

Bandsaws Tested

A Great Value Found

Plus:

Tame Your Belt Sander

The Best Sanding Blocks for Your Shop

Arts and Crafts Table Lamp

Outdoor Table in a Weekend

Mastering Euro Hinges

#110 October 2004
www.americanwoodworker.com

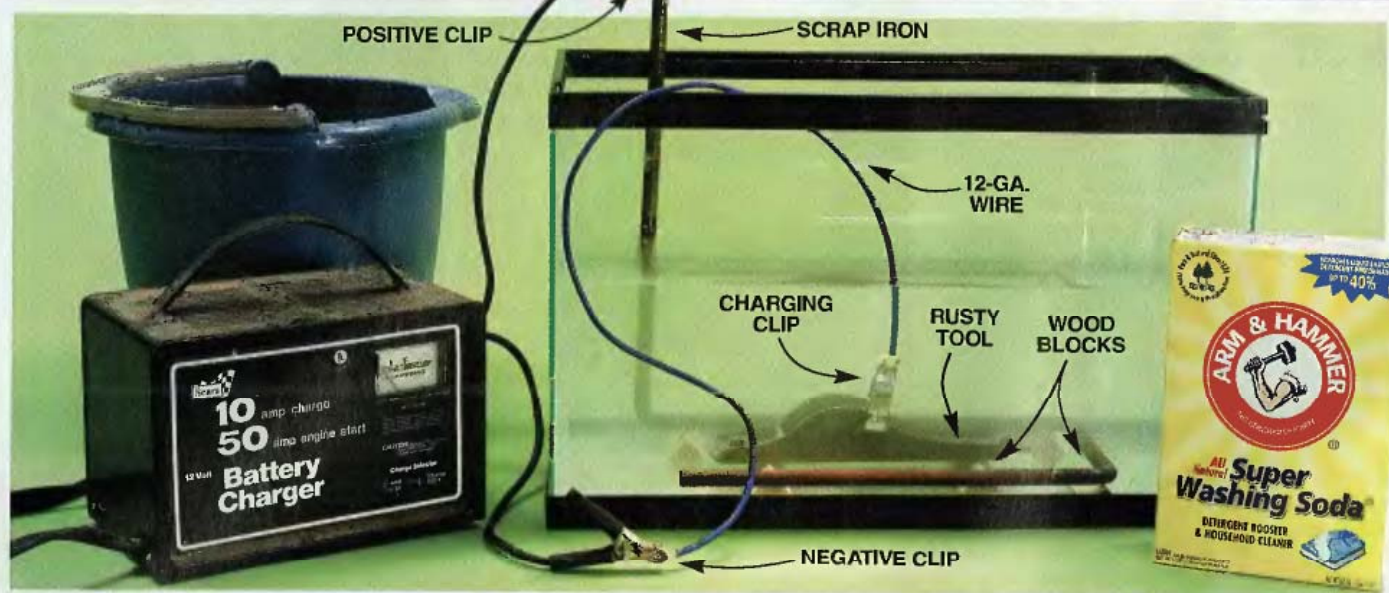
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A READER'S DIGEST PUBLICATION

QUESTION & ANSWER

by Bruce Kieffer
and Richard Tendick



ELECTROLYSIS CLEANS RUSTY TOOLS

Q I've heard there's an easy way to remove rust from small tools using a battery charger. How does it work?

A Electrolysis is a gentle, safe way to chemically remove all the rust, leaving the iron untouched. An abrasive can remove rust, too, but it may require removing a large amount of metal, either weakening the piece or destroying its value.

Here's what you need: A small battery charger, a plastic or glass container, washing soda (available in the laundry-detergent aisle at grocery stores), scrap iron, a charging clip and a couple feet of wire.

Here's how it works: Follow the setup in Photo 1. The tool gets a negative charge and the scrap iron gets a positive charge. The rust flees from the negatively charged tool and is attracted to the positively charged scrap iron.

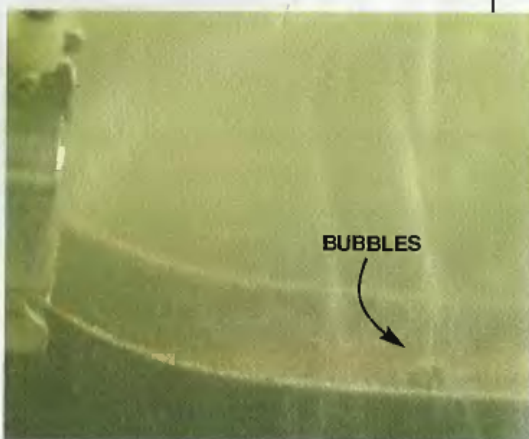
SAFETY CONSIDERATIONS

Electricity and water can be dangerous. Keep the charger away from the water in case of an accidental spill. Unplug the charger prior to placing your hands in the water.

The cleaning action occurs only in a line-of-sight manner, so it's best if the scrap iron surrounds the tool. When you've wired the tool and scrap-iron rod, plug in the charger. The lowest setting is all you need. Bubbles mean it's working (Photo 2). Eventually, a reddish brown crud will appear on the water's surface (Photo 3). When bubbles no longer form on the tool, you're done. Clean the tool with water and a gray 3M finishing pad. Treat your restored tool to a coat of rust-inhibiting wax or spray.



1 Electrolysis is not a complex operation. Mix one tablespoon of washing soda in one gallon of water. Pour this solution over the tool until it is covered. Hook the charger's black negative clip to the tool using a length of 12-gauge wire and a charging clip. This keeps your charger lead out of the soup. The red clip must be hooked to a portion of scrap-iron rod that is out of the water, because it would be eaten away in the water. Wooden blocks suspend the tool so the bottom gets cleaned as well.



2 Bubbles indicate the process has started. Now all you have to do is wait until the bubbles stop. This plane iron took a day and a half.

3 The orange crud on top is all that rust fleeing from the negatively charged tool to the positively charged iron rod. This is a good thing. It looks terrible, but this nontoxic sludge can be poured down the drain.



RAMON MORENO (4)

MAKE YOUR OWN TABLESAW MOLDINGS

Q I'm restoring an antique that's missing a piece of trim molding. I can't find a router bit profile that even comes close. How can I make a small section of molding to match the original?



BILL ZUEHLKE

A You can use your table saw to rough out the profile and then finish the shape with sanding blocks or a few basic carving chisels. First, trace the profile of the original on the end of a board. Use an extra wide board to provide legs for the molding to stand on as it's being shaped on the saw. Adjust the blade height so the cut is just shy of the mark. Cutting too deep will ruin the molding, and you know Murphy's law says that'll happen on the last cut.

Position the rip fence to guide the stock through the cut. Readjust the fence and the blade height as you work your way across the entire profile.

When you've rough-cut the molding, turn it on its back and rip to finish width. Refine the shape with sandpaper, a block plane, scrapers or carving chisels.

SMELLY GLUE

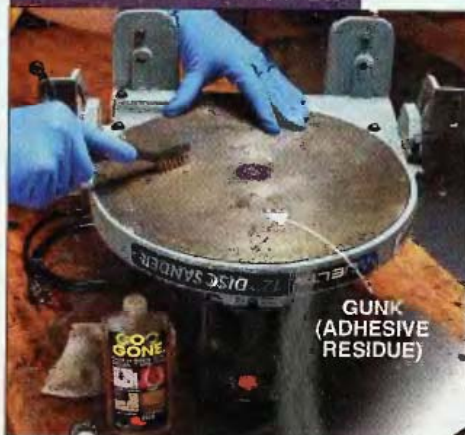
Q I bought a gallon of glue to save money. It has been more than a year and I've only used about half the gallon. The leftover glue has developed a rotten smell. Is the glue still good?

A According to the folks at Franklin Adhesives, your best bet is to toss the old stuff and buy a fresh bottle. The glue may be OK; a bad odor does not necessarily mean the glue has gone bad. But consider what your project is worth and whether you want to risk joint failure for the price of a bottle of glue.

Glues have a preservative in them to keep bacteria or fungus from setting up shop. But the preservative only delays the inevitable. Most woodworking glue has a shelf life of a year. Even though it's tempting to buy a big bottle to save money, you're better off in the long run buying glue in a size you know you'll use up in a year.

Tip: Write the purchase date on the glue bottle. That way, you'll know when it's time to buy fresh.





CLEANING ADHESIVE FROM A DISK SANDER

Q Removing old sanding disks from my disk sander leaves globs of adhesive residue. Is there a way to get rid of this stuff?

A Yes, there is! It's called Goo Gone, made by American Magic Products. Look for it at hardware stores, home centers and drug stores. It's citrus based, so it's not as harsh as paint solvents, and it works on this problem like nobody's business.

Remove the disk sander's table and lower guard or dust shroud. If you can, tilt your sander so the disk is horizontal. Squirt some Goo Gone on the disk and let it soak for a few minutes. Then scrub the disk with a small fine-bristle wire brush. When the adhesive residue is all dissolved, wipe off the Goo Gone with paper towels. Clean the disk with water to remove any remaining Goo Gone solution and dry the disk. **AW**

Source

Magic American Products
(800) 321-6330
www.googone.com
Goo Gone, 8 fl. oz. bottle, \$5.



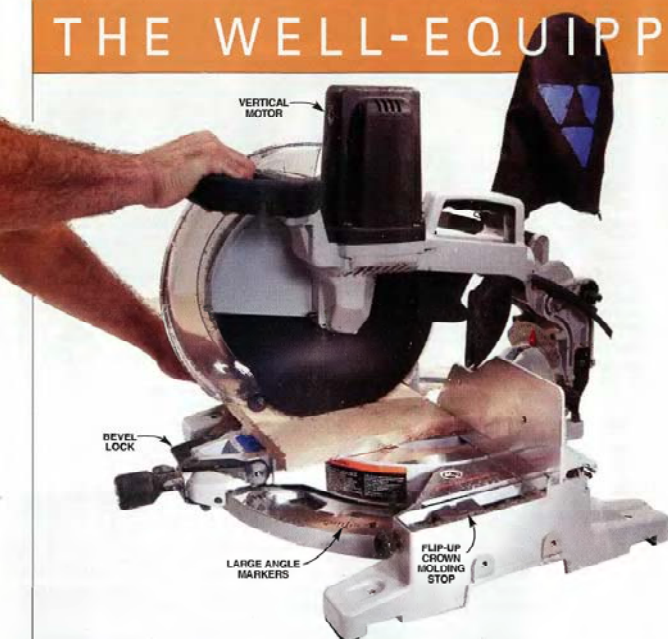
If you have a question you'd like answered, send it to us at: **Question & Answer, American Woodworker, 2915 Commers Drive, Suite 700, Eagan, MN 55121** or e-mail to qanda@readersdigest.com. Sorry, but the volume of mail prevents us from answering each question individually.

THE WELL-EQUIPPED

SHOP

NEW TOOLS, SUPPLIES AND MATERIALS

by George Vondriska



LARGER-CAPACITY MITER SAW

Delta has put a new twist on miter saws by mounting the motor vertically, instead of horizontally, on its new 36-412 12-in. dual-bevel compound miter saw. The result is increased capacity. This machine will crosscut a 2x10 at 90 degrees, surpassing the capacity of other 12-in. miter saws by about 1-1/2 in. Its street price is around \$399.

Other user-friendly features include a bevel lock that's located on the front of the saw so you don't have to reach around the back of the machine when adjusting for bevel cuts. Flip-up crown-molding stops are built into the table and greatly simplify cutting crown molding. The fence halves are locked in place with cam levers, slightly more convenient than the thumbscrews found on most miter-saw fences. The 36-412 uses a 15-amp motor, comparable to those on other miter saws, and comes with a good quality 60-tooth blade and a dust bag.

