ponders a break, but dismisses it.

"The carving market gets better every year," he sighs unbelieving. "I like it, it's fun, and I don't want to do anything else. Besides, I like to see something come from a dirty piece of wood that someone might only burn in the fireplace. You look at it and it looks like nothing, but I pick it up and make something out of it."}

*Note: Try your hand at a Southwestern-style folk-art carving Max designed just for you, on page 78.*

Written by Peter J. Stephano
Photographs: Gary A. Zeff
How a new design influence sprang from the cultural roots of Santa Fe and Taos to march with the classics

WARM UP TO SOUTHWEST

In New York, cowboy boots pound Manhattan sidewalks, and pueblo pottery graces Central Park apartments. Concho belts cinch flowing denim dresses along Chicago's Michigan Avenue, and lakefront condos sport Navajo rugs beneath pastel-colored, rough-hewn tables. Detroit, Cleveland, Miami, Portland, and other cities and towns across the nation evidence the Southwest, too: new stucco homes with red tile roofs, furniture and linens in desert hues, strings of red chiles hung in kitchen windows. What is it about the sunburst colors, fanciful designs, and serene shapes stemming from Taos and Santa Fe that now appeal to a broad spectrum of consumers?

We found the answer at the source. From their workshops, the craftsmen who create this new wave of furniture explained.

According to Rob Doolings, a furnituremaker and designer who markets a line from his Santa Fe studio and gallery, it's the freshness. "I think a lot of people outside of this region interpret Southwestern style as a new look. And, frankly, there hasn't been anything new in furniture for a long time. What's actually happening is that people are uncovering what I consider to be the oldest American look."

Continuing his explanation, Rob says, "What I call 'Santa Fe' style has come right from northern New Mexico, and it's really a blend of heritage: Spanish, Indian, and Anglo. It's tri-cultured and real American. And the Americana thing is really strong."

Rob moved from Boston to Santa Fe 15 years ago, and shifted from building the traditional to casting a style from the influences he discovered all around him. And now, work from his establishment, Doolings of Santa Fe (see photo top right), goes to 50 states, Europe, and Japan.
How did it all happen? "When I lived in the East, everything was Colonial, or Duncan Phyfe," Rob says. "There was little of those furnishing styles here. So, I said 'let's do something people can live with no matter where,' and what I tried to do was produce something that would fit anywhere, but have a Southwestern flavor. We used all the traditional designs, applying them to a more conventional American look. We uncovered the basics, and the Easterners loved it.

"The look has spread like wildfire in the last five years," continues Rob, "and even though a lot of the interpretation isn't what I'd call correct or completely authentic, it works. New York has its own 'Southwest style,' so does California, but that's OK."

"People are looking for a little gaiety in their home, a lighter feeling. We sell quite a few pieces to couples who may only have that one painted piece. It adds lift to their life."

—James Rannefeld, Taos

Like bright hollyhocks against a pink adobe wall, James and Andrea Rannefeld's Southwestern-style furniture stands out in any room, anywhere. You'd think a table, such as the one embellished with Indian designs, right, would feel more at home in a desert ranch house, but James says that's not at all true. "Actually, the painted pieces sell better for us outside the region. Vibrant red, yellow, purple, and turquoise combinations move well. In Washington, D.C., those colors are our No.1 selling finish."

The Rannefels take their painted-on designs from Navajo pottery motifs and petroglyphs (cave and rock drawings), and they find that people blend their painted furniture, marketed under the name Taos Style, with everything. "The animal figures associate well with country furniture—the pigs, horses, cows—so we sell in those markets," James explains. "And, our museum finish, a natural wax, goes well with primitive furniture. Now, we're washing our pieces white, peach, gray, and turquoise, and we sell that furniture to contemporary markets."

Until five years ago, James was crafting hardwood contemporary furniture of his design. Only occasionally did he turn out a Southwest style piece from pine, even though he lived in the middle of the influence. Then, the style took off, and the Rannefelds began producing a collection for the national market.

What's responsible for their collection's wide appeal? "I can only attribute the furniture's popularity to its classic design," James explains. "It's so simple, so basic, not convoluted. I think people are looking for something like that. Here, in Taos," he adds, "we're part of a continuing tradition. We've added our contemporary interpretation of color and size, but the basic designs haven't changed. They transcend style."

Southwest style may be a relative newcomer, but don't expect it to fade into the sunset after a few seasons. Robert Dittmer, home furnishings editor for Better Homes & Gardens® magazine, says that some major furniture-makers have begun to offer their versions of Southwest. "At the semi-annual furniture market in High Point, North Carolina, manufacturers, such as Lane, have already introduced collections that are their interpretations of Southwest. That's always a sign that a style has really arrived," Bob says with authority. Photographs: Gary Zeff

A harvest table from Taos Style, decorated with petroglyphs, blends with country decor.

Trasteros, such as this from the Cimarron Collection, can store clothes in a bedroom or house an entertainment system.
WOODWORKING VISÉS TIPS ON SELECTING THIS MUST-HAVE SHOP TOOL

Vises: the cornerstone of any bench
As long as woodworkers have been sawing, drilling, shaping, and smoothing stock, they've needed a means to hold that stock securely. For centuries, craftsmen depended on vises, most often all-wooden ones they meticulously fashioned themselves.

Nowadays, you can purchase metal vises that attach to your workbench with a minimum of fuss (you need only provide wooden jaws, or wooden faces to the metal jaws, and a few mounting screws). These quick-mounting units dominate today's market, so we decided to concentrate our testing on these models rather than the few vise kits available. We found the kits, which consist of as many as seven main parts plus hardware, tricky to install. Our advice: Don't try to tackle a kit unless you're prepared for a lot of work. To our amazement, the kits we looked at had no instructions, making assembly and installation a real guessing game.

Getting a grasp on two types of vises
Trying to tell one vise from another in today's catalogs and stores can be a confusing experience. Manufacturers and retailers alike put various names on the two types of fast-mount vises, but you can quickly tell them apart visually (see the illustration at right).

Some retailers call the wooden-jaw vise a shoulder or front vise (even though it normally mounts to the end of the bench). This vise helps you secure large pieces of stock on the top of the bench because its wide jaws (up to 16") accommodate two dog holes. Those extra-wide jaws also will hold large objects between them.

On the other hand, you'll spend more time opening and closing the more-cumbersome wooden-jaw vise. Why? With the exception of the Woodcraft model 17A11, none of the wooden-jaw vises we tested had a quick-release mechanism (we'll talk about this feature in the next section).

A cross section of vises (all shown without customer-added wooden jaws) clockwise from upper left: Record V175; Shopsmith CA-0123; two wooden jaw vises from Woodcraft, models 17D03 and 17A11; AMT A847; Jorgensen 40709; Record 52½D; and the Grizzly G1092.
If you think a vise is a vise, you’re only half right. Although most vises look similar, we found plenty of differences in the way today’s vises perform. And with any tool that gets as much use in your shop as a vise, it’s the little things that make a difference over the years.

So it’s no wonder that the woodworker’s bench vise has the lion’s share of today’s market. Most of these vises have quick-release mechanisms, take up little space, and install in a snap. Ideally, you would have both types of vises on a bench, but if you don’t have the need, money, or space for two vises, a woodworker’s bench vise should be your first choice.

**Screw mechanisms: two types to choose between**

You already know how tedious it is to drive a wood screw in by hand compared to zipping it in with a power screwdriver. Likewise, cranking the handle of a plain screw vise can be equally time-consuming. That’s why some manufacturers have improved on the basic screw by adding quick-release mechanisms. Both forms of this handy contraption—lever release and gravity release—temporarily disengage the screw. Disengaged this way, you can quickly move the front jaw to any position.

The gravity release shown below holds a half nut securely alongside the screw so long as you don’t turn the handle counterclockwise. When you do, the half nut falls away from the screw.

Continued
To operate a lever release such as the one above, you squeeze the lever toward the handle with one hand as you pull or push the front jaw. The spring-activated lever holds a half nut against the screw until you move the lever. Record first developed this mechanism, but several Taiwanese manufacturers have copied it.

If you're on a budget, you can buy the models without quick release for a few less bucks (about five percent less on the Record vises, for example). But, we bet that in the long run you'll thank yourself for spending the extra dollars. We found both systems to be equally reliable, but the lever releases work just a hair faster and have a more-positive feel to them.

More vise-buying points to consider

- **Capacity.** The amount of stock that a vise will hold depends on the width and depth of the jaws, and on the maximum spread between the jaws. Woodworker's bench vises come in standard 6", 7", 9", and 10" widths, but we found big discrepancies in jaw depth among models of the same width. For example, the AMT and Jorgensen 7" models below have a 1" difference in jaw depth.

- **Heavy-duty construction.** If you've ever wondered how bench vises of the same width can be as much as $50 to $70 apart in price, a big part of the answer lies in the vise's construction. The same AMT-Jorgensen photo below also exposes heavier components in the Jorgensen vise (that sells for about twice as much as the AMT).

Close inspection of these two vises also revealed much better machining of all the parts in the Jorgenson vise—a quality that affects how smoothly the vise opens and closes. The Record vises along with the Williams & Hussey vise, which happen to be some of the most expensive, had the best machining and smoothest-working mechanisms.

- **Built-in dogs.** Most woodworker's bench vises have dogs that slide up from the front jaw, but as the chart at right shows, a few don't. Even if you currently don't have dog holes in your bench, some day you may.

- **Sprung jaws.** Possessing a quality some retailers call "toe-in," these jaws meet at their top edges first, with their bottom edges set back a fraction of an inch. As you tighten the vise, the bottom edges come together as well, creating an even distribution of pressure across the jaws. Non-sprung vises have parallel jaws whose entire surfaces touch at the same time. The result: greater pressure near the bottom of the jaws, closer to the screw.

- **Handles.** As you can see by the photo on page 42, some vises have metal handles, some have wooden handles, and wooden jaw vises come without handles (you have to make them). We prefer the wooden handles.
GRIPPING FACTS ABOUT VISES

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>TYPE</th>
<th>RELEASE</th>
<th>WIDTH (INCHES)</th>
<th>DEPTH (INCHES)</th>
<th>OPENING WITHOUT WOOD CLAW (INCHES)</th>
<th>SPRING (UN)</th>
<th>FRONT DOG (UN)</th>
<th>COUNTRY OF ORIGIN</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT</td>
<td>A847</td>
<td>WB</td>
<td>L</td>
<td>7</td>
<td>3</td>
<td>9%</td>
<td>N</td>
<td>N</td>
<td>T</td>
<td>40</td>
</tr>
<tr>
<td>COLUMBIAN</td>
<td>11902</td>
<td>WB</td>
<td>G#</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>N</td>
<td>Y</td>
<td>US</td>
<td>119</td>
</tr>
<tr>
<td>GARRETT WADE**</td>
<td>70600.01</td>
<td>WJ</td>
<td>—</td>
<td>10,16</td>
<td>—</td>
<td>9</td>
<td>—</td>
<td>—</td>
<td>C</td>
<td>92</td>
</tr>
<tr>
<td>GRIZZLY***</td>
<td>G1072</td>
<td>WB</td>
<td>L</td>
<td>7</td>
<td>3</td>
<td>8</td>
<td>Y</td>
<td>T</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G1092</td>
<td>WB</td>
<td>L</td>
<td>9</td>
<td>3</td>
<td>10</td>
<td>N</td>
<td>Y</td>
<td>T</td>
<td>80</td>
</tr>
<tr>
<td>JORGENSEN</td>
<td>40709</td>
<td>WB</td>
<td>G</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>Y</td>
<td>US</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41012</td>
<td>WB</td>
<td>G</td>
<td>10</td>
<td>4</td>
<td>12</td>
<td>Y</td>
<td>Y</td>
<td>US</td>
<td>105</td>
</tr>
<tr>
<td>RECORD</td>
<td>V175</td>
<td>WB</td>
<td>—</td>
<td>7</td>
<td>2½</td>
<td>6½</td>
<td>N</td>
<td>N</td>
<td>E</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>52D</td>
<td>WB</td>
<td>L</td>
<td>7</td>
<td>2½</td>
<td>8</td>
<td>Y</td>
<td>Y</td>
<td>E</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>52KD</td>
<td>WB</td>
<td>L</td>
<td>9</td>
<td>3½</td>
<td>13</td>
<td>Y</td>
<td>Y</td>
<td>E</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>53E</td>
<td>WB</td>
<td>L</td>
<td>1½</td>
<td>3½</td>
<td>15</td>
<td>N</td>
<td>E</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>SEARS*</td>
<td>51781C</td>
<td>WB</td>
<td>G</td>
<td>10</td>
<td>4</td>
<td>12</td>
<td>Y</td>
<td>Y</td>
<td>US</td>
<td>80</td>
</tr>
<tr>
<td>SHOPSIGHT</td>
<td>CA-123</td>
<td>WB</td>
<td>—</td>
<td>7</td>
<td>3</td>
<td>8</td>
<td>N</td>
<td>Y</td>
<td>US</td>
<td>36</td>
</tr>
<tr>
<td>WILLIAMS AND HUSSEY</td>
<td>W83</td>
<td>WB</td>
<td>—</td>
<td>10½</td>
<td>4</td>
<td>10½</td>
<td>N</td>
<td>Y</td>
<td>US</td>
<td>150</td>
</tr>
<tr>
<td>WILTON</td>
<td>53A</td>
<td>WB</td>
<td>G#</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>N</td>
<td>Y</td>
<td>US</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>64A</td>
<td>WB</td>
<td>G#</td>
<td>10</td>
<td>4½</td>
<td>12½</td>
<td>N</td>
<td>Y</td>
<td>US</td>
<td>132</td>
</tr>
<tr>
<td>WOODCRAFT</td>
<td>17003</td>
<td>WJ</td>
<td>—</td>
<td>9</td>
<td>14</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>WG</td>
<td>77</td>
</tr>
<tr>
<td>WOODCRAFT**</td>
<td>17411</td>
<td>WJ</td>
<td>G</td>
<td>10,16</td>
<td>—</td>
<td>13½</td>
<td>—</td>
<td>—</td>
<td>C</td>
<td>110</td>
</tr>
</tbody>
</table>

*Similar model sold by manufacturer: Columbian.
**Vise manufactured by Cambridge.
***Similar models sold by Jet.
# Also available without quick release.
1. (WB) Woodworker's bench vise.
   (WJ) Wooden jaw vise.
2. (L) Lever.
3. Wooden jaw vises have two dimensions—one for width of front jaw and second dimension for maximum width of user-added wooden jaw.
4. (G) Canada; (E) England; (T) Taiwan; (US) United States; (WG) West Germany.
5. Selling prices based on advertised prices at time of article's writing.

Our recommendations
How much you spend on a vise depends a lot on how much money and effort you have in the bench it will attach to. If you want a vise that matches the quality of a fine-crafted bench, then nothing short of a Record or Williams & Hussey vise will do justice to your bench. All of the Columbian, Jorgensen, Sears, Wilton, and Woodcraft vises have quality construction built into them and will satisfy your needs if you prefer a gravity release mechanism. Although the Williams & Hussey vise, shown below, is exceptionally durable, it doesn’t have a quick-release mechanism.

If you’re on a budget, we feel the Grizzly vises offer the best value. These vises don’t have spring jaws, and we weren’t impressed by their 3½-deep jaws, but they have respectable construction, smooth operation, and lever-type quick releases. At $43 for the 7½ model, and $60 for the 9-incher, we couldn’t find a better value. ♦

Two heavy-duty tubular guides and excellent machining make the Williams & Hussey vise sturdy and smooth.

Manufacturers listing

<table>
<thead>
<tr>
<th>AMT</th>
<th>215/948-0400</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLUMBIAN</td>
<td>800-543-3224</td>
</tr>
<tr>
<td>GARRETT WADE</td>
<td>212/807-1155</td>
</tr>
<tr>
<td>JORGENSEN</td>
<td>312/666-0640</td>
</tr>
<tr>
<td>GRIZZLY</td>
<td>East of Mississippi: 717/326-8806 West of Mississippi: 206/647-0801</td>
</tr>
<tr>
<td>RECORD</td>
<td>Available through Garrett Wade, Woodcraft, and other woodworking catalogs</td>
</tr>
<tr>
<td>SHOPSIGHT</td>
<td>800-543-9396</td>
</tr>
<tr>
<td>WILLIAMS &amp; HUSSEY</td>
<td>800-258-1380</td>
</tr>
<tr>
<td>WILTON</td>
<td>708/934-6000</td>
</tr>
<tr>
<td>WOODCRAFT</td>
<td>800-225-1153</td>
</tr>
</tbody>
</table>

Written by Bill Krier  Technical consultant: James R. Downing  Illustrations: Kim Downing; Bill Zaun  Photographs: Bob Calmer
BUILD ON A STRONG FOUNDATION
LABOR-OF-LOVE
WORKBENCH

Note: For the frame members (parts A, B, C, E, F) we used 1 1/2" birch. To save money, you could substitute pine, fir, or spruce 2x4s and 2x6s for these parts.

