TUNE-UP YOUR

☑️ Tablesaws
☑️ Jointers
☑️ Planers

See page 66

We test and rate
23 SCROLLSAWS
NEW!
G1022Z
10" HEAVY-DUTY TABLE SAW
WITH CAST IRON WINGS
Includes FREE 10" Carbide-Tipped Saw Blade
$425.00

FEATURES:
- All ball bearing arbor
- Quick-lock fence locks both front and back
- Cast iron table and extensions
- Self-tensioning belt drive
- Heavy-duty rip fence with micro-adjustment knob
- Extra-long 4" tubes for extra-long jobs
- Tubes are 1 1/4" dia.
- Table size with extension wings: 27 1/4" x 40 1/2"
- Height of saw to tabletop: 56 1/2"
- Arbor diameter: 5/8"
- Cutting capacity: 3" at 90°, 2 1/4" at 45°
- Motor: 1 1/2 HP, Single Phase, 110/220V
- Shipping weight: approx. 270 lbs.

G1035
1 1/2 H.P. Shaper
- 2 speed, forward and reverse
- 2 spindle sizes: 1/2" & 1"
- Shipping wt.: 225 lbs.
*$425.00

G1071
Spindle Sander
- 3 spindle sizes:
  - 25" x 23" table tilts 15°
  - 2 cut @ 15°, 1 cut @ 45°
- Shipping wt.: 445 lbs.
*$495.00

G1257
16" Scroll Saw
- 100-1000 variable rpm
- 2 cut @ 0°, 1 cut @ 45°
- Shipping wt.: 40 lbs.
*$169.00

G1018
8" Jointer
- 8" x 65" bed
- 1 1/2 HP, 220V motor
- W/ mag switch
- Shipping wt.: 450 lbs.
*$660.00

G1029
2 H.P. Dust Collector
- 1982 CFM
- Handles 2 machines
- Shipping wt.: 140 lbs.
*$275.00
W/ free hose

G1037
13" Planer/Moulder
- 3 feed speeds
- Wide variety of profiles available
- Shipping wt.: 200 lbs.
*$695.00

WEST OF THE MISSISSIPPI
1-800-541-5537
FAX: 1-800-225-0021
P.O. Box 2069 Bellingham, WA 98227
Ask For Department # 64M

EAST OF THE MISSISSIPPI
1-800-523-4777
FAX: 1-800-438-5901
2406 Reach Rd. Williamsport, PA 17701

Call TOLL FREE 24 hours a day! Ask for your FREE '96 catalog!

Circle No. 860
Turned wooden hats? You bet!
Just a few of the many hat styles that Johannes Michelson turns in his rural Vermont workshop.

It was during our last staff issue-planning meeting when our features editor Pete Stephano suggested that we do an article on Johannes Michelson, a Vermont hatmaker. Eyebrows raised around the room. Most of us have been around woodworking long enough to know that you can make almost anything from wood. But hats?

It's true, folks! And they're impressive beyond belief. It turns out that Johannes, formerly a home builder and stair maker, just happened to think of this novel idea after reading an article about David Ellsworth's thin-walled bowls and a book on wood movement by Bruce Hoadley.

Although this craftsman has been turning his hats for only six years, his end product will amaze you. Whether you're a woodturner or not, be sure to treat yourself to Pete's article, "Hats Off to Turning," beginning on page 39.

P.S. The staff and I were so interested in Johannes' technique that we asked him to come to Des Moines to show us how he does his thing.

On another note, be sure to check out our 1997 Build-A-Toy® contest rules on page 17. As always, the prizes are great, and often worth over several thousand dollars. More importantly, proceeds from the contest go to needy kids across the country.

Project Showcase—It's Back!
Those of you who have been with us for several years will remember that we used to have a feature called "Project Showcase" in WOOD® magazine. In it, we featured projects built by our readers as a way of giving a tip of the hat to quality craftsmanship.

Now, after a hiatus of several years, we're making room for "Project Showcase" again. Starting with this issue, we'll run it two times a year. The first time out, we'll show you some of the work the WOOD magazine staff have been doing. After that, it's a readers-only feature. Be sure to see page 37 for information on submitting your woodworking projects for consideration.
CONTENTS

39 Hats off to turning
Get to know a Vermonter who shapes wooden hats to fit, selling them for over $500 each.

50 The wide world of scrollsaws
Find the tool that matches your cutting needs and budget as we review 23 models.

66 Tool Tune-up
Keep three important workshop machines in tip-top shape with these handy guides.

68 Tablesaws
How to adjust your fence and miter gauge.

74 Jointers
How to align feed tables and set knives.

79 Portable planers
How to restore rollers and set knives.

83 Kickback: don't let it happen to you
Avoid serious injury on radial-arm saws or tablesaws with advice from a safety expert.

Woodworking projects in this issue

14 Our supersturdy scrollsaw stand
Give your benchtop scrollsaw solid legs to stand on with this mighty 2x4 construction.

44 Simply sensational shutter shelf
Buy a pair of window shutters to begin making this tasteful, lighted shelving unit.

48 Space-saving workbench
Create a mobile shop with our on-wall bench; it's designed to store wheeled tool cabinets.

58 Show stoppers
Turn one or more decorative bottle stoppers that top anything you've ever seen.

62 Sun-loving indoor planter
Let the sun shine in on this lattice-covered stand. It accepts 8"-diameter flowerpots.

SHORT-SUBJECT FEATURES

1 The Editor's Angle
4 Talking Back
8 Build-A-Toy® Winners' Secrets
13 Wood Anecdote
17 Build-A-Toy Contest Rules
20 Yesterday's Tools
22 Ask WOOD
28 Tips From Your Shop (And Ours)
36 Project Showcase
98 Products That Perform
104 Finishing Touches

This issue's cover wood grain: Sycamore
When we listen to woodworkers, we understand what you mean — after all, we are woodworkers! You told us you needed a dado to cut plywood, solid wood, hardwood veneered plywood, laminates and melamine chip-free. You told us that it needed to cut precise slots and maintain accuracy. And it especially needed to accommodate today's undersized plywoods.

So we engineered a dado that would not only meet your needs, but would surpass your expectations. First we started with our superior tri-metal brazing to bond a special tooth design to an extra stiff blade body. You wanted daddes with super smooth flat bottoms so we included 4-wing chippers. You said you hate it when chips build up in the chippers, so we perfected a guilet which ejects the chips. And then we eliminated the hub on the outside blade so chips cannot build up between the blades. The Super Dado will cut all your materials chip-free with a dado so smooth, you'll hate to cover it up.

To make it even better, we added something no other dado manufacturer has...a sixth chipper that is \( \frac{3}{16} \)" thick. That doubles the number of possible slot widths (from \( \frac{1}{4} \)" up to \( \frac{3}{16} \)" wide), and allows you to set the dado to fit today's undersized plywoods. To make it even more flexible, we've included a set of precision steel shims for fine adjustments. Here is a dado that matches the slot width flexibility of an adjustable dado while maintaining the safety and finish of a stacked dado system.

And speaking of safety, we used the same anti-kickback technology associated with our saw blades and router bits. It's the anti-kickback shoulder design that reduces the chance of kickback from overfeeding. This higher level of safety lets you dado with confidence.

We also packaged all this in a sturdy carrying case. Once you use this new dado, you'll agree that it really is a Super Dado.
Wants to know what's going on with CMT

In your August 1996 issue, No. 89, you recommended CMT router bits in an article on stile and rail cutters. At the time, I couldn’t agree with you more. Since 1993 I have purchased only CMT router bits because of their high quality. However, when I recently ordered a stile and rail set from CMT, and compared it to a set I purchased in 1995, I noticed there was a definite difference. It appears to me that CMT has reduced its quality.

When I called CMT to inquire about this change, the response from the technical support division was that all of the bits shipped in the U.S. are now manufactured in the U.S., and the new manufacturing plant in the U.S. is using different specifications than the previous bits that I received which were manufactured in Italy. They assured me that these new bits would perform just as good as the ones shipped from Italy, and I am sure that they will, but I feel that when you are paying top dollar for the best router bits, they better be top quality. For my future purchases, perhaps I’ll fly to Italy.

—Bernard J. Bobinski, Riverhead, NY

In our conversations with representatives of both CMT USA and CMT Tools, it is clear that both companies are aware of the market confusion created by this situation, and that both companies desire a solution. To that end, the companies are engaged in legal proceedings that may take some time to conclude.

We have previously tested and reported on the Italian-made router bits, and like you, found the quality to be top-notch. Now, we’re waiting for the legal dust to settle before reporting on the U.S.-made bits from CMT Tools. In the meantime, you can easily distinguish the two bits because both are marked with their respective countries of origin.

Don’t contact your travel agent just yet, Bernard. You can still buy the Italian-made CMT bits through distributors that deal with the Italian manufacturer’s office in this country—CMT USA, P.O. Box 4185, Greensboro, NC 27404-4185. Call 910/854-0201 for the dealer nearest you.

Although CMT USA and CMT Tools of Oldsmar, Fla., both sell router bits, sawblades, and other tooling labeled CMT, the companies are separate. CMT Tools formerly imported the Italian-made products, but now has its own manufacturing plant in Florida.
IT WON'T LET YOU CONQUER THE WORLD, BUT YOU CAN SURE BLOW THROUGH SUB-DIVISIONS.

Dual speed settings for easy drilling through most materials.

Single sleeve chuck for one hand bit tightening.

On a single battery charge you can give 600 screws the ride of their lives.

Heavy-duty steel planetary gears.

The 2.0 amp hour EXCELL® battery means you can drive and drill longer.

It weighs 20% less than competitive 14.4 volt drill/drivers.

The new Bosch 14.4 volt cordless T-handle drill/driver gives you unprecedented power and run time. It's lighter than the competition, too. Who knows, maybe now Rome can be built in a day.
Ram Sport is one emotionally expressive ride. But it has practical benefits that come through loud and clear as well.

First and foremost, Ram Sport is a Dodge Ram. The truck that changed the rules.

So of course, along with those neat looks, cool fog lights and beefy tires, it has a standard driver’s airbag and a roomiest-in-class interior. There’s also a 40/20/40 bench seat with fold-down center console. And because it’s a Dodge, Ram Sport draws from our Magnum® engine lineup—overall the most powerful line of pick-up engines on the planet.

Here’s another reason you’ll be glad Ram Sport is
voice of
ild a bullhorn.

a Dodge: Ram has better resale
value than Ford, Chevy or
GMC.
Ram Sport is available in
regular and Club Cab models.

For still more information, give
us a shout at 1-800-4-A-DODGE.
Always wear your seat belt for a fully effective airbag.
*We calculated resale using avg. trade-in values
for '94 full-size models vs. MSRP, published in
Jan.-Sept. '95 N.A.D.A. Official Used Car Guide®
monthly editions.

America's Truck Stop The New Dodge
A DIVISION OF THE CHRYSLER CORPORATION
BUILD-A-TOY® WINNERS
Tell all...almost

Want to capture a prize in WOOD® magazine's 1997 Build-A-Toy Contest? Then heed this advice from two perennial winners.

In the seven-year history of the annual Build-A-Toy contest, two names consistently have appeared high on the winners' list in the professional division. So we thought there just might be a toy-building secret or two they'd be willing to share with would-be entrants. And their advice comes just in time for you to craft a toy for the 1997 edition of Build-A-Toy, which is announced on page 17.

Humor and motion, a winning combination
According to Mike, the 1989 toy contest was the first woodworking contest of any kind that he had entered. "Part of the reason I did—and still do—was that toys represent a welcome change for me. I really don't make any toys, except for the Build-A-Toy contest," he says. "And prizes were attractive, but the fact that it is a charity event for underprivileged kids was an important factor."

And that first entry taught him a few things. "I didn't have enough self-confidence to think that I would really win anything, but I did think that an original design would rate higher in the judges' eyes," Mike recalls. His 1989 entry, an apple pull toy with an animated pop-up worm, won only a citation. "It did have a few rough edges, like the stem that stuck out of the top," Mike admits. "For safety reasons, the judges might have frowned on it. Since then I've designed my toys around the rules, such as smooth edges and no small parts that children could swallow."

Mike's 1990 entry, a tumbling acrobat pull toy, earned a citation for best finish. After that, he pulled out all the stops, and has won either a grand prize or a first place nearly every year.

Part of Mike's winning record he owes to the pull-toy action mechanism he developed beginning in 1991. No matter the body style, the leg action looks like the rowing oars of a galley ship—back and forth, all in unison. "Then, I try to take something from nature that has a movement like my mechanism produces," he explains. "I think about something that might be appealing in that type of motion, such as a ladybug, spider, or a crab [see photos this page]. And I mean appealing to children as a toy, and secondarily to the judges. "The toy should be humorous, too," he adds. "In the contest over the years, I've seen so many trucks and boats and other typical toys that I try to do something that's really unique."

Mike also covers the bases. "With the different citation categories in the contest, such as best use of wood or clear finish, or best pull toy, I try to build an entry that will have a chance to win something in as many categories as possible."

And he feels that finish is important. "I try to use a number of wood species and leave them their natural color with a few coats of Minwax Antique Oil Finish," he says. "But a good finish really gets down to the sanding. I usually end with 220-grit, sanding all the parts before assembly."

Continued on page 10
A retired industrial designer and design engineer for Eastman Kodak, Neil Seely, 62, walked off with the top professional prize for a pull toy in the very first contest. Since then, he has racked up quite a record from his woodworking shop in Rochester, New York.

1989, Grand Prize.
1990, First Prize and Best Painted Finish.
1991, First Prize.
1992, Grand Prize, Best Use of Wood, Best Truck.
1993, Second Prize, Best Pull Toy.
1994, Second Prize.
1995, Second Prize.

Keep those judges entertained
“Careful workmanship is very much a part of winning in the Build-A-Toy contest,” Neil advises. “And originality—a design has to be a cut above the average. So, I try to do something that I haven’t done before. And I can afford to make my entry somewhat complex because I’m only making one of them [actually two—he keeps one].”

Although he takes pride in producing a winner, Neil feels that the contest’s prizes are a bonus. The real reward for entering is the creation of a new toy design. And unlike his contest competitor Mike Jagielo, Neil gives little thought to categories and extra citations. “I just want to develop the idea I have for the toy, and then see where it falls,” he says.

Here’s how his 1995 second-prize winning toy came about.

In 1992, Neil Seely captured yet another grand prize with this tractor/trailer rig.

“The idea behind my UFO pull toy [shown below left] came from a thought I had that a 1½-year-old child would be perfectly content pulling a block of wood around the house. Just drill a hole in it and attach a string. But a rectangular block would catch on everything. So, it would have to have the corners rounded off. Then, it would look like a UFO. Eventually, I elaborated on that a little bit by adding noise with jingle bells inside. Of course, for the parents’ benefit, there are times when it should be quiet, too, so I made it silent-running when it is flipped over.”

Neil encourages anyone with an idea to keep at it. “Don’t give up because it’s not working out. Just work on it a little harder. Or, put it on the back burner for a while and maybe a light will come on and you will know what to do.”

This craftsman’s toy entries (see photos on this page) have ranged from the simple to the complex. One common factor they have all shared, however, is a degree of fascination. And if Neil has any one strategy for winning, it’s that.

“My biggest secret—that I probably shouldn’t tell—is that I try to keep the judges entertained longer with my toy than anyone else does,” says Neil. “I believe that if I can keep them playing with my entry for five minutes longer than the others, they’ll feel that they ought to give me a prize. Otherwise, they’ve wasted their time! I think that’s the game Mike Jagielo plays, too. He really gets them enchanted.”

Written by Peter J. Stephano
Photographs: Jim Kascoitas, John Hedgerington, David Brennon, Mary Jagielo
We're talking pleasure here.
Precision. Power. Wait 'til you get your hands on this high-performance machine. It just gets better and better around every turn. The Delta Q-3 18" Variable Speed Scroll Saw. A scroller's dream machine.

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

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

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

This one's ready to test drive right now at your Delta dealer. If you're ready to cut circles around the rest, call us for the dealer nearest you. Delta International Machinery Corp., 800-438-2486. In Canada, 519-836-2840.

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

Delta is proud to nationally fund these two PBS programs for woodworkers, The New Yankee Workshop hosted by Norm Abram and The American Woodshop with Scott Phillips.
The image contains a list of entries sold best at a toy auction held on November 15, 1995, in Des Moines, Iowa. The entries included a pull toy, a Marine Corsair rider airplane, a semi with road grader, a Central tugboat, a Walnut rocking horse, a doll-sized kitchen cabinet, a passenger train pull toy, a Noah's ark rocking chair, a Marine Corsair rider airplane, a semi truck with flatbed, a riding car, a log cabin bank, and a Jeep and driver. The auction raised $180,000 for Christmas distribution by the U.S. Marine Corps Reserve's Toys for Tots program.

Additionally, the image promotes rebate offers on various woodworking tools, including a 14" Band Saw with 3/4 hp, a 14" Band Saw with 1 hp, a DJ-20 8" Jointer, and a DJ-15 6" Jointer. The rebates range from $50 to $100, depending on the model. The website provided is http://www.deltawoodworking.com/delta.
WOOD ANECDOTE

Ailanthus
The tree that you really don’t want to grow

For some unknown reason, the tree that many people call “tree of heaven” or “paradise tree” after its Chinese local name, was brought to North America from the Far East in the late 1700s. The bearer must have meant well, for the ailanthus (Ailanthus altissima) isn’t a terrible-looking tree. It grows straight—tall—and quickly.

You’ll find it in a wide “natural” range that stretches from the Plains States to the East Coast and northern Michigan to Florida’s panhandle. In fact, heat or cold doesn’t hinder this species much. Nor poor soil. Nor city smog and smoke. Even dryness won’t bother it. And the tree can survive submergence in salt water. So, there’s little to stop its propagation (it spreads by seeds and sprouts from its deep root system). In many places, the ailanthus has become a real nuisance by aggressively crowding out native or ornamental species.

So why give this tree a bad rap? For one thing, it stinks. The blossoms of the male ailanthus produce a stench. The leaves and wood also have a formidable and unpleasant odor. And, it’s not a very convincing shade tree. Nor does ailanthus live long—maybe 75 years. Lastly, ailanthus wood looks like white ash, but is weak and brittle.

Ailanthus' only claim to fame is that it is the tree referred to in the book and motion picture A Tree Grows in Brooklyn. Unfortunately, it really does.

Illustration: Jim Stevenson

$25 REBATE.
12” Variable Speed Lathe
Models #46-700/701 with
or without stand.

$50 REBATE.
15” Planer
with stand
Model #22-675

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

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

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

Call for the name of your nearest participating Delta dealer. Delta International Machinery Corp., 800-438-2486. In Canada, 519-836-2840.

Delta is proud to nationally fund this two PBS programs for woodworkers. The New Yankee Workshop hosted by Norm Abram and The American Woodshop with Scott Phillips.
Elevate your benchtop scrollsaw to new heights with this sturdy shop-made stand. It provides solid support directly beneath the saw to help minimize vibration.

We recommend that you elevate the scrollsaw table to a comfortable height, typically at elbow level. So, you may have to adjust the height of the uprights (C) slightly. We dry-clamped our pieces together before drilling the mounting holes to verify a comfortable working height.

For additional strength, drill the mounting holes, and drive the lag screws through the uprights (C) and feet (D) and into the 3/4" dowels in the mating pieces.

---

Project Design: James R. Downing
Illustrations: Roxanne LeMoine
Photograph: Dean Tanner
A HUNDRED DOLLAR REWARD FROM DELTA.

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

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

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

Okay, here goes: Buy any Delta Unisaw between July 1 and December 31, 1996 and we'll send you a rebate check for $100. Even on this Limited Edition Unisaw, as seen on The New Yankee Workshop—a saw that'll be offered this one time only.

Call for the name of the Delta dealer nearest you where you can take advantage of this one-time offer. Delta International Machinery Corp., 800-438-2486. In Canada, 519-836-2840.

Visit us on the web: http://www.deltawoodworking.com/delta
Just how strong is the Magna-Set™ Fence?

THE STRONGEST AND MOST ACCURATE ON THE MARKET - PERIOD!

Don’t try this at home!

We hoisted this 500 pound tablesaw into the air to demonstrate the clamping power of our Magna-Set™ Fence. After letting it dangle in the air as shown for almost a whole day we brought the saw down and tested for accuracy. The fence showed no deflection on our dial indicator which measured in one thousandths of an inch. Not only was there no damage to the fence, but we were able to slide it with one finger!

PATENT PENDING

- Locks on both ends
- Fits saws with 27'' tables
- Moves on ball bearing guides
- T-slotted for attaching fixtures
- Remains parallel to blade when unlocked
- Parallelism easily adjustable
- Fine positioning knobs on both sides for left or right handed use

EASY INSTALLATION!

Available from quality dealers nationwide

Woodstock International
Woodworking Tools and Accessories
Wholesale Only

P.O. Box 2309
Bellingham, WA 98227
Phone: (360)734-3482
FAX: (360)671-3053
Enter WOOD® magazine’s 9th Annual Build-A-Toy® Contest

All entries from the 1997 Build-A-Toy contest will be sold at a public auction in November 1997, and the funds raised donated to the U.S. Marine Corps Reserve’s Toys for Tots program to purchase new toys for needy children at Christmas. All Build-A-Toy contest entrants receive a colorful, “I Crafted a Toy for Joy” sticker.

Toys will be judged on Originality, Durability, Craftsmanship, Kid Appeal, Safety, and Finish. Only toys of your original design will be eligible for Best Toy Entry, and Grand through Third prize in the Home Hobbyist and Professional divisions. Toys built from plans as well as those of your original design will be eligible for all prizes in the Junior Craftsman division (ages 19 and younger) and all citation awards. The special award Best Entry from a Shop Class will be presented to the most outstanding entry (a multiple entry also qualifies) submitted by a shop class (elementary through high school) in the Junior Craftsman division.

Deadline for entries is September 1, 1997. Judging will take place in mid-September and winners will be notified by mail by mid-October. Names of winners will be published in WOOD magazine’s September 1998 issue.

Enter a Toy and You’re Automatically Entered in Our Drawing!

When you enter a toy in the contest, you’re automatically entered in a drawing to receive one of these great prizes:

- 3M™ Woodworker’s Packet — 3M™ 2” Sanding/Finishing Kit, 3M™ Aluminum Oxide Sandpaper, 3M™ Synthetic Steel Wool, 3M™ Sanding & Fiberglass Insulation Respirator, Scotch™ Painters’ Masking Tape
- Power Press pipe clamp spreader from American Tool
- WOOD Plan from WOOD magazine

No toy necessary to enter. See Drawing Rules for full details.

ENTRY FORM

WOOD® magazine’s 1997 BUILD-A-TOY® Contest

Please limit entries to 25 toys per individual or group. Please provide the following information for each entry submitted:

Division entering: □ Junior Craftsman □ Professional □ Home Hobbyist
My entry is: □ Original design* □ Built from plans
Check affiliation if applicable: □ Shop Class

*For Original Design entries: I certify that I have designed and built this toy myself. Should my entry win, I agree to cooperate with WOOD magazine to supply builder’s notes and a bill of materials for publication.

Signature __________________________ Date __________

Name _______________________________

Address _______________________________

City ___________________________ State ______ ZIP __________

Phone (_____) _________________________


(Attach one entry form to each toy. Copies okay.)
1997 Build-A-Toy Contest Prizes
Over $22,000 in tools and supplies to win!

Junior Craftsmen
(19 yrs. and younger, all designs)
Grand Prize
$1,400
RBI Hawk Ultra scroll saw
First Prize
$1,000
Skil power tools
Second Prize
$750
Dremel tools
Third Prize
$500
Meisel hardware merchandise

Home Hobbyist
(original designs only)
Grand Prize
Grizzly stationary power tools valued at $2,500
First Prize
$2,300 in Craftsman stationary machines
Second Prize
$750
Skil tools
Third Prize
$500
Dremel tools

Professional
(original designs only)
Grand Prize
$2,500 in Bosch tools
First Prize
$2,000
DeWalt tools
Second Prize
$1,050 Milwaukee sliding compound miter saw
Third Prize
$500
Porter Cable tools

Best Toy Entry
$3,000 in Delta tools
(Original design only, all divisions)

Citations (All designs, all divisions eligible)
Best Use of Wood, $300 HVLP paint system from Campbell Hausfeld
Best Pull Toy, $300 in MCMS woodworking products
Best Educational Toy, $250 in Constantine’s merchandise
Best Action Toy, PowerPress pipe clamp spreader and Speedbor2000 flat bits worth $170 from American Tool
Best Model, Quick-Grip bar clamp and Horsepower handy clamp worth $185 from American Tool
Best Clear Finish, $250 in Formby’s finishing supplies
Best Painted, Dyed Finish, $250 in Formby’s finishing supplies
Best Transportation Toy, $399 Vicmarc mini lathe from Craft Supplies USA

1997 CONTEST RULES
1. Toys must fit into a box no larger than 2 x 2 x 2. The primary material should be wood but may incorporate other materials.
2. Please follow Consumer Product Safety Commission guidelines: nonatox wood finish only; no parts smaller than 1 1/4" square on toys for children under three years of age; no sharp corners or points; pull strings longer than 1" should not have beads or other attachments that could tangle and form a loop.
3. Entries must be received by September 1, 1997. All entries must be postmarked; collect entries will be rejected. Attach an entry label, photocopy of an entry label, or a 3" x 5" card with entry information and your name and address to each toy.
4. Woodworkers accept Junior Craftsmen who build toys from existing plans will be eligible for Citation prizes only. Woodworkers who build their own original designs will be eligible for all prizes.
5. Entry constitutes permission to use winner’s name, hometown and photograph for promotional purposes, unless prohibited by law. Employees and immediate family members of Meredith Corporation and its subsidiaries and their affiliates and subsidiaries are ineligible. Winners will be notified by mail.
6. Winners will be selected and notified by mail on or about October 15, 1997, and will be issued the prize directly from the manufacturer/distributor. Value of prize is suggested retail price. For a list of winners, send a self-addressed stamped envelope to: 1997 Build-A-Toy, 1210 Grand Avenue, Des Moines, IA 50309-3376.
7. Meredith Corporation will donate all entries or auction money received from entries to the U.S. Marine Corps Reserve Toys for Tots program.
8. For woodworkers who enter their toy as an original design, Toy must be your own original design. A different approach to an existing toy would qualify. Toys based upon published patterns are not eligible.
9. A panel of representatives from the U.S. Marine Corps Reserve, Meredith Corporation, and woodworking experts will judge the toys on or about Sept. 15, 1997, on children’s appeal, craftsmanship, originality, durability, safety, and finish. The panel’s decision will be final.
10. Professional woodworkers include woodworking teachers, and anyone earning an income by selling wooden items. Winners are responsible for applicable taxes.