The saw table angles to 48 degrees left and right. Positive stops at 0, 15, 22.5, 31.6 and 45 degrees (left and right) firmly click into place. Hash marks on the angle protractor are large and very easy to read. The angle indicator includes 1/2-degree lines, so it's easy to fine-tune the angle in small increments. The saw bevels to 48 degrees left and right, with positive stops at 0, 33.9 and 45 degrees.

The 36-412 is slightly more expensive than other 12-in. compound machines, but it has everything you'd want in a top-of-the-line machine and is a pleasure to use. While its capacity is greater than other miter saws' capacity, it's less than on sliding miter saws. But you'll pay about \$100 more for a slider. The 36-412 is expected in stores in November.

Source
Delta Machinery, (800) 223-7278
www.deltawoodworking.com
36-412 compound miter saw, \$399.

QUICK-ACTING CLAMPS

It's hard to beat the convenience of a quick-acting clamp that you can grab, squeeze and tighten—all with one hand. The new Multi-Grip Clamps from Wilton have entered the clamping arena, and their competitive prices are putting the squeeze on other quick-acting clamps. The Multi-Grips cost 10 to 20 percent less than similar clamps.

Like other quick-acting clamps, Multi-Grips can be used to clamp or spread. The spread function lets you gently disassemble parts, with little or no mallet pounding. Clamp pressure is strong enough to pull together well-fitted parts, but as with other quick-acting clamps, I wouldn't rely on it for heavy-duty clamping situations, for instance, holding a router fence in position.

Square-bottomed Multi-Grips will stand on their own, a handy feature when working on a benchtop. If you sometimes need an extra light-duty vise, the Portalock Base will hold a Multi-Grip and can be clamped to a workbench that's 2-1/2 in. thick or less.

PHOTOS SUPPLIED BY MANUFACTURER



Source
Wilton
(888) 866-7129
www.wiltonclamps.com
Multi-Grip Clamps,
\$15 to \$40.

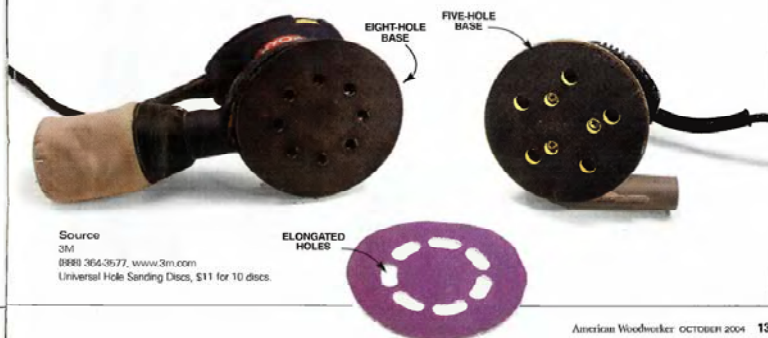
UNIVERSAL RANDOM-ORBIT DISCS

I'm at the home center, trying to remember whether my sander takes five- or eight-hole discs. I've got a fifty-fifty chance, but if I guess wrong, the dust collection on my sander won't work right. Thanks to 3M, I can't pick the wrong disc. The company has hit a hole in one with its Universal Hole random-orbit sander discs, \$11 for 10 discs. They fit 5-in.-dia. five-hole or eight-hole sanders.

It's a simple idea. The holes are slightly elongated,

making them large enough to cover five- or eight-hole patterns. Although its holes are larger than normal, therefore removing some abrasive, it works as well as a standard disc.

The Universal Hole discs are only available in 5-in. hook-and-loop discs in the standard array of grits. The price is comparable to the cost of other high-quality abrasive hook-and-loop discs.



Source
3M
(888) 366-3677, www.3m.com
Universal Hole Sanding Discs, \$11 for 10 discs.

THE WELL-EQUIPPED SHOP

\$1 TAPE MEASURE AND PENCIL CLIP

OK, I admit it: Keeping both a pencil and tape measure close at hand is a problem for me. I generally have only one or the other, sometimes neither. SpeedClip, a clever \$1 solution, clips onto your belt and has built-in holders for a tape measure and pencil. You provide the tape and pencil.

The belt hook wraps around and grabs your belt, so there's no chance of pulling the SpeedClip off when retrieving your pencil or tape. No belt? It can also be hooked onto a pants' pocket. Any tape with a clip on it can be hung on the SpeedClip. A plastic retainer grabs and holds the pencil so it only comes out when you pull it out.

Source:
FastCap
888 443-3736, www.fastcap.com
SpeedClip, \$1.



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JDS AIR-TECH and Dust-Force

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New!

\$289.00
Model 750-ER

JDS, the leader in quality air filtration products, introduces the ultimate air cleaner for your shop (Model 750-ER). This remote controlled unit will clean the air in a 30'x30'x8' shop once every ten minutes. For larger areas the models 8-12, 10-16, and 2400 are available. To remove odors, fumes and smoke, order our optional charcoal filter.

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\$299.00

Specifications

Motor.....1.5 HP
Max CFM.....1250
Fan.....11"
Inlet Dia.....1-5/8"-4"
Bag Capacity.....42 gallons
Decibels.....67-77
Electrical.....110/220
Switch Prewired for 110V

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www.thejdscompany.com

EASY-TO-PAPER SANDER

Finishing sanders remain a useful tool, especially for sanding into corners and on delicate pieces. Sanders of yesteryear vibrated enough to make your hand tingle for a week, and arm wrestling the paper onto most of these machines was enough to make you turn the sander into a paperweight and never use it again. The new Bosch 1297DK quarter-sheet sander, \$55, is a great example of today's smoother- and quieter-running finishing sanders, and it has put an end to the paper wars.

Its SheetLoc system simplifies attaching the paper. The sandpaper edges don't need to be creased; they slip right into the SheetLoc holders. The system stretches the paper tight and holds it with enough gusto to keep it firmly attached.

Dust collection is included on the 1297DK, and it works pretty well. Having dust collection means you need holes in the paper, so a punch plate is included with the 1297DK.

The 1297DK operates very smoothly and quietly, with little vibration transmitted to your hand. Its price is comparable to other good-quality finishing sanders. *AW*

Source:
Bosch Tools
877 267-2469, www.boschtools.com
1297DK finishing sander, \$55.



PHOTO SUPPLIED BY MANUFACTURER

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YORKCRAFT

The perfection of quality with low price!

YC-15P
15" Planer

with 3 hp 1 ph motor and 3-knife cutterhead

\$799.00

FEATURES: Table height is fixed, motor and cutterhead adjust up and down. Jack screw for adjustment. Two feed speeds. Dust hood.

YC-20P

20" Planer

with 5 hp 1 ph motor and 4-knife cutterhead

\$1199.00

FEATURES: Table height adjustable. Jack screw for adjustment. Two feed speeds. Dust hood. Solid cast iron table extensions.

YC-8J

8" Jointer

with 1-1/2 hp 1 ph motor and 3-knife cutterhead

\$649.00

YC-6J

6" Jointer

with 1 hp 1 ph motor and 3-knife cutterhead

\$339.00

FEATURES: Center mount fence with rock and pinion adjustment. Fence tilts both directions to 45°. Jackscrew for adjustment. Inboard stand. Habbening table and ledge. Dust hood included.

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Circle No. 36

edited by David Olson

DUST-FREE BANDSAW

I replaced my bandsaw's wimpy 1-1/2-in. dust-collection port with a shop-made shroud that makes bandsawing virtually dust-free. The secret: My shroud's intake port is much larger (see photo and exploded view, below). Another great feature is that the big hose mounts on the back, so it's out of the way.

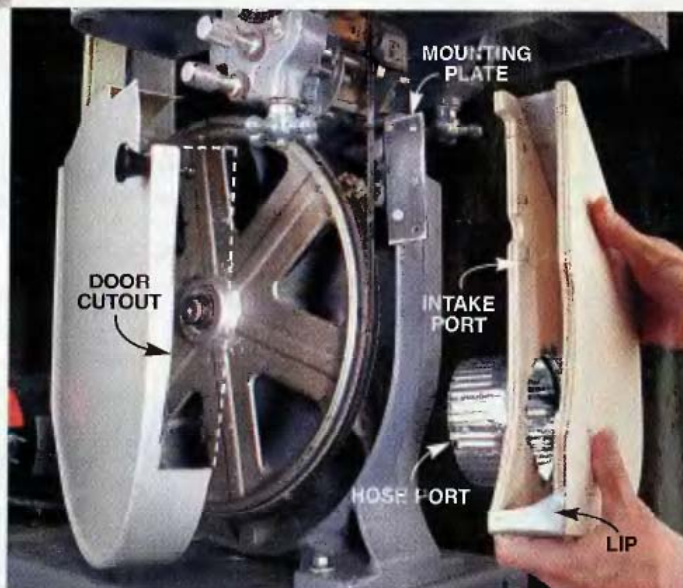
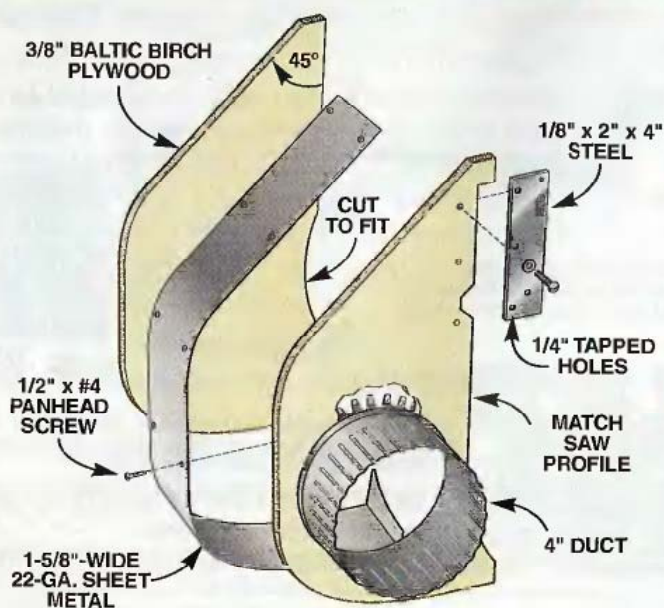
I built this shroud by improving a similar design I'd seen in an old woodworking magazine. My shroud is mounted on a steel plate that I cut to size with my angle grinder (1/4-in.-thick plywood would also work for the mounting plate). I attached this plate to the saw's casting, using the same tapped holes that held the original port. On saws without a port, you'll have to drill and tap a couple holes in the casting.

The shroud's angled top allows the table to tilt. I sawed the back plywood face to match the profile of the saw. I left the front face as wide as possible. It actually extends inside the door and is cut to fit around the wheel.

I cut a 4-in.-dia. hole in the back face and installed the sheet-metal duct. Then I attached the faces together with a length of 22-gauge galvanized sheet metal. The lip at the bottom helps keep sawdust in the shroud.

Once the shroud was mounted, I marked and cut the saw's lower door, so it would close. I was reluctant to alter my saw by cutting the door, but I'm glad I did. This shroud makes bandsawing much cleaner and more enjoyable.

David Olson



The intake port is about the same size as the hose port, so it doesn't restrict the flow of air to my dust collector.

DADO SCALE FOR LEFT-TILT SAWS

Installing a dado set on my left-tilt saw makes the scale on the rip fence unusable. Here's why: The cutters stack



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Ultra-sharp cutting edges dramatically reduce splintering and tear-out



Heavy-gauge plates are laser cut and precision balanced for accurate cuts and tight joints



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DEWALT

from left to right, toward the fence, so each cutter I add knocks the scale off by the width of the cutter.