Let's start with the end panels
1 Cut the end panel uprights (A) and rails (B, C) to the sizes listed in the Bill of Materials.
2 Set a stop, and cut half-laps on the ends of each upright and rail. See the End Panel Drawing on the opposite page for reference.
3 Glue and clamp together each end frame, checking for square. Later, scrape off the excess glue and sand both end frames.
4 Mark the centerpoints for eight 3/4" holes on the outside face of each end frame (see the End Panel Drawing for hole locations). Set a stop for consistent depths, and bore 3/4" holes 3/4" deep at each marked centerpoint. (See the Corner Detail at right for reference.) Switch bits, and drill a 1/4" hole through the stock, centered inside each 3/4" hole, backing the stock with scrap to prevent chip-out.
5 Rout a 1/4" rabbet along the inside face of each end frame where shown on the End Panel Drawing.
6 Measure the rabbeted openings, and cut two pieces of 3/4" plywood (D) to size. Cut or sand the square corners of the plywood panels to fit into the rounded corners of the rabbets in the end frames. Glue and clamp the plywood panels into the rabbets, and remove any excess glue with a damp cloth.

Add the stretchers for stability
1 Cut the stretchers (E) to size.
2 Cut a 1/2" rabbet 3/4" deep on the top inside edge of each stretcher. (We cut ours on the tablesaw with a dado blade; a table-mounted router fitted with a fence and straight bit also would work.)
3 Mark the locations, and dry-clamp the stretchers in place between the end panels where shown on the drawing at right.

Before designing this workbench, I talked to numerous woodworkers to determine what features they wanted. Then, I headed for the drawing board. Our bench has a base that can be kept simple like the one in the inset photo. Or, build the one above with doors and drawers. I've also incorporated a large 30x60" worktop, a bench-dog-and-vise system and a board jack (see page 86).
4 Using the previously drilled holes in the end-panel uprights as guides, drill a pair of \( \frac{1}{4} \)" holes 2\( \frac{1}{2} \)" deep into the ends of each stretcher as shown at right. (If your bit is too short, drill as deep as you can and finish drilling the holes to 2\( \frac{1}{2} \)" deep after removing the clamps in the next step.)

5 With the stretchers still dry-clamped in place, and using the drawing at right for reference,
mark matching numbers and location reference lines on each stretcher end and mating upright for relocating the stretchers later. Remove the clamps and finish drilling the ¼” holes to 2” deep into the ends of each stretcher.

**LOCATING THE THREADED DOWEL HOLES**

**STEP 1.**
Use a try square to mark lines along both sides of each hole.

**STEP 2.**
Find center between lines and transfer centerlines down outside face.

**STEP 3.**
Measure down 1½” and mark a line across the face of the board.

Following the three-step drawing above, mark the centerpoints for the cross-dowel holes. (When assembling the workbench later, the ¼ x 3” bolt threads into the cross dowels to hold the assembly together.) Then, drill ½” holes through the stretchers where marked, backing the stock with scrap to prevent chip-out.

Dry-clamp the stretchers (in the same location as before) between the end panels. Insert ¼” cross dowels into the ½” holes (see the Buying Guide for our source of hardware). Bolt the end panels to the stretchers with ¼ x 3” hex-head bolts. (See the drawing above left for reference.)

Thread the bolts through the cross dowels. (Be careful not to overtighten the bolts; we snapped off the head of one bolt.)

**Now, for the shelves**

1 Measure the distance between the stretchers (E), and cut the shelf supports (F) to size. Glue and screw the supports between the stretchers, with the top edge of the supports flush with the bottom edge of the rabbet cut in each stretcher. (See the Basic Bench Drawing for reference.)

2 Measure the openings, and cut the shelf panels (G) to size. Check the fit, and then glue and clamp the panels into place.

**Add the cleats and locate the vise**

*Note: See the box titled Topping It Off for benchtop alternatives.*

1 Cut the cleats (H) to size. Mark the centerpoints for the 5/16” holes on the top face of each cleat. (See the Cleat Detail accompanying the Basic Bench Drawing for the locations of the 5/16” holes needed to form the slots.) Drill the holes where marked. With a chisel, remove material between holes to form the slots. When fastening the benchtop to the cleats later, the slots allow the benchtop to expand and contract without splitting the cleat or benchtop.

2 With the top edges flush, glue and screw the cleats (H) to the top rail (B) on the outside face of each end panel.

3 Position the benchtop on the base and allow for a 9” overhang on the end on which you mount the vise. If you are right-handed, mount the vise on the left-hand
end. If you're left-handed, position the vise on the opposite end (same edge) and leave a 9" overhang on that end.

4 With the benchtop correctly positioned, trace the outline of the bench base on the bottom of the benchtop for repositioning the benchtop on the base later.

**Let's add the vise**

*Note: If you plan on adding the doors and drawers, do that first, and then add the vise. The instructions for adding the doors and drawers start on page 50.*

We cut parts I, J, K, and L to fit the vise and laminated benchtop noted in the Buying Guide. If you use a different vise and top, your dimensions may vary.

1 With the benchtop on the base, cut the spacer (1) to fit between the vise mount and the bottom surface of the benchtop. (See the Vise Drawing for reference. To accommodate the mounting bolts, we cut 3/4"x3/4" notches in the back two corners of the spacer).

2 To accommodate the mounting bolts, we cut 3/4"x3/4" notches in the back two corners of the spacer.

The thickness of the spacer should drop the top edge of the vise jaws 1/6" below the top surface of the benchtop. The thickness of the spacer will depend on the thickness of your benchtop. The 1/6" gap prevents projects on the benchtop from contacting the metal jaws of the vise.

2 Using the slots and holes in the cleats as guides, drill 3/16" holes 1" deep into the bottom side of the top for the 1/4"x2" lag screws. Be sure to center the pilot holes in the slots. Screw (but don't glue) the benchtop to the base.

3 Remove the vise, spacer, and mounting screws from the benchtop. So you won't scratch your projects, countersink the vise mounting holes so the mounting screws sit 1/6" below the top surface. With the spacer in place, bolt the vise to the benchtop.

4 Measure the distance from the inside face of the metal vise jaw to the front edge of the benchtop. (Ours measured 3/4"). Resaw or plane a 60"-long by 134"-wide strip (J) to match the measured distance. See the Vise Drawing for reference. Cut the strip to length. One end of the strip should fit against the vise jaw; the other end, flush with the end of the benchtop. Glue and screw the strip to the edge of the benchtop.

5 Cut the vise-jaw liners (K) to size. Using the Vise Drawing for reference, drill holes and fasten the liners to the vise jaws.

6 Cut another 134"-wide strip from 3/4" stock for the removable strip (L). (We've made the strip removable so it can be replaced should you accidentally saw into it.) Drill and counterbore holes into the removable strip where shown on the Vise Drawing. Screw (no glue) the strip to the edge of the benchtop.

**Topping it off**

Let your budget decide

You can top a workbench in several different ways. First, you can cut forty 3/4"-thick strips 134" wide by 60" long. With the surfaces flush, glue them together face to face in three sections. Then, glue and clamp together the three sections. Next, scrape and belt-sand the laminates smooth to form the benchtop.

You also can purchase damaged solid-core doors at most building supply centers for under $25.

See the Buying Guide on page 53 for our source of the laminated-maple top used on this workbench.

With the benchtop upside down, bore the vise-mounting holes through the spacer block and benchtop.
WORKBENCH

Time to drill the dog holes and make the bench dogs
1 Mark the dog hole centerpoints on the benchtop where located on the Exploded-View Drawing.
2 Build a drill guide like the one shown above. Then, bore ¾" holes into the benchtop as shown right. The guide helps keep the holes perpendicular to the workbench surface. When boring the hole closest to the vise, bore only 1½" deep to avoid hitting the vise mount and damaging the drill bit. Back the bottom of the benchtop with scrap to prevent chip-out.
3 Rout a ½" round-over on the top inside edge of each hole.
4 To build a bench dog, cut a 3 x 3" square from ¾" plywood. Draw diagonal lines on the block, and bore a ¾" hole at the marked centerpoint. Sand a slight round-over on all edges of the block.
5 Cut a ¾" oak dowel to 2½" long. Sand a round-over on the bottom end. Glue the dowel into the hole in the plywood square.

Next, build the drawers
1 Using the Cutting Diagram on page 52 and the Drawer Drawing at right for reference, cut a 6" strip off the end of a sheet of ¾" plywood. Cut the drawer fronts (N) to size.

Continued
Bill of Materials For Expanded Bench

<table>
<thead>
<tr>
<th>Part</th>
<th>Finished Size</th>
<th>Matl.</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>|</p>
<table>
<thead>
<tr>
<th>Parts</th>
<th>Finished Size</th>
<th>Matl.</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material key: B-birch, BP-birch plywood

Supplies: 1¼" flathead wood screws, #8×2½" flathead wood screws, ½" flat washers, ¾×3" hex head bolts, ½" cross dowels, ¼×2½" lag screws.

Toenail tacks on both sides to hold in place

Roller discs (2)

Roller detail

Bench base

Marked centerline

Drawer glide

Attach panels and cleats with 1¼" drywall screws, requiring ¾" holes through cleats. Mating holes in panel are ¾" holes ½" deep.
**WORKBENCH**

2 From 1/4" and 3/4" plywood, cut the four drawer sides (N), back (O), and bottom (P) to size.

3 Cut a 5/8" rabbet 1/2" deep along both ends of each drawer front. Machine a 3/4" dado 1/4" deep 1" from the back edge across each drawer side. Using the Drawer Drawing on page 50 for reference, cut a 1/2" groove 1/4" deep 1/2" from the bottom edge along the inside face of the drawer front and sides. Remove the clamps.

4 Dry-clamp the drawers together to check the fit. Trim any parts if necessary. The bottom edge of the drawer front (M) sits 3/8" lower than the bottom edge of the sides (N). Locate the centerpoints on each drawer side, and drill and countersink the holes for the 7/8" screws. Remove the clamps.

5 Glue and screw the drawer together, checking for square.

6 Mark the centerpoints for the beech pulls. Drill the holes and fasten a pull to each drawer.

**Install the drawers**

1 Mount a plastic drawer guide to the bottom back edge of each drawer, centered from side to side. (See the Drawer Guide/Detail accompanying the Drawer Drawing for reference.)

2 Measure the distance between the end panels, and mark a centerline on the top of the shelf panel (G) where shown on the Bench Base Drawing. Attach a roller on each side of the marked centerline where shown on the Roller Detail. Now, put the drawers in position, and attach a roller disc to the shelf panel next to the end panels where shown on the Bench Base Drawing.

3 Mark a centerline between each set of rollers. Using a square, mark the centerline from the front of the shelf to the back. Position a metal drawer glide over each line, and fasten each glide with just one screw in the middle. Fit both drawers into position and check the alignment of the rollers and glides. Adjust the glides as required. Next, install the rest of the screws to hold the glides in place.

**Attach the divider, cleats, and back panels**

1 From 3/4" plywood, cut the center divider (Q) to fit, cutting a notch for the back stretcher (E).

2 Cut the divider cleats (R) to size. Glue and screw cleats to the top and bottom of the divider panel. Slip the divider into position and screw it to the shelves (G). The divider should be 13 1/2" from the back side of the cabinet and 1 1/2" from the front.

3 Cut and install the remaining cleats (S, T, U, V, W) 13 1/2" from the backside of the cabinet.

4 Cut the back panels (X, Y) to size. Glue the panels in place.

**Add the doors and let’s put this bench to work**

1 Cut two pieces of 3/4" birch plywood to 22 5/8" by 16 1/2" for the four front doors (Z) where shown on the Cutting Diagram. Mark a centerline down the center of each panel. Glue and screw a pull over this centerline where shown on the drawing at left.
2 Following the marked centerline, and cutting through the center of the pulls, cut each plywood door panel in half.

3 Using the drawing below for reference, fasten a fixing plate flush with the top and bottom inside corners of each door.

4 Drill the holes in the stretchers (E) for the bushings. (If you need more room when drilling, loosen the hex-head bolts threaded through the cross dowels.) Insert a bushing in each hole. Push the hinges into the bushings, slide the fixing plates (attached to the doors) into the hinges, and thread the side-to-side adjustment screw through the hinge and into the fixing plate. Position the two adjustment screws for a good fit of the doors.

5 Remove or mask all the hardware. Stain and finish. (We left ours natural—no stain—and applied several coats of polyurethane). Add the catches to the bottom of the top stretcher. Mark the mating location for the strike plates on the upper corners of each door back and fasten them in place. (See the drawing titled Cutting the Doors for Reference when locating the strike plates.)

**Buying Guide**

- **Hardware.** For the basic bench, order threaded steel cross dowels, catalog no. D6618, 28 cents each (16 needed). If you're building the workbench with drawers and doors, you'll need the following hardware: 1 1/4 x 4" beech pulls, catalog no. B2527, $1.70 each (four needed). Delta 100 drawer glide with low friction disc rollers, catalog no. D8400, $3.60 each (two needed). Pivot hinges and plastic bushing, catalog no. D5600, $2.95/pair (four pair needed). Magnetic catch and strike plates, catalog no. D2107, 895 each (four needed). Add $3.50 per order for shipping. The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374-9514. Or, call 612/428-2199 to order.

- **Vise.** Cast-iron, lever-type quick release, 3"-deep by 7"-wide jaws, 8" maximum opening, catalog no. G1091, $45.75 (U.S.) ppd. from Grizzly Imports, P.O. Box 2069, Bellingham, WA 98227, or call 800-541-5537 to order.

- **Laminated maple benchtop.** 3/4 x 30 x 60" butcher block, part no. BB3060, $155 (U.S.) from Dunn and Company, 97 Washington, Des Moines, IA 50314. For freight costs and ordering, call 800-728-3866. ♠️

Produced by Marlen Kemnet
Project Design: James R. Downing
Photographs: Jim Kasenius
Illustrations: Kim Downing; Bill Zaun
And the winners are...KIDS

We loved it! Thanks to our generous readers, we had a room overflowing with 580 wooden toys awaiting judges for our second Build-A-Toy competition. After the judging, the U.S. Marine Corps Reserve landed and packed up toys to distribute through their Toys for Tots program.

We can't furnish plans for toys shown here, but you'll find two designs published in this issue. See page 80 for the complete winners list. As a bonus, the Museum of American Folk Art in New York City will exhibit many of the top toy entries from December 6 through January 6.

Sam Roberts of Roseburg, Oregon, packed a lot of woodworking skill into a 25"-long three-wheel motorcycle. His entry won the home-hobbyist grand prize and the best-use-of-wood award.
Homer Formby, far left photo, and the judging committee, above, take a close look at finalists before casting their votes.

The judges, shown behind a section of toys: Jim Downing, WOOD magazine design editor; Carmen Schifano, shop teacher at Chicago's Near North Career Metropolitan High School; Shelley Jones, Cherry Tree Toys art director; Major W. C. Koehler Jr., U. S. Marine Corps, and Homer Formby, one of America's most respected finishing experts.

Student entries were stronger this year, and Charlie Hardeman's tugboat was the top vote getter. Charlie, 14, built the toy in his grandfather's shop in Miami.

Bill Bruck, an industrial arts teacher in Fairfield, Ohio, built a recreational vehicle that captured the grand prize in the professional division. The roof slides off and reveals a carefully detailed interior.

Yes! WOOD magazine will sponsor another Build-A-Toy contest with even more prizes. Look for rules in the October 1990 issue.
Blemish-free and smooth as silk were just two of the attributes the Build-A-Toy™ judges noted when describing the finish on Jack Rowland’s little tractor. In fact, the judges proclaimed this the best home-hobbyist finish, worth $1,000 in Deft merchandise. Beneath the finish, we discovered a nifty project—little wonder the tractor is a favorite with Jack’s 13 grandchildren, too.

The chassis and body parts come first
1 Cut the chassis (A), axle block (B), hitch (C), and seat (D) to the sizes listed in the Bill of Materials. Mark and cut the radius on the rear of the hitch where shown on the Exploded-View Drawing. Now, drill a 3/8” hole through the hitch where shown.
2 Glue and clamp the axle block and hitch to the bottom of the chassis where shown on the Hitch Detail. Glue the seat flush with the back edge of the chassis.
3 Mark the centerpoints and drill four axle holes 3/4” deep in the chassis where located on the Exploded-View Drawing.

Note: Measure the diameter of your toy pegs before drilling the axle holes. We’ve found some that require 3/8” holes for a snug fit and others needed 7/8” holes. Test-drill holes in scrap first.