DRAWING RULES
1. NO PURCHASE OR CONTEST ENTRY NECESSARY.
2. To enter, fill out the Official Entry Form or place this information on a 3" x 5" postcard. Up to 25 entries per person allowed. Persons who enter the contest are automatically entered, one entry per toy up to 25 toys.
3. Sweepstakes begins on September 1, 1996. Entries must be received by September 1, 1997. No responsibility is assumed for lost or misdirected entries.
4. Sweepstakes open to residents of the U.S.A., except employees of Meredith Corporation, contest sponsors, their agents, affiliates, subsidiaries and immediate families.
5. The winners will be selected on or about October 15, 1997. Winners will be notified by mail and prize delivered on or about October 30, 1997.
6. Selection of winners by a random drawing from all eligible entries received will be under the supervision of Meredith Corporation whose decisions are final.
7. Odds of winning depend on number of entries received.
8. Prizes are not transferable, no cash alternative. Only one prize per person is allowed.
9. Entry constitutes permission to use winner’s name, home town, likeness, and photograph for contests, public relations, promotional and advertising purposes on behalf of Meredith Corporation, unless prohibited by law. Winner will be required to sign an Affidavit of Eligibility and Release of Liability within ten (10) days of notification.
10. Subject to all federal, state and local laws and regulations. Void where prohibited. All prizes donated. All taxes are the sole responsibility of the winners.
11. For a list of prize sponsors (available after October 15, 1997) send a self-addressed, stamped envelope to: Build-A-Toy Sweepstakes, 1210 Grand Avenue, Des Moines, Iowa 50309-3376.
12. Prizes: 25 woodworker’s packets (approximate retail value $25 each) 26 Power Press pipe clamp selections (approximate retail value $250 each) 100 WOOD Plans (total value $99.95 each)
With theHitachi approach

CORDLESS TOOLS WORK LONGER AND WEIGH LESS

The best in cordless freedom, power and weight is only available with the unique Hitachi Battery Belt Pack. Other approaches are just a pain in the wrist. Plus, the Hitachi approach is interchangeable for all same-voltage Hitachi tools, including flashlights.

Other approaches put all of the weight on the wrist

For example:

Compare the work-weight

1. The Hitachi DS13DV2B 12V Cordless Drill has a work-weight of only 3.1 lbs. using the unique Hitachi Battery Belt Pack (EB12B).
2. The DeWalt drill, pictured above, has a work-weight of 5.6 lbs.
3. The Hitachi Battery Belt Pack supplies 4.0 Ah of power utilizing two 2.0 Ah batteries.
4. The DeWalt battery, supplied with the drill pictured above, provides only 1.7 Ah.

Compare the power

The Hitachi approach offers the option of putting the battery weight on the waist belt

HITACHI POWER TOOLS

For the Hitachi dealer nearest you, call:
1-800-546-1666
For more information, call:
1-800-59-TOOLS
(1-800-598-6657)

© 1996 Hitachi Koki U.S.A., Ltd. 3950 Steve Reynolds Blvd., Norcross, GA 30093
When cardboard carpenters sold tools
A one-of-a-kind Stanley window display from 1939

“A good tool window always gets attention,” the Stanley Works counseled hardware dealers in a 1939 flyer. “This is especially true in the Spring when the building business opens with a bang; when home and camp owners are fixing up their places; when schools are requisitioning tools.”

The flyer accompanied a boxful of colorful die-cut cardboard pieces depicting carpenters working around a house, and showed how to set them up in a store window. Intended for use during the last two weeks of March 1939, the display aimed at touching off that springtime burst of business.

The forgotten package
H.B. Craven of Wayne, Nebraska, was one retailer slated to receive the display. Apparently, though, Craven's cardboard cutouts weren’t even shipped from the printer in Chicago until March 30.

Perhaps the spring tool-buying frenzy in Wayne already was underway when the package finally arrived, or maybe another display was in place. In any case, the carton was set aside unopened.

And so it remained until the 1970s, when a tool dealer discovered the package of props and displayed the set once. Then, for a convention of Stanley Tool Collectors in 1993 in Hartford, Connecticut, current display owner Clarence Blanchard constructed a mock storefront window and set up the display with tools from his collection. He showed it again at a Mid-West Tool Collectors Association meet in Charleston, West Virginia, the following year.

Many old-tool authorities believe this is the only complete Stanley window display in existence. “Some collectors have one or two Stanley Happy Carpenters, but not complete units,” Clarence says.

Costly cardboard
And what is such a rarity worth? “Advertising is well established in antique collecting, and good samples demand high prices. Plus, Stanley point-of-sale advertising is hard to find,” Clarence says.

“But this takes up considerable space,” he points out, “so it wouldn’t be desirable to many collectors.” Clarence figures the display’s value falls in the low five-figures, and he’s turned down at least one offer in that range. That just shows the kind of attention a good tool window gets, even one more than half a century old.

Top ten tools for display
The eleven “happy, busy Stanley Carpenters” displayed these ten tools. Prices are 1939 retail prices.
- Stanley Bailey jack plane, no. 5, $4.40.
- Stanley combination try square and miter square, no. 21-12", $1.20.
- Stanley Atha nail hammer, no. 51½-16oz., $1.25.
- Stanley Green End Zig-Zag rule, no. 106-6 ft., 65¢.
- Stanley Everlasting chisel, no. R40-1", $1.70.
- Stanley bit brace, no. 915-10", $4.40.
- Stanley screwdriver bit no. 26-¼", chucked in brace, 20¢.
- Stanley aluminum level, no. 313-24", $3.00.
- Stanley Pull-Push rule, no. 7506N, 65¢.
- Stanley Hurwood screwdriver, no. 20-6", 50¢.
ONE THOUSAND TWO-BY-FOURS. TWENTY-SIX DECKS.
THREE OAK FLOORS. AND IT'S STILL SUITABLE FOR FRAMING.

YOU WANT TOUGH? FRAME THIS. RUGGED ALUMINUM HOUSING. SPINDLE-LOCKS FOR EASY

BLADE CHANGES. BALL AND ROLLER BEARINGS. 24-TOOTH CARBIDE BLADE. AND A POWERFUL

2.75 HP, 13 AMP MOTOR. THE CRAFTSMAN SAWMILL. ANYTHING LESS JUST DOESN'T CUT IT.

CRAFTSMAN
EXCLUSIVELY AT SEARS AND SEARS HARDWARE STORES

© Sears, Roebuck and Co. 1995
Looking for resawing alternatives

My projects seldom use full-thickness 3/4" stock, so my thickness planer is in almost constant use. As you well can imagine, I lose a lot of valuable wood to my planer in the form of shavings. Can you suggest a method of resawing without a bandsaw? My benchtop bandsaw doesn’t have the guts (or the clearance) to resaw anything much wider than 3" pine.

—Jon Havestick, Santa Ana, Calif.

Jon, you can resaw wood using a tablesaw. To do this, cut into the board on both edges, and use a handsaw to cut through the remaining wood in the center of the board (see drawing right). Here’s one easy way to do this:

1. Set your rip fence so the space between the tablesaw blade and the rip fence equals the final thickness of the resawn boards plus 1/8". This extra thickness will allow you to plane or sand the wood to remove the saw marks.
2. Adjust the blade height to 1" or less, and make a cut into each edge of the board. Be sure to keep the same face of the board against the rip fence while you make these cuts.
3. Raise the sawblade an additional 1", and deepen the cut on each edge. Repeat this process until you have reached the height limit of your sawblade, or you have a 1/2" “web” of wood separating the two cuts in the center of the board.

It’s important that you leave at least a 1/2” web of unsawn wood in the middle of each board. With less material remaining to be cut, the board becomes too unstable to safely cut on the tablesaw.
4. Separate the sections by cutting through the 1/2"-thick area of wood in the center of the board with a handsaw. Place the board to be resawn upright in a vise, with about two-thirds of the board above the vise. Use the handsaw to cut the center web down to just above the vise. Then, reverse the board, placing a spacer between the cut halves. Reposition the board in the vise, and saw through the remaining center web.

Rosette cutters need the right power tool

I recently purchased a rosette cutter for my drill press, but to date have been unsuccessful using the tool; I can get the cut started okay, but then the wood tears as I apply more pressure, and the cutter chatters and damages the pattern.

—Ron Gray, Oak Ridge, Tenn.

Ron, you’re encountering a problem common to many woodworkers who try to use a rosette cutter on too small a drill press, or on a drill press with excessive spindle runout. These cutters, with their multiple shaping blades, exert tremendous drag while cutting. That drag causes smaller drill spindles to flex and then jump, tearing at the wood. And the deeper you make the cut, the more you’ll experience this problem.

We suggest that you use a large drill press with a thicker spindle to resolve your problem. If you already have a floor-model drill press, you can check the spindle runout with a dial indicator, or use the homemade gauge shown in the drawing left. Contact your tool dealer on how to reduce the runout of the drill-press spindle.

Continued on page 24
THE NEW RYOBI DETAIL BISCUIT JOINER

THE DIFFERENCE BETWEEN WOODWORKING AND WOODNOTWORKING.

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

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

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

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

This compact powerhouse cuts smaller slots and uses miniature "Accu-biscuits"™ to fit where standard biscuits don't. And its price is as small as its biscuits. But the Detail Biscuit Joiner is big on performance, from its beefy motor to its die-cast base and see-through fence. So see the new Ryobi Detail Biscuit Joiner at your local home center. It'll get your wood working like never before.

RYOBI
Exceed Your Expectations™

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

I get fine sawdust from my scrollsaw, and I would like to use it as part of a wood filler. What can I mix with this sawdust that will take a stain and won't turn white when varnished?

—Earnest Lemcke, Sioux Falls, S.D.

Ernie, you can mix the sawdust with yellow woodworker's glue to make a filler for small holes. Keep the sawdust content of this mixture high, and it will take stains and not turn white when varnished.

Golden proportions

I have heard of the "golden rectangle" theory that's used to calculate the proportions of furniture parts. However, I have not heard it explained so I can understand it. Can you give me a simple explanation? How can I apply it to my candlestick designs so that the various parts are in proportion to each other?

—Jack Fildes, Grafton, Ohio

When we first researched the "golden rectangle" or "golden section" theory of proportions, Jack, our eyes kind of glazed over. However, as we worked with the theory, it became easier to understand. We'll try to explain it in a simple and straightforward way.

This proportional system relates the length of a rectangle to its width, and was used by the Greeks as early as the 4th century B.C. For our technically minded readers, this system states that the smaller section of a line (AB) is related to the larger section (BC), as the larger section is related to the whole (AC). (Whew! see Golden Section drawing right.)

Now that we've got you confused, let's see about getting out of this swamp. The mathematics of this system (fortunately done by a whole lot of other people over the centuries) produces a ratio between the width and length of a rectangle of approximately 5 to 8, or, more precisely, 1 to 1.618.

To apply this ratio to a rectangle, consider the length of the short side to be 1 unit. Then multiply this length by 1.618 to get the length of the long side. For a rectangular solid (for example, a box or chest) obtain the third dimension by adding the lengths of the rectangle sides (1x + 1.618x) as shown in the drawing right.

To make this filler, first apply some yellow woodworker's glue to the area to be filled. Then, add the sawdust, working it into the glue with your finger. While the glue is still damp, sand the area, working more sawdust into the glue. Repeat this process as many times as necessary to fill the defect in the wood. Thoroughly sand the filled area to remove any glue residue around the patch, preventing the dreaded "white spot" from occurring when you apply the finish.

When designing a project, use these calculations in this way:

1 Determine one measurement of your candlestick (either the overall height of the candlestick or the width of the base). For our example, we'll arbitrarily choose a height of 6''.

2 To find the diameter of the candlestick base, divide the height (6'') by 1.618:

$$6'' \div 1.618 = \text{about } 3\frac{3}{4}''$$

(see the candlestick drawing below)

3 If you want to start your calculations with the dimension of the candlestick base (the shorter side of the rectangle), just multiply the base diameter by 1.618 to determine the height of the candlestick.

You can use this proportional system to calculate the dimensions of any project where you know one dimension. For example, a 16''-high coffee table designed using the golden rectangular solid would have a top width of 16'' × 1.618, or approximately 25 3/4", and a top length of 16'' + 25 3/4'', or 41 3/4".
THE OVERALL ADVANTAGE

At Makita, we're aggressively pushing the innovation envelope. New vision. New ideas, New tools. Real tools built for the real world. For professionals and serious do-it-yourselfers we offer the power, quality and precision that you've come to expect from Makita. These new orbital jig saws give you the needed edge.

For more information, call 1-800-4-MAKITA
Wholesale holesaw tire making
I am looking for a way of making tires for spoked wheels on my toys. I need an inside diameter of \( \frac{7}{8} \)" and an outside diameter of \( 1\frac{1}{4} \)". Can you help?

—Merwin G. Willman, Schertz, Texas

Merwin, the following procedure will help you cut accurate wheel tires:

1. Use a \( \frac{3}{8} \)" holesaw with a pilot bit and cut through all but \( \frac{1}{8} \)" of the thickness of the wood.
2. Change to a \( 1\frac{1}{2} \)" holesaw, and aligning the pilot bit to the pilot hole, cut through all but \( \frac{1}{6} \)" of the wood. Flip the board over, and using the pilot hole as a centering guide, cut through the remaining \( \frac{1}{6} \" of stock. Be sure to leave \( \frac{1}{8} \) or more of the wheel protruding from the holesaw to make it easier to remove the wheel from the saw.
3. Sand the outside of the wheel. You can also turn it on a lathe equipped with a screw center, or an arbor on a drill press.
4. Take the turned and sanded wheels back to the drill press. Use the \( \frac{3}{8} \)" holesaw, and working from the back, cut through the remaining \( \frac{1}{8} \" of thickness in the center of the wheel.
New Dynamic Duo Joins Artisan Line

10" TABLE SAW with your choice of a Biesemeyer Fence or the Vega Fence System as standard equipment.

The two newest products being introduced into the Artisan Line are the Model 64-10" Table Saw and the Model 54-6" Jointer. Features such as the Biesemeyer T-Square® Fence System or the Vega Fence System on the Model 64 and a rugged cast iron fence system and an enclosed base on the Model 54 are some of the many features that set these machines apart from the rest of the competition. Join the Dynamic Duo today by adding one or both of these new machines to your shop.

Call 1-800-248-0144 for the authorized Powermatic dealer nearest you.
Hold-down steadies workpieces on saw table

Feather boards and hold-downs are easy to find for tablesaws and router tables. Now, here's one you can build for your radial-arm saw. It makes your operations safer, and stops the subtle creep or movement of the stock that occasionally ruins cuts.

To build this helper, attach two screw eyes to your saw's fence about 8" to the right and left of the blade. Then, fashion the hold-down out of 3/4x3" stock, and fasten a handle as shown below. The length of the hold-down should equal the width from the fence to the front edge of the saw table.

Position a roundhead screw in the end of the hold-down so that the hold-down sits flush with the most common thickness of stock you normally cut. For thicker or thinner stock, make another hold-down, and position the screw accordingly. Make sure your fence is securely anchored so it doesn’t pull up when you push down on the hold-down.

—Dave Yarkosky, Albia, Iowa

For submitting the best tip in this issue, Dave Yarkosky receives a Delta Sidekick 10” Sliding Compound Miter Saw.

Tips From Your Shop
(and Ours)
WOOD Magazine
1912 Grand Ave.
Des Moines, IA 50309-3379

Our goal is to publish only new and original shop tips, so please send your idea to just one magazine. Also note that we cannot return your submissions. Thanks, and keep those shop tips coming.

Kerry Nelson
GENERAL-INTEREST EDITOR

Continued on page 30
Bring Joy this Holiday with a Hand-crafted Corian® Nativity Lamp

NEW from Better Homes and Gardens. WOOD

Corian® Nativity Lamp

YOUR KIT INCLUDES:
- all Corian® cut to approximate size,
- all patterns,
- glue and electrical parts, and

The unique natural translucence of Corian® creates a reverent halo effect around this Nativity Lamp. The finished project gives warmth to your own home, or makes a cherished, hand-crafted gift this holiday season.

To create the roof of the Nativity Lamp, simply heat the Corian® in a pre-heated oven according to the instructions, form to the desired shape, and it will harden as it cools.

- Beauty of Corian® enhances this classic design.
- Corian® is scratch-resistant—If a nick or scratch ever does appear, simply sand it out.
- Colors and patterns are uniform all the way through.

Corian® is the perfect wood alternative. You can carve it, cut it, sand it, and rout it. Because you work with Corian® like you do wood...use your regular carbide-tipped woodworking tools to create this Nativity Lamp. All Corian®, patterns, glue, electrical parts (except light bulb), and instructions are included.

FINISHED SIZE:
10"H x 9"W x 5"D

The Corian® Nativity Lamp comes in Venaro White, as shown.

Retail Value $55
Yours for only $28.95

Shipping and handling only $5.95 per order. Order several for gifts and save. If ordering from outside the continental U.S., please add 35% to order. NY residents add 8% sales tax.

Send check or money order to:
Art Specialties International, Inc.
P.O. Box 215, Dept. NA001
Depew, NY 14043

To order using VISA, MasterCard, or American Express, call 1-800-724-4008. Please refer to Item #N-1 when ordering. Plan ahead for holiday giving—allow 3-5 weeks for delivery.
Hide glue helps you with pry-apart turnings

To make two half-round turnings, most woodworkers glue the stock together with thick paper between the stock pieces and pop apart the paper-to-wood joint after turning. But this procedure can ruin small or delicate turnings because of the force needed to pry apart the pieces.

To prevent this problem, glue your stock together with bottled hide glue. When you finish turning the piece, place a few drops of water along the glue line on both sides and wait 5–10 minutes. Since hide glue is hydrophilic, or “water-loving,” it will pull the moisture into the glue joint, soften, and lose much of its bonding strength. This allows you to pry the two half-round pieces apart easily with a putty knife.

—Carl Davis, Owens Cross Roads, Ala.
THE #1 RATED ROUTER BIT
JUST GOT EASIER TO FIND.

Prized for its quality and precision, the original CMT router bit came to American shores from Italy. It still does today, now only available from the manufacturer's hand-picked authorized dealers.

Make no mistake - nothing beats the original orange bit for a quick, flawless, reliable cut. The product of over 30 years of research and refinement, only the original CMT router bit is:

- Machined from solid bar stock, instead of cast, for extra strength.
- Baked-on non-stick PTFE orange coating applied at 750°F for enhanced wear resistance.
- Manufactured with an exclusive micro-grain carbide for clean cutting and long wear.

So before you spend hard-earned money on a router bit, look for the CMT - MADE IN ITALY laser-etched shank. That's your iron clad assurance that you're getting the premium performer that's a cut above all the competition.

For more information on CMT USA, Inc. products, call or fax for a FREE 116-page, full color catalog and distributor listing. Dealer inquiries invited.

CMT USA, Inc.
307 F Pomonah Drive
Greensboro, NC 27407
Telephone: (910) 854-0201
Fax: (910) 854-0903
Toll free fax: (800) 268-9778
email: cmtnsa@aol.com

Circle No. 1312
White backdrop helps turninggs stand out

Some home shops are not the clean, well-lit places they could be. And on projects with intricate shapes, like the profile of a turning, a clear view of the workpiece may ultimately make the difference between success or failure.

If the area behind your lathe is dark and dingy, you can improve the view of your turnings by placing a piece of white paper or flexible art board behind the workpiece. Hold the bottom of the paper to the lathe with a pair of magnets as shown in the drawing, and prop the top against the wall. The contrast between the white paper and the wood will give you a crisp silhouette for clearly judging the progress of your work.

—Michael Locke,
Huntington Beach, Calif.
Behind-the-fence guard adds a margin of safety

The blade on a radial-arm saw often spins for several seconds after you return the saw carriage behind the fence. A careless or impatient reach behind the fence could prove dangerous.

A simple guard, such as the one shown below, will keep your fingers away from the blade. It also prevents cut-off scraps, blade wrenches, and try squares (which don't belong behind the fence anyway) from interfering with the spinning blade. Size the ¼" plywood or hardboard guard to fit your particular saw. Bore a liberal number of ⅜" holes in it to allow sawdust to escape. Glue a mounting cleat to the bottom edge on one side. Affix the guard with screws, or in some other way that allows easy removal.

—Cecil Lau, Burnaby, B.C.

---

**Power Up. Size Down.**

Don't be limited by the size of your workshop any longer. Now, Europe's finest line of combination woodworking centers is available in the U.S. Introducing EuroShop C-220. The perfect blend of performance, power and price. Call now to receive more information.

800-203-0023

Old World Machinery Co.
San Clemente, CA

---

**ARROW Introduces**

The New Improved T50®
Staple Gun Tacker!

All Steel Construction
Long-Lasting Reliability
Hard-Driving Power
And Now...

Easier to Squeeze THAN EVER BEFORE!

ARROW's T50P uses 6 different size staples: 1/4", 5/16", 3/8", 1/2", 9/16" and 17/32" Ceiling. All ARROW staple guns and staples are built in the USA under the strictest standards of quality assurance. It's been that way for over 65 years!

ARROW products are available at home centers, lumber yards, hardware stores and wherever fine tools are sold. You work hard for your money. So, spend it wisely. The all-steel T50P will last and last and last....

---

**WOOD MAGAZINE** OCTOBER 1996

---

Continued on page 34
More than six inches!

Isn't that every woodworker's dream? Our team of European Bandsaws give you almost twice the resaw capacity of our competitors, the innovations that go beyond your wildest dreams; dynamically balanced cast iron wheels, heavy duty cast iron tables and huge (well, actually large) blade capacities & professional guides. Our Bandsaws come in a size and budget to fit your needs. Call (800) 234-1976 today for your free demonstration video.

PS - For those of you that size is an issue, our Bandsaws range from 13" to 36" models.

LAGUNA TOOLS
2265 Laguna Canyon Rd., Laguna Beach, CA 92651 • FAX (714) 347-1346

Circle No. 615

TIPS FROM YOUR SHOP (AND OURS)
Continued from page 32

For softer bristles, clean them with dish detergent

It seems like even the most careful cleaning of a paintbrush in solvent still results in a stiff, hard-to-use brush after it dries. To keep your brushes as soft and springy as they were when new, try this:
First, clean your brush in mineral spirits or the appropriate solvent. Then, wash the brush thoroughly with warm water and dishwashing detergent. The water and detergent remove minute traces of finish and solvent that otherwise will dry on the bristles and cause them to stiffen.

—Jeff Isom, Waterloo, Neb.

ASK WOOD•KOTE

UNDERSTANDING WATER BASED POLYURETHANES

Q: I have an antique chair I'd like to refinish. Can I use a "water based" polyurethane? Will it provide a durable finish?

Steve Clements, Irvine, CA

A: After you have stripped, sanded and re-stained your chair, you have a variety of clear finishes from which to choose. Generally, polyurethane will be more durable than lacquer or shellac. Among the polyurethanes, you can choose a traditional high solids solvent borne product that offers perhaps the most durable finish but tends to yellow with age. A water borne product, such as Cascade Poly•Kote™, is often preferred for the following reasons:
1. There is very little odor.
2. It provides a hard finish.
3. There will be very little yellowing.
4. There is no fire hazard.
5. It is easy to apply.
6. The application tools can be cleaned with soap and water.

Cascade Poly•Kote™ will provide a very durable interior finish and can be used with complete confidence on your antique chair.

Have a staining or finishing question? Ask Wood•Kote!
Please write to Dept. Q.
P.O. Box 17192
Portland, OR 97217
or Fax to (503) 285-8374

"The Professional Woodworker's Choice Since 1943"

WOOD•KOTE PRODUCTS

A FEW MORE TIPS FROM OUR WOODWORKING PROS

• Master woodturner Johannes Michelson shares the expertise he uses to transform a chunk of green wood into a wearable, Western hat, page 39.
• See the Corner Detail drawing on page 65 for a clever way to conceal a corner joint.
• Put those pieces of plywood scrap to use by edge-joining them into panels. See page 65 for details on this simple and economical technique.
Project Showcase
We’ll feature your best work

If you’ve been a WOOD magazine reader for a while, you might recall Project Showcase. This feature, highlighting reader-designed and -built projects, appeared periodically throughout our first few dozen issues.

Now, we’re bringing it back. A couple of times per year, we’ll select a few of the best project photos submitted by readers and publish them along with a little information about the project and the builder.

We’ll start by showing you some items built by WOOD magazine staff members. On the next page, find out how you might get yours shown next time.

Note: We cannot provide plans, drawings, patterns, measurements, bills of materials, additional photographs or descriptions, construction details or instructions for projects shown. Nor can we pass out addresses or telephone numbers of Project Showcase exhibitors.

Project builder Chuck Hedlund doesn’t shy away from big-time projects in his free time. He spent 268 hours designing and building this oak rolltop desk. Matching accessories round out Chuck’s home office.

Senior how-to editor Marien Kemmet styled his mahogany dining table and chairs after the early 20th-century furniture of Greene and Greene, noted southern California architects and designers. The plugs are simulated ebony.

Correspondence writer Don Mostrom loves to build folk-style stringed instruments. This octave mandolin is his latest design. Despite the fancy inlay work (he used Corian), this one’s only his prototype.
Want to show your stuff?

You can send photos of practically anything you’ve built (no decks or other home improvements, please), with just one limitation: It must be an original design.

Items built from kits or directly from published plans are ineligible. Carvings must be original pieces, not taken from pattern books, roughouts, or carved in a class.

You may enter a project you built that’s inspired by a plan, kit, or something you saw, but please tell us. Generally, minor changes to a published plan, such as using different wood than specified or altering a few dimensions, won’t be enough to warrant selection.

Here are some factors we’ll consider in making selections:

- **Eye appeal.** A graceful, well-proportioned design is certain to catch our eye, as will a clever or unusual one. Interesting details or exciting use of wood also will likely grab our attention.
- **Craftsmanship.** We’ll look for evidence of careful construction. Grain matching, the way parts fit together, and quality of the finish will be just some of the things we’ll watch for.
- **Originality.** Is there something that distinguishes your blanket chest (or whatever) from hundreds of others? Tell and show us how it departs from the commonplace.