Fortunately, recalibrating the scale is easy. After installing my dado set and checking it to see that it cuts the width I want, I unplug the saw and lock the fence in place next to the blade. Then I place a piece of tape on the scale's zero mark. The edge of the tape is the new cursor line. Now I can use the scale for dado cuts without altering its regular setting.

Mark Nagel



EXTEND WORKING TIME FOR GLUE-UPS

When it's hot, or when I'm gluing a complex assembly, yellow glue is hard to use, because it sets up too fast.

To slow the drying, I just dampen the wood before I apply the glue. I admit I didn't try this technique until I called a glue company for advice. The company rep said the joints will be plenty strong as long as I don't saturate the wood. A little water goes a long way! Even if the dampened wood appears dry by the time the glue is applied, enough moisture remains to keep the glue moist.

Brett Waldrop



MAGNETIC PENCIL HOLDER

I used to have trouble hanging onto my pencil, but now it's always at arm's length. I simply place magnets on each side of my shirt sleeve and twist a nut onto my pencil (if the nut's too large, I wrap tape around the pencil shaft).

My shirt sleeve magnets are also great for keeping a couple of nails or screws handy during assembly or for work around the house. I admit it looks kind of goofy, but at least nobody can accuse me of having a screw loose!

Lorne Davidoff

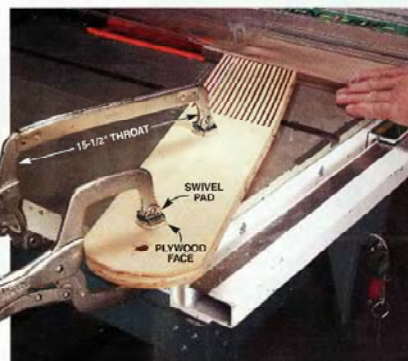
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QUICK FEATHERBOARD CLAMP

Clamping featherboards to my table saw was always a hassle until I discovered locking welding clamps. Their C-shaped jaws adjust to fit the webbed castings on the bottom of the extension table. They clamp and release easily, so adjustments and realignments are a snap.

I use locking welding clamps all over my shop. They're much lighter and easier to use than long-reach wood-working clamps. Be sure the ones you buy have swivel pads. I glue on plywood faces, for no-mar clamping. **NW**

Bob Newman



Source: Seven Corners Hardware, 85P, 4-3/4-in. throat depth, \$20; 16SP, 9-1/2-in. throat depth, \$30; vise-clip locking clamps w/swivel pads, 24SP, 15-1/2-in. throat depth, \$36.

PLAIN-PAPER SANDING BLOCKS

The best thing about these blocks is that they use ordinary sheet paper that costs a lot less than belts or self-stick pressure-sensitive-adhesive or hook-and-loop paper. They also allow you to use specialized paper, like wet-dry paper, that's available only in plain-backed paper. They require cutting the full sheets of sandpaper into one-half, one-quarter, one-third or one-sixth sheets, which can be a bit of a pain. I prefer the quarter-sheet blocks. That size fits nicely in the hand and it's easy to divide the paper into quarters.



RECOMMENDATION

The Preppin' Weapon (\$20) is well-designed and made in the United States of durable, high-impact ABS plastic. The contoured shape is comfortable whether you're sanding one-handed or bearing down with two.

Easy-to-use lever-action clips make paper changes a snap. The clips use very little sandpaper to grip and they pull the paper tight. Plus, the block can hold as many as four sheets of abrasive at once. Just tear off each sheet as it wears out. Other features I like include tapered edges that allow the block to get right into corners and a tough rubber pad that's firm, not mushy.

The Preppin' Weapon is designed for either wet or dry use. Its styrofoam core keeps the block floating in a bucket of water and the stainless steel clip mechanism will never corrode.

Source Time-Shaver Tools Inc., (877) 763-3729, www.timeshavertools.com

Preppin' Weapon, available in red, yellow, green and blue, 2-3/4 x 7-3/4 in., \$20 plus \$3.50 shipping.

PRESSURE-SENSITIVE-ADHESIVE OR HOOK-AND-LOOP BLOCKS AND PADS

These blocks use either hook-and-loop (H&L) or pressure-sensitive-adhesive (PSA) sandpaper. The big advantage to this style of block is the speed and ease of grit change. Just peel off the old and stick on the new. I like hook-and-loop paper best because it can be taken on and off multiple times; in contrast, the self-stick never sticks as well the second time.



RECOMMENDATION

I like Rockler's Sanding Block and Pad package (\$15). This pair is a must-have for anyone who already owns an H&L random-orbit sander. The Rockler set includes a comfortable, wedge-shaped foam block plus a flexible sanding pad. Both offer the quick-change convenience of the hook-and-loop system. The sanding pad is excellent for shaping anything you can get your hand around or into, including round-overs, spindles and coves.

If you're stuck on PSA paper, check out the similar block and pad from Scotton Co. (see wooden block in photo above).

FOAM
BLOCK



PAD



Sources

Rockler
(800) 279-4441, www.rockler.com
5-in. sanding block and pad, #26381, \$15.

Scotton Co.
(909) 674-6454, www.scottontool.com
5-in. round sanding block for PSA paper, #6035, \$9
5-in. round sanding pad, #6071, \$7.

SPECIALIZED SANDING BLOCKS

For people with specialized sanding needs, like carvers or boat builders, there's a host of specialized blocks. Here are some examples:

1. Contour Sanding Grips (see Editor's Choice, page 32).
2. The Flex Base from Scotton Co. (\$20) is just the ticket for boat builders or anyone who regularly sands curves. The company has models designed to hold plain, pressure-sensitive-adhesive or hook-and-loop paper.

Source

Scotton Co.

(909) 674-6454, www.scottontool.com

Flex Base with knobs for plain paper, 2-3/4 x 15-3/4 in., #6250, \$21.

3. The Vario Hand Profile Sander (\$30) is a shape changer. The base can conform itself to molding profiles to create an instant, custom sanding block. The Vario works fine on simple moldings, such as a cove or round-over, but I found it softened the crisp 90-degree details on more complex router moldings.
4. Paper changes are awkward on these plain-paper contour sanding blocks.
5. Sanding Sticks are good for tight spaces, like those on a carving. The belts must be special-ordered from the manufacturer.
6. The Hook & Loop Hand File is used like a file. H&L strips make grit changes a breeze. The file is flexible enough to conform to a gentle curve.

Continued on page 32



Continued from page 30

Source

Klingspor

(800) 228-0000

www.woodworkingshop.com

Vario Hand Profile Sander, #VA20000, \$42

Curv-A-Flex Hand Sander, #KL05205, \$7

Teardrop Hand Sander, #KL05235, \$7.

Sanding Sticks:

1/4 x 6 in., #LS25000, set of three, \$8

1/2 x 6 in., #LS45000, set of three, \$10

3/4 x 6 in., #LS65000, set of three, \$12

Hook & Loop Hand File,

#HF15500, \$20.

7. Belt Sanding Blocks

The main advantage to this style is

its use of long-lasting 3- x 21-in. belts designed for power belt sanders.

Source

Hartville Tools

(800) 345-2396

www.hartvilletool.com

The Sand Devil, #37895, \$15.



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Circle No. 10



RECOMMENDATION

There's one set of specialized blocks I think any woodworker would find useful: little rubber "tadpole" sanding blocks. They come in a variety of shapes and are just the thing for sanding router-molding profiles. They can't be beat when you need to match some small profiles. Tadpole sanding blocks don't cost a lot and they'll save you from hunting for the right dowel size or having to make your own profiles.

AW

Source

Lee Valley

(800) 871-8158

www.leevalley.com

Set of 15 Contour Sanding Grips, #68Z82.10, \$10.

Buying Euro Hinges

Confused by all the variations?
Here's how to find the hinges you need.



Euro hinges have revolutionized the way American cabinet shops mount cabinet doors. Originally developed as part of the European frameless cabinetmaking system, Euro hinges work equally well in traditional face-frame cabinets. Also called concealed or cup hinges, these high-tech marvels offer several advantages over traditional hinges.

They're really easy to install. You simply drill holes and pop the hinges and mounting plates into place. Cabinet shops use sophisticated boring machines for production work, but all you really need is a drill press, a 1-3/8-in. flat-bottom boring bit (see Tool Tip, page 36) and a 3/32-in. twist bit.

They make doors mountable in seconds. You just snap Euro hinges into place. Removal's a snap, too.

You can dial in a perfect fit. Euro hinges have adjustment screws that allow you to move the doors up or

down, side to side, and front to back after they've been installed.

There's a Euro hinge for almost every door: Thick doors, bi-fold doors, glass doors, doors with narrow stiles or profiled edges. Self-closing hinges are most common, but free-swinging versions are also available.

They don't show. Euro hinges mount behind the doors and inside the cabinet, so they're hidden when the doors are closed.

They're cost-effective. Euro hinges cost more than traditional hinges, but they make installation go a lot faster.

Some pro shops charge \$100 more per door to install traditional hinges.

If Euro hinges have a drawback, it's that there are so many variations it's hard to figure out which ones are right for your project.

Catalogs and Web sites commonly present diagrams and charts to help you choose. Unfortunately, they're almost always loaded with dimensions, unfamiliar terms and installation details that just make things worse. The fact is, you don't have to know a lot about Euro hinges to choose the right ones.

EURO HINGE BASICS Euro hinges vary widely in appearance, but they all share the same basic two-part design and they're all installed the same way. The best Euro hinges are loaded with user-friendly features.



EURO HINGE ANATOMY

Euro hinges have two parts: a hinged cup-and-arm mechanism and a baseplate. The cup mounts in a flat-bottomed hole drilled in back of the door. The arm locks onto the baseplate, which is fastened to the cabinet wall or face frame.

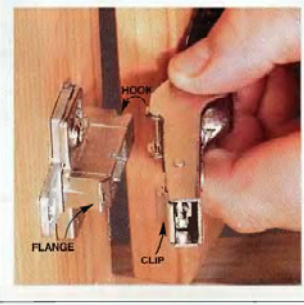
Cup-and-arm mechanisms come in several variations for different opening capacities. **Baseplates** come in several thicknesses, to work with different door and cabinet styles. **Mounting-hole locations** also vary, depending on the application.

TOOL TIP Drill cup holes with a flat-bottomed boring bit. Euro hinge manufacturers recommend using a 35-mm bit, but a 1-3/8-in. bit works just as well. The difference in diameter is only 0.02 in.

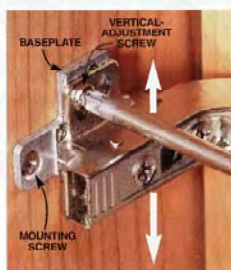


MUST-HAVE FEATURES

Snap-on attachment. Spring-lock hinges snap on and off the baseplate with finger pressure. Avoid hinges that clamp to the baseplate with a screw. They can work loose, leaving you with floppy doors.



Simple vertical adjustment. The best hinges allow you to adjust the doors up and down without loosening the mounting screws. These hinges are easy to spot because their baseplates won't have elongated mounting screw holes. Some hinges employ two-part adjustable baseplates (see photo, left). Others locate all three door-adjustment screws on the hinge arm.



Screw-on fastening. Baseplates that mount with regular flat head screws are most economical. All the other fastening variations, like Euro screws and expanding dowels, are aimed at pros. Some require special machinery to install.



FIND THE RIGHT HINGES Knowing where you want to use Euro hinges and what you want them to do is most important. Answering 3 simple questions allows you to cut through all the choices and zero in on the right hinge and baseplate combination.