4 Cut the grille and firewall (E) and motor (F) to size (we laminated two ¾” pieces for the motor). Drill four 5/16” holes in the motor where shown on the drawing. Using a handsaw, cut kerfs in the grille front where shown on the drawing. Glue and clamp the parts to the chassis.
5 Transfer the full-sized hood (G) pattern to the edge of a piece of ½” stock 2½” wide by 2¾” long. Cut it to shape. Glue the hood to the tractor assembly.
6 Sand ½” round-overs on the tractor body where shown.
7 Using the side view of the backrest (H) for reference, cut the piece to shape and sand round-overs on all but the bottom edges. Glue and clamp the backrest to the seat.
8 Trim four 5/16 X 1 3/8” axle pegs to 3/8” long, and glue them in the holes drilled in the motor.

9 Mark the radius, and then bandsaw the steering wheel (I) to shape from ¾” stock. Cut a piece of ¾” dowel to 1 ½” long for the steering wheel rod, and drill a 3/8” hole into the tractor where shown on the Hole Detail. Glue the wheel to the dowel.

### Bill of Materials

<table>
<thead>
<tr>
<th>Parts</th>
<th>Finished Size</th>
<th>T</th>
<th>W</th>
<th>L</th>
<th>Wl</th>
</tr>
</thead>
<tbody>
<tr>
<td>A chassis</td>
<td>¾”</td>
<td>2¼”</td>
<td>5½”</td>
<td>W 1</td>
<td></td>
</tr>
<tr>
<td>B axle block</td>
<td>¾”</td>
<td>1½”</td>
<td>2½”</td>
<td>W 1</td>
<td></td>
</tr>
<tr>
<td>C hitch</td>
<td>¾”</td>
<td>½”</td>
<td>5½”</td>
<td>W 1</td>
<td></td>
</tr>
<tr>
<td>D seat</td>
<td>¾”</td>
<td>1½”</td>
<td>2½”</td>
<td>W 1</td>
<td></td>
</tr>
<tr>
<td>E grille &amp; firewall</td>
<td>¾”</td>
<td>2½”</td>
<td>1¼”</td>
<td>W 2</td>
<td></td>
</tr>
<tr>
<td>F motor</td>
<td>1½”</td>
<td>1¼”</td>
<td>1¼”</td>
<td>LW 1</td>
<td></td>
</tr>
<tr>
<td>G hood</td>
<td>½”</td>
<td>2½”</td>
<td>2¼”</td>
<td>W 1</td>
<td></td>
</tr>
<tr>
<td>H backrest</td>
<td>½”</td>
<td>1½”</td>
<td>2”</td>
<td>W 1</td>
<td></td>
</tr>
<tr>
<td>I steering wheel</td>
<td>¾”</td>
<td>1¼” diam.</td>
<td>W 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J front wheels</td>
<td>¾”</td>
<td>2¼” diam.</td>
<td>W 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K back wheels</td>
<td>¾”</td>
<td>3½” diam.</td>
<td>W 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material Key: W-walnut, LW-laminated walnut
Supplies: ¾” dowel stock, 8—5/16 X 1 3/8” axle pegs, finish.

Print this article

56
Add some wheels for traction
1. With a circle cutter, cut the 2½"-diameter front wheels (J) to shape. Then, counterbore a 1" hole ¼" deep on the outside face of each wheel.
2. Using the Rear Wheel Drawing for reference, lay out the rear wheels (K) on ¼" stock, and drill four ¾" holes in each where shown. Reset the circle cutter, and cut a pair of 3½"-diameter rear wheels to shape.
3. Redrill the ¼" pilot hole in each of the four wheels to ⅜".
4. Rout ¼" round-overs on the outside edges of wheels. (To do this, we cut a V-shaped notch in a 20"-long piece of scrap stock and clamped it to our router table as shown in the photo at right. This enabled us to rout the wheels while keeping our fingers safely away from the router bit.) Now, remove the fence and round-over the edges of the ¾" holes.

Apply the finish, and head for the north 40
1. Sand the tractor smooth.
2. Add the finish to the wheels, steering wheel, and tractor body, being careful not to get any finish in the tractor body axle or steering-wheel holes. (For his award-winning finish, Jack sands the bare wood with 280-grit paper. Then, he applies his Defl, an aerosol lacquer, and lightly sands it with 280-grit. After applying a second coat of finish, he rubs it with 0000 steel wool.) Glue and pin the wheels to the tractor body with the ⅛″x⅔⅛″ axle pegs. Mount the steering wheel.

For safety, use a router with a V-shaped notch when routing the wheels.

Photographs: Hopkins Associates; Bob Calmer Illustrations: Kim Downing; Bill Zaun
THE BOARD OF
A fun-to-make learning toy that teaches

Children who visited our Build-A-Toy contest room couldn't keep their hands off this learning board designed by Jerome Kobishop of Stevens Point, Wisconsin. The challenge of mating bright colors and different shapes will certainly captivate your favorite preschoolers, too.

The board comes first
1 Rip and crosscut a piece of ¾"-thick maple to 5½" wide by 12½" long. Mark the locations for the wooden buttons and pegs where shown on the Board Drawing on the opposite page.
2 Drill ⅜" holes ¾" deep for the buttons where marked. Then, drill the ⅝", ⅞", ¾", and 1" peg holes.
3 Using carbon paper or a photocopy, center and transfer the full-sized peg-bottom patterns over the remaining four centerpoints. Drill blade start holes, and cut the openings to shape with a scroll-saw or coping saw.

And now, for the pegs
1 Crosscut a 2" maple turning square to 10" long. If you don't have stock this size, laminate thinner stock. (We found it easier to turn identical-shaped pegs if we turned them two at a time.)
2 Draw diagonals on both ends to find centers, and mount the turning square between centers on the lathe. Start the lathe, and turn the square round.
3 Using a photocopy or carbon paper, transfer the full-sized template pattern shown on the opposite page to posterboard or hardboard, and cut the template to shape.
4 Using the drawing above for reference, turn the pegs to shape. (We used a ⅜" gouge and a parting tool.) Turn the tenoned base of four of the pegs to fit into the ⅝", ⅞", ¾", and 1" hole openings (we frequently stopped the lathe and measured the round tenons with an outside calipers to ensure a good fit into their mating holes). Next, turn four pegs leaving the tenons 1" in diameter. Sand the pegs smooth and finish cutting between the pegs with a bandsaw or handsaw where shown on the drawing.
5 Trace the four patterns onto the bottom surface of the 1" diameter tenons. As shown in the drawing above, wrap a cloth around the peg to prevent marring it, and clamp it steady. Use a dovetail saw to cut each tenon to shape.
Add the finish, and call the little ones

1 Sand the board smooth. Apply a clear finish to the board and pegs. (Before applying the finish, we stuck a 1"-long piece of 3/8" dowel stock in each 3/8" hole to prevent finish from running into the button holes. We removed the dowels after the finish dried.) Steel-wool the top of the pegs and paint them (we used enamel).

2 Paint the wood buttons to match the peg tops. Glue and tap the pegs into the 3/8" holes (we used a rubber mallet to prevent chipping the painted tops of the buttons). ♣

FULL-SIZED PEG TEMPLATE

Note: Paint tops of pegs same color as buttons

1 5/8" dia.

3/8" dia.

1 9/16" dia.

Turn tenon to proper diameter to fit drilled holes

FULL-SIZED HOLE AND PEG END PATTERNS

Patterns require a 1" tenon on end of pegs

Centerpoints

Project Design: Jerome Kobishop
Photographs: Hopkins Associates
Illustrations: Kim Downing, Bill Zaun
HOW TO TRANSFORM FOUND WOOD INTO USABLE STOCK

WOODS—ON THE ROAD AGAIN
Over the last few years, we have published two articles about freshly cut wood—one called “Air-Drying Green Wood” (February 1987) and another titled “Harvest Your Own Bowl Blanks” (December 1987). But for me anyway, one question still remained: “How do you section and cut your way from an irregular-shaped hunk of wood to stock you can actually use to make something with?”

Not long ago, I seized my opportunity to find out. It happened when Marlen Kemnet, WOOD magazine’s how-to editor, passed along a hot tip from two of our readers. They had spotted “some of the best quilted maple they had ever seen” less than 120 miles from Des Moines. Marlen and Jim Downing, our design editor, wanted to take a look-see, so we loaded up our gear one Saturday morning and headed down Interstate 80 to Iowa City.

It was there, all right—more freshly cut maple than we could hope to carry! After de-barking the logs and sealing their cut surfaces and end grain to prevent rapid moisture loss and further splitting, we muscled as many of them as we could into the back of Jim’s pickup. (That’s Jim and me hefting the logs into the truck in the photo at right. Marlen, at rest on the tailgate of Jim’s truck, apparently was on his break when this photo was taken.) A few hours later, back in Des Moines, we tossed off our bounty outside the WOOD magazine offices. And the following Monday, we started our investigation of what turned out to be a most intriguing process.

Well, that’s how our adventure began. But there’s lots more to the story, so be sure to read on to find out how we transformed those big chunks of maple into workable pieces. Here’s hoping you find the process as interesting as we did.

Larry Clayton

Now you can add substantially to your lumber stockpile for future projects—at little or no cost. And we think you’ll have lots of fun doing it, too!
Start by sectioning the logs
Since the slabs of wood we had lugged back to our offices were much too large to handle, our first task was to section them. And it didn’t take us long to find out that you can’t just divide up a log any old way you want. No, sir! That’s where knowing how to “read a log” comes in mighty handy. And fortunately for us, Jim Boelling, our project builder, has done quite a lot of log-splitting and was able to pass along some helpful tips. “Basically, you need to attack wood from its most vulnerable points—along the cracks that invariably occur during the drying process,” Jim advised. “Think of it as exploiting the wood’s weakness.” Typically, the larger the log you’re working with, the more stress cracks you will see.

Start by lifting the piece you plan to work on up to a comfortable height. (We sat ours on another slab.) Now, looking down onto the top of the log, determine which cracks you want to attack. Major fissures often will show down the side of the log as well as from the end.

Once you’ve settled on your course of action, begin driving a pair of wedges down into the top of the log as shown in the photo above. As you drive in the wedges, the sections of the log should separate; often, they pop apart under impact. Divide the log into as many sections as there are major cracks.

Here’s an important safety reminder: Be sure to exercise all reasonable caution when sectioning your logs. Note that Jim Downing has donned a face shield to deflect flying wood chips, as well as gloves to protect his hands from a glancing blow of the sledge.

Make yourself a shooting box
With any luck at all, you now have several workable sections that need further processing. But wait a minute! Since none of the surfaces is flat enough to allow machining, you need to build what we call a “shooting box.” This simple-to-construct jig makes it possible for you to shave one of the log’s surfaces flat with the help of a router. The Exploded View Drawing above shows how the various jig parts fit together.
FOUND WOOD

Processing your wood—
the 5 key steps

Once you've completed construction of the shooting box, you're now ready for the exciting part—remolding those awkward-shaped pieces of wood into project material. Ready to start?

1 Begin by nailing one of the shooting box's support arms to the log as shown in the sketch on the previous page. Make sure that the top edge of the arm extends slightly above the surface of the log. Repeat this process to attach the second arm to the log.

Now, lift the log into position in the shooting box. Also, locate the router-mounted carrier board atop the rails of the shooting box. Lower the router's cutter (we used a 1/2" carbide-tipped straight bit) so that it will remove about 1/4" of material. Then, holding the router as shown in Photo 1, move the carrier board back and forth over the log until you have removed the stock.

2 Actually, from here on out, you can rely on your bandsaw, fitted with the widest blade you have, to make the remaining cuts. As you can see by looking at Photo 2, you make the next cut with the surface that you just trued-up against the bandsaw table. Use a straight-edged guide board to control your cut. Take your time here; the slower you go, the straighter your cut will be. Note: Due to the thickness of our log section, we had to remove a portion of it with a chainsaw prior to making the cut shown. Only then would the remaining piece pass under the upper blade guide.

3 Next, with two (in our case, three) flat surfaces to work with, you can call on the saw's rip fence to guide your remaining cuts. To determine the maximum-width cut you can make on your machine, raise the upper blade guide up as far as possible and measure the distance from the table to the bottom of the blade guide. Then, set your rip fence that distance from the blade, and pass the stock through the saw again as shown in Photo 3.

At this point, you have some decision-making to do. If you want to make turning squares or bowl blanks with the wood, simply surface the fourth edge by running it through the saw again. Then, cut the material to the desired configurations. If we had chosen to, we could have ripped the chunk shown in Photo 3 into several turning squares. Or, we could have crosscut it into a few bowl blanks. If you want to produce some flat stock, however, we rec-
ommend that you spend some time deciding which edge of the material to cut your boards from. Why? Because how you do it will affect the appearance of your boards. As you can see by looking at the drawing above, if you quarter-saw the stock, you'll end up with boards that display a straight grain pattern. But if you prefer the cathedral grain pattern of flat-sawed boards, that's fine, too.

What's a good way to determine how to proceed? We've found that wetting the surfaces of the wood with a damp rag allows us to quickly see which grain pattern looks most pleasing.

Once you've made your decision, set your bandsaw's fence the desired distance from the blade. (Shrinking and additional machining will reduce each board dimension by about ¼" or so. Be sure to allow for this reduction.) Rip the material into boards as shown in Photo 4.

5 OK, you've finished sawing your logs into some great-looking boards of various thicknesses, and maybe even some bowl blanks and turning squares. Now what? In order to ensure that you will have usable material when it dries, you need to seal, sticker, and store the wood.

To prevent uneven drying of the material, seal all end grain as shown here with paint or one of the products designed especially for this purpose. (See the Buying Guide for the product we used.) Then, cut several thin, narrow pieces of spacer material—preferably from leftover log scraps. These so-called "stickers," when placed between each layer of stock and near the ends of the boards, allow air to move freely in and around the boards as they dry.

After stickering your freshly cut and prepared lumber, move it to a dry, moderately warm location for storing. Also, label the stacks as to species and stickering date.

How long will it be before your lumber air-dries enough to use it? That depends, but an old adage calls for one year of drying time per inch of thickness. Of course, this will vary with the drying conditions. By far the best way to judge readiness at any given time is with a moisture meter.

Buying Guide

- Sealtite. Green wood sealer, catalog no. 01W61, $15.50 per gallon ppd. Woodcraft, Dept. WBH, P.O. Box 1686, Parkersburg, WV 26102-1686.

Written by Larry Clayton
Photographs: Jim Kascoutis, Bob Calmer
Illustrations: Jim Stevenson
Like most self-taught woodturners, I've picked up my share of bad habits along the way. That's why I feel so fortunate to have been able to spend a day at the lathe with Rus Hurt, a professional turner who lives in Port Wing, Wisconsin. Rus, who has produced more than 2,000 weed pots during the past seven years, has developed a step-by-step turning method that anyone—including a beginner—can master. Following Rus's no-nonsense procedure, I now can turn out a blemish-free weed pot in less than 40 minutes. And after reading this article and turning a few practice pieces, you'll be able to do the same in no time at all.

Marlen Kemnet
How-to Editor

Note: Sharp turning tools are a must. See the box below for reference. For additional help, refer to our Turning Basics article in the August 1985 issue of WOOD magazine and the Hollow-Grind Sharpening article, June 1986.

**Turn your stock round**

**Note:** If you don't have turning squares or dried firewood for your weed pot, see the Buying Guide for a source of turning squares.

1. Cut a piece of 3"- to 4"-square stock to 6" long. Draw diagonals on each end to find center.
2. Mount the stock between centers, using a spur center in the headstock end and a ball-bearing cup center in the tailstock.
3. With a 1/2" or 3/4" gouge, turn the stock round as shown in Photo A. Bring the work into round with light cuts and a slow lathe speed of 600–800 rpm. As the piece becomes more cylindrical in shape, increase the speed to about 1,350 rpm, and take slightly heavier cuts. For stability and safety, stop the lathe and move the tool rest closer to the turning as you round down the stock.

### 3 tools do the job

<table>
<thead>
<tr>
<th>TOOL</th>
<th>BEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot; spindle gouge</td>
<td><img src="bevel1.png" alt="Bevel" /></td>
</tr>
<tr>
<td>3/4&quot; spindle gouge</td>
<td><img src="bevel2.png" alt="Bevel" /></td>
</tr>
<tr>
<td>Parting tool</td>
<td><img src="bevel3.png" alt="Bevel" /></td>
</tr>
</tbody>
</table>
**Square both ends of the cylinder**

1. Use a 1/8" parting tool to square the headstock end (the end that will become the base) and form a tenon as shown in Photo B. Turn the tenon to fit into the hole in your drill-press table. (We checked the diameter of the tenon with an outside calipers. If your drill-press table doesn’t have a hole, drill a 3/4" hole through a piece of 3/4" plywood. Center the hole under the chuck, and fasten the plywood to your drill-press table to form an auxiliary table.) The tenon allows you to center and stabilize the turned blank flat on your drill-press table where shown in the drawing titled Drilling the Throat Hole.