Here’s how to enter

- Send sharp, properly exposed color photographs of the item. Include an overall view plus any detail views necessary.
- We prefer slides, but can use sharp, glossy prints. (We may need to borrow the negatives for publication.) We cannot use Polaroid photos. Photos cannot be returned.
- Avoid cluttered or confusing photo backgrounds. Include a prop or two to indicate scale. (For instance, coins next to a small turning help viewers visualize its size.)
- Even if it seems painfully obvious to you, explain what the project is or what it does—we don’t want to call your lamp a plant stand.
- Describe unusual features, special construction techniques, approximate building time, wood and finish used, overall dimensions, and anything else of interest.
- Tell us a little about yourself, too. Let us know how old you are, your occupation (or former one, if you’re retired), how long you’ve been a woodworker, and so forth.
- Include your daytime telephone number in case we want to know even more.

Then send everything to:

**WOOD magazine**

**Project Showcase**

1912 Grand Ave.

Des Moines, IA

50309-3379

---

**Art director Lee Gatzke** built this chess set for his son Mike. Drawers in the cocobolo box hold the turned cocobolo and spalted maple chess pieces. The light squares on the board are highly figured maple.

**Associate art director Perry McFarlin** constructed this wall-hung oak shelf for his wife’s collection of antique tin cups. He designed the display shelf around oak dentil molding he bought at a local home center.

**Design editor Jim Downing** crafted this intarsia-style family tree for his parents on their 50th anniversary. Pieces cut and shaped from walnut, maple, cardinal wood, and osage orange are inlaid into the mahogany background.

---

Photographs: Wm. Hopkins,

Hetherington Photography
Save 55% on MLCS Raised Panel Door Sets

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

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

Regular Price Over $150!

Raised Panel Door Sets

<table>
<thead>
<tr>
<th>SET #</th>
<th>BIT STYLE</th>
<th>RAISED PANEL LRG. DIAMETER</th>
<th>SET PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1301</td>
<td>1/4&quot; Shank Router</td>
<td>* 2&quot;</td>
<td>$69.95</td>
</tr>
<tr>
<td>#1302</td>
<td>1/2&quot; Shank Router</td>
<td>* 3-1/2&quot;</td>
<td>$79.95</td>
</tr>
<tr>
<td>#1303</td>
<td>1/2&quot; Shaper</td>
<td>4-5/8&quot;</td>
<td>$99.95</td>
</tr>
</tbody>
</table>

1/4" Shank CARBIDE TIPPED ROUTER BITS

All bits also available in 1/2" shank.

FREE SHIPPING in CONTIGUOUS USA for ALL ITEMS.

SOLID BRASS ROUTER INLAY SET

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

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

SPECIAL

Biscuit Joining Set

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

Biscuit Joining with your Router, Instructional sheet included.

MLCS 1-800-533-9298

To Order By MasterCard, VISA, Discover, or American Express CALL TOLL-FREE, 7 DAY - 24 HOUR ORDER SERVICE

To Send Check To: MLCS, Ltd., P.O. Box 4055 DF, Rydal, PA 19046

Circle No. 1251, 1350, 2260
Read on and you'll see how Vermont craftsman Johannes Michelsen uses his lathe to perform some neat hat tricks.

(Continued next page)

At the edge of the forest behind his shop, Johannes Michelsen displays a selection of his turned wooden hats made strictly from native Vermont stock.
Some things you just have to see to believe. Such as wooden hats. Even The World Book encyclopedia fails to mention hats of wood, although in two pages it traces hat history back to 3100 B.C. Throughout the centuries, there were bonnets, berets, cloches, fezes, sombreros, tricornes, turbans, and many others. But they were all made of something besides wood.

Certainly, when Zadoc Benedict founded the first hat factory in the United States in 1780 in Danbury, Connecticut, he didn’t start out fitting chunks of wood to people’s heads. Zadoc might have considered it, though, if woodturner Johannes Michelsen had been around back then.

With his Manchester, Vermont, workshop separated from Zadoc’s original hat factory by only 100 miles or so, Johannes no doubt would have been influenced. He couldn’t have avoided it. After all, a wooden hat once seen can’t help but be remembered. And to 50-year-old Johannes, turner of wooden hats, that’s always good for business.

From staircases to Stetsons
Johannes was born in Denmark and raised in Connecticut. After his return from service in Vietnam in 1969, he gradually established himself as a homebuilder and land developer in the Manchester area. By 1980, however, the local economy was slowing, and Johannes began specializing in custom stair building, which he occasionally still does. Yet, he wanted to create something else with wood, something more personally expressive than staircases.

“I read a magazine article about David Ellsworth, and how he turned hollow vessels,” Johannes remembers. “It showed his finished work and what they sold for. I thought, ‘Wow! He gets $400 to $600 for them. I could become a bowlturner and actually make a living at those prices.’ I started looking through the newspaper for a used lathe.”

Eventually, Johannes located one and began to turn green wood into bowls. It wasn’t all that new to him. “I had done some turning in my father’s shop when I was a kid. I think he bought the lathe just to keep me and my brother away from the radial-arm saw,” chuckles Johannes. “But turning green wood was all different. Then I read a book by Bruce Hoadley. He explained how green wood distorts as it dries, and saw
it as a handicap. But the more bowls I did, I began to look at distortion as maybe something good."

Working with distortion in the green wood became a challenge that continued through Johannes' 10 years of bowl turning. During that time, he got better and better, eventually selling his work at large craft fairs and to galleries across the nation. "After a while, I started turning vases because I liked to do big things," he recalls. "In fact, I made one pair of vases that stood 6' tall. They sold for thousands of dollars, when they sold. But it's like the real estate market—the higher the price, the fewer buyers there are. And the economy just happened to tighten up. By 1990, I had pretty much quit doing shows and had gone back to building staircases when the idea for the hats came along."

A brim on a whim
"It just popped into my head—why not turn a hat? And I told Wendy, my wife, 'One of these days I'm going to turn one,'" recalls Johannes as he leans back against the lathe bed. "The hat thing was always a joke."

Hats of wood may have been a joke back when Johannes turned nothing but bowls. Today—some 600 wooden hats later—they're not funny anymore. At $550 to $1,200 apiece for wearable ones, and $180 for small hats, shown next page, they're serious business. Johannes' first hat was even a prizewinner, of sorts. "In the fall of 1990, woodturner Albert Lecoff [founder and director of the World Turning Center in Philadelphia] invited us to his wedding," says Johannes. "It was going to be a country-western affair, so I decided to turn that wooden hat I'd been thinking about for years, and wear it."

The hat was a hit. In a vote taken by the guests for best items of apparel, Johannes' wooden cowboy hat was the hands-down favorite. "And the hat was ridiculous, not anything like I'm doing now," says the turner. "It was unanimous—people were stomping on the floor, beating on the walls, to give me the prize. That was the only wooden hat maybe in the world at the time, and to them it was pretty special. As I look back, Albert Lecoff wasn't the inspiration for the hats, but he certainly was the catalyst."

And with the hats, Johannes' knowledge of turning green wood—with its inherent distortion in drying—began to pay dividends. "The hats allowed me to take advantage of the way green wood
shrinkage,” he says. “And for them, I need all the shrinkage I can get.”

**Hats from the home front**
For his hats, Johannes relies on local woods from the surrounding Green Mountains—yellow birch, sugar maple, red maple, black cherry, white oak, butternut, and some box elder. “It’s all available around here. I don’t have to go more than 20 miles away to get it,” he says.

The height and shape of the wooden hats’ crowns matter little in planning. But, their brim diameter can’t exceed the 16” swing of Johannes’ lathe. “The biggest hat, my Trail Boss model, takes the full swing,” the craftsman notes.

While the type of hat and its brim determine how large a chunk of wood goes on the lathe, sizing a hat gets a bit more complicated. “A wooden hat has got to fit,” emphasizes Johannes as he taps the burled red maple Trail Boss on his head. “I can wear this hat out in the wind. But mostly, we try for an acceptable fit.”

For a custom hat, that “acceptable fit” comes from accurate measurements. “When I take an order for a custom-fit hat, I measure around the head with a flexible rule, or send the customer one with instructions,” the turner explains. “Because heads are oval, I get the width and the length. Then I add ¼” for wall thickness.

---

*Left: Johannes’ line of smaller hats duplicates the range of styles found in his full-sized ones, but also includes top hats and suburban “crushers.”*

*Below: A tap with the gouge handle and the parted-off center of the crown pops out. The piece will become a small hat. For his turnings, Johannes prefers gouges with extruded aluminum handles filled with lead shot. (HiTec tools by Glaser Engineering Company, 310/323-7128.)*

---

*Above: The evenness of the light glowing through the wood as he turns helps Johannes maintain a uniform wall thickness of ⅛” on the hat. The bent tool rests in the depth of the crown helps keep his hand steady.*
and about \( \frac{1}{4} \)" for shrinkage. That gives me the outside diameter."

Measuring, though, is only half the story of making hats that fit. The rest of the crafting deals with shrinkage and shaping.

**Crowns without pith, please**

Green wood shrinks more across the grain and parallel to the growth rings than it does perpendicular to the growth rings. Shrinkage along the length—in most woods—is negligible. In making wooden hats from green wood, these realities are crucial.

"The hat brim, not the crown, almost always faces the pith," says Johannes, turning a log chunk over. "That way, the brim will bend easily up and out from the center of the log. And the crown will distort into an oval as the wood dries. To get the oval shape to fit a head, I need the wood to shrink across the grain. But normal shrinkage isn't enough. That's why I clamp it later and let it dry (see photo below). Also, turned hats want to dry in a somewhat bulbous shape, and the clamps help reduce that."

**Making the most of wood**

Just counting lathe time, Johannes can turn a wooden hat in a couple of hours (see photos). "A hat sure takes a lot of wood," you might say. At first glance, it seems so. But as a businessman as well as a turner, Johannes has learned that waste doesn't make money.

The ring of wood that he parts off the brim becomes a mirror frame. From the wood removed in hollowing the crown, Johannes creates mini hats. And from the wood removed from inside the mini hats he makes micro hats that will fit on your thumb!

No matter the size of the hat, though, he'll sand each with 120-through 220-grit abrasive, then brush-coat it with lacquer on the lathe to slow down the drying. The coating also protects a hat from stains and finger marks during handling, and any discoloration from the rubber bands used in the bending rack.

After spending two or three days in a bending rack, a hat requires a day's clamping. Then, Johannes sprays on 10 coats of lacquer. When a hat is completely dry, he polishes it with a superfine, micro grit abrasive.

Despite all the thought and turning skill that go into the making of his wooden hats, Johannes laughs at any reference to working the green wood as a "science." According to the turner, "With enough experience, you don't need science."

**Want to see more hats?**

For a brochure describing Johannes' wooden hats, write with a SASE to: Johannes Michelsen, P.O. Box 562, Manchester Center, VT 05255.

Written by Peter J. Stefano
Photographs: Steve Izzell

**Top left:** Some final turning on the crown completes the hat. The dark color on the "band" was created by burnishing the turning wood with a scrap of padauk. "Exotic woods, such as ebony, purpleheart, padauk, and rosewood, are my crayons," says Johannes.

**Bottom left:** As the hat nears completion, Johannes blows out moisture from the thin green wood with compressed air to speed up drying.

**Left:** Under tension from rubber bands, hat brims dry to shape in 2–3 days. From the racks, hats move to the workbench, where Johannes clamps the crowns into more of an oval shape.
This stylish, but easy-to-build, shelving unit has lots going for it. Thanks to the exterior window shutters, the carcase goes together in a hurry. And by incorporating adjustable shelf standards into the design, we've made changing the spacing between the glass shelves a breeze. And if that weren't enough, we've included a couple of can lights to cast a flattering glow onto your collectibles sitting on the shelves.

**For starters, let's construct the basic carcase**

1. Start with a pair of 15x71" exterior wood shutters. (We purchased ours at a local home center for under $26 each.) Note that these are nominal dimensions; each shutter actually measures 14¾x71½". If the shutter stiles protrude past the edges of the rails (ours protruded about ⅛"), trim the ends of the stiles flush with the edges of the rails.

2. Install a ⅜" dado dado into your tablesaw, and adjust it to cut ⅛" deep. Cut a groove in a piece of scrap stock, and check the fit of the shelf standard in the groove. Adjust the cut if necessary. (See the Buying Guide for our source of shelf standards and lights.)

   Now, cut a groove along the *inside face* (with the wide rail at the bottom and louvers pointing down) of the shutter stiles. See the Exploded View and Carcase drawings for reference.

3. Cut a ⅜" rabbet ⅜" deep along the *inside bottom edge* (across the wide rail) of both shutters.

4. Cut a pair of filler blocks to ¾x⅛x⅞" to fill the bottom end of the groove running along the back edge of each shutter stile.
### Bill of Materials

<table>
<thead>
<tr>
<th>Part</th>
<th>Finished Size</th>
<th>Matl.</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>W</td>
<td>L</td>
<td></td>
</tr>
<tr>
<td>CARCASE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A sides</td>
<td>1 1/4&quot;</td>
<td>1 5/8&quot;</td>
<td>7 1/2&quot;</td>
</tr>
<tr>
<td>B top stretchers</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>C bottom stretcher</td>
<td>3/4&quot;</td>
<td>2 1/4&quot;</td>
<td>35 3/4&quot;</td>
</tr>
<tr>
<td>D bottom</td>
<td>3/4&quot;</td>
<td>1 5/8&quot;</td>
<td>37 3/4&quot;</td>
</tr>
<tr>
<td>E banding</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td>37 3/4&quot;</td>
</tr>
<tr>
<td>TOP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F panel</td>
<td>3/4&quot;</td>
<td>1 1/4&quot;</td>
<td>37 3/4&quot;</td>
</tr>
<tr>
<td>G front &amp; back</td>
<td>3/4&quot;</td>
<td>3&quot;</td>
<td>30 3/4&quot;</td>
</tr>
<tr>
<td>H sides</td>
<td>3/4&quot;</td>
<td>3&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>L front cove</td>
<td>3/4&quot;</td>
<td>1 1/4&quot;</td>
<td>41 3/4&quot;</td>
</tr>
<tr>
<td>J side coves</td>
<td>3/4&quot;</td>
<td>1 1/4&quot;</td>
<td>16 3/4&quot;</td>
</tr>
<tr>
<td>BASE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K front &amp; back</td>
<td>3/4&quot;</td>
<td>2&quot;</td>
<td>37 3/4&quot;</td>
</tr>
<tr>
<td>L sides</td>
<td>3/4&quot;</td>
<td>2&quot;</td>
<td>14 1/4&quot;</td>
</tr>
<tr>
<td>M front &amp; back</td>
<td>3/4&quot;</td>
<td>3&quot;</td>
<td>36 3/4&quot;</td>
</tr>
<tr>
<td>N sides</td>
<td>3/4&quot;</td>
<td>3 1/2&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>O front molding</td>
<td>3/4&quot;</td>
<td>3&quot;</td>
<td>40 3/8&quot;</td>
</tr>
<tr>
<td>P side molding</td>
<td>3/4&quot;</td>
<td>3 1/2&quot;</td>
<td>15 1/4&quot;</td>
</tr>
<tr>
<td>Q back</td>
<td>3/4&quot;</td>
<td>37 3/4&quot;</td>
<td>73&quot;</td>
</tr>
</tbody>
</table>

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

**Materials Key:**
- S-shutter, P-pine, PL-plywood, C-cove molding, H-hardboard.

**Supplies:**
- two 15x71" exterior shutters; #8 x 1 1/2", #8 x 1 3/4", #8 x 1 3/4", and #8 x 2 1/2" flathead wood screws; #6 x 1 3/8" roundhead brass wood screws for can lights; #18 x 3/4" brads, primer and paint, 3/6" glass for shelves.

**Buying Guide**

**Shelf standards and lights:** Two fixed-focus can lights, polished brass, with 40-watt bulbs. The starter unit has a 10' line cord with roll switch, and one 24' connector cord with a female plug for adding the second light. Add-on unit (second light) has bulb and two 24' cords. Catalog nos. SPL8 and SPL9. Four 22" shelf standards, #12556, and shelf supports, #5821B. Constantinides, 2050 Eastchester Rd., Bronx, NY 10461 or call 600/223-8037 to order.

*Continued*
These blocks allow the bottom back stretcher (C) to mate totally with a wood surface.

5 Cut the top filler blocks to size, and glue them in place.
6 Rip and crosscut the top stretchers (B), back bottom stretcher (C), and the carcase bottom panel (D) to size. From the edge of 5/4" solid stock, rip the 3/4"-wide front banding piece (E).
7 Glue the front banding piece (E) to the front edge of the bottom panel (D).
8 Using bar clamps, clamp the stretchers (B, C) and bottom panel (D, E) between the shutter sides (A). The top rear stretcher (B) and the bottom stretcher (C) are flush with the back edge of the shutter sides. The top front stretcher (B) is set back 3/8" from the front edge of the shutter sides.
9 Drill counterbored mounting holes through the shutters (A) and into the ends of the stretchers (B, C). Drill one hole into each end of the top stretchers (B) and a pair of holes into each end of the bottom stretcher (C). Drive a wood screw into each hole. Plug the holes, and sand the plugs flush.
10 Drill three countersunk mounting holes through each end of the bottom panel (D) and into the bottom end of each shutter side. Drive the screws.

Build a top to crown the carcase
1 Cut the top panel (F) to size. Mark the centerpoints for the can lights, and then use a compass to mark a 3 3/4" hole (1 3/8" radius) at each marked centerpoint. Drill a blade start hole, and cut both openings to shape. The can lights have a flange that will cover the edges of the holes, so a perfect edge isn’t necessary.
2 Rip and miter-cut the front, back, and side surround pieces (G, H) to size plus 2" in length.
3 Using the same setup used earlier, cut a 3/4" rabbet 3/8" deep along the bottom inside edge of each piece. Then, miter-cut the pieces to fit snugly around the top panel (F). As shown in the photo at right, we miter-cut one end, clamped it in place, and used a combination square to mark the cut at the other end.
4 Glue and clamp the surround pieces (G, H) around the plywood panel (F).
5 Cut the front and back cove molding pieces (I, J) to length plus 2". (The home center at which we bought the cove molding referred to it as 9/8" x 3/4" cove.) Using the miter gauge on your tablesaw, miter-cut the mating ends of the cove molding where shown on the Exploded View
Now, construct a sturdy base
1 Rip and miter-cut the base frame front, back, and sides (K, L) to size. Glue and clamp the pieces together. Measure diagonally to check for square.
2 Cut the base-frame surround pieces (M, N) to size plus 1" in length. Cut or rout a 3/4" rabbet 3/8" deep along the top inside edge of each. Now, miter-cut the pieces to fit around the base frame (K, L). Glue and clamp the base-frame surround pieces (M, N) around the base frame.
3 Rip the base molding pieces (O, P) to width, and crosscut them to length plus 1". Miter-cut the molding pieces to fit around the base-frame surround. Do not glue the molding in place yet.
4 Lay out a 1/2" notch with 1/2" radius at each end on each piece of molding. Bandsaw the notches to shape. Sand the flat areas with a palm sander and the radii with a 1"-diameter drum sander.
5 Install a 1/2" cove bit into a table-mounted router, and raise it to cut 1/2" deep. Position the router table fence to cut about 1/8" of the cove. Rout the cove along the top outside edge of the base molding pieces (O, P). Move the fence in 1/8" increments until the entire cove is cut.
6 Place the base assembly (K, L, M, N) on 1/2"-thick scrap blocks. Spread glue on the backs of the molding pieces, and position the molding. This keeps the tops of the cutouts in the molding pieces flush with the bottom edges of the base assembly. Clamp the base molding pieces in place.

It's final assembly time
1 Turn the carcasse upside down and position the base flush with the carcasse back and centered side-to-side. Clamp the base in place, and drill countersunk mounting holes through the base frame members (K, L) and into the carcasse bottom (D). Secure with wood screws.
2 Turn the carcasse/base assembly upright, and position the top flush with the carcasse back and centered side-to-side. Clamp the top in place, drill mounting holes through the top panel (F) and into the sides (A) and front stretcher (B). Drive the screws. Drill holes through the rear stretcher (B) and into the bottom surface of the top panel (F). Drive the screws.
3 Cut the back (Q) to size from tempered hardboard or plywood. (So the outside edges of the back panel would be less noticeable, we cut the panel 1/2" less than the carcasse width.) Lay the carcasse/top/base assembly front side down on sawhorses. Position the back, centered side-to-side on the assembly, and clamp it in place. Drill the holes and drive the screws. See the Side Section View drawing for reference.
4 Position the assembly upright. Glue plugs into all counterbored holes, and sand flush. Fill brad holes in the molding.

Add the finish and then the hardware
1 Prime the entire assembly. (We found it easier to prime with the back removed. Also, a spray finish saves time.)
2 Sand lightly after priming, and then apply a satin enamel.
3 Trim the shelf standards to length, trimming the excess from the bottom end of each. This will ensure the notches in the standards align and the shelves will sit flat. Install the standards and clips. Measure the openings, and have 3/8"-thick glass shelves cut to fit. (We ordered a pencil edge machined on the edges of our shelves.) Install the can lights, and add the glass shelves.

Written by Marlen Kemmet
Project Design: James R. Downing
Illustrations: Roxanne LaMoine
Photographs: Bill Hopkins
Handy roll-around tool storage

SPAC-SAVING

If you're looking for a quick way to add another work surface and more tool storage to your shop, look no further. This project fills the bill in both regards. The multi-drawer roll-around tool cabinets hold a ton of tools, and when pulled out, they can function as yet another work surface.

Note: The plywood cabinet surrounds in the Exploded View drawing are dimensioned to fit a Stanley Proto 27"-high storage cabinet. If you choose another make or model of rolling cabinet, be sure to change the dimensions of your wooden surrounds to fit. Plan for about 1/2" of clearance around the sides and top of the rolling cabinets.

Start with a pair of matching cabinets
1 Cut the side panels (A) and back panels (B) to the sizes listed in the Bill of Materials from 3/4" plywood.
2 From 3/4" solid stock (we used maple), cut the trim strips (C, D) to size, and glue them to the front and bottom edges of the plywood side panels.
3 Cut the top cleats (E) and bottom caster guides (F) to size. The caster guides center the rolling cabinet in the opening, preventing the inside of the cabinet and the outside of the rolling cabinets from rubbing against each other when moving the cabinet in and out of the surround.
4 Glue, clamp, and screw the two cabinet surrounds (A-F) together in the configuration shown on the Exploded View drawing.
5 Finish-sand both cabinets. Mask the solid stock, and paint the plywood. Then, mask the plywood, and add a clear finish to the solidwood banding.

Add a heavy-duty worktop
1 To form a worktop (G) for your cabinets, cut enough 1 1/2"-wide strips, and glue them face to face to form a top measuring 1 1/2"x21"x38". You also can opt for a less-expensive worktop by laminating two pieces of 3/4" plywood and trimming the edges with pieces of 3/4"x1 1/2" hardwood.
2 Sand the worktop smooth, and add a clear finish.
3 Cut the backboard (H) to size, and glue and screw it to the back edge of the worktop.
4 Position the wood cabinets exactly 28" apart (measure between the cabinet tops at front and back ends). Drill mounting holes through the cleats (E) and into the bottom side of the worktop. Screw the top in place, holding the cabinets squarely apart. You should have a 1/2" overhang on each end of the worktop.

And now, add a drawer for helpful storage
1 Cut the drawer guides (I), drawer front (J), sides (K), back (L), and bottom (M) to size.
2 Cut the rabbets and dadoes in the drawer parts where shown on the Drawer drawing. Construct the drawer, and add a 3" wire pull to its front.
3 Drill mounting holes, and screw the guides (I) in place.
4 Fit the drawer between the cabinets on the drawer guides.
Some final fixes make it work all the harder

1. To make it easier to grasp the cabinets to roll them in and out of the surrounds, drill two mounting holes, and add a wire pulls or handle to the front of each metal cabinet. Or, if your metal cabinet has a handle on the end, relocate it to the front of the cabinet. Next, mount the fixed casters so that they roll perpendicular to the benchtop.

2. Finally, position the workstation in your workshop. Drill a pair of mounting holes through the caster guides (F) and into the floor (you'll probably have to use a concrete bit, depending on your floor construction). Secure the caster guides to the floor to keep the workbench stationary.

Written by Marlen Kemnet
Project Design: James R. Downing
Illustrations: Roxanne Lemoine
Photograph: John Hetherington
The wide world of

Buying your first scrollsaw, or moving up to a premium model, takes a lot of careful research. You should know about special features, what tools perform best for the tasks you have in mind, and the size of the dent the purchase will make in your wallet. You'll find your answers in our review of 23 models in three price ranges.

Where scrollsaws differ

Look over a group of scrollsaws and you'll quickly see three distinct arm types. Each has its pros and cons.

- **Parallel-arm.** This common saw type uses equally spaced blade-holding arms that are connected by a link and that pivot in unison but on separate bearings (see next page, top). A separate link that attaches the lower arm to the motor works to raise and lower the blade in an almost vertical path. Only at the beginning and end of the stroke is the blade angled down or up respectively.

As a result, parallel-arm scrollsaws let you cut tight corners with ease and control, and without heavy stock removal. They do not cut as quickly as the following two saws.

- **C-arm.** Scrollsaws of this type consist of a rigid C-shaped frame that pivots on a single bearing. A drive shaft extending from the motor and attached to the lower arm of the C pulls the blade down at an angle, making for the most aggressive cutting stroke of the tested saws. That said, C-arms will not cut tight curves in thick stock as effectively as parallel arms. But they do excel at production work where cutting speed is important.

- **Parallel-link.** Made only by Sommerville Design under the Excalibur brand, this type features a pair of fixed parallel arms that in turn support two blade-holding linkages. These work the blade in an arching up-and-down sawing motion, causing the blade to move slightly toward the work at the middle of the stroke, and away from the work when the blade is fully raised or lowered. Because only the blade-holding linkage moves instead of the long arms, this scrollsaw type vibrates little, allowing for maximum control while cutting tight, clean corners. And, though parallel links cut
SCROLLSAWS

Learn what makes a cutting-edge tool in our test of 23 models

Parallel-Arm  C-Arm  Parallel-Link

Cutting action  Pivot point  Cutting action  Pivot points  Cutting action  Pivot points

Pivot points  Arm motion  Pivot points

faster than parallel-arm saws, they’re not as fast or aggressive as C-arm saws.