1. WHAT STYLE ARE YOUR CABINETS?

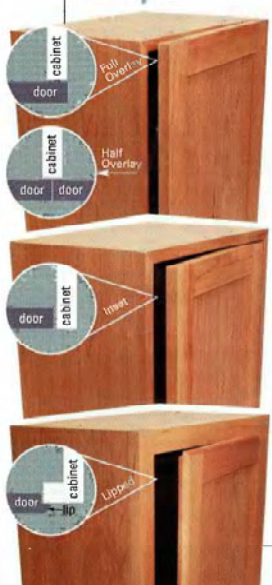


Face-frame cabinets have frames glued to the front of the cabinet box. This frame makes the cabinet rigid, but it reduces the size of the opening.



Frameless cabinets are completely open, bordered only by the edges of the cabinet box. The glued-in back makes the cabinet rigid.

2. WHAT STYLE ARE YOUR DOORS?



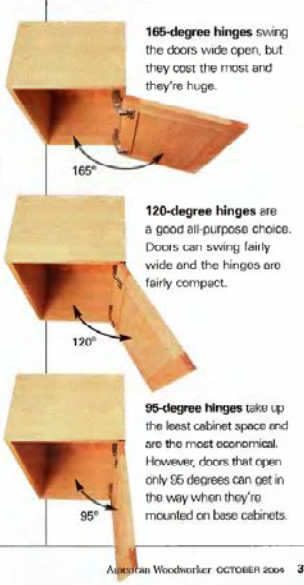
Overlay doors mount in front of the cabinet or face frame. Doors with *full-overlay* hinges cover the 3/4-in.-wide edge of the frameless cabinet side. Doors with *half-overlay* hinges cover half of the 3/4-in.-wide edge. You can mount doors on both sides of a single 3/4-in.-wide partition by using half-overlay hinges.

Sometimes, overlay amounts are listed incrementally, ranging from 1/4 in. up to 1-3/8 in. This use of two types of terminology can be confusing: A half-overlay hinge, for example, is not the same as a hinge with a 1/2-in. overlay.

Inset doors mount inside the cabinet or face frame, flush with the front.

Lipped doors fit halfway inside the opening, because the back edge is rabbeted. When the door is closed, the lip covers the opening. Typically, lipped doors are mounted on face-frame cabinets with partially concealed hinges. Few Euro hinges are compatible with lipped doors.

3. HOW FAR DO YOU WANT THE DOOR TO OPEN?



165-degree hinges swing the doors wide open, but they cost the most and they're huge.

120-degree hinges are a good all-purpose choice. Doors can swing fairly wide and the hinges are fairly compact.

95-degree hinges take up the least cabinet space and are the most economical. However, doors that open only 95 degrees can get in the way when they're mounted on base cabinets.

MORE TIPS FOR BUYING AND USING EURO HINGES

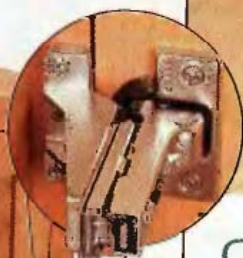
HIGH TECH FOR TRADITIONAL STYLE

Manufacturers have recently introduced Euro hinges for face-frame cabinets with inset doors. These hinges represent the ultimate merging of Euro design and traditional appearance. Now you can outfit a classic Shaker-style cupboard or Arts and Crafts bookcase with high-tech hinges.



CLEARANCE FOR PULL-OUT SHELVES

Doors mounted on standard Euro hinges interfere with pull-out shelves, because the doors swing inward as they open. Cabinets with pull-out shelves require doors with special zero-protrusion hinges. Zero-protrusion hinges keep the doors from protruding into the cabinet opening, so the doors aren't in the way of the shelves.



USE THE RIGHT DRIVER

Euro-hinge adjustment screws have PoziDrive heads. You can use a Phillips screwdriver on these screws, but a PoziDrive screwdriver works so much better that it's worth having if you're installing more than a few Euro hinges.

Source
Woodworker's Hardware
(800) 383-0130
www.wwhardware.com
#2 Pozi Screwdriver,
B POZI, \$4

A PoziDrive screwdriver has tapered flanges between its 90-degree tips.

FLANGE

Corner tick marks distinguish PosiDrive screws from Phillips screws.

TICK MARK



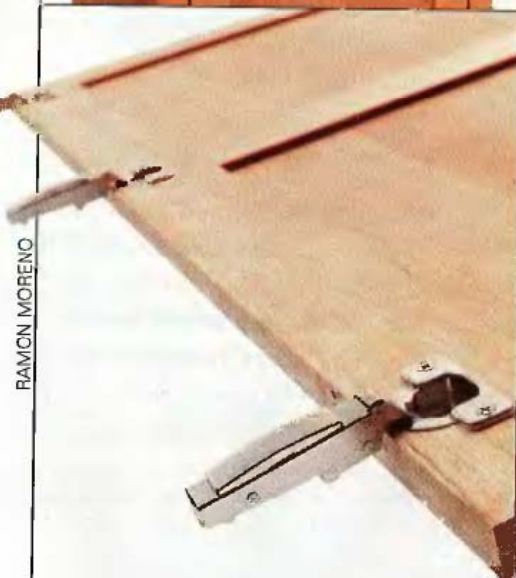
BUY THE PACKAGE

Some catalogs offer hinges and backplates separately. This gives professional cabinet-shop buyers all the options. But if you don't know Euro hinges inside and out, it's easiest to buy from a supplier who packages the hinges and baseplates together for specific applications, such as a "frameless cabinet, full-overlay door, 120-degree opening." **AW**



USE THREE HINGES FOR BIG DOORS

Any door taller than 40 in. or wider than 24 in. requires three or more Euro hinges. Suppliers have charts to determine the exact number you'll need.



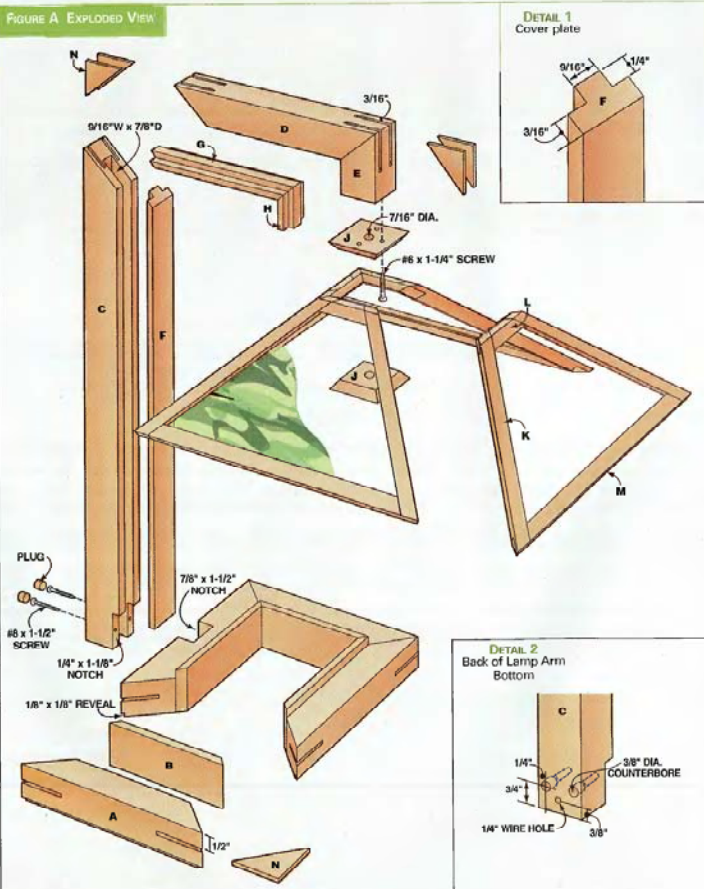
PROJECT REQUIREMENTS AT A GLANCE

Materials:
3 bd. ft. of 8/4 mahogany
3 bd. ft. of 4/4 mahogany
Electrical parts
Stained glass

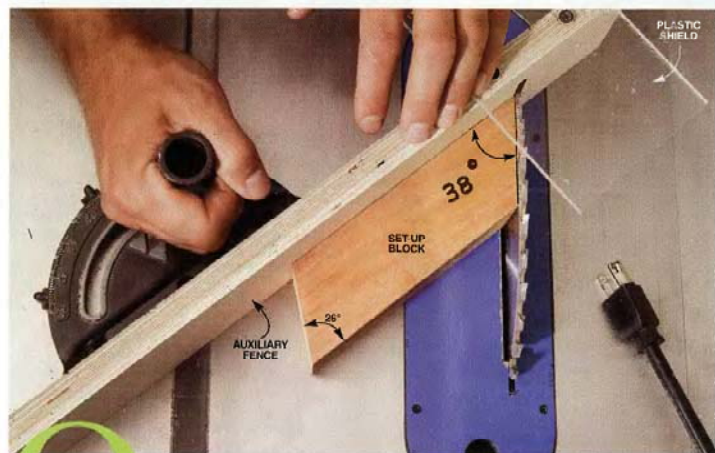
Tools:
Tablesaw, dado blade, router,
1/4-in. router guide bushing, 1/4-in.
straight cutting bit and jig saw.

Total cost: \$120.

FIGURE A EXPLODED VIEW



EDITOR: DAVID MUMFORD • ART DIRECTION: EVANGELINE EBERG • PHOTOGRAPHY: KELLY SHIELDS • ILLUSTRATION: FRANK ROHRBACH



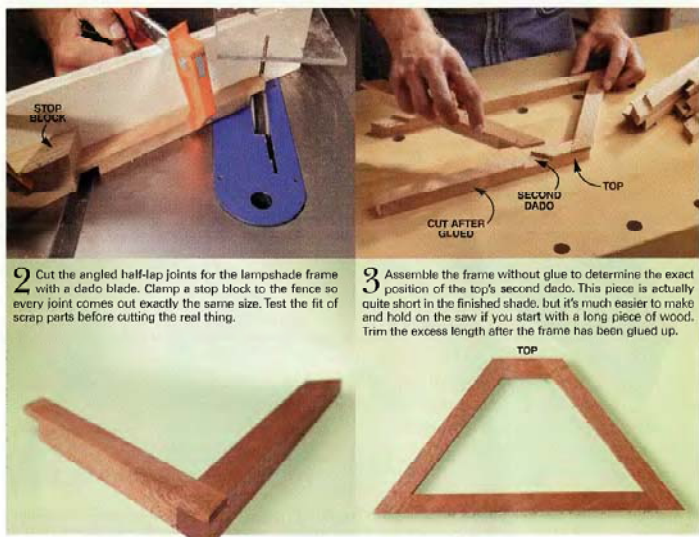
Our table lamp is reminiscent of the Prairie style of design, with lines that Frank Lloyd Wright might favor. In spite of its complex-looking shade, this elegant lamp is within reach of any intermediate woodworker. We've figured out a straightforward system that tames all those nasty angles and guarantees good results. The wiring is also simple, even if you haven't done much electrical work. All the parts are readily available through the mail or at a lighting store. You may find that the hardest part is selecting the stained glass. There is a bewildering array of colors and textures to choose from, but that's part of the fun.

Two precisely angled cuts are key to building the lamp shade. You'll go back and forth between these cuts a number of times. To ensure accuracy, make a setup block with both angles to use every time you reset the miter gauge or the tilt of the blade.

Caution: Fasten a piece of plastic to the top of the auxiliary fence to keep your fingers away from the blade.