2. Using a 3/8" gouge, form a concave bottom (up to the tenon) on the turning as shown in Photo C and Figure 1 at the bottom of the page. This shearing cut eliminates the torn end grain resulting from the scraping cuts made with the parting tool and results in much less sanding later. The concave bottom also helps the completed weed pot to sit level.

3. Repeat the previous two steps to form a 1/4" tenon 1/4" long on the opposite end of the turning and to create a concave surface where shown in Figure 2 below. For a tear-free surface near the throat hole, Rus prefers to make this tenon about 1/16" smaller than the diameter of the throat hole. This allows him to remove the entire tenon when drilling the throat hole.

4. Sand smooth the concave portion on the top of the turning. It’s easier to sand this surface now, before the tenon is removed. Remove the turning from the lathe.

---

**Time to drill the throat hole**

1. Chuck a 3/8" brad-point bit into your drill press. Position the bottom tenon in the hole in your drill-press table or wooden auxiliary top. Then, center the point of the bit directly over the tailstock-center indentation where shown in the drawing below.

2. With a drill-press speed of about 1,000 rpm, drill a 3/8" hole as deep as possible into the turning where shown in the drawing. For larger weed pots, you may want to increase the diameter of the throat hole. To prevent the bit from overheating, Rus raises it several times and allows the spinning bit to clean the waste from the hole and bit.

3. To help recenter the throat-hole end of the turning on the cup center, form a countersink on the hole just drilled. To do this, stick the pointed end of a plumber’s pipe reamer or large countersink in the throat hole and turn it by hand—usually about two revolutions of the reamer.

4. Remount the turning stock between centers.

---

**How the Weed Pot Takes Shape**

**Figure 1**

See photos A, B, and C

**Figure 2**

**Drilling the Throat Hole**
WEED POTS

Turn the base to rough shape

1. Readjust the tool rest at an angle and close to the base of the turning for tool stability. See Photo D for reference. Hold a 3/8" spindle gouge in your left hand, and use your right hand to stabilize the tool shaft on the tool rest. With the cutting tip of the gouge rolled slightly on its side and angled slightly upward, shape the arc for the base of the turning. See the drawing titled Cuts to Form the Arc for reference on the sequence of cuts. Make continuous final cuts to create a smooth arc as shown in Photo D and Figure 3.

2. Readjust your tool rest, and start on the opposite side of Line 1, making cuts toward the neck end (Line 2) as shown in Photo E and Figure 4 to form the top of the base. To accomplish this, shift the tool to the right hand and stabilize the tool shaft on the tool rest with the left hand. After making the cuts to roughly shape the arc, make final continuous arced-cuts to create the smooth shape shown in Photo E.

Proportions: Rus’s Rule of Thirds

To establish proportions for a weed pot, Rus suggests dividing the distance between the top and bottom (not including the tenons) into thirds. Then, he recommends marking reference lines on the cylinder where shown in the drawing at right. Line 1 (nearest the bottom) will be the widest portion of the base. Line 2 is where the squatty base narrows for the neck. Mark a third line between Line 2 and the top. This is where the neck will be at its narrowest. Remember, these are just guidelines; try slightly different shapes as shown at right.

CUTS TO FORM THE ARC

Figure 3
See photo D

Figure 4
See photo E

Figure 5
See photo F

66

WOOD MAGAZINE  SEPTEMBER 1990
Shape the neck

1 Start by making a reference cut at Line 3 (the thinnest portion of the neck) with the parting tool. Cut until the diameter remaining is 3/4" thick. (As shown in Photo F, we used outside calipers to ensure we didn't make the reference cut too deep.) See Figure 5 for reference before making the cut.

2 Start at the top of the previously formed base (Line 2), and cut toward the neck reference cut. Then, with the gouge in your left hand and using your right hand for stabilizing the tool, begin the cut at the top of the turning, and turn to the neck reference cut as shown in Photo G. See Figure 6 for assistance.

3 Make light, curved cuts to finish shaping the neck as shown in Photo H and Figure 7.

Sand your weed pot smooth and apply the finish

1 Remove the tool rest from the lathe and slide the base to one side. Using progressively finer grits of sandpaper, ending with 400 grit, sand the weed pot smooth. (To protect his fingers, Rus wraps the sandpaper around a foam rubber pad, and uses a lathe speed of 800 to 1,000 rpm.) For the final sanding, stop the lathe and sand with grain to prevent sanding rings from circulating the finished weed pot.

2 While slowly rotating the stock by hand, brush on the finish as shown in Photo I. Rus prefers Deft Clear Wood Finish (lacquer). Allow the finish to dry—approximately 30 minutes.

3 Running the lathe at 800 to 1,000 rpm, lightly buff the finish with 0000 steel wool.

4 Wipe the surface with a clean cloth. (Often, Rus will dampen a cloth with Watco Satin Wax, to clean the turning. Then, he'll run the lathe, causing the liquid wax to evaporate quickly.)

5 Apply a coat of finish wax—any furniture wax with a high carnauba content will work—to the turning (Rus uses clear Treewax). To speed the drying, run the lathe for 30 seconds, and buff with a cotton cloth.

Parting the weed pot from the lathe

1 Using a 3/4" gouge, reduce the size of the tenon at the base. Turn the tenon to a cone shape as shown in Photo J and Figure 7.

2 Remove the turning from the lathe, and use a 1/4" chisel to separate the tenon (don't snap it off as it may break fibers and leave an unsightly base). Sand the bottom of the weed pot. Sign and date the bottom of the weed pot, and then apply finish to the bottom.

Buying Guide

- Turning squares. 4 x 4 x 12" piece of walnut ($18.70), maple ($8.50), mahogany ($10.50), and cherry ($11.90). Add $3.60 for shipping. Constantine, 2050 Eastchester Road, Bronx, NY 10461. Or, call 800-223-8087 to order.

Denver-area reader Bill Heidtman was more than a little peeved when he wrote to us here at WOOD's magazine. He had spent a couple hundred dollars on three sheets of Taiwanese-made ¾" plywood with walnut face veneers that appeared as thick as the run-of-the-mill American variety. When it came down to sanding the cabinet parts he had made from them, though, Bill discovered the seemingly thick face veneers were actually an illusion. In fact, he accidentally sanded through the paper-thin veneer in several spots.

"If I hadn't already cut up all three panels, I would have returned them," Bill said in his letter. "The thin walnut face veneer was backed by another dark wood with the grain running the same direction." That backing fooled Bill into thinking the walnut face veneer was thicker than it really was. Bill felt so cheated that he suggested we check out this Asian plywood.

Indonesian plywood proliferates
During the last decade, political and technological changes have resulted in correspondingly great changes in where and how plywood is manufactured. At the center of the change lies Indonesia, a nation composed of a string of islands along the equator and northwest of Australia. As part of a development plan pushed by that nation's government, Indonesia has become the largest exporter of hardwood plywood to the United States—in less than 10 years.

Since 1980, the number of lumber mills in Indonesia has jumped from nine to more than 130. These new international players now supply more than two-thirds of all the hardwood plywood imported into the U.S. by volume—and more than half by dollar
ON ASIAN PLYWOOD

half by dollar value. Why Indonesia? The country has an abundance of lush rain forests, where a variety of hardwood species similar to Philippine mahogany grow to 200' heights and 8' diameters.

The trees—primarily the several species routinely called meranti (Shorea acuminata, S. leprosula, and others)—provide the substrate in Indonesia’s burgeoning plywood industry. Because the trees are old and big, the plywood made from them has some advantages. “The meranti they use has fine grain and few knots, compared to the firs that make up the core and crossband veneers in most U.S.-produced hardwood plywood,” notes Fred Geier, a buyer for Davidzon PWP of Chino, California, and frequent visitor to Indonesia. “As a result, you don’t have core voids like we know core voids.”

Indonesian plywood bests the U.S. product in another aspect, too, say importers like Geier. It’s stronger. Indonesian mills slice the core plies thinner, but use more of them than American producers. For a 3/4”-thick plywood sheet, a U.S. mill glues together five crossband layers under the face veneers. Indonesians lay up seven.

Taiwanese save face

As of this writing, almost all plywood coming out of Indonesia contains nothing but the mahogany-like wood, although a few mills began laying up plywood with North American oak and birch face veneer in 1988. Usually, though, if Indonesian plywood has face veneers of wood other than their native stock, it was added in Taiwan.

Plants in Taiwan produce large quantities of hardwood plywood panels carrying face veneers of cherry, oak, walnut, teak, and exotic woods. And, it’s this Taiwanese plywood—with face veneers a scant 1/100” thick—that American hobby woodworkers swear at. Woodworkers here have been used to face veneers 1/8” thick.

“The Japanese pioneered the development of slicers that cut super-thin,” says Dwight Hall of S.W. Plywood of Texas, a Houston import company. “But, it was the Taiwanese who, for competitive reasons, pushed the new technology to its limits—one well beyond what most good craftsmen can tolerate working with.”

Hall notes, though, that the Taiwanese, or any other Asian plywood manufacturer, couldn’t care less about the home craftsman. “True craftsmen sand their wares, but let’s face it, craftsmen do only 10, maybe 20 percent of the commercial woodworking in the U.S. anymore. It’s strictly a matter of economics. Real woodworkers are well down on the list of people whom Asian hardwood plywood manufacturers need to please.”

Statistics indicate that cabinet construction for new homes consumes the most hardwood plywood, followed by institutional uses, such as schools and banks, then commercial accounts including department store fixtures. Furniture manufacturing comes next. And, finally, there’s us—the home-hobbyist woodworkers.

“Most large commercial cabinet shops and furniture manufacturers have gotten used to the thinner veneers,” says Hall. “They don’t do much sanding anyway, and rely more on sealers and topcoats to provide the smooth finish. It’s like everything else today, such as plastic car bumpers and trim: It’s not built like it was 20 years ago.”

SAWING THE SUPER-THIN

“The ultra-thin face veneer on imported hardwood plywood not only won’t take much sanding, it also tends to chip easily when you cut dadoes and rabbets,” advises Jim Boelling, WOOD magazine’s project builder. “You can though, cope with it.” Here are some tips Jim suggests:

- Apply masking tape over the area of the cut, then saw through the tape.
- Never force-feed the stock past the blade or bit.
- Use a router rather than a dado accessory. Even though you might have to make several passes, a router’s rotary cutting action has less tendency to tear out or chip the veneer.

And, just how do you spot Asian plywood if it fools the eye so easily? That’s simple. The words “Made in Taiwan” (or Korea and elsewhere) appear on the edge of the panel. If you can’t make out the stamp, ask the dealer for the product’s country of origin.

Taxes trip up trade

If paper-thin veneers weren’t bad enough, other factors affect this new plywood’s price and availability. For instance, the falling value of the U.S. dollar has wiped out the price advantage that 3/4” and 1/2” imported hardwood plywood held over domestic stock. And, deals between nations often affect availability.

In 1988, for example, when Indonesian mills agreed to supply China with $3 billion worth of plywood, the deal threatened a cutback of supplies to North America, according to importer Hall. But, when a Chinese import tax busted the arrangement, “more material became available for the rest of the world,” he says.

Written by David Elbert
Photographs: Richard Mansur; John Limbach, Ripon Microslides
All of us here at WOOD® magazine want you to enjoy your woodworking hobby for years to come. We invite you to use the 14 photographs shown on the following pages to test your safety savvy. Look over each situation carefully, and jot down anything that doesn't look quite right. Then, compare your notes with the answers that appear in the far-right column of pages 71 and 73. For an added measure of safety, review the workshop emergency chart on page 96.

Got a router? If so, you change router bits now and then. Do you see anything wrong with the way it's being done here?

One last finishing touch with the gouge and your decorative carving will be done. But try to finish without hurting yourself.
SAFE ARE YOUR WOODWORKING HABITS?

2 With the bit securely locked in the collet, you're ready to rout.

3 Ah, you say, nothing could be simpler than touching up the edge of a cutting tool on a grinder. We beg to differ.

5 Another common and simple procedure—cutting off a board. Still, there's a right way and a wrong way, and this isn't the right way.

6 The advantage of plywood is that it comes in big sheets. That's also the disadvantage. Find a better way to make rough cuts.

WHAT'S YOUR SAFETY IQ?
Chalk up one point for each mistake that you caught and we described. Total your score and see the ratings on page 73.

Bonus points: If you noticed that our man's clothing was dangerously loose in several pictures, give yourself an extra point. And, if you noted his jewelry and thought he'd be better off without it, score another point.

1 Always unplug your router before changing bits. And, clean clutter out of the way. If this router were to rock against the adjustable clamp, the switch could click ON.

2 Nice goggles, but it's not the top of your head we're most concerned about here. Always put them over your eyes. Also, clamp that board securely, and chuck the entire router shank into the collet.

3 No matter how steady your hands are, they're not as steady as a tool rest. Lower that shield in place, too. And while you're at it, pop a bulb into that fixture. Oops! Don't forget to wear those goggles!

4 Experienced carvers know the importance of clamping down the workpiece. First, doing so prevents the work from moving around. And second, clamps allow you to keep your free hand away from the tool.

5 This situation cries out for clamps. And, get the power cord away from the cutting path of the blade.

6 Lots of errors here: Failure to support and clamp the end of the panel, overreaching, and neglecting to keep the power cord out of the saw kerf. By the way, pardon our careless woodworker if he thinks it's kind of foggy in his shop—he hasn't cleaned his face shield in weeks.

Continued
7 It's so easy to turn on the belt sander and quickly remove stock. But what risks do you run?

8 You operate the tablesaw so much that you assume you're using it safely, right?

9 Back to the tablesaw again. Now, let's put that popular material, plywood,...

11 It is so tempting to make quick work of boring some dowel holes with the drill press. But you know where temptation leads.

12 A radial-arm saw is an efficient machine for cross-cutting, ripping, and—if you handle it like this—for injury, too.

13 Here, you see a thickness planer with the power ON and our woodworker with his thinking...
through the tablesaw, and see how two “populars” create problems for some woodworkers.

**10** Bandsaws have a nasty bite if you aren’t careful.

**14** Let’s close with a classic. This woodworker is running a 9” long piece of stock through the jointer. What safety rules is he violating?

---

**WHAT’S YOUR SAFETY IQ?**

7 Don’t let the smooth look of a sanding belt fool you. Keep your fingers well away. This is no place for a tie, jewelry, or a loose coat.

8 If you’re looking for a place to store tools, scraps, and project pieces, the tablesaw isn’t it. Other mistakes: Feeding the stock with the fingers instead of a push stick, and neglecting to use a clamped-down feather board to hold stock.

9 Without a helper or solid support under the far end of the plywood, this woodworker may lose control of the workpiece. First, rough-cut sheets with a portable circular saw rather than a tablesaw. Clear the area of all obstructions including power cords, wood scraps, and items that may prevent the completion of the cut.

10 At this moment, our woodworker has two intact thumbs. If he continues, that could change. Use a block to push this piece. Also, lower the blade guard for safety and to keep the blade from wandering off the mark.

11 Keep your chuck key nearby—but not in the chuck. And next time, clamp the stock securely.

12 The sight of a hand close to a saw blade should give you a chill. Always use a push stick. And, don’t forget to lower the anti-kickback arm and tilt the hood.

13 Our man is risking his eyes and facial injury by looking inside while the planer is running, and he’s risking his hand by reaching into the machine to push the stock through. Stop the machine first before getting anywhere near the cutterheads. And, never raise or lower the table during the cut.

14 Never, never, never feed any board shorter than 12” long through a jointer. To prevent your hand from contacting the cutters, use a pushblock or pushstick and secure loose clothing.

---

**Now, score yourself**

**28–36 Safety Ace.** You’re alert and well-informed. Don’t case up.

**20–27 Stick in Time.** A careless act could send you to the emergency room. Please study those items that you missed.

**19 or less An Accident Waiting to Happen.** Your next shop project should be a safety session.
Beaming in on woodworking

THE LURE

Back in the 1950s, Buck Rogers blasted comic-book foes with his trusty ray gun. Then, it was science fiction. Today, engineers harness the laser ray and put it to work. In fact, the wheels on the woody wagon featured in our October 1989 issue were laser-manufactured.

A visit to Laser Machining, Inc. (LMI), a Somerset, Wisconsin, firm that produces laser machines and laser-cuts all sorts of products and materials, opened our eyes to laser technology. We found out that our woody wheels were just the tip of an enormous iceberg.

A scanner on this laser engraver reads black-and-white artwork and automatically fires the laser beam. Operator Arlene Smetzki needs only to center the artwork and the wood, then flip a switch.

Poof! It's laser woodworking

At LMI, we saw craftsmen operating these once-futuristic machines as comfortably as a router, scroll-saw, or sander. That's because lasers—though costly—aren't highly complicated. Says Bill Lawson, LMI's space-age entrepreneur, "There's nothing that difficult about laser technology, it's only different." (See box, opposite.)