**Good performance starts with low vibration**

Due to the rapid movement of the arms and drive mechanism in a scrollsaw, vibration exists in every machine. In fact, some tools vibrate to the point of dramatically affecting cutting quality and control, causing the workpiece to catch on the blade teeth and jerk up and down. Of the saws we tested, the Woodtek 82699B vibrated the most due to an imbalanced crankshaft. On the other hand, the Hegner 14E and the two Excalibur models ran the smoothest when operating at full speed.

Interestingly, many other saws (such as the RBIs, the Sears and Delta C-arms, and the Hegner Multimax 18 and Multimax 22, for instance) performed equally well when we slowed the tools down slightly. We discovered a cutting “sweet spot” on these and other variable-speed saws—that is, a speed at which the tools cut at an optimum level.

What should you watch for? For starters, try running the saw if the retailer you plan to buy it from has a floor model. Unless a well-timed counterbalancing weight or action exists in the linkage, you’ll feel a vibration transferring through the entire saw. Loosely fitting parts in the arm/motor linkage result in the same poor performance.

**Provide a solid base**

In addition, an improperly tensioned blade, poorly assembled tool, or wobbly stand can cause a tool to shake. Assuming that the first two problems are quick fixes, we’ll focus on the third.

Fortunately, you can dampen much of a tool’s vibration by supplying a firm base. With benchtops, simply attach your tool to a ¾”-thick rectangle of plywood. Then, place a same-sized piece of carpet pad beneath the plywood, and clamp (or bolt) the assembly to a rock-solid workbench with leg support directly beneath the saw. (Avoid mounting the saw in the middle of the bench where the benchtop may have some unwanted springiness.) Better yet, build our sturdy but inexpensive benchtop scrollsaw stand featured on page 14.

Metal stands—standard with many of the mid- and high-priced machines—come in a variety of configurations and heights. While some suit seated scrollsawyers (two of the three Hegners shown, for instance), taller models accommodate standing scrollsawyers.

**Scrollsaws priced under $300**

Craftsman 236090  Delta 40-560  Dremel 1672  Dremel 1695

Continued
The wide world of SCROLLSAWS

RBI offers a special wheelchair accessible leg package for its Hawk Ultra 226 scrollsaw.

RBI created a special stand just for wheelchaired woodworkers, shown above. Overall, we liked the three-legged stands for uneven shop floors. The rear leg on Delta's Caron stand adjusts, letting you tilt the tool forward for more scroll-sawing comfort.

Blade installation: the quicker, the better
For scrollsawyers who make lots of inside cuts, quick blade changing is a must. Here's what to look for in this area.

*Blade-tensioning systems.* Nothing is more frustrating than having to take several minutes to replace a broken blade or reinstall an upper blade end. Today, several manufacturers offer quick-blade-change systems so you can complete these processes in seconds.

In our tests, we preferred cam-operated tension-release levers or threaded rod-type knobs at the easy-to-reach front of the machines. Several scrollsaws feature blade-tensioning mechanisms at both the front and rear locations. With these, you first use rear tensioning when installing a new blade. Then, when making inside cuts, you simply work only with the front quick tension-release system to rapidly disengage and reengage the top of the saw blade.

Heading the class in ease of blade changing was Excalibur's EX30, shown right. It impressed us that the upper clamp didn't rotate out of place while clamping and tensioning the upper blade end. The upper arm also lifted up for handy blade threading through work-piece blade start holes. In a close second were the Deltas; the RBIs and Hegner's Multimax 22 tied for third place.

*Blade-clamping systems.* These consist of two metal blocks that tighten down on the flat, straight ends of plain-end scrollsaw blades. Most of the tested saws feature this system. One, however, employs only pin-type blades—blades with small metal pins running through their ends. Here, the blade-holding systems amount to springy metal forks or grooved arm ends that the blade pins rest in once fully tensioned. You'll note in our chart that some saws provide the holders needed to use both blade types.

Why is this important? If your scrollsawing interests lie solely in cutting out patterns or making large interior cuts, a pin-type blade system may be just what the doctor ordered. But, though pin-type blades change quickly and easily, their blade ends require at least a 3/8" blade start hole. That would make them a poor choice for fine fretwork. By contrast, plain blades come in a much broader range of tooth patterns and sizes (and slightly lower prices). In the plain-end type you can buy fine blades for delicate materials, those with reverse teeth at the bottom for avoiding chipout, and blades for cutting glass, bone, and metal.

Blade types aside, blade clamps remain at the heart of any quick-blade-changing system. These systems include levers or thumbscrews that open and lock the clamps in seconds. Those not considered quick-blade-change machines typically have setscrews in the blade clamps. These systems require one or two tools to install the blade ends, a task that devours precious time, especially when making inside cuts.

 Scrollsaws priced under $300 Continued

Grizzly G1257  
Grizzly G1572  
Grizzly G1060  
Skl 3333
With some of the lower-priced scrollsaws, such as the Dremel left, you need to remove a side cover to get at the lower-blade clamp. The Excalibur's lower-blade clamp, shown right, is exposed and easy to reach when changing blades.

Perhaps most irritating of all are those machines that make it difficult to install the lower blade ends beneath the saw tables. With the low-price-range Dremels, the Ryobi SC160, and the Skil 3333, you have to remove side-mounted covers and work in a confined space—a tough task for those with big hands. (See photos above.) And with some tools, you must take the upper and lower clamps out to complete the installation.

Machines offering user-friendly lower-clamp access include the Tradesman 8350, the Sears 236090, the Grizzlies, Deltas, RBIs, Hegners, and the Excaliburs.

More features to consider
Consider these other important components to better customize your scrollsaw selection.

*Throat depth.* In our roundup, we included saws that span from a 14" throat depth (the clearance between the blade and the back of the saw where the arms connect) to 30". How much is enough?

Only you know what kinds of projects you will try. But, if you go by the sizes of scrollsaw patterns found in this publication, you may find that a saw with a 16" to 18" throat depth handles most tasks. Note, too, that some saws let you turn the blade 90°, expanding your capacity for extra-long workpieces. With regard to the actual depth of cut, the range here goes from 2" to 2 3/8".

*Table talk.* Larger workpieces require more support and therefore a larger table. If your choices boil down to two saws equal in performance, buy the one with the larger table. The RBIs feature some of the largest tables on the market (now with improved table-locking systems); the Sears 236400, Woodtek 826398, and the Delta 40-650 also stand out for all-around workpiece support.

Manufacturers use cast iron, sheet aluminum, anodized (or

Continued
The wide world of **SCROLLSAWS**

Tables do not rust; they are light but when uncoated can leave a small black streak on cutting stock. Anodized aluminum avoids this problem. Harder, tougher, alloy-aluminum tables, such as the Hegners, combine the rigidity of cast iron with an ultra-smooth work surface.

Keep in mind that table finish becomes an issue only when the surface interferes with a cutting operation. (Compare the rough surface of the Sears C-arm table with the smooth Hegner table in the photos left.) Fortunately, you can fix a rough surface by first sanding it smooth, wiping, and then applying paste wax.

All but one scrollsaw table tilted to 45° in one direction. The Grizzly G1060 stopped at 30°. Some tools, as indicated in the chart, tilt to the left and right for trouble-free bevel cutting.

**Air blowers.** Every saw features a device for blowing sawdust from the cutting area. Usually, these consist of a bellows, an air hose, and, in some cases, a nozzle. Delta's model 40-650 delivered the strongest air jet, and we especially liked systems that blow dust sideways—not at you. These tools were the ones with an adjustable metal nozzle extension at the end of the air hose.

**Things electrical.** All of our scrollsaws showed ample power, but differed in motor type, speed options, and switches. For instance, those with DC motors produced power and torque right from the start; they maintained power cutting thick stock, and yet could operate at very low speeds.

A roughly finished table surface like that of the Sears C-arm, top photo, can cause resistance when cutting a workpiece. The smooth surface of the Hegner saw, bottom photo, avoids this problem.

Coated aluminum, and alloy aluminum for scrollsaw table construction. While the sheer weight of a cast-iron table helps dampen vibration, the table surface needs to be coated with wax to prevent rusting. By contrast, aluminum

---

**Scrollsaws priced between $300 and $799**

- **Delta 40-650**
- **Hegner Mutimax14E**
- **Craftsman 236400**
- **Woodtek 826398**
- **RBI Hawk 216**

The most innovative saw in the bunch, Delta's 40-650, introduces a convenient above-table switch that couples an on/off rocker with a variable-speed dial.
By contrast, tools with AC induction motors slowed markedly under heavy loads. At low speeds, AC variable-speed saws showed limited power when challenged. Universal motors provide basic service, while their close cousins, the permanent-magnet motors, offered more reliable variable-speed performance.

Related to this, variable-speed scrollsaws have an edge over one-and two-speed saws. Though for most cuts in wood, one- or two-speeds do the job reasonably well, variable-speed tools give you superior cutting control. They lead the pack at cutting thin stock, metal, glass, and making fine cuts.

Scrollsaw switches take the form of a lever or toggle, a rocker switch, or a rotary dial. (The 19" Excalibur uses an in-line switch located in the cord.) With some rotary dials, you simply pull out the dial to start the saw. Others combine a dial with an on/off toggle or rocker. While some switches seemed to belong to Delta's variable-speed C-arm shown left. Its above-table location proved to be a real plus.

**Our recommendations**

In every price range, we found standouts and value leaders. The costlier tools tend to offer more desirable features—deeper throats, less vibration, variable speed, and superior blade-changing systems.

In the under $300 benchtop class, we like Delta's two-speed 16" scrollsaw, model 40-560, for its up-front lever-action blade clamp and lever tensioning system. The tool's table provided all-around support, and the cutting quality, though slightly aggressive, impressed us.

For best value, we give the nod to Grizzly's G1060 and the Sears 236090. The Grizzly is the only tool in this price range that features a 22" throat depth. And though its table is small, it serves most needs. Spend another $30 for an updated aftermarket blade-clamp system from Seyco (see the phone number in the chart on the following pages) and you'll have a real winner.

We placed the Sears tool in the same boat because it offers variable speed, a quick-blade-change system, and runs admirably well. All of this for only $160!

Every tool in our mid-priced range ($300-$799) comes with a stand, except for the Hegner Multimax 14E. (The stand shown with the 14E below left is optional.) In a tight race, however, this tool outperformed the competition. Small table aside, it proved to be the smoothest-running saw in the test. That, coupled with a high-quality quick-blade-changing system, made it the ideal tool for fine cutting work such as that found in marquetry.

The innovative Delta 40-650 takes home the top-value award in the entire test group. Its stand adjusts, letting you tilt the DC-motorized saw forward for more convenient cutting. The lightweight, graphite C-arm kept vibration to a minimum while the up-front quick-blade-change system made inside cuts a breeze. Also, only the Delta 40-650 offers an easy-access above-table switch and variable-speed dial.

In the over $800 range, nothing topped Excalibur's EX30. For its smooth, clean operation, quick blade changing, and 30" throat depth, it owns the spotlight. Our tester, along with our staff project builders, praised the way the upper arm lifts so you can quickly and easily feed the blade through a blade start hole for inside cuts.

Finally, after a lively debate, we chose RBI's model 220V as our top-value award winner. It offers quality performance and a wide range of desirable features at a fair price. There were, however, several very close runner-ups.

---

**Scrollsaws priced over $800**

- **Excalibur EX19SD**
- **Hegner Multimax 18**
- **RBI Hawk 226 Ultra**
- **Excalibur EX30**
- **Hegner Multimax 22**
- **RBI Hawk 220 Ultra**
## SCROLLSAWS FROM $100 TO $1300

<table>
<thead>
<tr>
<th>PRICE RANGE</th>
<th>MANUFACTURER/IMPORTER</th>
<th>MODEL</th>
<th>ARM TYPE</th>
<th>AMPS</th>
<th>SPEED (RPM)</th>
<th>TYPE</th>
<th>THROAT DEPTH (IN)</th>
<th>MAXIMUM DEPTH OF CUT (IN)</th>
<th>STROKE LENGTH (IN)</th>
<th>MATERIAL</th>
<th>SIZE W X L (INCHES)</th>
<th>TILT RANGE LEFT/RIGHT (DEGREES)</th>
<th>TABLE QUALITY</th>
<th>VIBRATION</th>
<th>EASE OF CHANGING BLADES</th>
<th>EASE OF UPFRONT BLADE CLAMPS</th>
<th>EASE OF LOWERING BLADE CLAMPING</th>
<th>PERFORMANCE (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100-$200</td>
<td>DELTA</td>
<td>40-560</td>
<td>PA</td>
<td>1.2</td>
<td>2</td>
<td>IND</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>11 1/4 x 45L</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DREMEL</td>
<td>1672</td>
<td>PA</td>
<td>1.7</td>
<td>2</td>
<td>UNIV</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>AL</td>
<td>12.5 x 45L</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1695</td>
<td>PA</td>
<td>1.2</td>
<td>2</td>
<td>VAR</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>AL</td>
<td>12.5 x 45L</td>
<td>F</td>
<td>G</td>
<td>P</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GRIZZLY</td>
<td>61572</td>
<td>PA</td>
<td>1.6</td>
<td>1</td>
<td>IND</td>
<td>15</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>7 3/4 x 17</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>61257</td>
<td>PA</td>
<td>1.7</td>
<td>1</td>
<td>VAR</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>8 x 14 1/2</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>61960</td>
<td>C</td>
<td>2.5</td>
<td>1</td>
<td>IND</td>
<td>22</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>8 1/4 x 12 1/4</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RYOBI</td>
<td>SC150</td>
<td>PA</td>
<td>1.6</td>
<td>1</td>
<td>IND</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>10 x 15</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SC182VS</td>
<td>PA</td>
<td>1.2</td>
<td>2</td>
<td>VAR</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>AL</td>
<td>10 1/4 x 14 1/2</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEARS</td>
<td>SC36090</td>
<td>PA</td>
<td>1.2</td>
<td>2</td>
<td>VAR</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>AL</td>
<td>12 x 90</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRAFTSMAN</td>
<td>333</td>
<td>PA</td>
<td>1.6</td>
<td>1</td>
<td>IND</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>AL</td>
<td>10 x 19 1/2</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRADSMAN</td>
<td>8350</td>
<td>PA</td>
<td>1.6</td>
<td>1</td>
<td>IND</td>
<td>15</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>7 3/4 x 17</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8355</td>
<td>PA</td>
<td>2.0</td>
<td>1</td>
<td>IND</td>
<td>16</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>8 x 14 1/2</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>$200-$300</td>
<td>DELTA</td>
<td>40-550</td>
<td>C</td>
<td>1.3</td>
<td>2</td>
<td>VAR</td>
<td>18</td>
<td>2 1/2</td>
<td>3/4</td>
<td>CI</td>
<td>16 1/2 x 15L</td>
<td>E</td>
<td>E</td>
<td>G</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEGNER</td>
<td>MULTIMAX 14E</td>
<td>PA</td>
<td>2.8</td>
<td>1</td>
<td>UNIV</td>
<td>14</td>
<td>2</td>
<td>3/4</td>
<td>ALAL</td>
<td>7 1/16 x 15 L</td>
<td>E</td>
<td>E</td>
<td>G</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RBI</td>
<td>HAWK 216</td>
<td>PA</td>
<td>2.0</td>
<td>2</td>
<td>VAR</td>
<td>16</td>
<td>2 1/2</td>
<td>3/4</td>
<td>AL</td>
<td>10 x 16 1/2</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEARS</td>
<td>SC36040</td>
<td>C</td>
<td>1.3</td>
<td>2</td>
<td>VAR</td>
<td>20</td>
<td>2</td>
<td>3/4</td>
<td>CI</td>
<td>16 square</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRAFTSMAN</td>
<td>WOODTEK</td>
<td>862000</td>
<td>PA</td>
<td>2.2</td>
<td>5</td>
<td>IND</td>
<td>21</td>
<td>2</td>
<td>1</td>
<td>AL</td>
<td>14 3/4 x 22 1/2</td>
<td>E</td>
<td>P</td>
<td>F</td>
<td>P</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>$300-$400</td>
<td>CONTOURER</td>
<td>EXCA150</td>
<td>PL</td>
<td>5.4</td>
<td>3**, **</td>
<td>IND</td>
<td>19</td>
<td>2 1/2</td>
<td>3/4</td>
<td>ALAL</td>
<td>12 x 17 1/2</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>G</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EX300</td>
<td>PL</td>
<td>3.0</td>
<td>2</td>
<td>VAR</td>
<td>30</td>
<td>2 1/2</td>
<td>3/4</td>
<td>ALAL</td>
<td>12 x 17 1/2</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEINER</td>
<td>MULTIMAX 18</td>
<td>PA</td>
<td>2.8</td>
<td>1</td>
<td>IND</td>
<td>18</td>
<td>2 1/2</td>
<td>3/4</td>
<td>ALAL</td>
<td>9 x 17</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MULTIMAX 22</td>
<td>PA</td>
<td>2.8</td>
<td>2</td>
<td>VAR</td>
<td>22</td>
<td>2 1/2</td>
<td>3/4</td>
<td>ALAL</td>
<td>9 x 17</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RBI</td>
<td>HAWK 220 ULTRA</td>
<td>PA</td>
<td>1.5</td>
<td>2</td>
<td>VAR</td>
<td>20</td>
<td>2 1/2</td>
<td>3/4</td>
<td>AL</td>
<td>14 3/4 x 22 1/2</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HAWK 226 ULTRA</td>
<td>PA</td>
<td>1.5</td>
<td>2</td>
<td>VAR</td>
<td>26</td>
<td>2 1/2</td>
<td>3/4</td>
<td>AL</td>
<td>14 x 22 1/4</td>
<td>E</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. (C) C-arm
   (PA) Parallel arm
   (PL) Parallel link
2. (*) Requires belt change
   (**) Also available as variable speed
3. (CC) Direct current
   (IND) Induction
   (PM) Permanent magnetic
   (UNIV) Universal
4. Per manufacturer
5. As measured
6. (AL) Anodized aluminum
   (AL) Aluminum
   (ALAL) Anodized aluminum
   (CI) Cast iron
7. Overall measurements/shapes
   R = Round
   90 = Square
8. Excellent
   Good
   Fair
   Poor
9. Requires no tools
10. (FT) Front top
    (LR) Lower rear
    (RR) Rear top
11. (P) Accepts pin-type blades
    (PL) Accepts pin-end blades
    (PLP) Accepts pin-type and pin-end blades
12. (BG) Blade guard
    (BL) Blower
    (BS) Blade storage
    (HD) Hold-down
    (HA) Hold-down that adjusts to table angle
    (VP) Vacuum port
    (SS) Stand

---

WOOD MAGAZINE  OCTOBER 1996
### STANDARD FEATURES

<table>
<thead>
<tr>
<th>QUICK RELEASE</th>
<th>BLADE CLAMPS (6)</th>
<th>QUICK TENSION RELEASE (2)</th>
<th>TENSIONING LOCATION (11)</th>
<th>BLADE TYPE (11)</th>
<th>OTHER (12)</th>
<th>SWITCH (13)</th>
<th>OPTIONAL ACCESSORIES (14)</th>
<th>WARRANTY (YEARS)</th>
<th>COUNTRY OF ASSEMBLY (15)</th>
<th>WEIGHT (POUNDS)</th>
<th>SELLING PRICE (16)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Y</td>
<td>FT</td>
<td>PL</td>
<td>BL, HA</td>
<td>A, R</td>
<td>B, FS, ML, S</td>
<td>2</td>
<td>T</td>
<td>47</td>
<td>$ 200</td>
<td>The only machine with a levered quick-change blade holder in this price range. Cuts aggressively.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BG, BL, H, VP</td>
<td>A, R</td>
<td>B, ML, S</td>
<td>2</td>
<td>T</td>
<td>45</td>
<td>170</td>
<td>This two-speed saw offers quick-tensioning and upper blade end clamping.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BG, BL, H, VP</td>
<td>B, ROT</td>
<td>B, ML, S</td>
<td>2</td>
<td>T</td>
<td>40</td>
<td>240</td>
<td>Variable speed, adjustable hold-down, plus uses both pin-type and plain-end blades.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>P</td>
<td>BL, H</td>
<td>--</td>
<td>B</td>
<td>1</td>
<td>T</td>
<td>37</td>
<td>110*</td>
<td>Solid basic tool at an extremely low price.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>LR</td>
<td>PPL</td>
<td>BG, BL, HA</td>
<td>B, ROT</td>
<td>--</td>
<td>1</td>
<td>T</td>
<td>40</td>
<td>170*</td>
<td>Poor blade-tensioning location, but scores points for variable speed.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BG, BL, HA</td>
<td>L*</td>
<td>--</td>
<td>1</td>
<td>T</td>
<td>60</td>
<td>160*</td>
<td>Very low vibration and deep throat make this C-arm stand out in the low-price range.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>N</td>
<td>LR</td>
<td>PPL</td>
<td>BG, BL, BS, H, VP</td>
<td>L</td>
<td>QRBC</td>
<td>2</td>
<td>T</td>
<td>44</td>
<td>150</td>
<td>Lower blade holder hard to reach; built-in blade and tool storage.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, HA, VP</td>
<td>B, ROT</td>
<td>DRBC</td>
<td>2</td>
<td>T</td>
<td>24</td>
<td>170</td>
<td>Some vibration, but offset by quick-tensioning and variable speed.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, HA</td>
<td>B, ROT</td>
<td>B, FS, S</td>
<td>1</td>
<td>U</td>
<td>35</td>
<td>180</td>
<td>A smooth-running variable-speed tool with an adjustable hold-down and quick-blade-change system.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, HA, VP</td>
<td>A, L</td>
<td>ML, S</td>
<td>2</td>
<td>T</td>
<td>43</td>
<td>140</td>
<td>Quick blade-tensioning and clamping system, along with a vacuum port.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BL, H</td>
<td>--</td>
<td>--</td>
<td>5</td>
<td>T</td>
<td>40</td>
<td>100</td>
<td>A starter saw with some helpful features.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H, VP</td>
<td>C, ROT</td>
<td>B, DT, FS, ML, W</td>
<td>5</td>
<td>U</td>
<td>69</td>
<td>790*</td>
<td>Rear blade tensioning not preferable, but a respectable variable-speed beginner saw.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BL, HA</td>
<td>B, ROT</td>
<td>--</td>
<td>5</td>
<td>T</td>
<td>41</td>
<td>160</td>
<td>The most innovative tool in the test; loaded with features, plus smooth performance.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>C, ROT</td>
<td>B, DT, FS, ML, W</td>
<td>5</td>
<td>U</td>
<td>69</td>
<td>790*</td>
<td>Limited throat depth, but excels at precision work.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, HA</td>
<td>B, ROT</td>
<td>B</td>
<td>1</td>
<td>T</td>
<td>143</td>
<td>450</td>
<td>A very aggressive C-arm that excels at production work.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>R</td>
<td>B, BH, MB</td>
<td>1</td>
<td>T</td>
<td>85</td>
<td>350*</td>
<td>Unwanted vibration, but a large table and stand for the money.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>R</td>
<td>B, BH, MB</td>
<td>1</td>
<td>T</td>
<td>85</td>
<td>350*</td>
<td>A smooth, powerful machine with many good points. Can be equipped with quick-tensioning and lower-action blade clamps. Motor purchased separately.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BL, H</td>
<td>C, ROT</td>
<td>B, FS, ML, QRBC, S</td>
<td>6</td>
<td>G</td>
<td>30</td>
<td>800*</td>
<td>Limited throat depth, but excels at precision work.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>C, ROT</td>
<td>B, FS, ML, QRBC, S</td>
<td>6</td>
<td>G</td>
<td>30</td>
<td>800*</td>
<td>Limited throat depth, but excels at precision work.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>C, ROT</td>
<td>B, FS, ML, QRBC, S</td>
<td>6</td>
<td>G</td>
<td>30</td>
<td>800*</td>
<td>Limited throat depth, but excels at precision work.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>C, ROT</td>
<td>B, FS, ML, QRBC, S</td>
<td>6</td>
<td>G</td>
<td>30</td>
<td>800*</td>
<td>Limited throat depth, but excels at precision work.</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>RT</td>
<td>PPL</td>
<td>BL, BS, H</td>
<td>C, ROT</td>
<td>B, FS, ML, QRBC, S</td>
<td>6</td>
<td>G</td>
<td>30</td>
<td>800*</td>
<td>Limited throat depth, but excels at precision work.</td>
<td></td>
</tr>
</tbody>
</table>

13. (A) Twin switches
   (B) Pushpull
   (C) Separate speed and power
   (R) Rocker lever
   (L) In-line cord
   (ROT) Rotary
   (*) Indicates removable safety switch

14. (A) Blades
    (B) Blade holders
    (OK) Drill kit
    (DT) Drip-tanic system for cutting glass
    (FS) Foot switch
    (ML) Magnifier light
    (MB) Mobile base
    (QRBC) Quick-release blade clamp
    (S) Stand
    (PL) Pedal-operated top arm lift
    (W) Wood

15. (C) Canada
    (G) Germany
    (T) Taiwan
    (U) United States

16. *Mail-order tool. Shipping will be added to the selling price.

---

**Manufacturers' Phone Numbers:**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>800-438-2486</td>
</tr>
<tr>
<td>Hegner</td>
<td>800-322-2226</td>
</tr>
<tr>
<td>Skil</td>
<td>312/286-7330</td>
</tr>
<tr>
<td>Dremel</td>
<td>800-467-2623</td>
</tr>
<tr>
<td>Bork</td>
<td>414/554-1390</td>
</tr>
<tr>
<td>Trademaster</td>
<td>800/454-6114</td>
</tr>
<tr>
<td>Excalibur by Sommerville</td>
<td>800/357-4118</td>
</tr>
<tr>
<td>Ryobi</td>
<td>800-356-2559</td>
</tr>
<tr>
<td>Woodtek</td>
<td>800/645-8292</td>
</tr>
<tr>
<td>Grizzly</td>
<td>800/561-5537 (West)</td>
</tr>
<tr>
<td>Sears</td>
<td>800/377-7414</td>
</tr>
<tr>
<td>Seveco</td>
<td>800/462-3353</td>
</tr>
</tbody>
</table>

Written by Jim Harrod  Technical consultant: Dave Henderson  Photographs: Dean Tanner  Illustrations: Kim Downing
Looking for a great evening at the lathe? You can’t miss with these quick, fun, and practical toppers for cork stoppers. See the Buying Guide for our source of glassware and corks.