CUTTING LIST OVERALL DIMENSIONS: 14-1/2"W x 22-1/2"H x 17"D

Material	Part	Name	Qty	Dimension	Material	Part	Name	Qty	Dimension
Mahogany	A	Base sides	4	1-1/8" x 1-1/2" x 9-1/4"	Electrical	Q	Lamp cord and plug	1	18 g. 8 ft. long
	B	Base lip	4	5/16" x 1-3/8" x 6-5/16"		R	Rotary line switch	1	
	C	Arm (vertical)	1	1-1/2" x 1-1/2" x 23-1/2"		S	Flushing	1	1/8" ips, ferrule bushing
	D	Arm (horizontal)	1	1-1/2" x 1-1/2" x 10-3/4"		T	Steel pipes	2	1/8" ips, 10" long
	E	Arm (end)	1	1-1/2" x 1-1/2" x 3"		U	Couplings	3	1/8" ips, ferrule
	F	Vertical cover plate	1	7/16" x 1-1/8" x 21"		V	Steel pipe	1	1/8" ips, 5" long
	G	Upper cover plate	1	7/16" x 1-1/8" x 9"		W	Armbricks (elbows)	2	90 degree, 1/2" ball, 1/8" ips
	H	End cover plate	1	7/16" x 1-1/8" x 2"		X	Nipple	1	1/8" ips, 5" long
	J	Shade hangers	2	3/8" x 2-1/2" x 2-1/2"		Y	Star lock washers	2	1/8" ips
	K	Shade sides	8	3/4" x 1" x 10-1/2"		Z	Nuts	3	1/8" hex nut
	L	Shade tops	4	3/4" x 1" x 12"		AA	Keyless sockets	2	
	M	Shade bottoms	4	3/4" x 1" x 15-1/2"		BB	Cluster body	1	1-1/16" x 1-1/16"
	N	Splines	8	1/8" x 2" x 3-1/2"		CC	Brass arms	2	3-1/2", 1/8" ips
	P	Stained glass	4	1/8" x 12-1/4" x 6-1/8"		DD	Wire nuts	2	5/16" x 5/16"



2 Cut the angled half-lap joints for the lampshade frame with a dado blade. Clamp a stop block to the fence so every joint comes out exactly the same size. Test the fit of scrap parts before cutting the real thing.

3 Assemble the frame without glue to determine the exact position of the top's second dado. This piece is actually quite short in the finished shade, but it's much easier to make and hold on the saw if you start with a long piece of wood. Trim the excess length after the frame has been glued up.

BUILD THE SHADE FRAME

The shade is made of four identical frames. Use a stop block for all the cuts.

1. Mill the 4/4 mahogany to thickness and rip the boards into 1-in. widths. Rough-cut three 12-in. pieces and one 18-in. piece for each of the four frames (K, L, M). Cut enough parts to build an extra frame as a precaution and for setup purposes.

2. Attach a long auxiliary fence to your table saw's miter gauge. We added an acrylic guard just as a reminder of where not to put one's fingers.

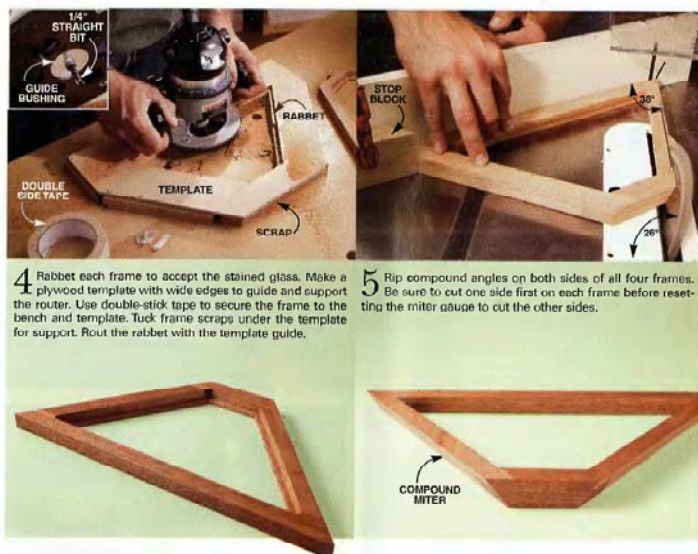
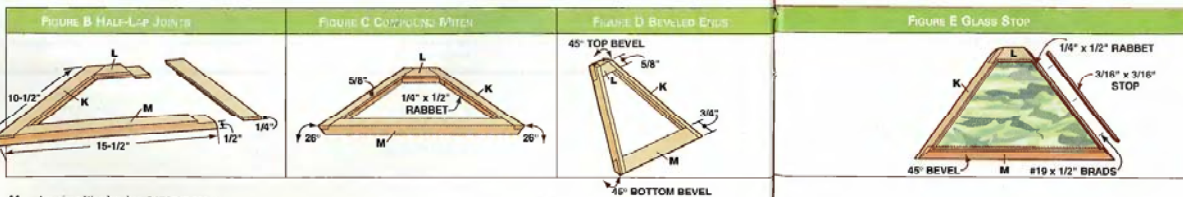
3. Make a setup block for setting your miter gauge angles by cutting a 38-degree angle on one end and a

26-degree angle on the other one. Use an accurate miter saw to cut the block.

4. Set the miter gauge to cut at 38 degrees (Photo 1). Miter both ends of the frame sides (K) and frame bottoms (M) to final dimensions. Miter just the left edge of the frame top (L). All these cuts can be made using one miter fence setting.

5. Cut the half-lap joint on the mitered end of each piece (Photo 2; Fig. B, below). Use scrap wood to set the blade height and a stop block for each cut. You will need to rotate the miter gauge 38 degrees right and left of center to accomplish all the angles.

6. Dry-fit all the pieces together and mark the posi-



4 Rabbet each frame to accept the stained glass. Make a plywood template with wide edges to guide and support the router. Use double-stick tape to secure the frame to the bench and template. Tuck frame scraps under the template for support. Rout the rabbet with the template guide.

5 Rip compound angles on both sides of all four frames. Be sure to cut one side first on each frame before resetting the miter gauge to cut the other sides.

tion of the half-lap on the right side of the frame top (Photo 3). Then cut the rest of the top half-laps.

7. Glue each frame assembly together with small C-clamps. When the glue has set, cut off the waste on the top.

RABBET FOR THE GLASS

8. Make a template out of 1/4-in. plywood to cut rabbets in each frame. Simply place a shade frame on the plywood, trace the interior and mark lines 1/4 in. to the outside of the tracing lines. Cut to this line with a jigsaw. Keep the template 3 in. wide to support the router.

9. Rout the rabbet with a 1/4-in. straight bit and guide bushing (Photo 4; Fig. C, below). Take several

passes of to get the rabbet to full depth. Clean up the corners of the rabbet using a chisel.

CUT THE COMPOUND MITERS

10. Use the setup block to set the table saw miter fence to cut at 38 degrees and angle the blade to 26 degrees.

11. Place a frame, face side up, with the bottom against the fence. Cut the compound miter (Photo 5), leaving a 5/8-in.-wide side (Fig. C). To ensure a clean joint, make two passes. The first cut is just shy of the line. For the second cut, add a shim, such as a playing card, to the stop block. This will take just a whisker off for a super-clean edge.

12. Next, place the freshly cut side against the miter fence and adjust the angle so the uncut side is parallel to the blade. This should be approximately 76 degrees on the miter gauge. Then miter the second side.

13. With a beveled side against the fence, adjust the miter fence so the frame bottom is parallel to the blade. Reset the blade to 90 degrees; rip each bottom to 3/4 in. wide (Fig. C). Reset the blade to 45 degrees and bevel the underside of the frame's bottom just up to the routed rabbets (Fig. E).

14. Remove the miter fence, flip the frame over onto its face and use the table saw fence to bevel the top.



Pencil Lines Tell You When To Stop

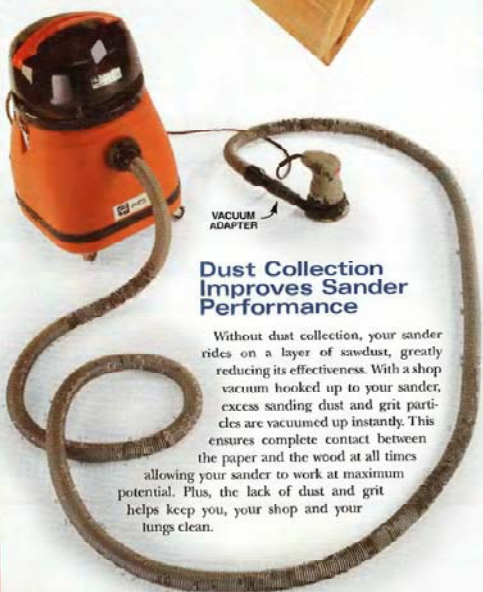
There's nothing worse than sanding right through a veneer. Pencil lines are a great way to gauge sanding progress. I always draw lines on plywood where it meets a solid hardwood edge. The lines will start to disappear when the hardwood edge is flush with the plywood. That's when you know it's time to stop.

Pencil lines work on glued-up boards, too. The boards aren't even until all the lines are gone.

Keep Edges Crisp

Lay pieces of scrap wood of equal thickness to bridge the piece you're sanding. This will prevent the sander from tipping and rounding over the crisp edges.

For sanding the narrow edges of doors, clamp the door between two pieces of thick stock to help steady the sander.



Dust Collection Improves Sander Performance

Without dust collection, your sander rides on a layer of sawdust, greatly reducing its effectiveness. With a shop vacuum hooked up to your sander, excess sanding dust and grit particles are vacuumed up instantly. This ensures complete contact between the paper and the wood at all times allowing your sander to work at maximum potential. Plus, the lack of dust and grit helps keep you, your shop and your lungs clean.



Scrapers Leave Sanders in the Dust

Scrapers have been around for centuries, and for good reason: They do the job fast! A sharp scraper leaves hardwoods with a smooth finish that only needs a little finish sanding. A scraper is faster than an orbital sander and you never have to change grits. The hard part is getting a good cutting edge on a scraper; it takes some practice. But, once you've used a sharp scraper, you'll find yourself reaching for it more often than for your sander. (For more on sharpening a scraper, see AW #102, September 2008, "Foolproof Scraper Sharpening," page 68.)

Source
Highland Hardware
(800) 241-6746, www.highlandhardware.com
BAHCO 474 card scraper, #091509, \$6.



Skip Grits

Really, it's OK. We checked with several major sandpaper manufacturers and each one said the same thing: Whatever grit you start with, you can skip every other grit as you progress from coarse to fine. Using each grit in sequence is almost always overkill, not to mention extremely tedious. If you start at 100, skip to 150, then 220. Or from 80, go to 120 and then 180.

Pipe Insulation Contour Sander

Sticky-backed sandpaper and foam pipe insulation team up to make perfect custom contour sanders. The flexible pipe insulation can be rolled to conform to almost any size of curve.

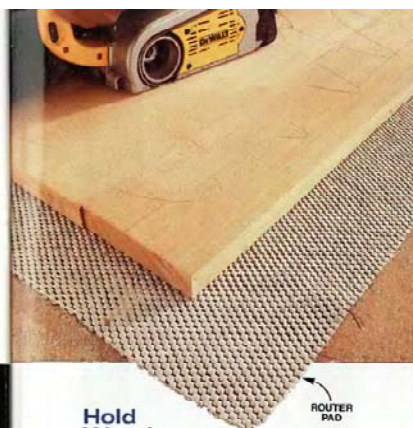
Source
Hardware stores and home centers, pipe insulation, \$2 per 4-ft. length.