In the laser industry, profiling and cutting parts from wood implies one class of machine—the computer-controlled carbon dioxide (CO₂) laser. Rated at 50 to 1,250 watts, these industrial-strength machines can, depending on their wattage, slice through 1″ oak, cut delicate wheels and gears (shown opposite page), and do any number of other production chores. Most people, though, will never see an industrial-class CO₂ laser. That's because these machines—that start at $100,000—end up behind factory walls.

The laser you're more likely to come in contact with falls into a class that LMI refers to as the laser graver, shown above. As its name implies, this smaller CO₂ laser (about 40 watts) does engraving work, such as on plaques, with an optical scanner control rather than computer. As the scanner reads black-and-white artwork, it triggers the laser beam to engrave the artwork or type on wood, ceramics, ivory, leather, and other materials. Engraving lasers can also cut parts from thin wood, but due to their lower power, the job takes longer.

Since engraving lasers cost as little as $40,000 and run on 110-volt household circuitry, small businesses can afford them.

There's probably an advertising specialty firm or award-and-trophy manufacturer near you that does laser engraving.

Laser sense

What can a laser do for you? Design editor Jim Downing discovered that the laser could cut the intricately patterned wheels for our woody wagon from ⅜″ Baltic birch at a significant savings over ready-made, spoked wheels. Carl Voss, WOOD® magazine's managing editor, inlaid his family's detailed heraldic crest into oak serving trays with the help of a laser. The laser at a local engraving business cut the design through a stack of three layers of veneer and simultaneously scored the oak for the tray surface so he could rout it. Carl paid $10 per tray for the laser work.
Lasers cut, drill, engrave, and weld with a light beam eight times the intensity of the sun. Here's how a carbon dioxide (CO₂) laser generates its beam: Under pressure, CO₂ mixes with nitrogen and helium in a resonator. Then, a high-voltage discharge passes through the gas, creating energy photons.

Both of the preceding problems were solved with a 40-watt, engraving-class laser, the type in service to produce advertising specialties, award plaques, and gifts. Such a laser can enhance wooden items, such as a jewelry or recipe card box, with a burned-in motif; engrave your favorite motto on a sign or plaque; decorate thin veneers with your design; "carve" your favorite scene on a flat surface, or cut out complex designs from thin wood. If the shop has rotary equipment, even round objects, such as a glass, can be laser-decorated.

To locate a laser service near you, check the Yellow Pages under "Trophies." You may have to ask if they feature laser engraving. And, although laser job shops charge about $35 per hour, it takes less than 5 minutes to execute the design shown on the plaque, opposite page, qualifying it for a minimum charge of $10.

Keep these tips in mind when considering laser work:
- Lasers read only the black lines in artwork. For sharp reproduction images, make your design lines a dark, solid black.
- Photographs reproduce only when the tones have been transformed to halftone dots, as in a newspaper photo, by a custom photo processing studio.
- An engraving laser can easily cut about \( \frac{1}{32} \)" deep. Deeper cuts take longer, increasing the chance of charring the wood. But, the laser also can lightly score wood.
- The smallest letter possible with an engraving is about 6-point type, like this: LASER ENGRAVING
- Anything smaller will become blurred and difficult to read.
- Provide only clear wood for engraving. Knots won't cut.
- If you want plywood engraved, be sure it is void-free.
- Remember, dense woods, such as ebony, take longer to cut. Oily woods may scorch. Wood may be finished or unfinished.

Written by Peter J. Stefano
Photographs: Duane Lage/Crofoot

Left: In his free time, laser engineer Peter Becher cut, by laser, a different profile on each of the 13 layers of this shadowbox scene.

Right: Cutting purpleheart, birch, and maple clock gears by laser assures accurate timing.

Center: Lasers quickly and easily cut intricate designs, as in this decorative fretwork made from birch.
Prepare to parade the autumn colors this year with this handcrafted necklace. Using our full-sized leaf patterns and your bandsaw or scrollsaw, you’re minutes away from a finished project. Necklace designer Marie Fredrickson notes that this is one of her hottest-selling pieces.

1 Using carbon paper or a photocopy, transfer the leaf patterns (one large and two small as displayed on this page) to 3/4” stock (we planed down 1/2” birch). If you want to eliminate staining the wood later, use scrap pieces of exotic woods.

2 With a bandsaw fitted with a 1/8” blade or a scrollsaw, cut the three leaves to shape.

3 Chuck a 1/8” brad-point bit into your drill-press. Then, one at a time, clamp the leaves in a hand-screw clamp, and drill a 1/8” hole through each as shown in the drawing at right. Use the lines indicating the hole locations on the full-sized photograph to align each leaf with the drill bit before drilling the holes.

4 Sand each leaf smooth. (We wrapped sandpaper around a nail file to sand the tight crevices.)

5 Cut a piece of lacing (we used brown rattail cord; narrow satin ribbon also would work) to 34” long. Thread the lacing through the 1/8” hole in the large maple leaf. Now, add an equal number of wooden beads onto the lacing on each side of the large leaf. Add the two smaller leaves, and thread a few more beads next to them. Finally, tie together the lacing at the ends.

Note: The lacing and wooden beads (like those used for macrame) are available at most hobby shops and craft supply stores.

Project Design: Marie Fredrickson
Photograph: Hopkins Associates

Stain, dye, or paint as desired (we mixed oil paints with natural Watco Danish Oil for our stain; you also could stain them with thinned artist’s acrylic paints).

Let the paint dry, and add a coat or two of clear finish.
WOODWORKERS love their routers, and it's easy to see why.
Few tools can be put to more uses, and none rival the router's ability to quickly and
gracefully enhance the appearance of a project. For best
results when using your router, keep these tips in mind.

Print this article

First, inspect the collet assembly for resin, wood dust, and
other debris that can make bit removal difficult. To avoid sticky
situations, start by removing the collet locking nut and collet.
Then, blow away any loose debris. With a paper clip, gently
scrape any gunk that remains as shown above (we removed the
router subbase for clarity). Soften stubborn resins with lacquer thinner,
then wipe clean.

Note: Always unplug the router when servicing the collet assembly
or changing bits.

One other culprit can make bit removal a hassle: burrs
on the bit shank. Remove them with a few light file strokes
as depicted above. Now, securely lock the bit in the collet.

For the best possible cut, move the router along the
grooves of the surface in a counterclockwise direction as
shown above. When routing all four edges, cut the end-grain
edges first, then cut the edge-grain lengths to minimize edge-
grain splinters.

Move the router at a consistent speed, and increase the feed rate
if burning occurs. If the grain tears out, take several light passes.

Before starting your router, always keep these safety
pointers in mind:
• Wear eye and lung protection.
• Hold the router comfortably at arm's length and make sure you
  have enough available power cord to complete the job. If you
  run out of power cord, the bit would spin too long in one place
  and could burn the workpiece.
• Walk along with the router as you work, being careful not to
  overreach or lose your balance.

When routing three edges of a surface, such as a shelf,
back the final end-grain cut with scrap to prevent splintering
of the workpiece. As shown above, the bit chipped out the
scrap block, but left the corner of the workpiece crisp and clean.

Illustrations: Jim Stevenson
CARVE A
HOWLIN' COYOTE

In the New Mexico wilds, you can count on coyotes howling. That's why carver Max Alvarez (see "New Mexico Mountain Menagerie" on page 36) has a passion for this rascal of the sage. "They're survivors, and intelligent," he says.

Roughing out the body
Max carves large coyotes in cottonwood, but you can choose any carving wood. To make one the size Max usually carves, enlarge the pattern. For a smaller version, use the pattern on this page full-sized. (See the box at right for wood sizes.)

After transferring the pattern to your wood, saw out the body and tail. Cut a mortise in the body (the dimensions according to the size of your coyote) where the tail will go. Then, rough out the body, retaining its angles.

Next, rough out the tail. Saw a tenon at its base to fit the body's mortise. Next, finish-carve the tail and sand, but don't glue in place.

Print this article

Getting down to the details
"Cut deep grooves to separate the toes on the coyote's feet," says Max. "And, make shallow squiggles for eyes." On each ear, hollow out an elongated trough. For the nostrils, drill two holes about ¼" deep with a ¼" bit. Use a ⅛" bit to drill a hole ¼" deep for the mouth. "Then, elongate the holes," he adds.

With the details carved, you're ready to sand, but not too smooth. "To leave some texture, I never use finer than 60-grit paper," he says. After sanding the body, glue the tail in place.

Pick your color, then paint
First, paint on a base coat of white (we recommend acrylic paints). When that dries, apply your chosen overall color, leaving the chest and underside white. After the second coat dries, apply black paint to the nose, mouth, eyes, ear accents, and tail tip. "Highlight the coat with streaks of black, then red, yellow, or other colors you like with a dry brush," Max notes.

Sample Southwest style with this folk-art carving from Santa Fe's Max Alvarez

CARVING WOOD SIZES
Large coyote:
Body: 5½ x 9 x 25"
Front legs: (2) 2½ x 2½ x 13"
Ears: (2) 1 x 1¼ x 4⅝"
Tail: 4 x 4 x 16⅛"

Small coyote:
Body: 6 x 2¼ x 1¼"
Tail: 1⅛ x 1⅛ x 3⅜"

One in a collection of regional patterns from the nation's top carvers

Photograph: John Hetherington Drawings: Bill Zaun
WOOD salutes our advertisers for their support in the 1990 WOOD Build-A-Toy contest.

ACME ELECTRIC • ALBERT CONSTANTINE AND SON • AMERICAN MACHINE & TOOL • AMERICAN TOOL COMPANIES • BLACK & DECKER • BOSCH • DEFT • DELTA • DML • DREMEL • FABULON GEL-EZE STAINS • FARRIS MACHINERY • FISHER-HILL • FOLEY-BELSAW • FRANKLIN INTERNATIONAL • FREUD • GRIZZLY • HOW-TO BOOK CLUBS • INDUSTRIAL ABRASIVES • JET • LEICHTUNG • LOBO • MARITA • MEISEL HARDWARE • MILWAUKEE ELECTRIC • MINWAX • MLCS • NOVA TOOLS • OLSON SAW • PENN STATE • PORTER-CABLE • RB INDUSTRIES • RED DEVIL • RODALE BOOKS • SANTA ROSA TOOLS • SHOPSIGHT • SKIL • THOMPSON-FORMBY • TOTAL SHOP • VAUGHN & BUSHNELL • WILKE MACHINERY • WILLIAMS TOOLS • THE WOODWORKERS STORE • WOODWORKERS SUPPLY OF NEW MEXICO • THE WOODWORKS

WOOD advertisers demonstrate a strong commitment to the Build-A-Toy contest by contributing many valuable prizes. Through their generous support they have inspired our readers to design and build many wonderful toys for the Toys-for-Tots program.

WOOD readers have contributed hundreds of toys (and thousands of hours) to brighten the lives of underprivileged youngsters through the Toys-for-Tots program of the U.S. Marine Corps Reserve.

Thanks to all for making the Build-A-Toy program so successful.

SPECIAL CITATIONS
Best Professional Finish ($1,000 in Minwax merchandise): Mike Jagie, Almond, Wis., acrobat in tree.
Best Home-Hobbyist Finish ($1,000 in Deft merchandise): Jack Rowland, Porterville, Calif., tractor.
Best Use of Router ($1,000 in Porter-Cable merchandise): Albert J. McCaffrey, Duluth, Minn., hutch.
Best Use of Wood ($1,896 Kity K-5 from Farris Machinery): Sam Roberts, Roseburg, Ore., 3-wheel motorcycle.
Best Painted Finish ($1,000 in Red Devil merchandise): Neil Seely, Rochester, N.Y., tricycle.
Best Truck ($600 Makita Maxi-Shop): Robert W. Sanders, St. Marys, Ga., Mack truck.
Best Car ($1,500 in Foley-Belsaw merchandise): U.W. Ponisch, Teslin, Yukon Territory, open car.

STUDENT DIVISION
Grand Prize ($1,500 in Black & Decker merchandise): Charles Hardeman, Miami, Fla., tug boat.
First Prize ($500 in Total Shop merchandise): Walter Green, Newark, Ohio, fire truck.
First Runner-up ($250 in Grizzly merchandise): Cary McPherson and Wayne Green, Newark, Ohio, helicopter.
Second Runner-up ($100 in American Tool Companies merchandise): Rene Spaulding, Newark, Ohio, rocking dinosaur.

HOME-HOBBYIST DIVISION
Grand Prize ($1,500 in Delta merchandise): Sam Roberts, Roseburg, Ore., 3-wheel motorcycle.
First Prize ($500 in Jet): Rich O'Shaughnessy, Wilmington, Del., crane.
First Runner-up ($250 in Leichtung merchandise): Richard J. Zichos, Pasadena, Md., semi-tractor, tractor and scraper.
Second Runner-up ($100 in Industrial Abrasives merchandise): Mark R. Woodruff, Loveland, Ohio, stealth bomber.

PROFESSIONAL DIVISION
Grand Prize ($1,500 in Freud merchandise): William Bruck, Hamilton, Ohio, recreational vehicle.
First Prize ($500 in Bosch merchandise): Neil Seely, Rochester, N.Y., wooden tricycle.
First Runner-up ($250 in Dremel merchandise): Greg Curtis, Longwood, Fla., rubberband roadster.
Second Runner-up ($100 in Santa Rosa Tools merchandise): Alvin Curtis, Oshkosh, Wis., whale rocker.

NONWINNERS DRAWING
$250 in AEG merchandise: Albert Manning, Maricopa, Ariz.
$250 1-hp router from Acme Electric: Stanley Yanoff, Cathedral City, Calif.
$55 Carving set from American Machine and Tool: Jame Westerburn, Schuyler, Neb.
$200 hardware package from Albert Constantine and Son: Maurice A. Nielsen, Temple, Texas.
$100 gift certificate from Cherry Tree Toys: Cynthia House, Arlington Heights, Ill.; Martin Hochhalter, Ash- ley, N.D.; T. J. Lagonegro, Elmira, N.Y.; Martin Badinelli, Smithville,
N.J.: Joe Moleck, Schuyler, Neb.
$20 stain kit from Fabulon Gel-Eze
Stains: Roger Coddington, Traverse
City, Mich.; V.D. Vandlen, Battle Creek,
Mich.; Richard Williams, Winslow,
Maine; Dwain Whitson, Bardstown, Ky.;
George A. Hackett, Sheillsburg, Iowa;
Russ Allen, Palatine, Ill.; Patia Croom,
Hazelhurts, Ga.; John W. Claiber, Villa
Rica, Ga.; Robert Stevens, East Har-
ford, Conn.; David L. Sullivan, Hemet,
Calif.; Warren H. Atkins, San Mateo,
Calif.; Mack Hoffman, San Clemente,
Calif.; Mark Kramer, Green Lake, Wis.;
Larry J. Weaver, Peters burg, W.Va.;
Michael Kinser, Norton, Va.; Anthony Mitchell,
Norton, Va.; Jason Scott, Norton, Va.;
Preston Jackson, Norton, Va.; Roland Cochrane,
Norton, Va.; Dwayne Smith, Norton,
Va.; Paul Edmondson, Odessa,
Texas; Bill Rohde, Memphis, Tenn.;
Stuart L. Woldman, Shaker Heights,
Ohio; Dallas Johnson, Wa hpeton, N.D.;
Chris Johnston, Fargo, N.D.; Robert
Guest, Albuquerque, N.M.; Alex W.
Finsch, Garfield, N.J.; Myron Spindler,
Hope, Minn.; Robert H. Mitchell, Brook-
lyn Center, Minn.; Orvel Treangen,
Spring Grove, Minn.
$75 Ripstrate from Fisher-Hill: Mi-
chael Davis, Rome, Ga.; John C. Mon-
ghan, Goleta, Calif.; Jerome P.
Kobishop, Stevens Point, Wis.
$10 Titebond glueing kit from Franklin
International: Brian Anderson,
We seca, Minn.; George A. Miller, Bar-ryton,
Mich.; Joseph Winter, Livonia, Mich.;
Edward Lusk, Muncie, Ind.; Terry N.
Kaeb, Buckley, Ill.; James M. Kirby,
Daytona Beach, Fla.; Herb Graham,
Rhome, Texas; Robert C. Montz,
Brunswick, Ohio; J. D. Shea, Manches-
ter, N.H.; Joseph Pasquato, Lawrenc-
eville, N.J.
$100 book club membership from How-To Book Club: Ted M. Przybok,
Birmingham, Mich.; Donald Rieh, Glov-
ersville, N.Y.; Frank W. Howard, Benton
Harbor, Mich.; Tom Withrow, Remer,
Minn.; Harry Billings, Mission Viejo,
Calif.
$99 portable belt sander from Lobo:
John C. Schneider, Rome, Mich.;
Charles Ferre, Rockford, Ill.; Donald E.
Begley, Lexington, Ky.; Joe Christoff,
Wichita, Kan.; S. B. Shear, Sharon,
Mass.
$125 9-piece router-bit set from
MLCS: L. M. Beeman, Kingsley, Pa.
$25 gift certificate from Meisel Hard-
ware: J. R. Christman, Pittsford, N.Y.;
Jeff Horn, Schuyler, Neb.; Wayne H.
Traffans, Wyomissing, Pa.; Gregory
Burns, West Hartford, Conn.; Kevin
Hutchinson, Amesbury, Mass.; Howard
Neillist, Elkhart, Ind.; Dallas Howard,
Wichita, Kan.; Glenn Thompson, Va-
silia, Ark.; Normand F. Bergeron, Low-
ell, Mass.; Richard Ehler, Vesper, Wis.
$348 4" belt sander from Milwaukee
$26 branding iron from Nova Tools:
Stephen Forman, E. Amherst, N.Y.
$80 Carbide-tipped saw blade from
Son saw: Anne House, Arlington
Heights, Ill.; R. C. Darbyshire, Quail Valley,
Calif.
$130 Super 15 scroll saw from Penn
State: Harold Geigel,
Canton, Ohio.
$550 14" scroll saw from RB Industries: Ralph L. Kohler,
Blossvale, N.Y.
$75 Build It Better Yourself wood-
working book from Rodale Books:
Bob Stevens, Naples, Fla.
$250 plunge router and accessories
from Skil: Susan, Lewis University
Training Program, Dwight, Ill.
$100 Formby gift set from Thomp-
son-Formby: Nathan Foltz/Scott Muto,
Newark, Ohio; Robert Stafford, Pontiac,
Mich.; Warren J. Kaeb, Buckley, Ill.;
Matthew Hardeman, Miami, Fla.; Lore-
ta Kneprath, Port Washington, Wis.
$29 handyman utility pack from
Vaughn & Bushnell: Jamison S. Hon-
eycutt, Norton, Va.; Chris Draughn,
Norton, Va.; Chris D. Ayers, Norton, Va.;
George J. Wagner, Ringle, Wis.; Tom
Hock, Westminster, Md.; Ralph D.
Cope, Hartford, Conn.; Gordon
McCaughan, S nosomish, Wash.; E. W.
Chapman, Montville, Ohio; Richard C.
Newlon, Kilmarnock, Va.; James Hyl-
ton, Norton, Va.
$399 Bridgewood model BW12P 12"
planer from Wilke Machinery: Harold
Tiller, Broken Arrow, Okla.
$250 Black & Decker cordless jigsaw
from Williams Tools: Gerald MacFar-
lane, East Dubuque, Ill.
$50 gift certificate from The Wood-
workers Store: Frank D. Roman,
Fairmont, W.Va.
$549 Matchmaker joiner from Woodworkers Supply of New Mex-
ico: Wallace Leeke, Lemay, Mo.
$25 gift certificate from The Wood-
works: Warren J. Malak, Wisconsin
Rapids, Wis.; Carl Boop, Levittown,
Pa. *
Whether your woodworker's license reads "Beginner," "Intermediate," or "Advanced," you're bound to have a few questions about your favorite hobby. We can help by consulting our staff and outside woodworking experts. Send your questions to:

Ask WOOD
Better Homes and Gardens®
WOOD® Magazine
P.O. Box 11454
Des Moines, IA 50306-1454

We'll answer all questions, but due to the volume of mail, we can't publish every letter. We may edit letters selected for publication.

No, you can't do that!
I have access to large sanding belts from the local plywood mill that have some use left in them. I want to cut them in strips to make belts for my 3 x 24" portable sander, and want to know the best way to glue or tape the two ends. I would appreciate your recommendations.

—Bob Moldenbauer, Roseburg, Ore.

Bob, we ran your idea by Win Wilson at Adirondack Adhesives in Albany, New York. According to Win, you must scarf the ends to avoid a bump every time the joint passes over the base of the sander. Also, you need a 25-ton heated press to properly seal the joint. Without a press and the ability to scarf, this operation is beyond the reach of home woodworkers. Win added the caution that homemade belts have a reputation for delaminating and flying off the sander—a risk no one should take.

Wood conditioner helps even out stains
I constructed a birch end table to which I would like to apply deep red mahogany and then spray on lacquer. My hardwood lumber shop has told me that birch, like hard maple, stains poorly. I noted a WOOD magazine article in the October 1987 issue that suggests applying a coat of shellac on pine to reduce the absorption of stain. Since I wish to finish with lacquer, I have doubts that this method would be successful. Could you offer a solution?

—Robert W. Fies, Chicago

Jim Boelling, WOOD magazine's project builder, suggests you apply Minwax Wood Conditioner to your sanded project—it works great on soft woods, such as pine, and light-colored hardwoods such as birch and maple. Here's one more solution some woodworkers have found successful: Spray on a light coat of stain. Then when that dries, brush on additional stain.
Save your fingers by making your own table extension
Recently, I acquired a Powermatic Artisan tablesaw. The open-grid extensions on this and many other tablesaws are finger busters, as far as I am concerned. How can I fill the grid openings?
—Richard Pinette, San Antonio, Texas

We suggest you remove the grate-type extensions and use them as patterns to build your own extensions from 1 1/2" birch or maple and 3/4" particleboard or plywood as shown below. Apply plastic laminate to the top and bottom of the particleboard (the bottom layer helps prevent warping). Then, you'll never again worry about trapping your fingers in the open extensions. You may even want to lengthen the shop-made extensions to expand your work surface.

Wood collectors cover the globe
As a regular reader of WOOD magazine, I find it most informative, even though it is written for the American market. Along with my interest in woodworking, I also collect specimens of timber. Recently, I heard that in America there are groups of enthusiasts who collect wood samples and the related data in much the same way as stamp collectors. Would it be possible for you to pass on to me any information, including names and addresses, of this hobby? A little international exchange would add a dimension of my interest.
—Barry Poole, Victoria, Australia

Barry, old mate, this is going to open up a whole new world to you. The group you refer to is the International Wood Collector's Society. It boasts hundreds of members, many outside the U.S. In fact, a peek in their current membership directory shows 35 of your countrymen listed. You'll discover that they are a great bunch and that they publish a nifty magazine about the hobby. For membership information, write: Robert M. Bartlett, Secretary-Treasurer, International Wood Collector's Society, 2913 Third St., Trenton, MI 48183.

NOW, CUT WOOD ACCURATELY TO 10/1000" 

Introducing PARAGAUGE. The new parallel gauging tool for virtually every table and radial arm saw. It measures the distance from blade to fence so precisely you can cut wood accurately to within + 10/1000 of an inch.
PARAGAUGE. The portable gauge that produces perfect parallel alignment of the fence and your blade up to 16 inches in width, virtually eliminating kick back, binding, and burning.PARAGAUGE. So versatile, you can use it to square your radial arm saw. Use PARAGAUGE on router tables, band saws and drill presses, too.

To order your PARAGAUGE using Mastercard or Visa: 
Call Toll-Free 1-800-343-6129 7 day/24 hour order service

SCROLL CONTROL

Since 1974 HEGNER has set the standard in scroll saws. Now, to give you exceptional control for best results, the acclaimed HEGNER Multimax saws are available with electronic variable speed.
As a novice, you can select the speed at which you are comfortable. With experience, you can produce extremely fine detail in wood, metal or plastic; just reduce the speed by turning a dial. HEGNER sets the standard again. Why take a chance on less when you can have the best?

Send for FREE information... or call 1-302-322-2226

Name ____________________________
Address ____________________________
City ____________________ State _________
Telephone ( )________ Zip ___________

ADDITIONAL MACHINERY IMPORTS LTD. P.O. Box 312, Dept. 415 New Castle, DE 19720
CARVING IS FUN WITH WARREN TOOLS
RECREATE YOUR FAVORITE SUBJECT
IN WOOD — INTRODUCTORY OFFER

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3/4&quot; Mini Shaker Peg</td>
<td>6.00/100</td>
<td></td>
</tr>
<tr>
<td>3 1/2&quot; Reg. Shaker Peg</td>
<td>15.00/100</td>
<td></td>
</tr>
<tr>
<td>Reg. Candle Cup</td>
<td>16.00/100</td>
<td></td>
</tr>
<tr>
<td>1&quot; Wheel</td>
<td>4.00/100</td>
<td></td>
</tr>
<tr>
<td>1/4&quot; Axle Pegs</td>
<td>3.50/100</td>
<td></td>
</tr>
<tr>
<td>1 5/8&quot; Sawtooth Hanger</td>
<td>3.00/100</td>
<td></td>
</tr>
<tr>
<td>1 1/2&quot; Birch Spindle</td>
<td>8.25/100</td>
<td></td>
</tr>
<tr>
<td>1 1/2&quot; Oak Spindle</td>
<td>11.50/100</td>
<td></td>
</tr>
</tbody>
</table>

Orders under $25.00 add $2.50 shipping.
Over $25.00 shipped FREE. Serving Continental U.S.A. Only.

American Woodcrafters Supply
PO Box G
Ricville, IA 50468
515-885-9032
FREE with Order

WOODWORKERS
Over 4000 Items

Finest Dimensioned HARDWOODS and VENEERS

SUPER-SMOOTH EXTRA-DURABLE CARBIDE-TIPPED CIRCULAR SAW BLADE
BUY NOW SAVE $57

A circular saw blade that will last longer than other blades on the market. It is made of high-quality, durable carbide material that can handle any cutting task. The blade is designed for smooth, precise cuts and is perfect for professional use. Order now and save $57.

FORREST MFG. CO., INC.
461 River Road, Clifton, NJ 07014

For comparisons with other blades, see page 45

Horton Brasses
Nooks Hill Rd. PO Box 120j
Cromwell, Ct 06416
203-635-4400
send $3.00 for a catalog

Build Your Own Pool Table
Save hundreds of dollars while gaining a sense of achievement. Complete kits or individual components, plans, slates, pockets, cloth, etc. Brochure $1.00.

Continental Billiards
2905-B Peachtree Industrial Blvd.
Buford, Georgia 30518

SQUARE DRIVE SCREWS
Simply the Best!
- Square Drive Beats Driver Slippage
- Hardened Steel for Extra Strength
- Deep Thread for Super Grip
- Also Brass & Stainless

Send $3 for Samples and Catalog

McFEELY HARDWARE
P.O. Box 3 • 712 12th St.
Lynchburg, Va 24503
Toll Free 1-800-434-7807
or FAX (804) 847-7136

WOOD MAGAZINE • SEPTEMBER 1990
WOOD CARVING IS FUN & PROFITABLE!

Want to carve decoys, statues or guns stocks?

It's easy when you use the Dupli-Carver Series wood carving machines. A patented five axis carving action allows these machines to complete difficult undercutting and contours as no other machine can. Complete machines are available starting as low as $359.00.

SEND $1.00 FOR OUR FULL LINE BROCHURE AND PRICE LIST AND START PLANNING YOUR FULL OR PART-TIME BUSINESS.

MARLIN INDUSTRIES, INC.

Rt. 70, Box 191, Dept. D09
Cedarville, NC 28717
(704) 743-3351
**GREAT IDEAS FOR YOUR SHOP**

**WORKBENCH BOARD JACK**

*A helping hand for when you need it*

Hold stock safely at bench side with our quick-and-easy adjustable support. With this jack, you can avoid flimsy clamping setups or having to call a helper every time you need to work the edge of a long piece of stock. It also allows you to quickly elevate stock to a comfortable working height. For stability, the dowelled top fits into the holes drilled along the bottom outside edge of the workbench shown on page 46.

---

**BUILD THIS HARP FROM PLANS OR KIT**

**GREAT HARP for BEGINNERS**

39" tall  
4 Octave Range

**ORDER TODAY**

TOLL-FREE  
(800) 432-KITS

**VISA**  
**MASTERCARD**  
**DISCOVER**  
**AM EXPRESS**

Full-size Harp Blueprint  $23 ppd  
Precut kit wall parts  $210 ppd*  
Finished Student Harp  $465 ppd*  
Catalog (free w/order)  $1 ppd  
(MN residents add 6% sales tax)  
*Foreign shipping will cost extra

**MUSICMAKER'S KITS, INC.**

423 South Main Street, Dept. B7  
Stillwater, MN 55082  
(612) 439-9120

---

**SIZED PATTERN**

Each square = 1"
Hammers
Curious and Collectible Tools of Change

The first hammer was a rock tied to a stick. As man progressed into the Bronze and Iron ages, hammers forged other tools and became essential tools of change.

By the time of Christ, the hammer evolved to a shape familiar today. Some even had claws for pulling nails.

Until the middle of the 19th century, blacksmiths crafted hammers as one-of-a-kind tools and hand-forged hammers display an imperfect surface. Also, many old hammers feature the once-common strap method of head attachment. Craftsmen made these strap hammers by forge-welding a pair of steel straps to the hammer head, then riveting the straps through the wooden handle.

Americans hammer out the unusual
From the 1840s to the first years of the 20th century, U.S. inventors patented approximately 400 hammer designs. The majority failed to excite the public and now prove quite collectible curiosities.

One of the earliest patents for an American hammer was that of Solomon Anderson of South Berlin, New York. His 1845 carpenter's hammer had claws that curled around the handle.

In 1902, George Voight of San Francisco patented perhaps the most unusual and interesting hammer. Manufactured by the Double Claw Hammer Company of Brooklyn, New York, Voight's hammer head featured two-piece construction and a second curved claw under the normal claw to speed nail-pulling (see photo above).

Collecting heads and handles
The value of handmade hammers depends on their approximate age, quality of workmanship, condition, and a blacksmith's touchmark on the head. A simple strap hammer brings $50 and up.

Uniqueness adds value, too. Double-claw hammers sell for $100 to $300; a Solomon hammer more than $100. Early hammers made by Cheney, Winchester, Keen Kutter, and Stanley range from $25 to $100.

Written with Phillip J. Whitby
Photograph: Bob Calmer

NEW GROUND MARKETING™
P.O. Box 718 Lanadowne, PA 19050
(215)622-2445

Lockwood Power™
Oscillating Spindle Sander

MetaRout™
Introductory Offer
First 500 units $399.00

Lockwood Power™
Worm and gear drive
5/8 hp motor
1 1/2" stroke
57 strokes per minute

MetaRout™ plus your router can do Edge Joining, Face Contouring, Repetitive Mortising, Raised Panel Doors, Plate Joinery!

$799.00

Write or call for free information!
SKYCROFT TOOLS, INC.
TUNGSTEN CARBIDE ROUTER BITS
INDUSTRIAL GRADE, THICK CARBIDE SEALED BALL BEARINGS
40 - 60% BELOW WHOLESALE
TOP VALUE, NO GIMMICKS.

TOOL-INDUSTRY INSIDER

Delta sees turning as woodworking's next hot spot
During the 1980s, executives at Delta watched Taiwanese manufacturers change the face of the woodworking market by shipping low-cost stationary equipment to the United States. As each wave of machines hit U.S. shores, interest in those products—and woodworking in general—grew in leaps and bounds. Ironically, many Taiwanese engineers based their designs on Delta machines.

We ran across Mark Strahler, Delta's director of marketing, at the 1990 National Home Center Show in Chicago, and he described the situation this way: "First it was drill presses. Everybody was bringing Taiwanese drill presses into this country. Then, they brought in copies of the Delta 31-205 tablesaw at low-ball prices. By the mid-'80s, scrollsaws in a great array of prices and qualities were available to the public. Suddenly, scrollsaws were going crazy."

(Note: Delta now imports low-priced tools from Taiwan, too.)

Today, Delta officials feel that scrollsaw demand has peaked. What's next? Strahler thinks lathes will be a hot ticket, and naturally, Delta wants to lead the charge.

How did the people at Delta arrive at their conclusion? "We took a look at two hot products—benchtop tablesaws and scrollsaws—and realized that here were products that help the woodworker complete projects with just one major tool," Strahler told us. "So, when we looked for another tool that allows you to do a project from start to finish, a lathe was the obvious answer. That, combined with the popularity of turning in other countries such as England and Australia, makes us feel that turning could explode in popularity in this country."

Understandably, Strahler didn't want to make public the specifics of Delta's marketing plan to boost turning. But, he assured us that Delta will be encouraging more people to try turning through a variety of promotions. "A lot of people think that turning is difficult," Strahler said. "We'd like to dispel that myth."