**Project Prep**

**Stock:** Turn the lids, stoppers, or cruet stand from domestic or exotic hardwoods. Blank sizes are:
- Jar lids: 1 x 2 x 2"  
- Stoppers: 1 1/4 x 1 1/4" stock, 2-3/4" long  
- Large stoppers: 1 1/2 x 1 1/2 x 2"  
- Twin-cruet stand: 2 x 5 1/2 x 5 1/2"

**Lathe equipment:** 3-4" faceplate, live (rotating) tail center, jaw chuck (if available).

**Turning tools:**
- 1/4" and 1/2" spindle gouges  
- 1/8" and 1" skews  
- 3/16" parting tool

**Lathe speeds:**
  - Roughing: 500-800 rpm  
  - Finish-turning: 1000-1200 rpm

**LET’S GET GOING WITH THE JAR LIDS**

Turning a jar lid calls for gluing the blank to a wasteblock, turning a recess in the bottom, parting it off, then completing the lid on a jam chuck. A fixture that serves as both a wasteblock and a jam chuck eliminates a lot of faceplate changing. Here’s how to build the two-in-one fixture.

First, trace around your 3" (or thereabouts) faceplate onto a piece of 1 1/2"-thick stock (2x softwood lumber works great). Bandsaw the disc, then screw it to the metal faceplate. Use screws long enough to penetrate about 3/4" into the wooden disc.

Mount the assembly on the lathe headstock. True the side and face with a gouge, then flatten the face with a scraper. Form a tenon tapering to a 2"-diameter face, similar to the one shown below.

Glue the lid blank to a wasteblock, getting it as close to centered as possible.

**Mount the lid blank**

Start with 1 x 2 x 2" stock. You can use practically any wood; we even laminated scraps of 3/4"-thick Baltic birch plywood for one blank.

Draw diagonal lines to locate the center of the face that will be the top of the lid. Draw a 2"-diameter circle around the center. (Open your compass to 1".)

Now, glue the blank to the tenon on the lathe fixture, centering the tenon inside the circle. Woodworking
glue, epoxy, or instant glue (cyanoacrylate, or CA, adhesive) would work for this.

To attach the blank with CA adhesive, first spray a mist of accelerator on the end of the fixture’s tenon. While that dries, put a few drops of gap-filling CA adhesive inside the circle on the blank. Then, press the blank onto the tenon, holding it for a few seconds while the glue cures.

**Start on the bottom**

With the blank glued to the fixture, slide the tailstock (with a live center installed) up to the workpiece. The tailstock adds support and minimizes the chances of dislodging the workpiece while you round it.

Using a gouge, turn the blank to the largest diameter possible. Then, slide the tailstock out of the way and true the blank’s face with a gouge or scraper.

Measure the cork’s top diameter. Draw a centered circle of that diameter on the face of the workpiece. To draw the circle easily, hold a pencil at the center of the spinning turning to make a center mark. Then, open your compass to the appropriate setting—half the circle’s diameter—and lay it on the tool rest. Aim the point of the compass at the center marked on the turning, then push the pencil against the spinning turning to draw the circle.

(Our corks measured \(1\frac{3}{8}''\) in diameter. Instead of setting a radius of \(2\frac{3}{8}''\), we went with a slightly smaller \(1\frac{1}{8}''\) compass opening. This allowed us to sneak up on the correct recess diameter rather than running the risk of making it too big initially.)

With a parting tool, cut in about \(\frac{1}{6}''\) deep just inside the circle, as shown above right. Expand this groove into a recess, using the parting tool or a gouge. The cork will fit into this recess, and should fit snugly. So, taking small cuts, enlarge the recess toward the layout line. Stop frequently to check the cork’s fit. When you reach the right diameter, true the recess bottom to provide a good gluing surface for the cork.

Measure the recess depth; it should be in the \(\frac{1}{8}''\) to \(\frac{3}{8}''\) range. If it’s too deep, shave a bit off the rim with a gouge or scraper.

---

**JAR LIDS**

Establish the diameter for the cork recess with a parting-tool cut.
SHOW STOPPERS

Turn the top to shape
Separate the turning from the fixture. If you attached it with CA adhesive, a sharp rap on the side with the gouge handle (or a mallet, if you insist on always using the correct tool) will often knock it loose. Otherwise, you can part it off in the usual fashion.

Now, turn the fixture’s tenon to match the inside diameter of the blank’s recess. This will be the jam chuck to hold the turning, so the workpiece must fit over it snugly. Reduce the diameter in small steps with the parting tool, checking the fit frequently.

Press the turning onto the jam chuck, seating it firmly so it will run true. Now, turn the top and edge profile, following one of the five designs shown or one of your own. If the turning tends to pop off the jam chuck, secure it with double-faced tape.

Sand the completed lid. (We used progressively finer sandpapers from 150- to 320-grit.) Then, finish the turning. Finishes applied to the piece while on the lathe work well for the small lids. Padding lacquer or woodturner’s wax stick would be good choices.

Remove the lid from the jam chuck. Finally, glue the cork into the recess, using woodworker’s glue or epoxy.

To turn another lid, simply take a light facing cut on the end of the tenon, and glue another blank to it. When you form the recess, size it to fit the existing jam chuck by using inside-outside calipers. Don’t try to resize the jam chuck for each lid—cork diameters are uniform enough (and the cork itself resilient enough) that a lid that fits one cork will usually fit any of them.

SPINDLE-TURN THE STOPPERS

Turn the bottle stoppers employing spindle-turning tools and techniques. Before you start, though, insert the cork firmly into the flask’s opening. Then, see if the height of the cork standing above the top of the bottle neck suits you.

We thought the tops would look better with less cork showing between the bottle top and the turning. So, we cut off the corks about 1\(\frac{1}{4}\)" above the bottle top, as shown below. Shorten yours or not, as you prefer.

Cut off the cork with a fine-toothed saw to bring the turning closer to the bottle.

To begin, locate the center on one end of a 1\(\frac{3}{4}\) x 1\(\frac{1}{4}\) piece of stock about 1\(\frac{1}{4}\)" longer than the height of the stopper. Drill a 3\(\frac{1}{4}\) hole 1\(\frac{3}{4}\)" deep straight in. You can drill it with a twist drill or a gouge. Chuck the blank by inserting the dowel into the hole. (You may have to adjust the hole size; you want the dowel to fit tightly for turning, but you also want to be able to remove the piece.)

Shape the stopper
Install a live center in the tailstock, and slide it up to engage the workpiece. Then, with a gouge, round the blank to the largest possible diameter. Cutting in from the edge with the parting...
tool, square the end with the dowel protruding from it.

Lay out the stopper features on the blank. Here's an easy way:

Photocopy the stopper template you wish to use from the five shown below and opposite page. Fold it along the centerline, and lay it on the outest against the side of the blank. Align the bottom of the template and blank. Then, with the lathe running, hold a pencil against the blank at each asterisked line on the template.

Determine the bottom dimension by measuring the diameter at the top of the cork. (We made some stoppers' bottoms a little larger than the cork diameter so they would overhang the corks.)

Then, with a parting tool, cut in to the specified diameter at each line and to the desired diameter at the bottom. Rough out the stopper profile, using the sizing cuts and the dimensions on the template for guidance. A small gouge and skew will do the job. Leave a connection to the waste at the top.

Finish the stopper, and part off the waste at the top. Sand, and apply a clear finish. Remove the turning from the chuck, then glue the dowel into the predrilled hole in the cork. Saw off the dowel at the bottom of the cork. (We used a handsaw for safety.)

---

**TRY THE TWIN-CRUET SET**

Dress up the twin-cruet set with a pair of stoppers and a matching stand. Turn these stoppers (templates below right) from $1\frac{1}{2} \times 1\frac{1}{2} \times 2$" stock, following the turning procedure described previously.

**Turn the cruet stand**

True the bottom face of a 2\times 5\frac{1}{2} \times 5\frac{1}{2}" bowl blank. Draw diagonal lines on it to locate the center. Scribe two circles around the center, one the size of your 3" faceplate and another as large as possible, but at least 5" diameter.

Band saw the larger circle. Place the faceplate inside the smaller one, and attach it to the blank with wood screws about 1" long (they shouldn't extend more than 3/8" into the stock). Mount the block and faceplate on the lathe.

---

**Buying Guide**

**Italian glassware.** Spice jars, 3", round or square, $2.95 each; bottles, 12" tall, two styles $4.95 each, one style $5.95 each; single cruet, 5\frac{1}{2}" tall, $4.95; double cruet set, 8" tall, $19.95. Cork included with each piece. Shipping extra.

**Bottle stoppers.** Bottle-stopper blanks. Square stock 1\frac{1}{4} \times 1\frac{1}{4} \times 2\frac{1}{4}". Available in ten species (bocote, cocobolo, paduk, zebrawood, Madagascar rosewood, bird's-eye maple, goncalo alves, bubinga, Amazon rosewood, and pau rosa). Package of five pieces, one species, $9.95; assortment, one piece of each species, $19.95. Shipping extra. All from Craft Supplies USA, 1287 E. 1120 S., Provo, UT 84606. Call 800/551-8876 to order, 800/398-2743 for customer service.

---

Photographs: Hopkins Associates  Illustrations: Roxanne LeMoine; Lorna Johnson

WOOD MAGAZINE  OCTOBER 1996  61
Let's start with the basic box assembly

1 Cut the planter box front and back (A), sides (B), and bottom (C) to the sizes listed in the Bill of Materials from 3/4" oak plywood. See the box on page 65 for our method of utilizing scrap plywood for this and other projects. See also the Cutting Diagram for layout reference.

2 Fit your tablesaw with a 3/8" dado blade, and cut 3/8" rabbets 3/8" deep along the edges of the front and back pieces (A). See the Box drawing for reference. Now, using a 3/8" dado blade, cut grooves 3/8" deep and 3/8" from the bottom end on the inside face of the front, back, and side pieces (A, B).

3 Cut a 3/8" rabbet 3/8" deep along the bottom edges of the bottom panel (C).

4 Dry-clamp the plywood pieces together to check the fit. Adjust if necessary, then glue and clamp the box pieces together, checking for square. Later, remove the clamps, scrape off excess glue, and sand smooth.

Now, add the finish to the plywood box

1 If you want the same white-washed finish on your plant stand as on ours, you'll need to finish the box now. If you want to stain or paint the box, it's also easiest to do it now before the lattice surround and lattice pieces are attached. To achieve the white-washed look, dilute two parts of interior latex paint with one part water. Use a cloth to wipe the watered-down paint on the wood, wiping with the grain. Then, use a
Clean, damp cloth to immediately wipe off most of the paint mixture. (We tried this on a piece of scrap plywood first to get the hang of it.)

2 After the paint has dried, lightly sand the surfaces of the plywood box with 220-grit sandpaper to bring back as much of the wood grain and color as desired. If you lose too much of the washed effect, you can always wipe on and rub off some more of the paint mixture.

Cut and nail on the lattice-surround pieces

1 From ½" oak stock, rip seven pieces from the edge to ¼" wide by 36" long for the ¼x1½" lattice-surround strips (D, E, F).

2 Using your tablesaw or router, cut a ½" rabbet ½" deep along one edge of each 36"-long strip.

3 Miter-cut the lattice-surround pieces (D, E, F) to length from the 36"-long strips. Sand the pieces smooth. Then, nail each surround piece to the front, back, and side panels where dimensioned on the Box drawing. Position carefully to keep the strips square to each other and to the plywood box. To prevent the thin strips from splitting when driving the brads, clip the head off one of the brads, and chuck the brad into your drill press. Use the brad as a bit to drill pilot holes through the surround pieces.

continued
Indoor planter

It's time to add the lattice

1 Rip 1/8" strips from the edge of 3/8" stock. (We planed thicker stock, and then cut 16 pieces measuring 1/8" x 5/8" x 24" each.) You'll use these for the lattice (G-J).

2 Sand the strips smooth. Use the previously stated procedure to whitewash each strip. Let the strips dry. Then, miter-cut one end of each strip.

3 Apply masking tape to the top and bottom pieces of the lattice surround (D, E) on each of the four frames where shown in the photo above. The masking tape allows you to make all your pencil marks for positioning the lattice strips now. Then, you simply peel off the tape later to remove the pencil marks.

4 As noted on the three-step drawing, mark the centerlines, then weave and nail the pieces in place in the order marked on the

LATTICE LAYOUT

Use a combination square to mark the layout centerlines, and then align the lattice pieces inside the rabbeted frame.

WOOD MAGAZINE  OCTOBER 1996
drawing and as shown in the photo. Use a combination square as shown in the photo to keep the lattice pieces at a 45° angle from the top and bottom surround pieces. When you have the lattice pieces correctly positioned, use your portable drill with the brad pilot bit to drill a pilot hole at each point where two pieces cross. Drive the brads. The short pieces (J) are just glued in place.

**Add the top and bottom trim**

1. **Cut the bottom trim pieces (M, N) to size.** Then, cut the top trim pieces (O, P) to size. Glue and clamp the top four trim pieces together to form a rectangular frame. Now, as shown in the Routing detail accompanying the Exploded View drawing, rout the outside edge of the frame.

2. **Whitewash the top trim frame and bottom trim pieces if necessary,** and then glue and clamp them in place. See the Top View drawing for reference.

3. **Apply three coats of clear finish (we used Deft Semi-Gloss Lacquer) over the whitewashed finish.** Paint the inside of the box with an oil-based enamel paint.

**Here's how to put plywood scraps to good use**

If you're like most woodworkers, you've got pieces of plywood lying around your shop. Here's what we did to use some of ours.

To form the panels for our planter, we cut the narrow strips of plywood to length (measured with the grain) plus 1". Then, as shown in the photo at right, we edge-joined the individual pieces, using C-clamps at each joint to keep the surfaces flush. We didn't use biscuit joints or splines on our panels. If you're using the plywood in a situation where strength is important, use either. Later, we removed the clamps and trimmed the top and bottom ends to obtain the 8½" final length.

Cut long, narrow pieces of scrap plywood into shorter pieces. Then, carefully edge-join the individual pieces to form wider, more usable panels.
When your car acts up, you know it’s time to open the hood and make some adjustments. Likewise, if you don’t keep your power tools in tune, the quality of your woodworking will almost certainly suffer. Or worse yet, you may be setting the stage for a nasty accident.

To prevent such occurrences, and to maximize precision performance from your tools, we’ve developed a trustworthy guide to keep your major power tools in tip-top shape. Here, we look at three shop stalwarts:

- the tablesaw, jointer, and planer. For similar information on tuning up a radial-arm saw, bandsaw, or miter-saw, see the October 1995 issue of WOOD® magazine.

Start by gathering up your tune-up tools

- You probably already have all or most of the basic tune-up tools: 8” and 12” plastic drafting triangles, a 4’ level or aluminum rule, a set of SAE or metric wrenches (depending on the type of screws...
and bolts used on your machine), spring or C-clamps, a few shingle shims, and several pieces of scrap stock. You'll also need a set of feeler gauges for checking clearances. You can buy these pocket-size sets of thin metal blades in .001" increments at auto-parts stores and some hardware stores. These sets cost only a few dollars each, so it's a good idea to have an extra set or two for use as precision shims, too.

That's the low-tech list. For greater precision, consider investing in a dial indicator, such as the A-Line-It (shown in the photo left). It's available for $139.95 ppd. from In-Line Industries, 661 S. Main St., Webster, MA 01570. Call 800/533-6709.

A dial indicator measures dimensional differences as small as .001"—about one-third the thickness of a human hair. Accessories that come with the A-Line-It let you configure the indicator to perform many different tasks on several machines.

For tuning up a tablesaw, or any other saw that uses a 10" circular blade, you also might want to purchase a calibration plate like the one shown in the photo below right. These are precision-ground blades with no teeth to get in the way of your measurements. A calibration plate also doubles as a disc sander. You can order a 10" "Set and Sand" Disc from CMT for $24.90 plus shipping (call 800/531-5559), or a 10" "Calibration and Sanding Disk" from Freud dealers ($38 list). Call 800/472-7307 for a nearby dealer.

To take some of the tedium out of setting the knives on a jointer, consider a magnetic setting tool such as the Magna-Set ($27-$70 depending on model, plus shipping, from Grizzly Imports. Call 800/523-4777 east of the Mississippi river, 800/541-5537 west of the Mississippi). We show and tell you more about these high-tech tools on the pages that follow.

Next, do a quick inspection of moving components
Before you tune up any machine, examine its belts, pulleys, and bearings. Check belts for cracks, fraying, and wear. If the top of a belt is more than 1/8" below the edge of the pulley, replace it.

Even if the belt looks okay, remove it and inspect the pulleys. Look for a shallow groove on the pulley's inside bevel, where the belt makes contact. If you can feel a ridge between this groove and the portion of the pulley that does not contact the belt, replace the pulley. Worn pulleys shorten the life of your belts and bearings, and sometimes cause annoying vibration as well.

Finally, before you reinstall the belt, spin all bearings. They should turn smoothly and silently, with no detectable back-and-forth movement. A dial indicator can tell you the precise amount of movement. It should be 0. Up to .001" is acceptable, but keep an eye on them because any play at all causes bearings to wear faster.
As the workhorse in most woodworking shops, the tablesaw gets more use than any other stationary power tool. Properly tuned, it's also one of the most accurate machines you'll ever operate. Timely tune-ups ensure cuts that are right on the money—and promote safety by eliminating most of the causes of dangerous workpiece kickbacks.

Getting to know your saw
Tablesaws fall into three general categories: direct-drive saws, contractor's saws (pictured right), and cabinet saws. No matter what type you own, we'll show you how to get top performance from it. Here are the key differences between the three types:

With direct-drive saws, the arbor is mounted on the motor shaft; there are no belts or pulleys. Most direct-drive saws are lightweight bench-top models.

With a contractor's saw, the motor mounts out behind the saw and drives the arbor with a single belt. A contractor's saw bolts to a lightweight frame and can be readily relocated from one part of a job site to another.

Cabinet saws connect the motor to the arbor via two or three belts and pulleys. These powerful heavyweights are a good choice for a saw that never leaves the workshop.

A few opening procedures
Begin your tune-up by unplugging the saw. Remove the blade so the blade, arbor flange, blade washer, and arbor threads can be thoroughly cleaned and inspected. (If you're not sure about the position of these parts, see the Aligning the Drive Pulleys drawing on the opposite page.) Now, rub the blade washer and nut lightly across a sheet of 320-grit abrasive mounted to a flat surface such as a piece of plate glass. Any burrs or high spots will show up as bright, shiny areas. These should be flattened with emery cloth or a whetstone.

Also check the blade's arbor hole, using a finger to feel for burrs. Remove any you find with a small whetstone. The same goes for any nicks or burrs you detect on the arbor flange.

Finally, if yours is a contractor's saw, check and tighten all of the stand's nuts and bolts. Snug them up for rattle-free performance.

The nine steps to a perfectly tuned tablesaw
Now you're ready to get that saw in tune. Because each of these adjustments depends on the one that goes before it, make them in the order described here.

1 Align the drive pulleys
If you have a direct-drive saw, you obviously can skip this step. Multi-belt cabinet saws rarely go out of alignment, either. But contractor's models, which have a motor that hangs from the back of the saw with a long belt, are prone to vibration that transmits directly to the blade.

First, check the motor's pivoting base. Its job is to tension the belt, and the pivot should only be free enough to let the motor swing downward as the blade lowers
and upward as it rises.

Now, if space permits, lay a straightedge against the outer edges of the arbor pulley and motor pulley as shown in the drawing above. If both sides of each pulley touch the straightedge, the pulleys are in alignment. If one or more points of the pulleys don't make contact with the straightedge, adjust the motor or pulleys until the straightedge lies flush against both pulleys.

If you can't maneuver a straightedge into your saw, you'll have to align the pulleys by eye. Crouch behind the saw so you can sight along the belt and pulleys with your dominant eye. (Close the other one.) Once they're aligned properly, be sure to tighten up the pulleys or motor mount.

2 Level the table insert
Now check that the table insert fits flush with the tabletop. Most inserts have four leveling screws at the corners. Turning these screws raises or lowers the insert. If your saw's insert doesn't have leveling screws, you may have to file the underside of the insert to lower it, or use layers of masking tape to raise it.

Use an 8" drafting triangle to determine if the insert is flush. With a triangle, stand it on edge at 90° to the miter slot. First, bridge the insert at the front edge, and raise or lower the insert until it touches the triangle. Move the triangle to the rear and do the same. Finally, slide the triangle over the entire insert. If you feel it catch, lower the insert some more.

3 Level the extension wings
For accurate cuts and controlled handling of large workpieces, your tablesaw's extension wings should be perfectly flush with the table. Check this with a 4' level as shown above.

If they're not flush, you'll need the level, a fine file or 220-grit sandpaper, a spring or C-clamp, and a set of feeler gauges you can use for shims.

Begin by removing the wings
and, with the file or sandpaper, gently radiusing the top edges of the saw table and wings. This removes sharp edges and burrs. Also sand off any paint on the mating edges of the wings.

Now, bolt the wings back on the saw, but don’t tighten the bolts all the way. Let the wings sag, with a ½" gap at the top where the wings meet the table.

Place the level across the front edge of one wing and the table-top. Clamp the level to the extension wing at the outer edge. Pushing the level flat against the table aligns the wing. Slowly tighten the front mounting bolt, keeping a close eye on the bottom of the level. If it lifts from the table as you tighten the bolt, the bottom edge of the wing needs shimming; if a gap appears at the center of the level, you need to shim the top edge.

Check at a minimum of three points along each table edge. You need to do this because wings can bow along their length (even cast-iron ones). By shimming at three locations you can remove most, if not all, of any bow.

To make shims, insert feeler gauge blades one at a time directly above or below the bolt. Tighten and check the alignment. It may take some trial and error to find the right thickness. Once you do, cut enough ¼"-long pieces of the blade to fit above or below all the wing bolts. Repeat this process with the other wing.

4 Check the blade for alignment with miter slots
For a saw to accurately crosscut and rip, its blade must precisely parallel the miter slots. A misaligned blade will force work into or away from the blade, causing burning or kickbacks.

To check your blade’s alignment, remove the guard and splitter, and install your best blade or a calibration plate.
Raise the blade or calibration plate to the top of its travel, then lower it slightly. (We've tuned many saws that slightly skew the blade at its topmost setting, which can throw off your settings.)

Next, adjust the miter gauge to 90°, and set it into the slot on the arbor nut side of the blade. If your miter gauge fits sloppy in the slot, use feeler gauges to shim it snugly against the side of the slot nearest the blade.

Mark a reference point on the blade just below the teeth or gullets, and rotate the mark to the front of the table. Now, stand an 8" drafting triangle against the miter gauge, with the point lined up with the mark on your blade. Lock the miter gauge in place, slip a .010" feeler gauge between the triangle's point and the blade, take up all play, and clamp the triangle to the miter gauge.

The feeler gauge should slide in and out without deflecting the blade. Remove the feeler gauge and rotate the blade mark to the rear. Slide the miter gauge to the rear—again lining up the point of the triangle with the mark on the blade—and lock the miter gauge in place. The same feeler gauge should fit. If it doesn't, try others until you determine how far your blade alignment is off. If it's more than .002", determine which direction the back of the blade needs to go.

The illustration opposite page, bottom, shows a "high-tech" way of checking blade alignment with a dial indicator. Instructions packed with the A-Line-It explain how to read a dial indicator.

**5 Align the blade parallel with the miter slots**

Exactly how you get the blade into alignment varies somewhat, depending on the type of saw you have. Direct-drive and contractor saws have a pair of trunnions bolted to the bottom of the table. To align these, you loosen the trunnions and shift them to one side or the other as shown above left. We find it easier to move the rear trunnion assembly. Leave one of the front bolts semi-tightened and use it as a pivot.

Using a piece of stock and a hammer, gently tap the trunnion in the direction you want to move it. For greater control over this adjustment, you also can shift the trunnions with an L-bracket trunnion adjuster like the one shown above. This "Precision Alignment & Locking System (PALS)" is available for most tablesaws for $19.95 ppd. from In-Line Industries at the address on page 67.

When the same feeler gauge can be inserted at the front and rear of the blade, the blade is parallel and the bolts can be tightened. After tightening them, check one more time to make sure the trunnion didn't move.

With cabinet saws, the trunnions and table are independently bolted to the cabinet, making adjustments easy. With these, loosen three of the table-mounting bolts as shown top right, and tap the table into alignment with a mallet or hammer and a block of wood.

Continued
6 Set the bevel stops
Built-in stops govern a tablesaw's 90° and 45° bevel settings. Check your owner's manual to find out where these stops are located, then use an 8" triangle to learn if they're accurately set.

First, raise the blade or calibration plate just shy of its highest position. Check the 90° setting by positioning the triangle on the table with one leg of the 90° angle on the table and the other against the body of the blade, taking care to avoid the teeth. If you see a gap at the top or bottom of the triangle, use the tilt wheel to move the blade until the gap disappears. Unlock the 90° stop, bring it into contact with its matching point on either the trunnion or lead screw nut, and relock the stop. With the triangle, double-check that the blade remains at exactly 90° to the table.

Set the 45° bevel stop in the same way, tilting the blade to the 45° position and placing the triangle with its 45° leg against the body of the blade. Again, check after you relock the stop to be sure it hasn't shifted.

7 Adjust the blade guard and splitter
To do its job properly, the splitter must remain parallel with the saw blade, in the middle of the kerf. To set the splitter, cut a thin piece of cardboard or plywood in half, place the pieces against both sides of the blade or calibration plate, and center the splitter.

8 Set the miter gauge
For accurate cuts, check your miter gauge often. Place it on a flat surface, such as your saw's table, and use the 90° angle of a triangle to determine if the gauge is square, as shown right.

To set the 45° left and right angles, use the 45° edge of the triangle to establish and lock in your miter settings.
9 Align the fence

Kickbacks, excessive sawdust, burnt cuts, and crisscross saw marks are all symptoms of an improperly aligned fence. But properly aligned, you might be surprised to learn, doesn’t always mean that the fence should be set precisely parallel to the blade. Instead, for safe, burn-free ripping cuts, we recommend setting your fence .015" to .030" open at the rear. This prevents work from binding between the blade and the fence if the wood warps as you rip it.

The big trick to aligning a fence is keeping it that way, which means you should probably realign it before every major cutting project. To make this an easy adjustment now and in the future, rip a 4"-long, 3/4"-thick hardwood block to the width of your miter slot. Then, cut this piece in half to get two 2"-long blocks.

To align the fence, fit these blocks into the miter slot at the front and rear edges of the table. Loosen the bolts that adjust parallelism, drop the blade beneath the table, and slide the fence against both blocks.

At the rear, start with a .015" feeler gauge between the fence and block. With the fence pushed firmly against the block at the front and the block and feeler gauge at the rear, lock the fence head. Retighten the alignment bolts on the fence.