Coarse Grit Saves Time

If you need to remove a lot of material, using too fine a grit is a waste of time and paper. Use 80- to 100-grit sandpaper to do the hard, time-consuming work. As a rule of thumb, you should spend about 80 percent of your time with these coarser grits. Then the finer grits simply remove scratch marks from the previous grit.



Hold Wood Steady with a No-Slip Pad

Router pads do a great job of gripping flat pieces of wood during sanding. With a router pad, you don't need to stop and move clamps around or (one of my personal bad habits) try to hang on to a board with your fingertips and work the sander one-handed.

Source: Home centers and hardware stores, router pad, \$7.



A Raking Light Finds Hidden Defects

Shine a bright light from different angles across sanded boards to illuminate hard-to-see swirl marks and problem spots while they're still easy to fix. Use the light before each grit change and you'll avoid having to back up several grit levels to remove a deep scratch.

Flap Sanders Eat Wood

A flap-sanding disc turns an angle grinder into a great tool for shaping and sculpting wood. You'll be amazed at how quickly these things remove wood. Be sure to take time to practice a bit before you scoop out your first chair seat.

Source: Home centers and hardware stores, 3M flap-sanding disc, \$9, angle grinder adapter, \$10.



Soft Pads Increase Random-Orbit Sanders' Flexibility

A soft replacement pad does a better job than the standard firm pad that comes with your random-orbit sander when it comes to sanding contoured areas.

The thick, flexible pad conforms to a soft curve. A stiff pad tends to dig in and ruin the work.

Source: Check the supplier of your sander; pads vary with brand and model, \$15 to \$25.

Dampen the Wood for a Clean, Smooth Finish

After your final pass with the power sander, wipe a damp sponge over the wood. As the wood dries, any loose wood fibers will stand up.

Let the wood dry completely. Then lightly sand the whole surface with 220 or higher grit paper to knock off the whiskers. This yields as smooth a wood surface as you can get and is especially important when you use water-based finishes that tend to raise the grain anyway.

Wetting the wood will also reveal any hidden glue smears or sweat drips. Or you can wait until the varnish is on to see them—your choice. **AW**



Tile-Topped Outdoor Table

This sturdy white-oak table will last a lifetime and won't blow over in the wind.

by Jock and Susan Holmen

IF YOU LOVE LOUNGING on your deck and need a solid side table to hold your cool drink and snacks, here's the solution. We designed this stylish side table to be simple to build. It's made of white oak and finished with an outdoor stain, so it's sure to handle the weather. The ceramic-tile top provides a durable maintenance-free accent.

PROJECT REQUIREMENTS AT A GLANCE

Tools: Tablesaw, bandsaw, plate joiner, planer, jointer.

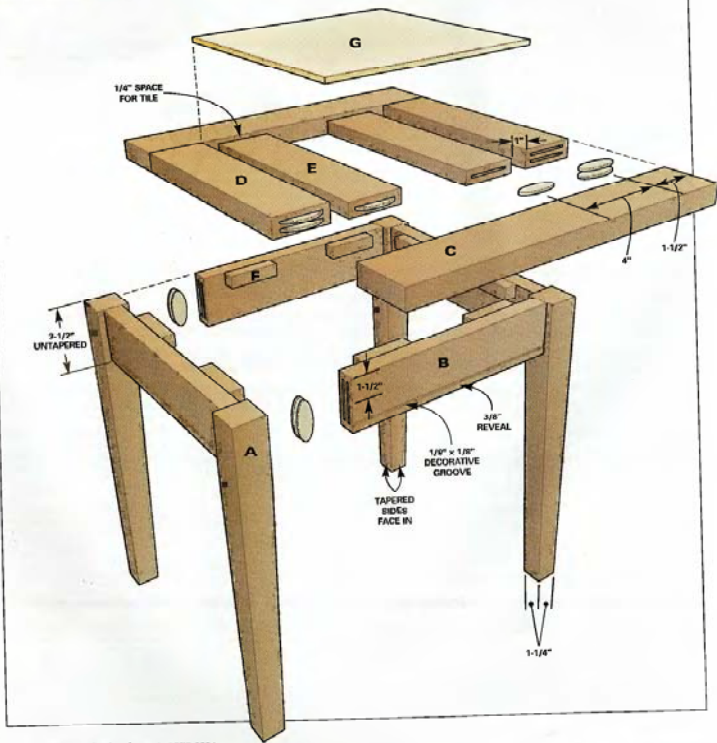
Materials: 4 bd. ft. of 8/4 (2-in.) white oak; 8 bd. ft. of 5/4 (1-1/4-in.) white oak, No. 20 biscuits, one 12 x 12-in. ceramic tile, exterior wood glue, exterior stain, silicone caulk.

Total cost: About \$50.

Cutting List Overall Dimensions: 18" x 18" x 19"

Part	Name	Qty.	Dimensions
A	Leg	4	1-3/4" x 1-3/4" x 19"
B	Apron	4	1" x 3" x 12-3/4"
C	Long frame	2	1" x 3" x (tile length + 6-1/8")
D	Short frame	2	1" x 3" x (tile length + 1/8")
E	Tile supports	2	3/4" x 3" x (tile length + 1/8")
F	Glue block	8	3/4" x 3/4" x 3"
G	Tile	1	1/4" x 12" x 12"

FIGURE A EXPLODED VIEW



1 Rip thick lumber for the legs to rough size on the table saw. Always use a pushstick when cutting narrow boards. Joint, plane and crosscut the legs to final size.



2 Bandsaw two tapers on adjacent sides of each leg. Saw each taper about 1/16 in. oversize. The tapers are subtle, so mark an X at the top of each one to help you keep track of which surface is tapered.

BEFORE YOU START

Buy your ceramic tile before you build this table, because the actual size of tiles can vary. We purchased a single 12-in.-square x 1/4-in.-thick ceramic tile at our local home center. The actual size was closer to 11-7/8-in. square. The tile is undersize to allow a grout joint in normal applications, but the amount can vary. We used white oak for its natural resistance to rot (see Sources, page 64). Other wood, such as mahogany, teak, cedar or ipe, will also withstand the elements.

TAPER THE LEGS

Start by sawing the 8/4 lumber for the legs (A) 1/8-in. oversize (Photo 1). Then joint, plane and cut to the final size (see Cutting List, page 60).

Next, mark an X at the top of two adjacent sides on each leg. These two marked sides will be tapered. Use these Xs to help you keep track of the tapers. The tapers are subtle and it's possible to confuse them with the untapered outer sides (see Oopsl! page 64). Also, the legs are untapered where they join the aprons (B, Fig. A, page 60).

Mark lines for the tapers on each leg and saw the taper on the bandsaw (Photo 2). Stay about 1/16 in. away from your pencil line. After the first taper is cut, reattach scrap with masking tape and cut the second taper. Remove the bandsaw marks with a pass or two over your jointer (Photo 3).

CUTTING THE DOUBLE BISCUIT SLOTS

Using spacers makes easy and accurate work out of cutting the double biscuit slots in the legs. This setup works with any biscuit joiner and the only measuring you need to do is to locate the center of the slot down from the top

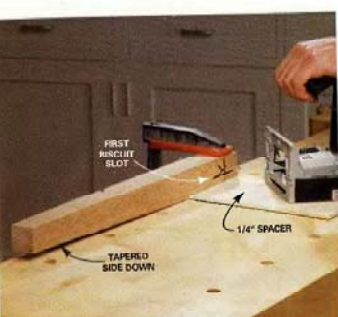
of the legs (Fig. A). Make sure to cut the biscuit slots in the legs with the adjacent taper down (Photos 4 and 5).

MAKE THE APRONS

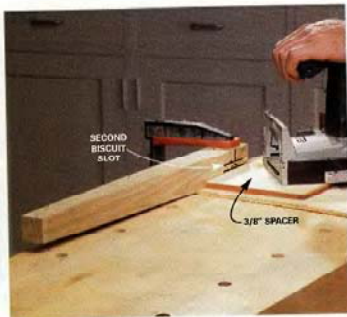
Cut the aprons (B) to final size. Cut the decorative groove on the bottom outside face (Fig. A) on your tablesaw using a standard 1/8-in. kerf saw blade. The groove is also a handy way to keep track of the outside face of the aprons during the upcoming biscuit-cutting



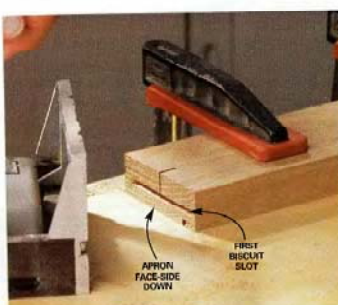
3 Smooth the tapered sides with your jointer. A freehand bandsaw cut can be fairly uneven, so smoothing might take two passes. Feed the legs top-end first. Use a push block and stick to guide the leg.



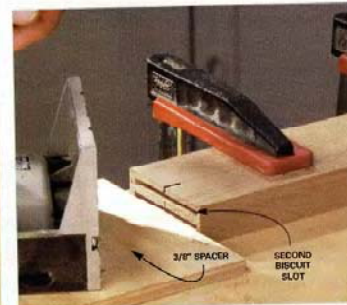
4 Cut a pair of biscuit slots in the legs. To center the apron on the leg, use a 1/4-in. spacer for the first slot. To avoid a costly mistake, always clamp each leg with a tapered side down. Only cut the slots in faces marked with an X.



5 Cut the second biscuit slot in the legs. Add a 3/8-in. spacer on top of the 1/4-in. spacer. Spacers are far easier to use than fiddling with the biscuit joiner's fence when you're making these double slots.



6 Cut biscuit slots in the aprons' ends. Clamp the apron face-side down. That's the side that has a decorative groove cut into it. This time, cut the first slot without the 1/4-in. spacer.



7 Cut a second biscuit slot with the 3/8-in. spacer under the plate joiner. This is a foolproof system for making the slots in the legs and aprons exactly the same distance apart.

steps. With the decorative groove facing down, cut the double biscuit slots in the ends of the aprons. Cut the first slot without any spacer and the second one with a 3/8-in. spacer (Photos 6 and 7).

ASSEMBLE THE BASE

First make two leg assemblies by gluing two legs and one apron together, then the other two legs and an apron (Photo 8). Make sure the decorative groove on the apron is facing out. Use an exterior glue for this project (see

Sources, page 64). After the glue has dried, complete the table base by adding the other two aprons (Photo 9).

ADD THE TABLETOP

With your chosen tile in hand, use the information in the Cutting List's notes, page 60, to determine the correct lengths for the tabletop parts (C, D and E). Make these parts and mark centerlines for the biscuit slots on their ends (Fig. A, page 60).

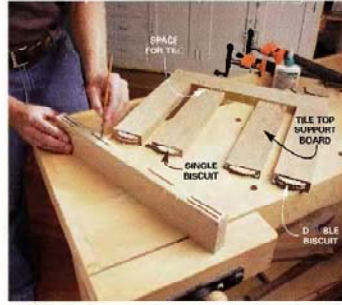
Cut the double biscuit slots in the outer frame boards (C and D) with their top sides facing up during slot cut-



8 Assemble the table base in stages. Glue together two legs and one apron using exterior glue. Make sure both legs lie flat on your bench. Repeat this step with the other pair of legs and apron.



9 Assemble the entire table base. Work on a level surface, such as the top of your table saw. This will ensure the finished table won't wobble. Working upside down also prevents excess glue from dribbling down the legs.



10 Assemble the top. A small paintbrush works great for applying glue to the biscuits and slots. The tile top of this table rests on support boards that are thinner than the rest of the frame. The tile top's support boards are connected with only a single biscuit.