To back up its promotions with products, Delta has joined forces with Robert Sorby of England to provide a line of Delta/Sorby turning tools in the U.S. And, Strahler told us his company will introduce a lathe priced under $500 with plenty of higher-priced lathe features no later than March, 1991. Today, Delta lathes sell between $1,000 and $2,500. ♣

Do-It-Yourself Kits
Factory Direct
Clocks and Furniture
Also Assembled and Finished
Grandfather Clocks, Mantel and Wall Clocks
Curio Cabinets, Chairs, Desk, Cradle...and more!
Solid 3/4" Black Walnut, Cherry, or Oak
Heirloom Quality
Solid Brass West German Movements and Dials
Money Back Guarantee

I am interested in
☐ Do-It-Yourself Kit
☐ Finished Clocks
☐ Finished Furniture

Name ____________________________
Street __________________________
City ____________________________
State ________ Zip ________

SEND IT FOR COLOR CATALOG

EMPEROR CLOCK COMPANY
World's Largest Manufacturer of Grandfather Clocks
Dept. 3801, Emperor Industrial Park
Fairhope, Alabama 36532 • Phone 1-205-985-2316

88
Like Having a Lumberyard Right In Your Shop!

NOW! PLANE, MOLD, SAND and SAW with

Infinitely Variable Power-Feed!

MAKES YOU MONEY... SAVES YOU MONEY!

Put this versatile power-feed tool to work in your shop... see how fast it pays for itself! Quickly converts low-cost rough lumber into valuable finished stock. Turns out perfect picture frame moldings, quarter-round, casing, tongue & groove... all popular patterns... any custom design!

✓ Just a twist of the dial puts twice as many cuts-per-inch at your fingertips as any comparable planer — from 70 to over 1,000 CPI! This heavy-duty machine will sail through even the toughest oak at higher speeds, or you can slow it down to handle those "hard-to-work" pieces like curly maple, knotty cedar, burls, knees and much more! A valuable feature for molding work, where profiles make sanding impossible.

✓ Change to Molding or Sanding in just minutes! Unique "Morse-Taper" Quick Change Cutterhead guarantees fast changeover... bearings remain factory set... precisely aligned at all times.

✓ Now choose from three powerful models! Woodmaster introduces the first 18" and 25" Planer/Molders... with all the features that have made the 12" model the most versatile Planer/Molder on the market! Send for Free Facts today!

MAIL COUPON TODAY OR CALL TOLL FREE 1-800-821-6651 Ext. PW39

FREE 30-DAY TRIAL!

FREE PLANER/FAC TICS KIT

Woodmaster Tools, Dept. PW39, 2908 Oak, Kansas City, MO 64108

<table>
<thead>
<tr>
<th>YES!</th>
<th>Please rush me your FREE Information Kit which tells in words and pictures why this amazingly designed powerfed shop is so much better than other single-purpose or combination tools. Also send me details on your 30-DAY FREE TRIAL GUARANTEE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td></td>
</tr>
<tr>
<td>ADDRESS</td>
<td></td>
</tr>
<tr>
<td>CITY</td>
<td></td>
</tr>
<tr>
<td>STATE</td>
<td></td>
</tr>
<tr>
<td>ZIP</td>
<td></td>
</tr>
</tbody>
</table>
Colonial-era cabinetmakers may have been equally skillful at horse-trading and craftsmanship. In light of recent research, it seems that they frequently substituted a mahogany look-alike for the real thing in some of their now classic and collectible Queen Anne and Chippendale furniture.

Experts at the Francis du Pont Winterthur Museum in Winterthur, Delaware, have only recently discovered that the primary wood of a few pieces in their valuable furniture collection happens not to be mahogany, but a species named sabicu (Lysistoma latissilqua), native to the West Indies. Late 18th-century American cabinetmakers called the wood “horseshit” due to its distinctively curly figure. Because sabicu resembles true mahogany in color, they inventoried it and combined it with other wood species in building popular pieces of the time—particularly high chests of drawers and tables. In some instances, true mahogany, which behaves better under a knife or gouge, was used for carved legs and finials on a sabicu piece.

Doubt lingers as to whether or not any actual misrepresentation was intended. Since sabicu came from the same area as mahogany and appeared identical, the furnituremakers could simply have thought the two the same. Yet, mahogany was well-known, and if sabicu could pass for mahogany, who would know or care? Whatever the verdict, sabicu went undetected for more than 200 years, making it the master of masquerade.  

Illustration: Jim Stevenson

"Jorgensen" AND "Pony"

CLAMPS

Dependable extra hands for all types of clamping and work-holding jobs: Woodworking Projects, Home Maintenance, and Furniture Repair.

Write for FREE LITERATURE.
For big 32-page "how-to-clamp-it" catalog, send $1.00.
ASK YOUR DEALER
ADJUSTABLE CLAMP COMPANY
THE CLAMP FOLKS
410 N. Ashland Avenue • Chicago, IL 60622
Wood Carvers Supply, Inc.
P.O. Box 8928 G • Norfolk, VA 23503
(804) 583-8928 • Our 35th Year

Complete 64 page color catalog including over 2,000 carving tools, books & supplies such as carousel animal kits, gun checking tools, ship model kits plus much more. We offer great service, quality products and a 30-day money back guarantee. Send $2.00 for a 2-year subscription.

Thin HARDWOOD—Priced Right
Clear • Kiln-Dried • Surfaced surf
3/4" x 3 1/4" Lengths 10 packs
20 Sq. Ft. Packs • Random Widths & Lengths

<table>
<thead>
<tr>
<th>Wood Type</th>
<th>Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red or White Oak</td>
<td>$32</td>
</tr>
<tr>
<td>Pecan</td>
<td>$30</td>
</tr>
<tr>
<td>Walnut or Cherry</td>
<td>$34</td>
</tr>
<tr>
<td>Maple or Birch</td>
<td>$32</td>
</tr>
<tr>
<td>Poplar or Basswood</td>
<td>$30</td>
</tr>
<tr>
<td>Honduras, Mahogany</td>
<td>$37</td>
</tr>
<tr>
<td>Teak 6&quot;W</td>
<td>$82</td>
</tr>
<tr>
<td>Ash or Sassafras</td>
<td>$41</td>
</tr>
<tr>
<td>Purpleheart</td>
<td>$65</td>
</tr>
<tr>
<td>Padauk</td>
<td>$50</td>
</tr>
<tr>
<td>Red Cedar 2 1/2 x 6&quot;</td>
<td>$32</td>
</tr>
<tr>
<td>Red Oak 2 1/2 x 6&quot;</td>
<td>$32</td>
</tr>
</tbody>
</table>

Price includes UPS delivery in Continental USA. To order circle wood & dollar amount above. Send with check or money order to:

HARDWOODS OF ILLINOIS
R.R. 4, Box 818 • Mt. Vernon, IL 62864

THE PERFECT GIFT
FOR HOME WOODWORKERS!

BETTER HOMES AND GARDENS®

WOOD

ONE FULL YEAR (8 ISSUES) ONLY $19.97

To order, call TOLL-FREE 1-800-678-2666
or write WOOD Magazine, 1716 Locust Street, P.O. Box 10625, Dept. 385303, Des Moines, Iowa 50336-6625.

ANYTIME ANYWHERE ANYWOOD
mold plane and edge

Professionals and hobbyists alike know the strengths of the W&H moldplane. Superior US-made construction and quick two-minute cutter changes make it a snap to cut moldings and plane hardwoods. It's fast, easy, and super-smooth.

Our five-year warranty and free 30-day trial are your assurance that W&H goes the distance.

Mail this ad or call us toll-free today. 1-800-256-1380 in NH 603-654-6828

Williams & Hussey Dept. 2307M Riverview Mill, P.O. Box 1148, Wilton, NH 03086

YES! Send your free information kit today.

Call TOLL-FREE 1-800-321-6840

Innovative Tools
Solve Your
Woodworking Problems!

The Lauchtong Workshops Catalog is the only place you'll find "Leuchtong Innovations", those tools we've designed and built on our own to make your woodworking and home repair jobs faster and easier. Call our toll-free phone above, mail the coupon today, or fax it to 1-216-484-6741.

FREE Catalog!

Please send me your FREE catalog!

Name ____________________________
Address ____________________________
City __________________ State ______ Zip ______

Leuchtong Workshops
4944 Commerce Pkwy. #150
Cleveland, OH 44128

WOOD MAGAZINE    SEPTEMBER 1990

91
You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below. Each company mails the catalogs or information directly to you.

POWER TOOLS

SCROLL SAW AND LATHE INFORMATION—More than 20 pages of information, including full-color photos, on HEINRIG precision scroll saws, HEINRIG lathes, and HEINRIG duplicators. Send your order now. CHOICE woodturners' machines are considered state of the art, and what to look for in the future. Send for your literature. AMI, LTD. $1.00. Circle No. 3.

WOODWORKING PROFESSIONALS ONLY—Now save 20% on the mail order price of your scroll saw. Browse through the world's finest production quality universal machine for just $1.99. Contact your Scroll Saw Manufacturers Association for a complete catalog. SAWMAKERS GROUP. Send for your free catalog. Circle No. 6.

ACME ELECTRIC IS ANNOUNCING OUR NEW 1990 CAT-ALOG—It features a wide selection of machinery for your workshop. From 1/4 HP to 3 HP electric motors, this catalog contains everything you need to build your own machine, from the shop to the factory. ACME ELECTRIC, INC. $1.00. Circle No. 7.

PORTABLE SAW MILL—One man saw mill with a capable woodmiller at $100. Gas and electric models will cut dimension lumber from 8" to 19" high. Send for your free catalog. BETTER BUILT CORP. Free. Circle No. 8.

175-PLUS USES GUIDE—For Dremel® Tool. Written from the do-it-yourselfer's view, this book shows how to plan and do a variety of everyday projects using the versatile Dremel Tool and cordless FreeWire. 59-page book with over 275 photos includes tips on using a Dremel Tool in flexing, shaping and cutting. Complete money-back guarantee. Send for details. FOLEY-BELSAW, Inc. Free. Circle No. 9.

MADE IN SWITZERLAND—The Foley-Belsaw Model M-14 Circular Sawmill tells you how to turn the trees to turn them into fine, true-cut lumber. Available with heavy-duty steel base, 11.5"-inch cutting capacity, and 11.5"-inch wood base, this sawmill is accurately designed to do the job for you. Foley-Belsaw, Inc. $1.00. Circle No. 10.

INFORMATION—Complete informa-tion on the famous line of VCA Swiss woodworking machines. Designed for precision work, the small to medium-sized cabinet shop. Used by thousands of hobbyists and professional woodworkers. Send for a complete catalog. Foley-Belsaw, Inc. Free. Circle No. 11.

POWER TOOLS YOU CAN BUILD AND SAVE—Build sturdy woodworking tools from kits and save—sold for over 40 years—warranty on parts. Simple step-by-step plans with full size patterns for wood base. Plans and patterns can be purchased separately. Send for descriptive brochure. CILA-MET FMC, INC. $1.00. Circle No. 12.

LOBO POWER TOOLS—Fine crafted woodworking power tools for quality craftsmanship. From simple to complex, from hobby to professional, LOBO offers a full line of woodworking machines. Send for your free catalog. LOBO POWER TOOLS, Inc. Free. Circle No. 13.


PERFORMANCE DRUM SANDERS—Exclusive features at an affordable price for precise wide surface sanding. The complete line includes the retrofitting Performance Drum Sander, the Pro Max and the New Super Max. New accessories for production-mode sanding of pieces as small as 2½" long. Send for brochure. PERFORMANCE PRODUCTS, Inc. Free. Circle No. 15.

THE PRECISE SCROLL SAW FOR THE ENTIRE FAMILY—The Hawk was designed for beginners and built for professional woodworkers. Learn how to produce custom designs that you can be proud of. Available from your local hardware store. HAWK. $1.00. Circle No. 16.

THE VERSATILE RIBI WOODY PLANER/MAID/SANDER—Indispensable! 4-1/4 in. 1-1/2 HP. Ribis Wood Planer/Maid/Sander/Rip Saw. Find out how the Wood Planer saves you money turning rough stock into beautiful professional quality projects. With 3 models to choose from, there's one that fits your needs. It does it all, and so you can do it all! Send for free catalog. RIBI INDUSTRIES, INC. Free. Circle No. 17.

PORTABLE SAWMILLS—Convert logs into valuable lumber. Wood-Mizer Technologies produces a line of portable bandsaw mills that allows the novice as well as the experienced sawyer to safely convert standing logs into lumber. Then, with the use of our Solar Dryer, you can dry your lumber, you can increase the value of every board you produce. We manufacture some of the finest portable sawmills in the world. Send for your free catalog today. Product videos available. Send for our 44-page cata- log. WOOD-MIZER PRODUCTS, Inc. $1.00. Circle No. 18.

HAND TOOLS

DIAMOND WHEATSTONES BY DMT—Discover the ease and speed of sharpening on the finest Diamond Wheatstone. Perfect for every woodworking tool, from the coarsest to the finest. Available in 2-, 3- or 5-inch stones. Available from your local hardware store. DMT. $1.00. Circle No. 19.

RADIO-PLANE—Profession edge finishing tools. The RADIO-PLANE lets you quickly round-over an edge with an edge without the time of routing and sanding. Dual, non-adjustable edge guides provide maximum control and accuracy. Complete money-back guarantee. Send for the free catalog. AMERICAN MACHINING TECHNOLOGY, INC. $2.00. Circle No. 20.

PERSONAL IDENTITY BRONDS—Brochure describes brand names that you can put on your name or you work quickly and easily. Made especially for branding wood. They are available in 1, 2, 3 lines of copy or with your logo. Changeable date also available. NOVA TOOL CO. $1.00. Circle No. 21.

STAINS/FINISHES

LUMBER

QUALITY EXOTIC LUMBER/TURNING WOODS—We offer a comprehensive selection of fine quality exotic woods. Brisbane, Kauri, Tulipwood, Sycamore, African Blackwood, Cocobolo, Bloodwood, Figured Maple, Spalted Maple, Psydrac, Oak, Walnut, Hardwood, etc. Over 5000 hard-to-find specifically items. Send for your big new 72-page catalog. MEL-SEL HARDWARE SPECIALTIES, $1.00. Circle No. 40.

WOODWORKERS' RESOURCES—Send for our new 148-page Craftsman Catalog and 14-page hard-to-find specialty. Send for catalog and your free samples. BEREZA HARDWOODS, $1.00. Circle No. 500.

EDLCO—WE KNOW OUR LUMBER—Our Lumber Company is pleased to offer you our new catalog, which includes the finest hardwood turning woods available today. Available inادس species. We offer over 25 species of imported as well as domestic hardwoods, softwoods, timbers, and specialty woods. All lumber is carefully inspected and quality assured for you our customers. We know our lumber. It is top grade. Send today and receive a catalog, color samples, and our free samples. EDLCO HARDWOODS, $1.00. Circle No. 500.

THIN LUMBER—Approximately 20 species—1/4" to 1/4" thickness. Thinner material milled, all KD surfaced—finished in vertical and horizontal grain. Package of micro-lumber 1/4" x 1/4" thick. HARDWOODS OF ILLINOIS, Inc. Circle No. 459.
NATIVE AMERICAN HARDWOODS—We feature the finest northern kiln dried hardwoods. Our large inventory has been carefully selected to ensure quick service. Ed Selig's 55 years of experience and personal assistance can quickly meet all your needs. Available in all sizes of domestic hardwoods with no minimum or maximum order required. Send for catalog: NATIVE AMERICAN HARDWOODS, LTD. $1.00. Circle No. 570.

RARE IMPORTED EXOTIC AND DOMESTIC HARDWOODS—The world renowned Martin Guitar Co sells hardwoods and retail exotic wood (A4, B4, B4/A) and sawn veneers (A4 & A4) and Sanded Stock, plus planing accessories and second quality guitars. Send for catalog: SAWMILL/WOODWORKER'S DREAM $2.00. Circle No. 578.

STEVE H. WALL, LUMBER CO—Quality hardwoods and woodworking machinery for the craftsman and educational institutions. Also lists 15 popular hardwoods at wholesale prices. Also dealers for Delta, RBI, MiniMax, Fretz and Produit woodworking machinery. STEVE H. WALL LUMBER CO $1.00. Circle No. 592.

EXOTIC IMPORTED AND DOMESTIC HARDWOODS—Over 75 species of lumber, burl planks, turning squares and veneer. Samples (1" x 3" x 8") ideal for craftsmen, furniture and cabinet makers, architects, and designers available. Catalog provides common and botanical names, source, complete data on all hardwoods. WOODWORKERS SUPPLY $1.00. Circle No. 598.

VIDEOS

SANDING PROCESS—One of America's leading manufacturers of abrasive belts, sheets, discs, rolls and other abrasive specialties will help you solve your sanding problems. This 40-minute video contains all the sanding tips you'll need for details. ECONOMASIVES, Free. Circle No. 615.

IF YOU ARE A DEMANDING HOBBYIST—Or professional and you want a quality workshop, owe it to yourself to improve your skills with the professional grade shop. Send for a free 16-page catalog. LAGUNA TOOLS (100% refundable). $0.99. Circle No. 640.