Now remove the blocks, plug in the saw, and rip a test cut. Inspect the fence side of the ripped edge for burns and crisscross saw marks. If you find any, add a little more space between the fence and blade. If you need to add .030" or more space, replace the blade and recheck.

(If you are getting less-than-clean cuts with a dado blade, reset your fence parallel with the blade. Just open it up again for ripping.)
Except for the tablesaw, you may use the jointer more than any other machine in the shop. A jointer requires fewer adjustments than a tablesaw—just three or four, depending on the design of your machine. But they’re critical if you want to mill stock that’s perfectly straight and square.

How your jointer works
Think of a jointer as a motorized hand plane turned upside down. In place of the hand plane’s sole, jointers have a pair of tables that support the stock as you pass it over a rapidly turning cutterhead.

Down below, an elevation wheel provides a means for adjusting the height of the infeed table, and many jointers have a control for the outfeed table as well. Machined dovetail ways align and guide the tables. You can fine-tune their alignment and lock them in place with accessible gib screws.

The cutterhead itself consists of a cylindrical assembly that typically holds two or three knives, each beveled like the blade on a hand plane. As shown below, the knives of a typical cutterhead are tightly wedged in place with gibs and gib bolts.

Five surefire tune-up tactics
To guarantee yourself a jointer that makes smooth and accurate cuts time after time, you need to align the infeed and outfeed tables, square up the fence, set the knives, and properly set the height of the outfeed table—in that order.

1 Check the tables for parallel alignment
Though the two tables aren’t on the same plane during use, they must be absolutely parallel with each other along their entire length. Tables that sag at one end or the other (or both) will cause concave cuts. Tables that are high at their outer ends will produce convex cuts. And an outfeed table that’s parallel with the infeed table, but lower than the knives, will result in a condition called “snipe”—a small, hollow cut found at the end of a workpiece. This occurs when the infeed table no longer supports the workpiece.

To align the tables, first unplug the jointer, slide the fence completely off the table, remove the cutterhead guard, and raise the infeed table to the same height as the outfeed table. Now, lay a level or straightedge across both tables as shown opposite page, top. If any light shows under the straightedge at the outer end of either table, the table is sagging. Usually you can correct this by tightening the upper gib screw (see drawing right).

If you see light under the straightedge in the middle, next
to the cutterhead, the offending table or tables are high at their outer ends. Loosening the gib screws lowers them.

For even more accuracy when checking table alignment, use a pair of 12" triangles, as shown top right. Set one triangle on each table (not necessarily at the same height) with the 90° edges of the triangles touching. If you see a gap at the top, one or both tables are sagging at their outer ends. If there’s a gap at the bottom, one or both table ends are too high.

This method won’t tell you which table is the offender, but you can quickly find out by tightening the gib screws on the infeed table; if this doesn’t bring them into alignment, try adjusting the outfeed table.

If your machine is old or gets lots of use, you may discover that tightening the gib screws won’t fix a sagging table. This happens because the dovetail ways have worn over the years and must be shimmed to compensate for the accumulated wear.

We prefer to shim the outfeed table, because its adjustment range is very small, but if your jointer has a fixed outfeed table, you have no choice but to work with the infeed side.

Shim with feeler gauges. To measure how much shimming is needed, loosen the lower gib screws, lift up on the outboard end of the table, and insert a feeler gauge 1/8" onto the surface where the table contacts the lower casting as shown left. Release the table, snug the gib-adjustment screws, and check to see if the table is parallel with the other one. After you’ve found the right thickness of shims, cut 1/2" lengths and install them. Finally, lock down the gib-adjustment screws and make a final check.

2 Square the fence for square cuts
A fence that’s not exactly 90° to the tables can cause you a truckload of grief. Even a slight angle error can multiply through the course of a woodworking project. That’s why we like to precisely set the fence at the beginning of each work session.

With your drafting triangle, the job should take only a few minutes. Simply loosen the bevel lock, position the triangle as shown on the next page, top left,
move the fence until you see no gaps at the table or fence, and retighten the lock. Use the same technique to set the 45° angle.

(At this point, you may decide to adjust your 90° and 45° stops—but don’t rely on them for critical work such as edge joining. Instead, check with the triangle every time you change the angle of the fence.)

3 Set the knives
Even manufacturers have trouble setting knives perfectly. In our last test of 6" jointers ("Jointers Under $1,000," December 1995, pages 44-49), none of them arrived in their boxes with perfectly set knives. But guess what? All the machines still produced straight, smooth edges.

That said, we’ll show how to set your knives quickly and at least as accurately as the factory did. Aim for a maximum variance of .002-.003" between the knives. If you want to spend the better part of a Saturday at it, you can get them closer—but we’d rather spend that time building projects.

If your machine came with a two- or three-legged knife-setting gauge, don’t bother using it. These gauges are designed to set each knife exactly the same height above the surface of the cutterhead. But few jointers have cutterheads that are perfectly parallel with the tables, which means

---

**LOCATING THE CENTER OF CUTTERHEAD’S ARC**

**Step 1**
Rotate cutterhead so the knife is approximately at the top of its arc. Position the stick so mark No. 1 sits directly on top of the knife tip.

**Mark No. 1**
Mark a line 1" from end of stock around all four sides of stick.

**Mark No. 2**
Marked on stick directly above the edge of the outfeed table.

**Step 2**
Rotate cutterhead clockwise until the stick stops. Place a mark on the stick directly above the edge of the outfeed table.

**Step 3**
Rotate cutterhead counter clockwise until the stick stops again. Place mark No. 3 directly above the edge of the outfeed table.

**Mark No. 2**
Marked on stick directly above the edge of the outfeed table.

**Mark No. 3**
Marked on stick directly above the edge of the outfeed table.

**Step 4**
Mark a line centered between mark 2 and mark 3. Place the stick with the newly marked line on the edge of the outfeed table. Transfer a line from mark 1 to the jointer fence. This will be the center of the cutterhead. Using a square, transfer the centerline all the way down the fence.

**Mark No. 1**
Centerline marked on fence

**Mark No. 1**
Centerline between mark 2 and 3
the cutterhead knives won’t be parallel with the tables either.

We’ll provide you with three options for setting the knives—one low-tech and two high-tech. Which you choose depends partly on the type of cutterhead your machine has.

The first might be called the king of low-tech. It uses a simple wooden stick and a sheet of window glass. The stick should measure about $\frac{3}{4}\times1\frac{1}{2}\times12''$ and have at least one flat surface. The glass should be cut to the width of the knives and about 12 inches long. To prevent cutting your hand, order polished edges.

Use the stick to determine the top of each knife’s cutting arc. Begin by drawing a mark all around the stick at about 1'' from one end (known as “mark No. 1”). Then, follow Steps 1–4 in the drawings opposite page. In Steps 1–3 mark No. 1 should be directly above the knife tip at all times. (It may help to keep light finger pressure on top of the stick.) After marking the cutterhead centerline on the fence, permanently scribe it with a scratch awl and triangle.

To set each knife, rotate the cutterhead until the cutting edge of the knife aligns with the mark on the fence. Check the alignment by setting a triangle against the fence and touching the knife. Immobilize the cutterhead by inserting tapered wood shims between the head and bearings, as shown top left. Loosen the knife gib bolts just enough so that the knife moves with firm hand pressure. Raise the knife slightly higher than the top of the outfeed table. Now, lay the glass on the outfeed table, extended to fully contact the knife. Press the glass to the table and slowly snug up the gib bolts, starting with ones at the ends and alternately working toward the middle.

Take care that you don’t overtighten the bolts. Too much
torque can force a knife out of alignment. To limit the amount of pressure you can apply, turn the wrench with only your thumb and forefinger. Set each knife in turn, aligning it with the mark on the fence.

Now, use the stick to check that each knife is set the same height as the others. Lay the stick on the outfeed table, lining up any one of the three table edge marks, and rotate each knife past it. All should move the stick the same distance at both ends.

For a high-tech way to set jointer knives, invest in a setting tool such as the Magna-Set (see page 67 for a source). It consists of two steel or plastic bars that slide along a pair of parallel rods. As shown previous page bottom, each bar has small but powerful magnets that hold the jig to the table and the knives. This keeps each knife flush with the outfeed table while you tighten the gib bolts. Of course the Magna-Set won’t work with an aluminum outfeed table.

A dial indicator setup, such as the A-Line-It, offers yet another way to set the knives. (See the drawing above left.) The indicator tells you exactly how high the knives are from end to end, and in relation to each other. These gauges work especially well with knives that you adjust with jack-screws that elevate the knives.

Finally, spin the pulley by hand to make sure the knives don’t hit the tables or other parts. Reinstall the cutterhead guard, and plug in the machine.

4 Adjust the outfeed table
If your jointer has a fixed outfeed table, you can skip this step—and should use extra care and time setting the knives to ensure that the table and knife heights are the same. If you can move it, you need to adjust the outfeed table to exactly the same height as the tops of the knives.

We’ve found that the easiest way to do this is to lower the table slightly, set the infeed table for a light cut, and slowly feed stock through the knives until the cut edge projects over the outfeed table about 1". Now, shut off the jointer, raise the outfeed table until it just contacts the workpiece, and lock it down.

To double-check this setting, finish jointing the edge and make a second pass, stopping to make sure the outfeed table fully supports the cut.

5 Test your adjustments
Now, it’s time for a test drive. Select two pieces of stock that are approximately 3/4 x 4 x 36", and pass each over the cutterhead on the 3/4" dimension. Use a shallow cut and keep pressure on the infeed side until 8" to 10" is supported by the outfeed table. Then, transfer pressure to the outfeed side.

After you’ve milled both boards, place the cut edges against each other. If any light shows through the joint, unplug the machine and recheck the alignment of the tables. If the alignment checks out okay, you’re probably not feeding the stock properly.

Continued
Compared to the versatility of the tablesaw and jointer, the planer is a one-trick pony. Its only purpose in life is to machine opposite faces of stock parallel with each other and to a desired thickness. Of course, even a pony has to learn its one trick well before you put it through its paces—and the same goes for a planer.

Planers come in many sizes and shapes, but all of them share similar components that need tuning from time to time. We will cover the basic adjustments here. Since your machine may vary somewhat from those shown in our illustrations, you may have to spend time getting familiar with the locations of its adjustment points. Your owner's manual should help, if you have one.

The four steps to planer-adjustment success
For a planer to do its job properly, the table must be parallel with the cutterhead knives along their length, the feed rollers must press the stock firmly against the table, and the knives must be set to exactly the same height. Here's how to get everything in sync.

1 Align the table with the cutterhead
Begin by unplugging your planer and cleaning any rust or debris from its table. (Lower the table or raise the head assembly so you can get your hands in there.)

If your machine has bed rollers, adjust these first. Lay a straightedge on the rollers, and use a feeler gauge to check how far they stick above the table. This distance should measure .002" for most planing work. If you work with rough-cut stock, and find that it doesn't feed smoothly, adjust the rollers as high as .010" above the table. If the rollers need adjusting, check your owner's manual to learn how to do it. With some planers, you make the adjustment with shims. And with others you change the rollers' elevations with screws, as shown next page top.

After you've adjusted the bed rollers, if any, find out if the table is parallel with the cutterhead. To produce stock that is the same thickness across its width, the table and cutterhead must be within .005" of parallel.

The simplest way to do this is to insert a piece of stock on edge between the table and one end of the cutterhead, as shown next page middle. Then, adjust the elevation until the cutterhead just touches the stock. Slide the stock along the table and under the cutterhead to the other end of the cutterhead. If the table is parallel to the cutterhead, the stock will not jam into the cutterhead or separate from it, showing daylight as you move it.

Continued
If the table isn’t parallel, again check your owner’s manual. Most planers have two or four table- or head-elevation screws that pass through the table or head, as shown in the photo on the previous page and in the drawing below. These interconnect with gears or chains so they all turn in unison. To adjust this style of table or head, disconnect the screws from each other either by loosening setscrews that hold the gears to the screws, or by removing the chain that runs around sprockets under the table.

Now, individually turn the screws until your piece of stock contacts both ends of the cutterhead without binding. Then, retighten the setscrews or reinstall the chain.

(With some portable planers, like the Delta on the previous page, you adjust the head, not the table. You loosen a pair of nuts and turn bushings that raise or lower the head, then retighten the nuts. We removed the side covers of this machine to reveal its inner workings.)

2 Adjust the feed rollers
Feed rollers, made of rubber or serrated metal, run the stock between the cutterhead and the table at a consistent rate. If your planer leaves marks on the wood, feeds erratically, or stalls, the rollers may be exerting too much pressure. Too little roller pressure, or rollers coated with pitch and gum, contributes to a jerky feed rate—and also can cause kickbacks.

Most planer rollers are spring-loaded, like the ones left, so they can follow uneven stock. If you suspect that your machine’s rollers are applying too much or too little pressure, check your owner’s manual to learn how to adjust their springs. Adjustment
systems vary from manufacturer to manufacturer.

Clean off dirty metal rollers with solvent and a wire brush. Wipe rubber rollers with a rag dampened in mineral spirits. Go lightly. Too much solvent can damage rubber rollers.

3 Set the knives

A planer can’t produce smooth, ripple-free surfaces unless its knives are razor sharp and set a uniform distance above the cutterhead. As with jointers, a planer’s knives are held in place by gibs and are raised and lowered in most cases with springs or jackscrews. You can adjust them with the basic knife-setting gauge that may have come with your machine, or with a dial indicator knife-setting gauge.

Begin by loosening and removing the knives. Clean the gibs and slots in the cutterhead with solvent to remove any wood residue. Reinstall a sharpened knife in each slot, but tighten its gibs or jackscrews only part way; you should be able to move the knives with slight pressure.

(Some portable planers have fixed-position knives that you don’t have to adjust. You simply bolt new knives into holders that automatically locate the knife at the proper height.)

The basic knife-setting gauge works well for setting the knives in a planer because the knives must be set parallel to the head. Set the gauge over a knife at each gib bolt, as shown in the drawing middle left. A small boss on the gauge contacts the edge of the knife and helps prevent the knife from creeping upward. Tighten the gib bolts in increments, starting with the outside bolts and moving toward the center.

If a knife creeps up slightly as you tighten it, tap it back into place with a block of hardwood. If a knife is a little low, lift it with the jackscrews.

A dial indicator knife-setting gauge works in much the same way as the basic gauge, but it shows you exactly how well you set the knives. Attempting to set all three knives to the exact same height may take an hour or more. So, consider the job well done if you come to within .001". As with a jointer, don’t overtighten the knife bolts.

4 Reset the depth gauge

Now, give everything a final once-over, including a quick spin of the head by hand to make sure the knives don’t collide with other parts. Finally, plug in the machine, turn it on, run a piece of stock through it, measure the stock’s thickness, and use this dimension to reset the planer’s built-in depth gauge.

Written by Jim Huffman
with Bob McFarlin and Dave Henderson
Illustrations: Kim Dowling
Photographs: Wm. Hopkins
ADVERTISMENT

The New Dodge
presents
Weekend Home Improvement Tour
at


See do-it-yourself demonstrations at 25 cities nationwide.
Tour starts September 28.
Call 1-800-362-9554 for demonstration times.
Discover great ideas about
• kitchens • baths
• wallpapering • repairs
• window treatments • painting • wood projects

ENTER OUR SWEEPSTAKES and you could win a Dodge vehicle of your choice.
See Official Rules and vehicle choices at participating Home Depot stores

For that “SPECIAL” project

IN STOCK
NO MINIMUM
VARIOUS WOODS

FREE COLOR CATALOGUE

Kits Ready to Assemble & Finish

Adams Wood Products, LTD
974 Forest Dr., Dept. M 37
Morristown, TN 37814 • Phone (423) 567-2942

Circle No. 1002

GET BACK TO NATURE.
Peel off paint & varnish as easy as peeling an orange.

Citristrip is the onlystripper with a pleasant orange scent and a powerful No Methylene Chloride formula. It also stays wet and active over 24 hours, so you can strip away multiple layers and complete your entire project in one easy step. For more information call 1-800-899-0401.

ATTENTION CLASSIFIED ADVERTISERS

Now you can reach over 1,100,000 responsive woodworkers and do-it-yourselfers in the WOOD Classified Mart section. The next closing date is October 7, 1996 for the January 1997 issue.
For rates and information call: 1-800/424-3090 or write:
WOOD Classified Mart
500 North Michigan Avenue, Suite 2010
Chicago, IL 60611

ACCESSORIES
UNIQUE NEW DIAL METER GAUGE! Developed by aerospace engineers. Greater accuracy. Better傷s. Faster setup. Less sanding, better producitivity. Easy-to-read. 6" diameter dial. For outperforming conventional meters. For saws, bandsaws, etc.

APPAREL/ACCESSORIES

BUSINESS OPPORTUNITIES
KITCHEN SAVERS INSTITUTE. Learn all aspects to start and operate successful independent business. No franchise fees. Save thousands! Cabinet refacing and restoration workshops includes: installation techniques, job pricing, marketing and support assistance. 1-800/265-4183.

FINISHING/RESTORATION

HARDWARE
WOODWORKERS HARDWARE! Free catalog, specialty hardware, kitchen accessories, tools, and more. Satisfaction Guaranteed! C.L.E. Suite. 1277/789, Waco, TX 76708.

HARDWOODS/LUMBER

THINWOODS 17/64" - 3/8" thickness. Perfect for scroll sawing, crafts, books, musical instruments and more. Ask to Zebrawood. Free brochure Call 1-800/514-3449 Sherwood, Columbus, MO.


HELP WANTED
EASY WORK! EXCELLENT PAY! Assembly Products at Home. Call Tom 1-800-367-8040 Ext: 1189.

HOME FURNISHINGS
UNFINISHED MAHOGANY DINING ROOM CHAIRS. Save by Finishing Yourself, Ball & Claw, Hand Carved, Four Styles of Chippendale Seat With Muslin Cover. $135.00 Delivered. Reproduction galleries. 1-812/244-1168.

INSTRUCTION/EDUCATION
THE SCHOOLS OF CLASSICAL WOODCARVING. Learn or improve fine hand carving skills from British master carver Ian Agrell. Call 415/826-2180.

WOODTURNING INSTRUCTION BY RUSS ZIMMERMAN, in your shop or on your lathe. Since 1976 over 2000 improved and satisfied students. 312-242-6989.

MUSIC/SUPPLIES
PLANS, KITS, SUPPLIES for musical instruments: Harp, drum, cello, violins, banjo, guitar, more. Musician's Kits, Dept 585, PO Box 2117, Stillwater, Minn. 55082. 612/380-4078.

PLANS/KITS/PATTERNS
SHAKER FURNITURE KITS from New Hampshire. Easy to assemble. All solid Red Oak, Reasonably priced. Call 1-800/669-3907 for Catalogue.


HOME ENTERTAINMENT CENTER PLANS Up to 31" TV, 4 shelves. Unique design. $30.00. $20.00 S/H. To 8 weeks delivery. Drawings Unlimited, BO Box 3927, Barnum, MN 56514-0927.

TEN BEST SELLING PLANS Complete with easy to follow instructions. Send $1.85 to: Jiffybox, Box 12901, Florence, SC 29504, 803/354-8034.


W O O D  C L A S S I F I E D  M A R T
For rates: 1-800/424-3090 Fax 312/464-0512
WHERE SAFETY BEGINS

Kickback: Don’t let it happen to you

Safety Man Mike Gililland tells you how to deal with this sawing danger

Mike Gililland is a lifelong woodworker and an engineer with 25 years’ experience designing and working with woodworking power tools to make them safer. A resident of Missouri, he owns and operates a safety-consulting firm.

Send your safety-related question, stated simply, with a SASE to: The Safety Man, WOOD® Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379. Not all questions will be published, but each will receive a reply.

For this photograph, Victor Baker re-created what happened when his radial-arm saw kicked back a 2x2x18” piece of pine. It penetrated a fiberglass garage door and flew 15’ into the driveway.

O of the many reader questions that I received in response to my first safety column (“What your owner’s manual can do for you,” WOOD magazine, October 1995), one from woodworker Victor Baker of Jefferson, Ohio, really caught my attention. Vic’s photo above vividly depicts what can happen (ouch!) when you try to rip wood incorrectly on a radial-arm saw.

Vic had a binding or misalignment problem, both causes of kickback. To avoid them, be sure the blade—a sharp one—is parallel to the fence before you rip. Check the alignment often (radial-arm saws become misaligned more easily than tablesaws). Here are some other guidelines:

- Always stand at the infeed side and out of line with the workpiece (as Vic luckily did). Keep your hands there, too.
- Never reach around the blade to pull at the board.
- Use a pushstick to feed and a feather board to steady the work.

- For radial-arm saws, set the nose (infeed side) of the guard to just clear the work. Also set the antikickback fingers and spreader at the outfeed side.

Along the same line, William Belz, Jr., from Cheektowaga, New York, wondered what is the best thing to do if the wood you’re ripping does start to bind. In this case, “best” may be a relative term, but here’s what I do if it happens during the cut: Hold the workpiece firmly in place—don’t let it move—and turn off the saw. When the blade stops, remove the wood and correct the problem. Trying to retrieve a bound board with the saw blade moving only worsens the situation. And remember to always check the blade-to-fence alignment after repositioning the fence. It takes just a few seconds to correct for potential binding.

Remember, too, that a binding board might kick back. If you believe it’s inevitable, get out of the way! One great woodworking tragedy is the sacrifice of personal safety for the sake of a piece of wood. No matter what the board costs, it’s replaceable. Your fingers (or worse) are not.

Safe thin-strip ripping

For ripping, owner’s manuals tell you to keep the wider portion of the board between the blade and the fence. That’s to encourage you to push that part of the board. Pushing on the part outside the blade can result in kickback (look at Vic’s photo if you doubt how serious that can be). But this requires always readjusting the rip fence. Rushville, Maryland, reader Kent Drew wants to know a safe way to make repeated narrow rips without readjusting the fence.

There are several ways, Kent. And you can make a number of fixtures to help you, but they mostly require removing the blade guard. Here is one method I like that retains the blade guard for added safety.

Continued on page 84
Clamp the auxiliary fence (shown in drawing below right) to the saw’s rip fence with C-clamps. Use the pushblock (see Pushblock drawing right), resting on the flat part of the auxiliary fence, to do the feeding. With a pushstick in your free hand, guide the board carefully without applying pressure against the blade. Of course, follow all other safety instructions on ripping, too, including using the blade guard and standing out of the line of a possible kickback. Also, use only unwarped, knot-free wood to avoid splintering and binding. And as a rule of thumb, I recommend starting with a board that is less than six rips wide. Stability is harder to maintain with a board wider than that.
FREE Shipping thru 10/31/96
10% to 20% OFF (Listed Items)
SUPER FALL COMBO SALE

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

WOODWORKER II
ALL PURPOSE RIP & CROSSCUT

WOODWORKER II LIST SALE 10% 20%
12"X40"TX1  $163 $129 $116 $103
10"X40"TX1/2 or 3/2"  $196 $156 $119 $107 $96
8-1/4"X40"TX1  $196 $156 $119 $107 $96
8"X40"TX2  $196 $156 $119 $107 $96
OTHER SIZES AVAILABLE

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

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

ONLY $62... $50
NET COST TO YOU AFTER USING SHARPENING COUPONS

WOODWORKER I - CROSSCUT
FOR TABLE AND RADIAL SAW

DURALINE Hi-A/T FOR TABLE & RADIAL SAWS
ALL FLAT FACE
5/8" HOLES. Boring up to 1-1/4" $7.50 extra. Larger holes—time basis. Shipping $4.90.

FOR SPECIAL PRICE COUPONS
MENTION WOOD MAGAZINE.

BUSINESS OPEN ACCOUNTS AVAILABLE

FOR TOOL SUPPLIES & OTHER MAKES OF CARBIDE BLADES OR DADO SETS. Coupons expire 12/31/96.
Most mention WOOD magazine for discounts & coupons with purchase.

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

I just purchased your WOODWORKER II 3/2 blade, and I AM TICKLED PINK with it. My RYOBI PT 3000 saw acts like it had a 3 H.P. motor in it. Cuts so much easier and quieter and smoother. Don't need my jointer or sander now.

P. Rose, PA

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

I also am going to send you my old Craftsman blade to sharpen. I'm not satisfied with our local sharpening. Now, how to justify another one of your blades.... because I don't ever want to be without one.

Rick Price

NEW DELUXE DADO-KING! AS LOW AS $184 NET
AFTER USING SHARPENING COUPONS

C-4 Carbide Tips — 4 on each chipper with special negative rake angles.

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

BLADE DAMPENERS-STIFFENERS

REDUCES NOISE 50%–75%

WE RECOMMEND OUR FACTORY SHARPENING as some local sharpening creates problems with MICRO-CHIPPED EDGES reducing blade life & cutting quality.

3-5 DAYS ON THESE AND ALL MAKES OF FLAT FACE & CONCAVE CARBIDE TIPS SAW. Ship via UPS. Typical 10x40T $17.00, 40T $19.00. Add return UPS $5.00, $1.00 each additional blade.

FORSTEN MANUFACTURING COMPANY, INC.  461 RIVER ROAD, CLIFTON, NJ 07014  FAX (201) 471-3333

Stainless 0.020 Carbide (above), left. and FORSTEN with sheep Cafion and Coredon reinforced Tungsten Carbide Carbide Tips (below). Each shown after cutting 3,000 feet of MDF. Similar results obtained cutting particle board, melamine, and plywood.

SPECIAL COMBO SALE
EXTRA 10%-20% OFF
CARBIDE IS THE HARDEST OF THE C-4 GRADES AND 45% STRONGER, NOT WEAKER!
FOR 50% TO 90% LONGER LIFE.

WE RECOMMEND OUR FACTORY SHARPENING as some local sharpening creates problems with MICRO-CHIPPED EDGES reducing blade life & cutting quality.

3-5 DAYS ON THESE AND ALL MAKES OF FLAT FACE & CONCAVE CARBIDE TIPS SAW. Ship via UPS. Typical 10x40T $17.00, 40T $19.00. Add return UPS $5.00, $1.00 each additional blade.

B/S new 5/8" Bore NEW $239 $210 $201 $192 $184
5" D. 5/8" Bore $232 $210 $201 $192 $184
10" D. 5/8" & 1" Bore $330 $307 $301 $295 $289
12" D. 1" Bore $438 $404 $398 $392 $385
(Bore up to 1-1/4" Add $25—Plus $5.50 S/H)

Standard C-4 Carbide (above), left. and FORSTEN with sheep Cafion and Coredon reinforced Tungsten Carbide Carbide Tips (below). Each shown after cutting 3,000 feet of MDF. Similar results obtained cutting particle board, melamine, and plywood.