11 Fasten the base to the top with glue blocks. This table doesn't use any metal screws or brackets that can rust out. You don't have to clamp these blocks. Just rub them hard back and forth to squeeze out the glue, and then hold them in place for a few seconds until the glue gets tacky.

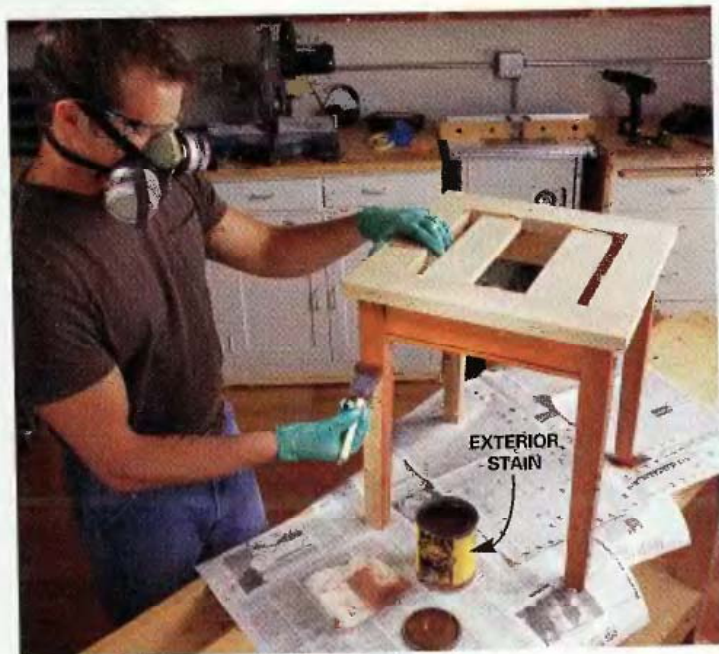
ting. Cut the bottom slot without using any spacer and the top slot using the 3/8-in. spacer. The tile support boards (E) are thinner and sit 1/4-in. below the surface of the outer top frame boards. This offset provides room for the tile. The support boards are joined to the long tabletop frames (C) with only one biscuit at each end. Cut slots for these biscuits with the supports' top side facing up and without using a spacer.

Next, glue and clamp the top (Photo 10). After the base and top sections have thoroughly dried, give these

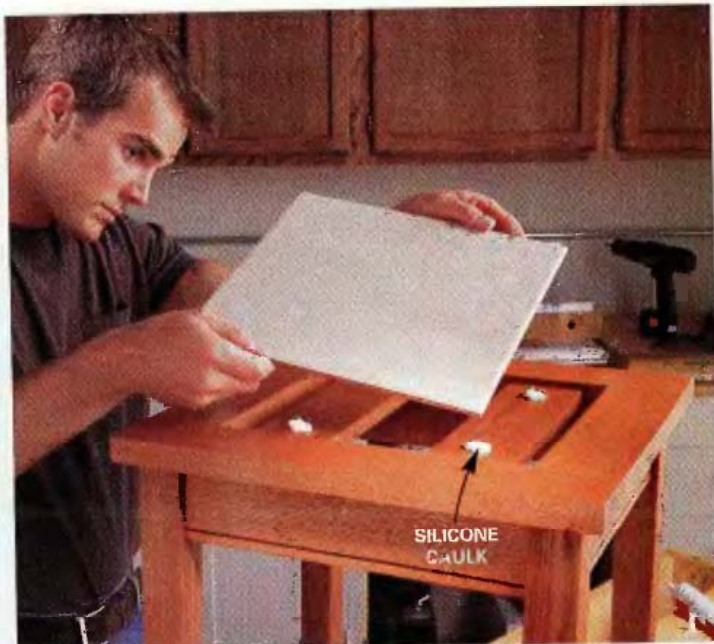
assemblies a final sanding. Attach them to each other using glue blocks (F). Apply glue to each block and rub it back and forth several times until you feel the glue take hold slightly (Photo 11). Then put pressure on the block for about five seconds before letting go. Leave the table upside down until the glue is dry.

USE AN EXTERIOR STAIN

We chose to apply exterior stain on our table. Exterior stain is very easy to apply with a brush or a rag



12 Finish the table with an exterior stain. Let it dry thoroughly before you install the tile top.



13 Install the tile top using four spots of silicone caulk. Make sure the stain is completely dry before you install the tile, or the caulk may not stick to the support boards.

(Photo 12). Be sure to work in a well-ventilated area and use the appropriate safety equipment. The exterior stain needs to be renewed every year or two, but it won't peel or crack like varnish.

When the stain is completely dry, glue the ceramic tile in place using silicone caulk (Photo 13). Center the tile so there is a 1/16-in. space between it and the wood frame. This space provides a place for rainwater to drain away. Now you're all set for a lazy afternoon on your deck.

Sources

Groff & Groff Lumber Inc.
(800) 342-0001
www.groffslumber.com
8/4 white oak, \$4 per bd. ft.
5/4 white oak, \$3 per bd. ft.

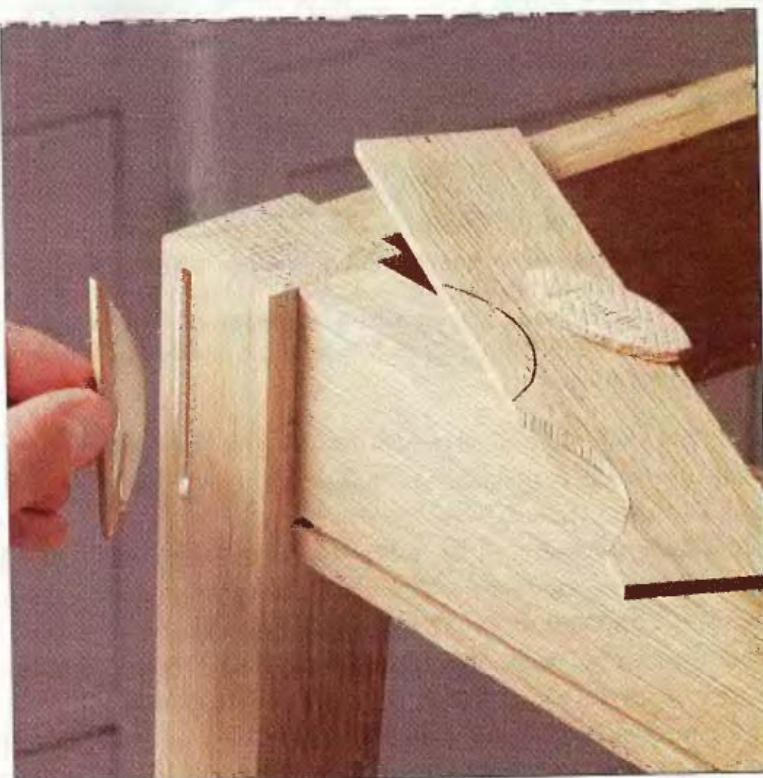
Cabot's Stain
(800) US-STAIN
www.cabotstain.com
Australian Timber Oil,
Mahogany Flame, #3459,
1 quart, \$15 to \$18.

Woodcraft Supply
(800) 645-9292
www.woodworker.com
Exterior glue, Titebond III Glue,
16 oz., \$8.

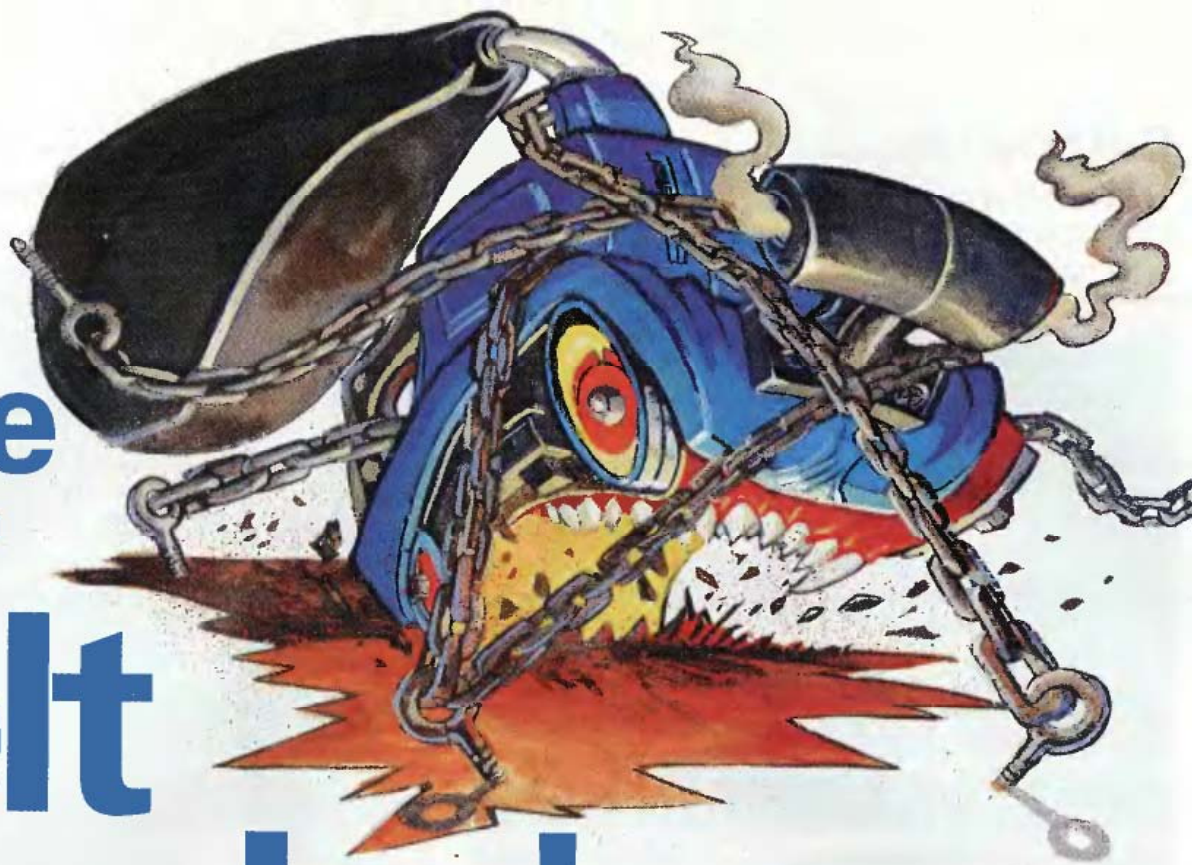
Oops!

We were making such great progress, but we lost track of which side of this leg was tapered and cut a biscuit slot on the wrong side. Rather than make a whole new leg, we decided to repair the mistake. If you make a similar mistake, here's how to fix it.

Find a piece of wood that matches the color and grain of the leg you're repairing. Plane the piece of wood to fit the biscuit slot. Trace half the outline of a biscuit, making your outline about 1/16 in. larger than the biscuit's outline. Cut out this "half-biscuit" on your bandsaw or scrollsaw and test its fit. The half-biscuit should fill the slot from end to end and stand a little proud of the leg's surface. Glue the half-biscuit into the slot. When the glue is dry, sand the half-biscuit flush with the leg. If you do a good job of matching grain, the repair should be hardly noticeable—and it sure beats making a whole new leg. **AW**



Tame Your Belt Sander!