LOBO POWER TOOLS—Complete one stop location for all affordable woodworking power tools. Excellent quality at the most affordable prices. Send for catalog. LOBO TOOLS, Free. Circle No. 981.

EPOXYES/GLUES

ARE YOU CURIOUS ABOUT EPOXYES?—Our application notes and product literature will tell you how adhesive is working. how it works, and what it will do for you. We are chemists, too, and can answer any question you may have about your own application. We can answer your questions. SMITH & CO. Free. Circle No. 709.

GENERAL WOODWORKING CATALOGS

ADVANCED WOODWORKING—Specialty products catalog from the exclusive distributors of Hegner & Felder woodworking machinery. Includes complete selection of scroll saw bladers, accessories and improvements for all brands. We carry the Hegner precision scroll saw, also our full line of Felder systems items & more. AMI, LTD. $2.00. Circle No. 801.


WOODWORKING CATALOG—Planners, joiners, tablesaws, sawhorses, drill presses, Sanders and much, much more. Send for information, GRIZZLY IMPORTS, INC. Free. Circle No. 860.

TOOLCATALOG—"Innovation" sets Leichtbau apart from the rest! You'll get low prices, high-quality, and craftsmanship that is second to none. Leichtbau is the woodworking, do-it-yourselfer and hobbyist, many of whom have become die-hard fans of Leichtbau designer tools. LIEBHERR WORKSHOPS. Free. Circle No. 870.

TOOLS ON SALE—A division of Seven Corners Ace Hardware Inc. offers a comprehensive catalog featuring over 200 pages of tools and machinery. Whether you're looking for savings and fast delivery on over 650 items, request our catalog. This catalog offers one of the most complete selections of power tools available anywhere from the most respected manufacturers in the industry. Milwaukee, Makita, Porter-Cable, Black & Decker, Freud, Bosch, Delta, and many more. SEVEN CORNERS ACE HARDWARE $1.00. Circle No. 920.

WOODWORKING TOOLS OF EXCEPTIONAL QUALITY—Since 1928, we have searched the world for tools you don't see in most retail stores. The 100% Guarantee of Classic lifetime of quality for people who love to work with the sharpened, carvers, cabinetmakers, finishers, hobbyists, and woodworkers. Over 4,000 tools each backed by Woodcraft's unconditional guarantee of satisfaction. WOODCRAFT SUPPLY CORP, Free. Circle No. 855.

KITS

POOL TABLE KITS AND COMPONENTS—Save hundreds of dollars on your dream pool table by buying a kit or building from scratch. The "Continental" pool table kit is complete with all the components and instructions you'll need to build a tournament quality slate pool table at home in a corner of your living room. The "Continental" kit is designed for the hobbyist who has a practical project for the first time or experienced kit builder. If you are more ambitious, use our plans or your own to build a pool table from scratch. In stock supply only the finest Italian slate, leather pockets, billiard cloth, matches, and other components. Send for complete information. CONTINENTAL BILLIARDS $1.00. Circle No. 1018.

OAK FURNITURE AND ACCESSORY KIT CATALOG—Features a full range of top quality oak furniture kits and accessory items to complement your oak furniture. Feature items include roll top desks in several styles, striking bookcases, trestle tables, china cabinets, file cabinets, bedroom furniture, Mariner's globe, plus many more. Send for full line complete catalog today. WOOSTECHNICAL CRAFTSMAN CORNER, Free. Circle No. 1017.

FACTORY DIRECT GRANDFATHER CLOCKS—Build your own model grandfather clock kit from the world's largest manufacturer. Clocks are made of solid 4" hardwoods, primarily walnut, oak and cherry. West German-made molded movements. Send for color catalog showing our selection of grandfather clock kits. Buy direct from factory and save. EMPEROR CLOCK CO. $1.00. Circle No. 1530.

QUALITY CLOCK KITS AND PLANS—Handmade in America, our clocks are made from solid hardwoods, birch, cherry, oak, or walnut with beveled glass. Or build from "scratch" using our detailed plans and ten pieces. Choice of quality movements. Send for our free brochure. KREINELL CHIME CLOCK WORKS, $2.00. Circle No. 1530.

MUSIC MAKER'S KEEP BOOK—A 32-page resource catalog for building and learning to play handmade musical instruments. Includes designs and instructions on building guitars, banjos, mandolins, fiddles, bass, dulcimers, ukuleles, banjo, guitars, violins, and much more. Save. MUSIC MAKER'S KEEP BOOK $2.00. Circle No. 1530.

BITES, BLADES, CUTTING TOOLS

AmMax Tool Co.—offers "Professional Quality" tungsten carbide tipped router bits, shaper cutters, saw blades, and saw blades made to order. Our exclusive "16" scroll saw featuring light, cutting without blade binding. Carbide tipped router bits from $6.00, woodworking files from $6.95. AmMax Tool Co., Free. Circle No. 1304.

BANDSAW BLADES FOR ALMOST ANY TYPE BANDSAW—Our mini-catalog contains sidewalk saws, blade refillers, circular saw blades, router bits, saw blades and disks. Send for catalog. BUCKEYE SAW CO. $1.00. Circle No. 1007.

CARBIDE-TIPPED ROUTER BIT AND SHAPER CUTTER CATALOG—Our catalog contains thousands of dollars worth of stock ready to be shipped. We specialize in quality disbursing of most unusual size and shapes. These top quality industrial router bits and shaper cutters are of the highest quality. We now have to receive new giant catalog. CASCADE TOOLS, INC. Free. Circle No. 1320.

TIRED OF THE IMPORTS—All new 1989 router bit catalog featuring over 950 items. This factory direct mail order 62-page catalog offers the industry's largest selection of the finest quality American made router bits and shaper cutters. $5.00 refund included with catalog. EAGLE AMERICA CORP. $3.00. Circle No. 1320.

SUPER-SMooth, EXTRA-DURABLE, CARBIDE-TIPPED CIRCULAR SAW BLADES—Get a smooth-as-sanded surfac, precision-ground saw blade. Your blade will be able to rip and cross-cut 1/2 in. hard wood and soft wood. Also available to make your router a full line of saw blades from $6.00. Woodward saw blades from $6.95. Woodward tools, Free. Circle No. 1321.

PRODUCTION QUALITY CARBIDE TIPPED ROUTER BITS—MLCS Ltd. offers a full line of professional production quality carbide tipped router bits at 50-70% lower than most of the major brands. This catalog contains every direct sale, every cut to order. Send today for information. MLCS LTD. Free. Circle No. 1321.

Saw Blades Values—Olson Saw's special suit for men and women to design your own custom made tools and materials. We can make your router or and ordinary circular saw blade into a versatile tool. Add your own quality accessories that fit all tools. OAK PARK ENTERPRISES LTD. $1.00. Circle No. 1560.

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 94.
TUNGSTEN CARBIDE ROUTER BITS AND SHAPER CUTTERS—Heavy duty industrial grade. Router bits furnished in both 1/4 and 5/8 diameter shafts. Shaper cutters are 1/4" bore, with 1/8" bushings. You can buy cheaper, but not better. Save up to 60% over "wholesale" prices. Tremendous selection. Catalog comes with $3 discount coupon. SKYSCRAP TOOLS INC. $1.00. Circle No. 1372.

HARDWARE/WOOD PARTS

OUR READY TO ASSEMBLE KITS—for Queen Anne chairs and occasional tables make it easy for you to make professional looking furniture. We also stock individual Queen Anne parts for your use. Complete information in our brochure packet. ADAMS WOOD PRODUCTS. 506 Circle No. 1461.


HARDWARE CATALOG—A unique 64-page catalog of the very finest in hardware, solid brass cabinet handles and backplates. All of British and No American manufacture. Double & single post handles, knobs, escutcheons, standard & special sizes are in stock. Look! 1 pair of handles, 1 pair of backplates, 1 pair of candle sconces, and 1 pair of doorknobs. 100% satisfaction guaranteed. Free shipping on orders over $25. Woodworking catalog. AMERICAN WOODCRAFTERS SUPPLY. 52. Circle No. 1409.

BRASS FURNITURE HARDWARE—This 96-page catalog shows over 500 items of authentic reproduction hardware from the 1700’s and on into this century. This fine quality hardware is a must for the furniture craftsman working on a new project or the refinisher who needs replacement hardware. HORTON BRASSWARE. $3.00. Circle No. 1430.

Dowel SQUARE DRILLS—Thousands agree—once you have used one you will never want to use anything else! The square drill square drill eliminates warping as it drills. The deep square, with two drill points in the center of the drill, will not split the wood. The size ranges from 1/8 to 12 1/2". Available in stainless steel, with wood or brass. Prices quoted. Quantity discounts. For literature, MCQUEEN HARDWOODS. $1.00. Circle No. 1450.

WOOD TOY PATTERNS—Patterns for all ages including children's patterns and executive toys. New catalog has many new patterns to choose from including parts and wheels. Send for new catalog and receive a coupon for free toy parts and wheels. TOYS AND JOYS. $1.00. Circle No. 1480.

DESIGN & DECORATE WITH WOOD MOULDINGS—Contains full-color photos of various home improvements showing the extensive use of wood mouldings. The color plates of all wood mouldings used to create this finished design are also shown, plus suggested alternative profiles. A simple way to transform any room into a showcase on a minimum budget. WOOD MOULDING & MILLWORK PRODUCERS ASSN. 746. Circle No. 1487.

QUALITY AMERICAN-MADE WOOD TURNINGS—such as shaker style, candle sconces, toy parts, raft items, and dowel rods in birch, oak, walnut, and cherry. Send for complete 32-page catalog. WOODWORKS. $1.00. Circle No. 1466.

INCOME OPPORTUNITIES

SILKSCREEN YOUR NEXT PROJECT—Turn a 30 piece of wood into a $100.00 plaque with three silk screens. It only takes a few minutes to make. Send to screen printer in CA. How to learn woodwork. For additional information send for our wholesale story. JENNINGS PRODUCTS. $1.00. Circle No. 1650.

WOOD CARVING MACHINES AND ACCESSORIES—All types of wood carving machines, equipment, and accessories needed for the job. Professional woodcarving for the hobbyist at home, in the workshop or on the go. Begin your hobby or full time business by ordering our catalog and price list. MARLIN INDUSTRIES. $1.00. Circle No. 1659.

MAKE MONEY IN FURNITURE RESTORATION THE MINUTEMEN WAY—Earn $200-$1000 per day stripping, repair, painting, and varnishing furniture. Send for more information. Advertising Agency. $1.00. Circle No. 1650.

ATTENTION ANTIQUE RESTORERS: WOODWORKERS—with a special interest in antique furniture restoration. 25-page catalog is loaded with unique, hard to find items. Includes hundreds of antique restoration parts, wood reproduction hardware, oil lamps and accessories, wood turnings, standing figurines, antique furniture parts, and more. VAN DYKE’S RESTORERS. $1.00. Circle No. 1877.

UNIQUE GREENHOUSE/SCREENHOUSE IDEA—a gardener’s paradise during the winter months, a bug-free screen room during the summer months. Complete the concept by adding a 30" mini-greenhouse. Send for mini-greenhouse details. MARVIN’S INDUSTRIES. $1.00. Circle No. 1877.

HOW TO MAKE PICTURE FRAMES—Instructions for the do-it-yourselfer on how to make picture frames using standard mouldings. Tells what tools to use and how to build and finish picture frames. WOOD MOULDING & MILLWORK PRODUCERS ASSN. 60C. Circle No. 2085.

CARVING SUPPLIES

DECOY AND WOOD CARVERS WISHEBOOK—78-page book of wood carving and supplies for wood carving, wood carvers, wood turners, Chisels, sharpening, precision grinding tools, and more. Send for a free copy. CARVING PRODUCTS. $1.00. Circle No. 2185.

WOODCARVING TOOLS—Whittlers and carvers—Warren Tool Co. offers a catalog for you full of whittling and carving hand and power tools, books, stones, wood, and supplies. Since 1889, the name to look for in this field. WA- RREN TOOL CO. INC. $1.00. Circle No. 2186.

WOOD CARVERS SUPPLY INC.—Our 35TH YEAR—Complete 84-page color catalog including over 2,000 carving tools, books, and supplies. Send for your free copy today. Carter Tool Co., P.O. Box 801, Office 202, New York, N.Y. 10017.

CLAMPS

MERLE ADJUSTABLE CORNER CLAMP—Quick & easy to use. Fully adjustable from 2.5" to 69.5". Perfect for clamping picture frames, cabinets, or anything requiring 90° corner clamping. The Merle is a combination of aluminum & steel construction, a true industrial quality tool. Send today for information. MLG LTD. Circle No. 2250.

CLOCKS

BUILD HEIRLOOM CLOCKS—Now create beautiful heirloom quality clocks right in your own home! Choose from easy-to-follow instructions on tempting classic wooden clocks. 32-page catalog also offers a selection of music boxes, music movements, custom clocks, and a complete line of hardware parts and Glass & Paint for clock building. Satisfaction guaranteed. THE AMERICAN CLOCKMAKER, 25c. Circle No. 2320.

KLOCKIT'S FREE 76-PAGE COLOR CATALOG—Is packed with the largest selection of beautiful wood clock kits for all skill levels, huge selection of quartz and mechanical movements, wood parts, music movements, tools and much more for the craftsman. KLOCKIT. Circle No. 2255.

I AM ENCLENCING: $ for priced items
$ for handling
$ for total remittance

Address
City
State
Zip Code

94
BECAUSE WE CARE ABOUT YOU

WORKSHOP MEDICAL EMERGENCY CHART

Determine if the area is safe for you and the victim. Check the victim for life-threatening injuries such as no breathing or bleeding that won’t stop, and give first aid. Call your emergency number for an ambulance. Then, give first aid for injuries that aren’t an immediate threat to life.

Bleeding

Apply direct pressure to the wound with your hand, using a sterile gauze pad, or a clean cloth. If no fracture is evident, elevate the wound. If bleeding continues, keep adding dressings and applying pressure. If bleeding does not stop, call your emergency number.

Severed Extremity

Control bleeding as directed above. Wrap the severed part in a moist gauze pad or cloth. Seal it in a plastic bag. Keep it cool by placing the bag in ice or ice water. Call your emergency number for an ambulance or take the severed part with you and go immediately to the hospital.

Eye Injuries

You usually can flush a loose object from the eye with water or blot it out with the corner of a moist, clean cloth. Do not try to remove an embedded object. Lay the injured person down. Place an inverted paper cup over the injured eye, and secure it with a bandage over both eyes.

Burns

Cool the burned area with cool water until pain subsides or the ambulance arrives. Cover the burn with a clean, moist dressing. Do not break blisters. Seek medical care for burns on the face, genitals, hands, feet, or a large area of the body.

Important Phone Numbers

<table>
<thead>
<tr>
<th>Emergency:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor:</td>
</tr>
<tr>
<td>Surgeon:</td>
</tr>
<tr>
<td>Hospital:</td>
</tr>
<tr>
<td>Burn center:</td>
</tr>
<tr>
<td>Poison center:</td>
</tr>
<tr>
<td>Fire department:</td>
</tr>
</tbody>
</table>
SOME RULES AREN'T MADE TO BE BROKEN.

Ever since the first one came off the production line, experienced professionals who rely on their tools have associated the Stanley POWERLOCK® tape rule with one thing. Quality.

That's because for over 25 years the people who work with tools for a living have taken it to the limit. And it always comes back for more. You see, no other tape rule is built like a Stanley Tape.

Its Mylar® coated blade, for example, provides the ultimate in protection, resisting wear, abrasion and most chemical solvents longer than any other tape blade.

And Stanley tape rules are laser tested for precision to make sure they're the most accurate tapes you can buy.

What's more, Stanley tapes are available in a variety of styles and lengths, from 3 ft. up to 300 ft. But no matter which size tape you buy, when you buy a Stanley you're buying the #1 tape rule. The rule by which all others are measured.
ENGINEERED TO SET A NEW PERFORMANCE STANDARD FOR CORDLESS DRIVER/DRILLS. THE RYOBI 7.2V, 9.6V AND 12V TORQUE FORCE SERIES FEATURES BREAKTHROUGH MOTOR TECHNOLOGY TO DELIVER MORE POWER LONGER. A KEYLESS CHUCK, ELECTRIC BRAKE AND BUILT-IN BIT STORAGE ARE STANDARD. NEW ERGONOMIC DESIGN AND PRECISION ENGINEERING MEAN BALANCE, HANDLING EASE AND POWER SECOND TO NONE. PUT MORE POWER IN YOUR PROFITS. CALL 1-800-323-4615 AND PUT THE TORQUE FORCE “WORKAHOLICS” TO WORK FOR YOU.

RYOBI

WORKAHOLICS

RYOBI AMERICA CORPORATION, 1424 PEARMAN DAIRY RD., ANDERSON, SC 29625