Still sharp after 6 feet of cutting.

For special price coupons mentions WOOD magazine.

For tool supplies & other makes of carbide blades or dado sets. Coupons expire 12/31/96. Most mention WOOD magazine for discounts & coupons with purchase.

Quality is why we're different!
Put some Uncommon tools to work for you and achieve Uncommon results!

Our tools are uncommon, and unmatched, in quality, variety and value. Over 60 pages of woodworking tools provide you with the largest selection of router tables and accessories available in the U.S., as well as, many other unique and useful tools. More than a catalog, it's also a wealth of information that will enlighten and inform anyone who works with wood.

Call Today!
800-344-6657
5323 W. Kimberly
Davenport, IA
52806-7126

WOODHAVEN

TURNING TOOLS & SUPPLIES
Largest & Best Selection - ANYWHERE

PENS/PENCILS
Best Selection & Program - ANYWHERE

TURNING BLOCKS & SQUARES
Best Selection - ANYWHERE

PEN BLANKS
Biggest & Best Selection - ANYWHERE

WOODCRAFTERS
OF OKLAHOMA
5700 S. Western - Oklahoma City, OK 73109
TOLL FREE 1-888-333-7513

Buckboard Bench Kit
(Real Springs)

Kit Includes:
Authentically designed steel springs that give a little, steel arms and backrails, complete hardware and full-size plans with detailed instructions.
42"Lx22"W, 18"H to Seat, 30"H to Back
Price: $495 (Quantity discounts available)
Pre-cut & drilled oak: $700 Additional

The Roudebush Company
PO Box 348A, Star City, IN 46985
800-847-4947

Visa, MC accepted, price includes shipping UPS

Attention: Woodworkers

FREE WOODWORKING PLANS

3 FREE Project Plans
*Send $2.00 for our catalog and we will include a FREE project plan featuring FULL SIZE patterns for the coat rack, birdhouse and hanging pot holder projects illustrated above. (Reg. Price $7.95) Our 84 page full color catalog offers over 800 woodworking plans you can purchase. We have plans for wood chimneys, birdhouses, furniture, scroll saw projects, toys, lamps, whirligigs and many other award winning projects.

I am enclosing $2.00. Please send catalog and plan for three projects.

NAME

ADDRESS

CITY

STATE

ZIP

Meisel Hardware Specialties
PO Box 70 W
Mound, MN 55364-0070

CUSTOM WELDED BANDSAW BLADES

70 Years Of Cutting Edge Service

- Good: Top quality blades for every use
- Tough: All welds guaranteed
- Fast: 97% of orders ship the next day
- Easy: Toll free and fax order line

1-800-543-8864
FAX (513) 860-0578

4930 Provident Dr. • Cincinnati, OH 45245

Buckeye Saw Co.

PLAN #24 - $7.95

PLAN #25 - $11.95

PLAN #26
$7.50

"SIZZLER" MOTORCYCLE PLAN - 14" long Classic Soft-tail construction. Detailed frame & engine, Spoked wheels, turning Fork, working Kick Stand, choice of seats, & other options. BLANK includes stand.

"FITGER JET" - 14" long - is a cut-out & trace project, generally taking a weekend or so, and is designed simply but with the realism and details of a real modern day fighter jet. PLANS include stand.

For PLANS send U.S. check or U.S. money order in the above amount to:
GATTO PLAN SUPPLY
55 Dogwood Road
Hampton, VA 23666
Gorilla
AND SONS

Knife Catalog
Lowest Prices!

Send for our New 1997 Catalog!

NAME:
ADDRESS:
CITY: STATE: ZIP:
PHONE: ( )

Featuring A Wide Selection Of Brands & Styles!

2 issues — $5.95 each
3 or more — $4.95 each

Send the month and year of the issue(s) you want, along with your check or money order to:
WOOD Magazine, P.O. Box 9255, Dept BI-SA,
Des Moines, IA 50306.
NO ADDITIONAL CHARGES! Postage, handling,
state and local taxes included in price.

FOR FASTEST SERVICE, CALL TOLL FREE
1-800-572-9350
7 a.m. – 9 p.m. CST. (MasterCard and VISA accepted.)

For All Your Woodcarving & Sign Carving Needs

Terralco provides a full line of machine
carving and sign carving equipment.
Beginning models are the T-110 single
spindle bench carver and our CM614
single spindle sign carver.

Intermediate models include the K-Star,
a two-spindle heavy duty bench model,
and the Northstar, a heavy duty floor
model available in one to eight spindles.

Our advanced model is our Master
Carver series, which is an extremely
heavy duty floor model from eight
to forty spindles.

Write or call for more information.
NEW FROM
OLSON

Free Blade Offer
The experts agree, PGT’s are “The Best” Scroll Saw Blades You Can Buy!
The Smoothest Cutting, Most Accurate, & Longest Lasting Scroll Blades Made.
Available from your Olson Dealer
5° Plain End Blades with Reverse Teeth. Univ. Sizes 5, 7 & 9.
Free Blade Offer
Send Self Addressed
Stamped Envelope for One Each of # 5, 7 & 9.

Name
Address
City
State Zip

The Olson Saw Company
16 Story Hill Road, Dept. VM
Bethel, CT 06801
Fine Quality Saw Blades Since 1918

Van Dyke’s Presents a Catalog with supplies for upholstery, antique restoration, woodworking, caning, brass, hardware, carvings and many related trades! 46 Years in Creative Arts & Trades Many Hard-To-Find Items! SEND $1.00 FOR CATALOG TO: VAN DYKE’S RESTORERS Dept. R56966, P.O. Box 276, Woonsocket, SD 57383

CLARK’S BENCH TABLE®

INNOVATIVE NEW PROJECT! EASY to build • EASY to use & move • Super sturdy design NO SHIPPING & HANDLING FEE! Kill a few hours • $12.00 Complete galvanized hardware (for one table) • $10.00 Also available as easy-to-assemble kits in various widths (please call for prices) For color picture and information please GASE plus $1.00, which will apply to your order
(800) 265-5797
Clark’s Bench Table, 1870 Palmera Ct., Laughton, NV 89029

SHAKER PEGS CANDLE CUPS MUG PEGS $15.95 per 100, prepaid. Wide selection of other wood products. Catalog $1.00 or free with order.
Benny’s Woodworks P.O. Box 840, Dept. WD67 Shelbyville, TN 37160 1-615-884-8995 • 1-800-255-1335

Shaker Peg Mug Peg

Miniature Furniture Plans & Kits As seen in the “Wee Wonders” article in the June issue of WOOD
KITS made with furniture quality hardwoods
PLANS detailed with full instructions
MINIATURES ARE SUCH FUN! PLANS
Country Cupboard Buffet .................................................. $9.00
Shaker Settee Rocker .................................................. $5.00
Colonial Rocking Horse .................................................. $6.00
PERKINS MINIATURES 1708 - 59th Street • Des Moines, IA 50322-6102 Send $2 for complete list of Plans & Kits

The Japan Woodworker’s Catalog is . . .
loaded with the best tools you can get your hands on. In our catalog you will find a huge selection of Japanese saws, waterstones, chisels, planes, carving tools, gouges and books. Send $1.50 for our catalog and supplements during the next two years.
THE JAPAN WOODWORKER 1731 Clementi Rd., Alhambra, CA 91801 Phone: 1-800-537-7802

SK-28SP TILTING SPINDLE SHAPER
3HP, 1 or 3Ph, 1° or 3° spindle, overload protection, forward and reverse switch, 30° spindle tilt, 3 speeds, optional sliding tables and 3/4° spindle, 340 lbs.

SEC0 INVESTMENTS COMPANY WOODWORKING DIVISION 145 W. Whittier Ave., Van Nuys, Ca 91408 Tel (213) 256-1792 Fax (213) 256-1792

SQUARE DRIVE SCREWS Simply the Best
Square Drive Beats Driver Slippage
Deep Thread for Super Grip
Hardened Steel for Superior Strength
Made in the US or Canada!
Send $5 for Samples, Catalog, & $5 Off Coupon

McFEELY’S SQUARE DRIVE SCREWS
PO Box 11169 • Dept. WD Lynchburg • VA 24511-1169
Call Toll Free: 1-800-443-7937

If you’re building the outsides, we’ve got the insides! Call or write for our FREE clock parts catalog. #W2 S.LaRose, Inc. P.O. Box 21301 3223 Vanceysville St. Greensboro, NC 27405 (919) 621-1936

Circle No. 109
"Woodworker’s Marketplace" 15034
Circle No. 230
Powerful Thinking

Powerful thoughts bring powerful results. Watch our free demonstration video on the Robland X31 combination machine and you will see the powerful thought process that has gone into the design of this Belgian success story. Every woodworker’s dream, combine:

- 12" Jointer/Planer
- 10" table saw
- 3, 3HP motors (German)
- Cast iron sliding table system
- 50" rip capacity
- Shaper
- 20 seconds to change functions
- Mortiser

Put the power in your hands today. Call (800) 234-1976, for your free demonstration video.

LAGUNA TOOLS
2265 Laguna Canyon Rd., Laguna Beach, CA 92651 • FAX (714) 497-1346

Circle No. 615

HEGNER
Precision Scroll Saws and more...

- No sanding
- Quick blade changes
- Smooth & quiet performance
- Easy financing now available

FREE '96 CATALOG

Advanced Machinery
P.O. Box 312, Dept 744
New Castle, DE 19720

Call for a FREE catalog
800.322.2226

HEGNER...the better scroll saw

ACCURA
Combination Machine

Circle No. 3

NEW!
PERMATRAK
Full Function Drill Press

Model 5740

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

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

Shaping Your World Since 1928.
$129.50 Price good thru 1996
Plus Freight. PA residents add 6% Sales Tax
ORDER NOW TOLL FREE
1-800-435-8665

American Machine & Tool Co., Inc.
400 Spring Street, Royersford, PA 19468
You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below. Each company mails the catalogs or information directly to you.

POWER TOOLS

SCROLL SAW, CRAFT & WOODWORKING CATALOG—Our '90 catalog features the 7 models of HEINER Precision Scroll Saws, the consistent choice of the experts. Information on scroll saw blades and accessories is included. Also ZYLISS Portable Vise, ACCURA Banchtop Combination Machine, HENGER Lathes and Duplication, METABO Hand Tools, and PLANOR Vertical Glue Press information. ADVANCED MACHINERY. Free. Circle No. 3.

HARBOR FREIGHT TOOLS CATALOG—The finest professional quality tools and equipment at the lowest prices. GUARANTEED! Our NEW Woodworking catalog has been expanded to contain hundreds of additional brand name woodworking tools & supplies. See why millions of woodworking professionals and Do-It-Yourselfers have trusted Harbor Freight Tools for over 27 years. HARBOR FREIGHT TOOLS. Free. Circle No. 48.

LOBO POWER TOOLS—Fine crafted woodworking power tools, top quality, affordable prices. A commitment to quality since 1972. Free Catalog & full selection warranty. We sell a complete line with many options for our band saws, table saws, planers, jointers, double drum Sanders, edge Sanders, wide belt Sanders, power Sanders, and hand Sanders. Send for our free brochure. LOBO POWER TOOLS. Free. Circle No. 87.

EUROSHOP COMBINATION MACHINES—Com-plete line of combination machines from Europe, designed for the American woodworker. Highest quality table saw, planer, jointer, tester, router and more. Send for free brochure. OLD WORLD MACHINERY CO. $1.00. Circle No. 73.

CATALOGUE OF UNIQUE PRODUCTS FOR THE WOODWORKER—Filled with products and projects you can't find anywhere else. The 36-page full-color catalog features our complete line of Dust Collectors and accessories, Air Cleaners, Air conditioners, Scroll Saws, Planers, and the exclusive Carbide II variable speed mini mill. If you're looking for a unique line of products and supplies including catalog, kits, parts, hand tools, hand cutters, etc., written in English or French. Send for our catalog. PENN STATE INDUSTRIES. Free. Circle No. 75.

DUST COLLECTOR SYSTEMS—Keep your shop clean and safe from saw dust with one of our large capacity Commercial Style Dust Collector Systems. Call for your free demonstration. Our DCS-6 and DCS-8 Systems are now available in 110v, 220v, and 240v models. SANDING & HAYDEN. Free. Circle No. 76.

SURFACE PLANER—Information package available from Penn State Industries describing the specifications and applications of its super 12 inch surface planer. Special discount price available on current promotion. PENN STATE INDUSTRIES. Free. Circle No. 75.

NOW'S THE TIME TO EXPERIENCE THE PERFORMAX DIFFERENCE—Minimize your sanding time with a Performax Drum Sander and benefit from our ten year anniversary offer. Purchase a 16-32 Plus and receive a free Metal Stand (a $100 value) or select the 22-40 Plus and receive a free TensionPaddler (a $50 value). Nine models to choose from. PERFORMAX PRODUCTS. $1.00. Circle No. 78.

DRUM SANDER: UNIQUE, COST SAVING—Using plastic soda bottle as drum and sheet sander paper with your own hands. Can save you $25.00 or more. Send for our Free Technical Data-sheet. SANDACO CORP. $1.00. Circle No. 79.

THE POWERMATIC CATALOG—Includes pictures, descriptions, and specifications of the complete Powermatic line of woodworking machinery. The catalog contains information on the heavy-duty production equipment as well as the benchtop machinery needed for the serious home woodworker. POWERMATIC. Free. Circle No. 81.

THE ADVANTAGE—That's what you have over other woodworking when you shop the SECO MACHINE tool line. SECO MACHINERY. With choices of straight-line rip saws, wide belt Sanders, dust collectors, power feeders, and lots...lots...lots...write today for a catalog of this woodworking equipment. SECO MACHINERY. Free. Circle No. 83.

TOOLS ON SALE—A division of Seven Corners Ace Hardware, Inc. has SECO MACHINE on display. Of all the most popular brands of power tools available anywhere, all at discounted prices. Included are saws, planers, Sanders, routers, drills and more from manufacturers such as Black & Decker, DeWalt, Freud, Bosch, Delta, and many more. Now introducing a full range of Warner brand Sanders. Tools on Sale division of SEVEN CORNERS ACE HARDWARE, INC. $1.00. Circle No. 92.

WILLIAMS & HUSSEY—Thousands of professionals use our American-made molder/planners to produce curved or straight moldings. Over 40 years of experience with a 5-year warranty. Send for our catalog or call for a free brochure. WILLIAMS & HUSSEY. $1.00. Circle No. 83.

THE LATEST SUNLUX MACHINERY CATALOG—If you're looking for quality woodworking machinery at affordable prices, Sunlux has what you need. Table saws, planers, Sanders, routers, sanders, edge cutters and many more. All machines carry one year warranty. Catalog SUNLUX MACHINERY. Free. Circle No. 97.

HAND TOOLS


IMPRESS YOUR WOODWORKING SKILLS!—Craftsman around the world have discovered the secret of better quality work. The 72 page Japan Woodworker's Catalog is loaded with a huge selection of Japanese saws, planes, chisels, hand tools, Japaneses design, tool books, planes, cutting and garden tools. Send for 1994 catalog and all supplements for two years. THE JAPAN WOODWORKER. $1.50. Circle No. 197.

STAINS/FINISHES

PERFECT PEN POLISH—NEW Developed for pens but great for any small lathe turned object. Pen Turning Manual, everything you need to know from wood selection to marketing. A complete line of pen making supplies—many styles of mechanisms, unusual pen turning materials such as dried sanded burrs and spindles, a variety of pen supplies. HUT PRODUCTS FOR WOOD, INC. $1.00. Circle No. 230.

PLANS

PATTERNS! PATTERNS! PATTERNS!—Huge assortment of designs to suit your needs. OER 1500 top quality FULL SIZE PATTERNS conveniently grouped into 70 jumbo blueprint sets. We've also included easy-to-follow instructions for making and painting a PLUS tips & techniques! Beginner or pro will enjoy creating 100's of fun, profitable projects! Discount prices, fast service, satisfaction guaranteed! Illustrated catalog in simple patterns, ACCENTS IN PINE. $2.00. Circle No. 310.

WOODWORKERS’ PLANS AND SUPPLIES—Wood projects are simplified with this high quality plans, specialty hardware and other supplies of high quality at moderate prices. Over 200 projects are available for making toys, decks, clocks, pool tables, lamps, chests, and other furniture. Moisture, dyes, moldings, ornaments, dollhouse kits, door hardware, and turning tips are also available. ARMOR PRODUCTS. $1.00. Circle No. 315.

FREE SCROLL SAW PATTERN CATALOG—A beautifully illustrated catalog showing our full line of woodworking patterns and accessories: shelves, mirrors, video, books, baskets, clocks, fans, drills, drill bits, doll furniture, toolboxes, and much more. Too much information to print here—you just get the catalog for free today! THE BERRY BASKET. Free. Circle No. 323.

“YOU CAN MAKE IT” CATALOG—This comprehen- sive 60-page catalog is one of the best resource books any woodworker can have. It shows hundreds of project plans ideas for indoor and outdoor furniture, outdoor structures, play gyms and playhouses, rocking horses, toys, doll houses, home improvement and a variety of woodworking books. The catalog also includes handy reference information on fasteners and a $4.00 catalog rebate coupon. Request “WBM6”. CRAFT PATTERNS, INC. $4.00. Circle No. 326.

FULL-SIZE FURNITURE PLANS CATALOG—Illustrated and describes over 500 plans for making furniture of quality found in museums and fine furniture stores. Plans include roll top desk, cradles, dining tables, chairs, bureaus, bookcases, tool chests, poker table, children’s furniture, rocking horse, spinning wheels, and more. Bill of materials exploded drawings assist the woodworker. FURNITURE DESIGNS, INC. $1.00. Circle No. 345.

GATTO PLAN SUPPLY—Sticker for Detail Realistic Wood Block Models that you can build with your own scrap wood, dowels and my easy to follow instructions. 1864 pages of plans for just $1.50. Detail Plan Supply PLAN B. ACE VINTAGE CARS, TRUCKS, TRACTOR TRAILS, Mug Cars, Construction Equipment, Farm Tractors, Fire Engines, Steam Engines, and many more are designed for beginners to advanced woodworkers. Plans are enough to cover the step-by-step instructions with tips proved to produce a collection to be cherished a lifetime. Plans from 50 to 250 separate parts. Brochure. GATTO PLAN SUPPLY. $1.00. Circle No. 375.

PROJECT PLANS—Full-size plans for over 850 easy-to-build woodworking projects. Nation’s leading source for scroll saw patterns, cow projects, toy plans, yard ornaments, wood furniture, etc. Over 3000 hard-to-find specialty items. Send for big new 100-page full-color catalog. MEISEL HARDWARE SPECIALTIES. $2.00. Circle No. 407.

SCROLLSAW PATTERNS GALORE—Choose from over 400 unique, creative patterns and advanced, complex projects. Projects for the hobbyist or professional scroll sawist. Make gifts or make projects for resale. Choose from shelves, houseware items, toys, folk art, arrows, kennels, lamps, and many other original craft ideas. Our FULL-SIZE patterns make your scroll sawing easier and more fun! Send for our FREE descriptive catalog. SCROLL SAW HINTS offering information and tips on using saws, stories about scroll sawers worldwide, reference material, plus a listing of Nelson Designs’ projects—a great resource for you. Order your copy today! NELSON DESIGNS. $1.00. Circle No. 410.

PLANS & KITS FOR MINIATURE FURNITURE—Build some of Don Perkins’ furniture as seen in the “Wee Wonders” article in the June issue of WOOD magazine. Designs, patterns and kits for many early period American furniture pieces are now available to help you build chairs, tables, shelves, stands, beds, cradles, cupboards, rockers and many other items to furnish that dollhouse or room box. Illustrated price list. PERKINS MINIATURES. $2.00. Circle No. 423.

WOOD TOY PATTERNS—Patterns for all ages including children’s patterns and extremely advanced. New catalog has many new patterns to choose from including parts and wheels. Send for new catalog today! TOYS AND JOYS. $1.00. Circle No. 443.


TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 98
QUALITY EXOTIC LUMBER/TURNING WOODS—We offer a complete line of exotic & rare species woods. Available are woods such as Bubinga, Afromosia, Peroba, Rosewood, Yew, Zebrawood, Purpleheart, Macassar Ebony, Santos Mahogany, etc. Prices are available upon request.

LUMBER

WOODWORKING SUPPLIES—Blocks, pegs, cups, hearts, heads, handles, brackets, spindles, shelf brackets, glaze, clock parts, brackets, bells, dowels, spindles, knobs, beads, picture hangers, cup hooks, pins, screw eyes, game pieces, novelty items, and much more.

BENNY'S SUPPLY


GRIZZLY IMPORTS, INC.—Celebrate 1998 with our 176-page full-color catalog packed with an incredible selection of quality machines, tools, and accessories at prices you can afford. We've added over 1,000 new items this year alone! Send for your free catalog today and start enjoying tremendous savings on all your woodworking needs. GRIZZLY IMPORTS, Inc. Free Circle No. 890.

HARTVILLE TOOL—Get your hands on some of the best woodworking tools and supplies around. All at the lowest prices you'll find. Great for all levels of woodworking, offering top-quality tools and accessories at prices you can afford. Send for your free catalog today. CRAFT SUPPLIES USA, $2.00. Free Circle No. 855.

WOODWORKING BLADES AND SUPPLIES—Large selection of top quality band saw, scroll, and fret saw blades including the new Cleon PGT precision ground tooth fret saw blade with reverse teeth. Also high quality coated abrasive drills, discs, and accessories at prices you can afford. We've added over 1,000 new items this year alone! Send for your free catalog today and start enjoying tremendous savings on all your woodworking needs. WALNUT CREEK WOODWORKING SUPPLY CO. Free Circle No. 1299.

COMPLIMENTARY TOOL CATALOG—Woodcraft offers over 4,000 of the finest quality woodworking tools, books, supplies, and cabinetry hardware in our complete full color catalog. Craftsmen, cabinetmakers, carpenters, woodworkers have relied on Woodcraft for over 75 years. Woodcraft is an independent company, not a subsidiary of Woodcraft. Free Circle No. 1299.

THE WOODWORKERS' STORE CATALOG—The catalog that helps woodworkers do it right! Discover over 200 new products, including exciting items for making computer desks, entertainment centers, kaleidoscopes, jewelry, and much more. Woodcraft offers a complete line of quality woodworking tools, books, supplies, and cabinetry hardware in our complete full color catalog. Craftsmen, cabinetmakers, carpenters, woodworkers have relied on Woodcraft for over 75 years. Woodcraft is an independent company, not a subsidiary of Woodcraft. Free Circle No. 1299.

Satisfaction guaranteed! THE WOODWORKERS' STORE. Free Circle No. 955.

THE WORLD'S BEST TABLE SAW FENCE—Evolution & Pro-Fit manual saw fences for the hobbyist & professional user. Fits all table saws made. Woodcraft offers a complete line of quality woodworking tools, books, supplies, and cabinetry hardware in our complete full color catalog. Craftsmen, cabinetmakers, carpenters, woodworkers have relied on Woodcraft for over 75 years. Woodcraft is an independent company, not a subsidiary of Woodcraft. Free Circle No. 1299.

Satisfaction guaranteed! THE WOODWORKERS' STORE. Free Circle No. 955.

WOOD-FRIENDLY LOW-LIGHT MEASUREMENTS—Uses a new patented electronic wave technology to accurately measure wood moisture content from 6% to 30% in just seconds. No pins to "abuse" wood and leave holes. No waiting for measurements to stabilize. Make it a must for anyone working with wood. Literature.

WAGNER ELECTRONIC PRODUCTS, INC. Free Circle No. 1285.

UNCOMMON WOODWORKING TOOLS—American made quality router tables and fences, dovetail jigs, unique router biscuit joinery system, mortise machines, pin router, router bits, videos, commercial grade router bits and more. Free from the manufacturer. First, friendly, knowledgeable service. WOODHAVEN, $20.00. Free Circle No. 1290.

KEEP YOUR SHOP AND LUNGS CLEAN—Enjoy the benefits of a last year mobile workbench. The Dust Elimination Workbench removes up to 99.9% of the dust before it becomes airborne. For dust created by other tools, common sense tells us that wood, even as dust, has weight and is affected by gravity making it difficult to be collected at the dust extractor of a woodworker's head. This is why it is much more efficient to collect dust particles at wrist level. The workbench top is made of solid oak and features a special patented cross-milled kick-off rail for increased choice of wood craftsmen. WOODMARK, $1.00. Free Circle No. 1295.

BITS, BLADES, CUTTING TOOLS

BANDSAW BLADES FOR ALMOST ANY TYPE BANDSAW—both wood and metal cutting. Also circular saw blades, router bits, bandsaw blades and discs. Send for catalog. BUCKEYE SAW CO. $1.00. Free Circle No. 1307.

FOUR-COLOR ROUTER BITS AND SAW BLADE CATALOGUES FROM CMT USA, INC.—Router bits and saw blades ideal for production work. Features include premium Carbide-Tipped saw blades from CMT USA, high-speed steel from CMT USA, carbide-tipped saw blades from CMT USA, and a new line of Carbide-Tipped router bits. Catalogs are available in four-color format. CMT USA, INC. Free Circle No. 1312.

FREUD—Premier line of carbide-tipped sawblades, router bits, shaper cutters and other woodworking tools, Freud offers a full-line on anti-kickback carbide-tipped router bits. Send for a free router bit catalog. FREUD. Free Circle No. 1325.

SUPERMOTTO EXTREMELY DURABLE, CARBIDE-TIPPED CIRCULAR SAW BLADES—Get a smooth-as-sanded surface with our full-carbide 40-tooth Woodworker Blade. You will be able to rip and crosscut with ease, using less pressure than ever before. The extra thick taper edge gives you a clean, levantly smooth finish. You will also be able to cross-cut oak and birch ply-veneer with no bottom splinters. Send today for our information pack. FORREST MG CO. Free Circle No. 1325.

PRODUCTION QUALITY CARBIDE TIPPED ROUTER BITS—Large discounts. New expanded catalog featuring a huge selection of Carbide-Tipped Router Bits, Radius Bits, Round Nose Tools, and Specialty Bits. Solid Carbide Tipped Bits, The Router Speed Control, plus our unique line of clamps, tools and supplies. Save 50% to 70%. Value, quality, and prompt service guaranteed! MLC LTD. Free Circle No. 1325.

OLSON SAW COMPANY FOR ALL YOUR SCROLL AND BAND SAW NEEDS—Contact Olson for a complete listing of companies that sell their extensive line of superior quality scroll and saber saw blades for all your woodcutting needs, including the new "Jiffy"™ Scroll Blade—"The Best" scroll saw blade available! A catalog of every type of scroll saw blade made on nearly every domestic and imported saw is also available. OLSON SAW COMPANY. Free Circle No. 1367.

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 96
SWEDISH SILICON STEEL BAND SAW BLADES—Special low carbon silicon steels available from 1/16" thru 1 1/4". We manufacture over 60 special saw blades for wood workers. The "AS" series Venner Bar, Timber, Plastic, & various other Blades. Impact-Pallet Disassembly Band, Special Banded, Band, Furniture Bands and many more. Catalogue. SUFFOLK MACHINERY CORP. Free. Circle No. 1370.

INDUSTRIAL QUALITY CARBIDE TIPPED ROUTER BITS & SCREW CUTTERS—Great selection at the best prices for anti-kickback design router bits and shaping cutters. Same day service. Ask about our specials and free catalog. WOODLINE ARIZONA INC. Free. Circle No. 1385.

INCOME OPPORTUNITIES

WOODWORKERS!—Have you created a plan or pattern? Would you like to sell it in a catalog? Earning income! You're the originator—You'll create the catalog. Send for information on how to submit your plan for review. CLARK'S BENCH TABLES. $2.00. Circle No. 1310.

SECURE FUTURE IN FURNITURE RESTORATION WITH MINUTEMAN—Earn $200-$1,000 per day stripping, repairing, refinishing, mirror resurfacing, veneering and more at home or in shop part-time or full-time. We provide complete training on all materials necessary. FREE workshop teaches you the basics in furniture restoration. Featuring Amity, the first complete line of waterbased furniture restoration products. Catalogue. MINUTEMAN. Free. Circle No. 1661.

MISCELLANEOUS

AMERICAN STEEL SPAN BUILDINGS—Designed with the do-it-yourselfer in mind. Our buildings are made in a heavy gauge steel with a 20-year warranty. Everything is pre-cut and pre-drilled, and just bolts together. A quality pre-engineered building with style and structural integrity at a price that everyone can afford. Send $15.00 firm price for full-color brochure. Send for FREE catalog. ANDERSON MFG. CO. Free. Circle No. 1735.

UNDERBED STORAGE DRESSER—Top quality solid wood, ready-to-assemble kits provide convenient storage space. Over 250 different models. Send $15.00 for Firm price for full-color brochure. Send for FREE catalog. VAN DYKE'S RESTORERS. $1.00. Circle No. 2077.

WHOLESALE GLASS BROKERS—High quality glass shipped to your door directly from the finest manufacturers. Table tops, tempered glass; shelves; beveled glass; custom shapes; E" to 1/2" thick, tinted glass; and much more! Send coupon and remittance to address above. Coupon expires November 10, 1997. WOOD WORKER'S RESOURCE.

Better Homes and Gardens® WOOD Magazine, October 1996 Dept. OCW96 P.O. Box 11736 Riverton, NJ 08077-7931

arenticat, WHOLESALE GLASS BROKERS. Free. Circle No. 2079.

PEN, PENCIL PRODUCTION SYSTEM—And equipment and supplies are detailed in free brochure. Anyone can produce high-quality pens and pencils from scrap wood. The system provides all equipment, supplies and consumables for your first set. Contact us for best prices on components and pre-cut, pre-drilled wood blanks. WOOD-MAKER INC. Free. Circle No. 2405.

CARVING SUPPLIES

WOOD CARVING MACHINES AND ACCESSORIES—Make all types of wood carvings quickly, easily, fun and profitable. The machines do the work. Whether for sign carving, flat-3D, decoups, panels, gun stocks or furniture, we have the machine for the job. Professional woodcarving for the hobbyist and superior quality for the professional. Begin your hobby or full or part-time business by ordering our catalog and price list. MARSH, INC. $1.00. Circle No. 2125.


WOODTURNING SUPPLIES—Best selection of woodturning supplies anywhere. Greatest selection of pen kits, pencil kits, project boxes, and display cases available. Selective, priced, selected, tool, little tools, etc. Over 250 different pen blanks including exotics, figured, acrylics, celluloids, and dendromons. Carving knives, tools and books. WOODWORKERS OF OKLAHOMA, INC. Free. Circle No. 2195.

CLAMPS

MERLE ADJUSTABLE CORNER CLAMP—Quick & easy to use. It forces corners together. Fully adjustable from 2 1/4" to 6 3/4". In perfect for framing picture frames, cabinets, or anything that requires corner clamping. The clamp is cast aluminum, all metal & metal & steel construction, a true industrial quality tool. Send today for information, MILCUT INC. Free. Circle No. 2250.

CLOCKS

KLOCKIT—The leading supplier of clock-making supplies for over 25 years. Quartz and mechanical movements, clock cases, dials and kits for all skill levels. KLOCKIT. Free. Circle No. 2335.

CLOCKS PARIS CATALOG—For the hobbyist and clock enthusiast. Contains clock parts, quartz and mechanical, clock movements for the hobbyist and clock repair person. Gift ideas include complete clocks, watches and novelty items. Your satisfaction guaranteed. S. LAROSE, INC. Free. Circle No. 2375.


FASTENING PRODUCTS

SQUARE DRIVE SCREWS—Thousands agree—once you try them you will never want to use anything else! The square drive recess virtually eliminates wood-damaging Chore bit "car-out", the deep threads results in excellent gripping power, treated for strength. Sizes from #4 x 1/4" to #12 x 4", stainless steel, stainless, brass, hard plate and zinc plated available. Catalogue for literature. McFEELEY's, $1.00. Circle No. 2450.

SHOWS & SEMINARS

"THE WOODWORKING SHOWS": MACHINERY, TOOLS AND SUPPLIES—Hundreds of products for the woodworker demonstrated and sold at discounted prices at every "Woodworking Show". In-depth seminars and free workshops on a variety of woodworking topics. Shows are scheduled in 27 cities. Send for free brochure. "THE WOODWORKING SHOWS". Free. Circle No. 2500.
Start Your Own Business! Be Your Own Boss!

BE A HOME INSPECTOR

...Unlimited opportunities for ambitious people! No previous experience needed!

Make $100.00 an Hour—or more!

Make no mistake—the number of home inspections being done each year is on the rise. With today's low home mortgage interest rates, real estate sales are on the up—banks and mortgage companies often insist that a home inspection be conducted by a qualified professional prior to sale. This means an incredible increase in demand and in money-making opportunities for trained Home Inspectors. Qualified Home Inspectors are earning anywhere from $100 to $300 per inspection—and the average home inspection only requires a few hours of time to complete. Think what that means in terms of total weekly earning potential.

WORK PART-TIME HOURS...
MAKE A FULL-TIME INCOME!

Another advantage of the home inspection field is that you can work full or part-time—often you can pick and choose the hours you work as well. Many Home Inspectors make a very comfortable income just working on the weekend. So whether you want to make additional money in your spare time or start your own full-time business,ICS can help you with training that includes all the basics you'll need!

Don't be fooled by other schools who try to duplicate ICS training—we give you all the lessons and equipment you'll need for much lower tuition!

ICS urges you to compare our training to other schools offering similar programs—with ICS you'll get everything you need—lessons, equipment, special supplements for far less tuition. And, with ICS, you can choose from several low monthly payment options at 0% interest!

Program designed by top leaders in the field!

This program was especially developed by experts in the field of home inspection and follows guidelines established by the American Society of Home Inspectors—the premier organization representing the field of home inspection nationwide. With this program you'll train at home in all the important areas of home inspection—from the roof to the foundation, you'll have the knowledge you need to get started fast!

No matter where you live—big city, small town or rural community—you can get the skills you need to break into this lucrative field with the ICS proven distance-education "Quick-Learn" method of instruction.

☑ Train at home, the hours you choose.
☑ Keep your present job while you train for a better one.
☑ No previous experience or special talent needed.
☑ No technical jargon or boring textbooks.
☑ Everything is explained in plain English.
☑ Lessons are broken into "bite-sized" units for quick mastery.
☑ The most affordable tuition—and the most convenient payment plans—fit every budget. No interest or finance charges ever!

You'll get plenty of practical "hands-on" training, so you'll have the confidence you need to make your home inspection career or business a success.

Mail coupon today for your free information package with all the facts about training at home to be a Home Inspector.

Growth in the real estate market is on its way up. Be ready to take advantage of the unprecedented opportunities that are waiting. Find out how you can train at home in your spare time to make money as a Home Inspector by sending for the complete information package shown here.

Or Call Toll Free: 1-800-595-5505 Ext. 2013

If coupon is missing, write directly to:

ICS School of Property Management
Dept. ABD596S
925 Oak Street, Scranton, PA 18515

SEND TODAY FOR FREE FACTS...

SCHOOL OF PROPERTY MANAGEMENT

925 Oak Street, Scranton, PA 18515

Dept. ABD596S

☑ 15 HOME INSPECTOR ☐ 04 Auto Mechanics
☑ 06 Electrician ☐ 25 Gun Repair
☑ 27 PC Repair ☐ 87 TV/VCR Repair
☑ 44 A+ Cert. Test Prep.* ☐ 85 Drafting
☐ 14 Air Conditioning/Refrigeration ☐ 53 Desktop Publishing & Design
☐ For personal enrichment ☐ 07 High School
☐ 31 Professional Locksmithing

SEND TODAY FOR FREE FACTS...

☐ 72 Appliance Repair
☐ Computer Programming
☐ 01 QuickBASIC
☐ 37 Visual Basic
☐ 36 Visual C++

Name ___________________________ Age _____________
Address ___________________________ Apt. ___________
City/State ___________________________ Zip ___________
Phone ___________________________
Wax cleans, protects, and polishes

In the past, I've tried dozens of products to polish and rust-proof the tops of my cast-iron machinery tables. All of them have shortcomings, so I was eager to see what Renaissance Wax could do.

I quickly found that this white paste wax spreads easily with a soft cloth. It takes minimal effort to buff out by hand and leaves a crystal-clear finish. Despite the humidity in my shop, I detected no rust or fingerprints over the course of about six weeks.

The manufacturer also says that Renaissance Wax can be used on furniture, so I applied some to a finished wood tabletop. The solvent in the wax picked up traces of dirt and grime even though the piece was clean and well maintained. Then, I buffed it to an even, mirror-like sheen.

To test the protective properties of this product, I waxed a piece of unfinished oak and poured a soft drink on it. After 30 minutes, I wiped the liquid off. The soft drink did not penetrate the wood, and I didn't see any discolored.

—Tested by Bob McFarlin

Jet's new cabinet saw has left-tilt blade

I recently had the opportunity to go to Jet headquarters near Seattle to test a preproduction sample of its new tablesaw above. The Jet XACTASAW Left, like its predecessor the XACTASAW Right, closely matches the Delta Unisaw in construction and performance. Unlike those two saws, the XACTASAW Left has a left-tilting blade. Not surprisingly, Jet positions this saw to compete against the only other left-tilting cabinet saw on the market, the Powermatic Model 66.

The XACTASAW Left comes with a 50° XACTA fence that closely resembles the 50° Biesemeyer fence on the Model 66. A similarly equipped Model 66 with a 3-hp motor costs $300 to $400 more.

In my tests, the XACTASAW Left performed flawlessly. Its fit and finish are excellent. I rank it about equal to the Model 66 except for its motor. The Model 66 comes with a high-quality, U.S.-made Baldor motor that starts more smoothly than the Taiwanese motor on the XACTASAW.

—Tested by Bob McFarlin

Big convenience from small clamps

How many times have you struggled to clamp something that was just too small or fragile for conventional clamps? Well, put away the rubber bands and clothespins. Your struggles are over.

With nonmarring pads that measure just ½x3/8", and a maximum jaw capacity of 4x⅜", Quick-Grip Micro Bar Clamps bring a new and much-needed level of precision, control, and convenience to small-part clamping. Like their bigger cousins, the regular Quick-Grip Bar Clamps, the Quick-Grip Micro Bar Clamps have a pistol-grip handle and quick-release trigger. Despite their small size, these clamps exert lots of pressure—more than enough for small projects. Although the small size doesn't translate into a small price, I think these clamps will prove essential for hobbyists and model makers.

—Tested by Bob McFarlin

PRODUCT SCORECARD

Renaissance Wax

| Performance | ★★★★★
| Price | about $19 for 8 ounces
| Value | ★★★★☆

Cutlery Specialties, 22 Morris Lane, Great Neck, NY 11024. Call 516/829-5899.

PRODUCT SCORECARD

Quick-Grip Micro Bar Clamp

| Performance | ★★★★★
| Price | about $10
| Value | ★★★★☆


PRODUCT SCORECARD

Jet XACTASAW Left Tablesaw

| Performance | ★★★★★
| Price | $1,699
| Value | ★★★★☆

Jet Equipment & Tools, P.O. Box 1349, Auburn, WA 98081-1349. Call 800/274-6848 or 206/351-6000.

Continued on page 100
Recent medical studies show that breathing wood dust can be hazardous to your health. The JDS AIR-TECH 2000 will dramatically improve the quality of the air in your workshop.

Our model 350 delivers 350 CPM of filtered air. This will clean the air in a 20 x 20 x 8 foot shop six and a half times per hour. For larger areas, our dual speed model 8-12 will deliver 800 or 1250 CPM of filtered air for only $495. Our model 10-16 will deliver 1,000 or 1,600 CPM of filtered air for $695.

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

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

$259.00
Model 350

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

To place an order or for the dealer nearest you call us toll-free.
And give yourself some breathing room.
Reciprocating saws offer something for everyone

I’ve tried many makes and models of reciprocating saws. But when it came time to buy one for myself, I purchased one of the smallest, the Porter-Cable model 9647 Tiger Cub. Although its 4.8-amp motor doesn’t match the muscle of saws in the 10-amp range, I’ve used it to cut everything from 4x4s to 4” cast-iron drain pipes.

The Tiger Cub’s top speed, 2,600 strokes per minute, matches that of the big saws. But it sometimes doesn’t cut as fast because it doesn’t have the power to maintain top speed under heavy pressure. The slim profile of the Tiger Cub helps you reach tight spots, but the greater weight and two-handed operation of the bigger saws give them more stability during the cut.

Although the Tiger Cub has enough brawn for the average homeowner, it’s not the ideal saw for everyone. If you remodel professionally, or plan on doing a lot of demolition, then you’re better off with a full-sized reciprocating saw such as the new Porter-Cable model 9737 Tiger Saw.

The first thing I noticed about this 9.6-amp saw is that it weighs nine pounds, putting it squarely in the heavyweight arena. What really interested me, though, are the Quick-Change system for replacing blades, and the dual-action cutting modes—orbital and straight reciprocating.

Compared to the blade clamps found on most other reciprocating saws (and the Tiger Cub), which require an easy-to-lose Allen wrench, the Tiger Saw’s Quick-Change system was a joy to use. To install a blade you simply give a half-turn to a spring-loaded collar located at the top of the reciprocating shaft. Then, drop in the blade and let go of the collar. The process takes just a second or two. To release the blade, you turn the collar counterclockwise about a quarter-turn. In my tests, the collar held blades securely and released them without a problem.

I was surprised that the orbital motion didn’t deliver a big increase in the cutting speed. It took me about four seconds to cut through a 2x4 with the saw in the orbital mode, compared with five seconds in the straight-reciprocating mode. (The Tiger Cub, which does not have reciprocating action, severed the 2x4 in seven seconds.) So the orbital motion will only save you a few minutes over the course of a big job.

One final point of comparison: For time-consuming cuts in metal, I prefer the Tiger Cub’s sliding on/off switch and dial-type variable-speed switch. The Tiger Saw’s trigger-type switch controls both the on/off function and the variable speed. This requires that you pay careful attention to your finger pressure when making cuts in metal which require slow blade speeds. On quick-cutting tasks, the all-in-one switch on the Tiger Saw proves more convenient.

—Tested by Bill Krier

<table>
<thead>
<tr>
<th>PRODUCT SCORECARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porter-Cable model 9647 Tiger Cub reciprocating saw kit</td>
</tr>
<tr>
<td>Performance</td>
</tr>
<tr>
<td>Price</td>
</tr>
<tr>
<td>Value</td>
</tr>
</tbody>
</table>

| Product 9737 Tiger Saw reciprocating saw kit |
| Performance | ★★★ ★★★ |
| Price | $170 |
| Value | ★★★ ★★★ |

Porter-Cable, P.O. Box 2468, Jackson, TN 38302-2468. Call 800/487-8665.
Our new G1067Z 7" x 40" Swivel-Head Wood Lathe beats the competition hands-down when it comes to quality and value. It can be used for spindle turning or the headstock and tool rest can be rotated for convenient bowl turning. Automatic speed control has six settings. No more changing belts!

- Cast iron bed and headstock housing
- 13½" swing over bed
- 40" gap between centers
- 1" x 12 T.P.I. RH spindle
- 3½" bore through spindle
- M.T. #2 spindle taper
- ½ H.P. TEFC motor, 1725 R.P.M.
- Dual voltage: 110/220v, 12/6 amamps
- 6 speeds: 600, 950, 1300, 1700, 1900, and 2100 R.P.M.
- Ball bearings in motor and spindle assemblies
- Push-button ON/OFF switch
- Headstock can be locked at any location on bed
- Approx. shipping weight: 200 lbs.

Primary Market

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

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

---

Econ-Abrasives
WE MAKE ABRASIVE BELTS ANY SIZE, ANY GRIT!

<table>
<thead>
<tr>
<th>Standard Abrasive Sheets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CABINET PAPER</td>
<td></td>
</tr>
<tr>
<td>50/pk $16.70</td>
<td></td>
</tr>
<tr>
<td>100/pk $30.00</td>
<td></td>
</tr>
<tr>
<td>60D $15.60</td>
<td></td>
</tr>
<tr>
<td>60D $27.80</td>
<td></td>
</tr>
<tr>
<td>100 thru 150C $14.50</td>
<td></td>
</tr>
<tr>
<td>25.60C</td>
<td></td>
</tr>
<tr>
<td>FINISHING PAPER</td>
<td></td>
</tr>
<tr>
<td>80A $11.15</td>
<td></td>
</tr>
<tr>
<td>100 thru 280A $10.00</td>
<td></td>
</tr>
<tr>
<td>1670C</td>
<td></td>
</tr>
<tr>
<td>NO LOAD PAPER(white)</td>
<td></td>
</tr>
<tr>
<td>100 thru 400A $12.25</td>
<td></td>
</tr>
<tr>
<td>21.25C</td>
<td></td>
</tr>
<tr>
<td>*C&quot; = 100 SHEETS</td>
<td></td>
</tr>
</tbody>
</table>

Velcro® Vacuum Discs
8 Hole pattern for Bosch sanders

<table>
<thead>
<tr>
<th>ABRASIVE BELTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Belts are resin bond cloth with a bi-directional splice, specify grits.</td>
<td></td>
</tr>
<tr>
<td>1X30 .81ea</td>
<td></td>
</tr>
<tr>
<td>1X42 .81ea</td>
<td></td>
</tr>
<tr>
<td>1X44 .81ea</td>
<td></td>
</tr>
<tr>
<td>2X18 .85ea</td>
<td></td>
</tr>
<tr>
<td>3X18 .86ea</td>
<td></td>
</tr>
<tr>
<td>3X21 .90ea</td>
<td></td>
</tr>
<tr>
<td>3X32 .3/4 .93ea</td>
<td></td>
</tr>
<tr>
<td>OTHER SIZES ON REQUEST</td>
<td></td>
</tr>
</tbody>
</table>

HEAVY DUTY SPRING CLAMPS
Clamps come w/PVC tips and grips.

<table>
<thead>
<tr>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>$1.75 ea</td>
</tr>
<tr>
<td>6&quot;</td>
<td>2.25</td>
</tr>
<tr>
<td>8&quot;</td>
<td>3.50</td>
</tr>
</tbody>
</table>

JUMBO ROUTER PAD 24" x 36" It will not allow small blocks of wood to slip out under router or sanding applications. ROUTER PAD ONLY $8.95 ea.

JUMBO BELT CLEANING STICK ONLY $8.80

* Wide Belts*Rolls*Roller Wheels
* Pump Sleeves*PSA Discs
* Router & Wood Bits

Econ-Abrasives
P.O. Box 865021
Plano, TX 75066
(214)377-9779

TOLL-FREE ORDERING LINE (800)367-4101

---

NOW'S THE TIME...

For 10 years Performax has continued to lead the industry with high quality drum sanders. If you haven't tried a Performax drum sander, now's the time. Join in our 10 year anniversary celebration and benefit from these special offers.

16-32 PLUS
Receive FREE Tension Rollers ($50 value) with the purchase of our sander that made history, the 22-44 Drum Assembly.

Receive a FREE Metal Stand ($100 value) with the purchase of our newest sander, the 16-32 PLUS.

These are limited time offers and subject to dealer participation. Call now for the dealer nearest you and a brochure of the complete line of Performax products.

(612) 895-9922 1-800-334-4910
12257 Nicollet Ave. So. Burnsville, MN 55337

---

Circle No. 860

Circle No. 3866

Circle No. 78
Templates quickly mark corners

Anybody who has tried to draw a radius using cans, coins, or similar objects will greatly appreciate the accuracy of Quick-Corner Templates. And if you typically haul out a compass or rule to mark radii and 45° corners, the quick corner templates will greatly speed these procedures.

The green template contains 45° corners that measure ½, ⅜, ⅓, ⅓, ⅓, ⅓, and 25° across. The small yellow template gives you convex radii of ½, ⅜, 1, 1⅔, 1½, 1⅓, and 25°, and the large yellow template offers 3, 4, 5, and 65° radii. For concave corners, the blue template provides you with ½, ⅜, 1, 1⅔, 1½, 1⅓, and 25° radii.

To use these polycarbonate templates, you simply lay the section of the template with the desired profile on the corner of your workpiece, and then follow the curve or angle with your pencil. Locating lugs molded into the bottom side of the templates make positioning foolproof.

—Tested by Dave Henderson
Waltzing on walnut

Longwood Gardens, near Philadelphia, rates as one of the largest and finest horticultural displays in the world. It also features a most unusual floor in its conservatory ballroom. According to Bob Chenoweth in his book Black Walnut (Sagamore Press, Champaign, Illinois, 800/327-5557), the floor is made of black walnut salvaged from—all things—surplus World War I gunstock blanks! The triangular-shaped blanks were split lengthwise, then laid in a parquet pattern.

Register touts top trees in USA

According to the 1996-97 National Register of Big Trees, Florida has more champion trees (146) than any other state. California, though, has the biggest of the big trees—the 275'-tall giant sequoia nicknamed General Sherman. The champion-of-champions hardwood tree, a 129' sycamore with a girth of nearly 50', belongs to Ohio. Only four states have no big-tree champions—Delaware, Massachusetts, North Dakota, and Wyoming. All in all, the Register lists the champions of some 840 different species and where they're found, as well as the 154 species that remain championless. Published by American Forests, America's oldest conservation organization, and sponsored by the Davey Tree Expert Co., headquartered in Kent, Ohio, the National Register of Big Trees has listed the nation's largest specimens for 56 years. To find out how you can become a serious big-tree hunter, write for a free brochure to: American Forests, P.O. Box 2000, Washington, DC 20013. For a copy of the 1996-97 Register, enclose $7.95 (U.S.).

A fretwork revival?

Fretwork, the art of making intricately sawn cutouts in wood, was in its heyday at the turn of the century. Or was it? The article on Minnesota scrollsaw craftsman Carl Weckhorst (“Fretwork Masterpieces”) in the January 1996 issue of WOOD® magazine sparked hundreds of fretwork-fan letters to Carl, and many to the WOOD offices. Maybe it's the 21st century that will truly mark fretwork's popularity zenith!

Brenda Seitz, of Decorah, Iowa, wrote to tell us about her husband Rod's scrollsawing endeavors. Seems that a number of years ago he bartered for a used scrollsaw, then retreated to the basement and began piling up sawdust. “I accumulated more refrigerator magnets than I could ever give away,” wrote Brenda. Today, Rod, helped by his father-in-law, Allen Monroe, has built a lively business around his scrollsawing. But it's clocks, not refrigerator magnets, that Rod produces these days. “I now have a bare refrigerator, but walls full of beautiful clocks,” Brenda penned.

Rod does reproductions, and also designs his own patterns. For information, send a SASE to Old World Clocks, 2481 River Rd., Decorah, IA 52101.
In a durability test, the competitor’s hammer lasted 60 seconds. If you happen to need one for longer than that, buy a Stanley hammer.

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

You see, after years of research (and a whole lot of sleepless nights) our engineering department concluded that jacketed, solid-core fiberglass is more durable than the compression-molded variety some of our competitors use to make their hammers.

That’s the Stanley philosophy. Don’t quit working until your product is perfect. You’ll find this kind of dogged determination across the board at Stanley. In everything we make. Like a garage door insulated to reduce noise. Or a closet organizer made with steel planks instead of wire so it doesn’t wrinkle your clothes.

It’s innovative thinking like this that’s kept us ahead of the competition for more than 150 years. At Stanley we’re not happy simply churning out products. We’re only happy when our products are better than anyone else’s.
What happens when you listen to woodworking professionals? A new wood glue that meets their every expectation.

Introducing ProBond™ Professional Strength Wood Glue. The features that woodworkers want and need are formulated into ProBond Wood Glue. Extensive field testing among professionals has confirmed ProBond’s outstanding performance. In fact, among those expressing a preference, ProBond was rated higher in overall quality than the leading brand.

Ease of Use Combined with Firm, Snug Bonding. A glue with strong wet tack. It sets in just 15 to 25 minutes. With minimal clamping. After curing, the bond is actually stronger than the wood itself.

It pours easily. It’s sandable and paintable. Plus it’s resistant to heat and moisture.

New Bottle Works Great. ProBond’s revolutionary bottle helps get the job done fast. The size and shape fit your hand perfectly. The offset spout delivers the right amount of glue right where you want it. Every time. Even in tight corners.

We even designed the cap and wide-neck bottle to be easy to open and easy to fill.

ProBond Wood Filler is as Professional as Our Glue. ProBond Professional Strength Wood Filler has a totally unique solvent formula. Dries fast. Won’t crumble. Resists shrinking and cracking. It’s easy to sand. It’s stainable and available in colors that match most popular woods.

So next time you need wood glue or wood filler, step up to new ProBond.