Get that menacing belt sander under control with these whip-it-into-shape tips. *by George Vondriska*

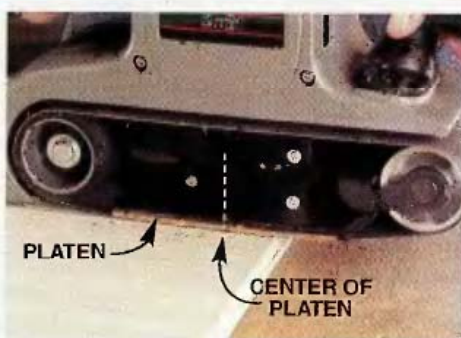
Does the prospect of using a belt sander make your palms sweat and your hands shake? I feel your pain. Belt sanders have a bad rap as the quickest way to ruin a project. Use them incorrectly and your project starts to look like the rolling hills of Ireland. But used correctly, they're a great tool for flattening panels, flushing up trim and face frames and getting to the finish line fast.

- Start by learning the belt-sander rules of the road:
- Keep it moving. The slightest pause can form a gouge.
 - Let the weight of the sander to the work. Don't lean on the machine.
 - Use nothing but 120-grit paper until you're comfortable with the machine.
 - Don't overextend yourself. Running a belt sander at your reach's extreme end is a sure way to gouge material.

Handling the Sander



1 Start with a soft landing. Before you pull the trigger, lift the sander slightly off the workpiece. Squeeze the trigger as you ease the sander down and forward, feathering it into the material. Think of it as an airplane making a smooth landing.



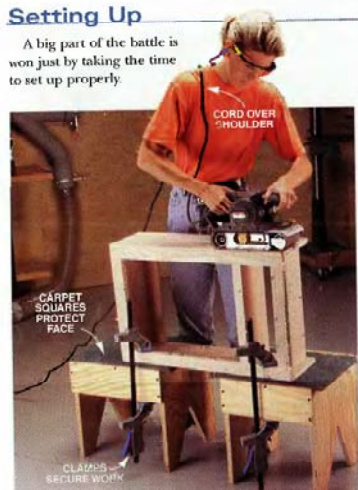
2 Go over the edge, but only a little. As you sand to an edge, allow the platen to project over the corner, but never by more than half its length or width. This keeps the sander balanced and flat.



3 End with a smooth take-off. OK, you've successfully landed your sander and finished sanding. Now it's time to take off. On your last stroke, lift the sander as it moves forward. Then release the trigger.

Setting Up

A big part of the battle is won just by taking the time to set up properly.



Get the height right. The surface you're sanding should be slightly lower than your waist. This puts your arms at a comfortable working height. For some projects, like cabinets, it may mean working on a surface other than your workbench. Make sure the piece you're sanding is secure. It's also good practice to keep the cord out of the way by draping it over your shoulder. It looks weird, but it prevents frayed cords—and nerves—from belt-sanded wires.



Provide solid stops. You can't sand a piece that you're chasing around the shop. Belt sanders are powerful and have a tendency to launch projects off their perches. Be sure your material is trapped against stops that are firmly clamped to the bench. Clamping the material itself to the bench is a hassle because the clamps get in the way. The stops should be thinner than the material you're working on and wide enough so the sander won't bump into the clamps.

Trueing Up

A belt sander can flatten a glued-up panel in no time.



1 Sand diagonally first. Flatten a solid wood panel by first sanding at 45 degrees to the grain using an 80-grit belt. This helps level the high spots that often occur at the joints. Use a straightedge to check the panel, working the angles in a criss-cross fashion until it's flat. **Note:** Never sand plywood at an angle.



2 Then go straight. When the panel is flat, sand parallel to the grain, using the same 80-grit belt, until the cross scratches from your diagonal sanding are gone. Each stroke of the sander should overlap the previous stroke by half a belt width. Pencil marks help you keep track of where the sander has been and where it needs to go. When the cross-grain marks from the previous step are gone, change to a 120-grit belt and work the entire panel again.

Tooling Up

It's a poor craftsman who blames the tool, but it's hard to get good results from a prehistoric belt sander. Here's what to look for in a new belt sander.

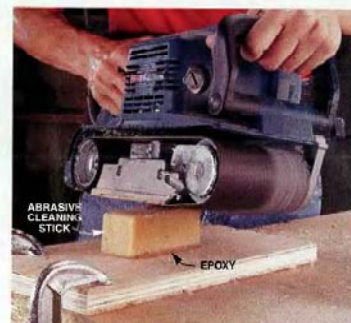


Eliminate gouging with a sanding frame. A sanding frame (\$20 to \$30) is like training wheels for a belt sander. Unlike training wheels, you'll never want to remove the sanding frame. A slick surface on the bottom of the frame rides on your material, and the sander is suspended within the frame. This is a no-experience-required way to keep the sander under control and dead flat. Some frames even have micro-adjust knobs that allow you to control how much material the sander is taking off.

Frames really shine when you're working on large surfaces. Not every belt sander is made to work with a frame, so if you're buying new, it's a feature to look for.



Variable speed gives you better control. A belt sander set on low speed and equipped with a fine-grit belt is easy to control. It's especially useful on veneered materials. If you want to hog off barrels of sawdust quickly, switch to a higher speed.



Clean belts = better results. An abrasive cleaning stick, epoxied to a board and clamped nearby, will keep your belt clean and working hard. Abrasive cleaning sticks set like an eraser for sandpaper. At less than \$10 per stick, it's a lot less expensive to frequently use the cleaning stick than to frequently change paper.



Get the right belt. Look for no-lap belts for your sander. The seam is a butt joint with high-strength tape holding the back of the joint together. Belts with lap joints tend to have high spots that go thump, thump, thump, as you sand, which makes controlling the sander more difficult. **AW**

Easy setup makes all the difference

You're about to be marooned on a desert island. You're allowed one power tool to take with you. Which would it be?

My choice would be a bandsaw.

After the router, a bandsaw is the most versatile tool in a woodshop. It can cut straight or curved lines; it can turn logs into lumber or make precision dovetails. Of course, you must pick the right blade for the job, and then set the guides just so for each blade—without losing your patience. We all like lots of power. It's really handy for the big stuff.

Shopping for a saw that can do all these jobs can drive you nuts, however. The choices are overwhelming. For any amount you're willing to spend, there's another machine that costs only \$100 more—or \$100 less.

To help you, we've undertaken the most comprehensive bandsaw test we've ever done. In this issue and the next, we'll look at 14-in. and larger saws that cost less than \$1,500. In this issue, we'll review 19 saws that cost less than \$1,000. Their wheels range in size from 14 to 17 in. and their motors are between 3/4 and 2 hp. In the next issue, we'll tackle 13 more-expensive bandsaws.

This test has three parts. First, we'll review the important features any bandsaw should have. Second, we'll take a close look at individual models. Last, you'll find a chart with side-by-side comparisons and recommendations for saws in four price ranges.

PART 1
saws
under
\$1000

Tool Test Bandsaws

by Tom Caspar

FEATURES TO CONSIDER

Bandsaws are used in so many ways that every woodworker has a slightly different take on which features matter most. Whether you're rough-sawing curved parts, cutting joints or resawing door panels, here's the short list of points to check.

WHEEL DIAMETER
Wheels come in different sizes, from 14 to 18 in. diameters. Blades as wide as 5/8 in. are fine on a 14-in. wheel; wider blades for resawing last longer and have more traction on larger wheels.

TENSION RELEASE LEVER
Move this lever to relax the tension on a blade after a day's work. It's the best new feature that makes a saw more convenient to maintain.

PRICE
More money generally gets you more power, but other features, such as the guides, may be the same on a less-costly model.

GUIDES
Upper and lower guides hold the blade straight. Your choice among the many types of guides depends on which blade size you use most.

CAPACITY
The clearance under the guides determines how tall a board you can resaw. Capacity is fixed on welded-steel saws (right). You can increase it from 6 to 12 in. on many cast-iron saws (left) by adding a riser block.

TABLE
Look for a big, sturdy table if you saw heavy timbers and logs.

FRAME
Bandsaw frames are either cast iron (left) or welded steel (right). Either type can be very rigid and free of vibration, depending on the model.

VOLTAGE
A 2-hp motor, ideal for resawing (ripping wide boards into thin pieces), requires 240-volt service. (This model is a 1-1/2-hp, 120-volt machine.)

POWER
For general work, 3/4- or 1-hp motors are fine. Look for a 1-1/2- or 2-hp motor for the best results when resawing boards over 6 in. tall.

KEY FEATURES

GUIDE SYSTEMS

The biggest pet peeve among bandsaw users is blade guides that are a pain to adjust. We gave this factor a lot of weight in our ratings.

Blade guides are located both above and below the table (see photos, right). For an accurate cut, it's equally important to set both correctly—even more so the smaller the blade you use.

How often do you have to adjust the guides? For best results, you should change blades to cut curves of different sizes and wood of different thicknesses. That means changing the guide settings, too. However, many bandsaw owners rarely fiddle with the guides, making do with a single size blade for almost all their work.

If you're a fastidious woodworker who'll switch back and forth between blades, look for a guide system that we rate as easy to adjust. We believe that the more complicated the design of the guide system, the less likely you'll set it right. If you don't mind getting by with one blade, any guide system will work.

A good guide system is a combination of two things: the guides themselves and the adjustment mechanism that holds them. Guides come in three types: block, bearing and disc. Which type is right for you depends on the range of blade sizes you use and your level of patience (see "Types of Bandsaw Guides," page 75).

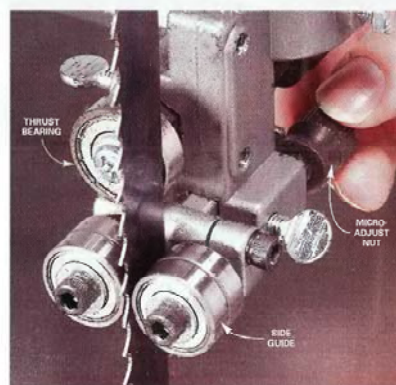
We prefer an adjustment mechanism that moves the guides and thrust bearing independently. (A thrust bearing sits directly behind the blade, preventing the blade from bending backward.) On saws without an independent system, you must remember to set the guides first, then the thrust bearing. One setting depends on the other. That can be frustrating.

We also prefer saws that have easily accessible micro-adjust nuts or cams for positioning upper and lower guides and thrust bearings. On saws without micro-adjust nuts, you must manually push or pull the guides and bearings into place.

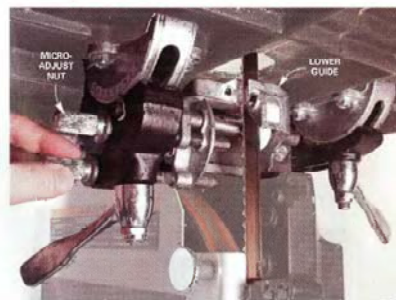
HORSEPOWER

If you want to cut lots of thick stock, go for power above all else. If you won't cut big stuff often, easy-to-adjust guides are more important.

Motors range from 3/4 to 2 hp. More horsepower generally costs more money. Power affects



Easily adjustable blade guides are mighty convenient when you switch blades for different jobs. We prefer micro-adjust nuts that let you dial in how close the guides are to the front of the blade. We also prefer a system that lets you independently move the thrust bearing either before or after setting the guides.



Lower blade guides are often overlooked in all the stuff under the table. They should be easy to adjust, too, because they're as important as the upper guides. We prefer lower guides that are high up and relatively close to the table, because that minimizes the length of unsupported blade. This is particularly important with 1/4-in. and smaller blades.



More power yields the best results when resawing. You get a smoother cut because you can maintain a constant feed rate. All bandsaws have plenty of power for work less than 2 in. thick, but you really notice a difference sawing boards 6-in. thick or more. For resawing, look for a saw with 1-1/2 to 2 hp.

both a cut's speed and quality. The higher the horsepower, the faster you can feed thick stock without slowing down the motor (see photo above). If the motor bogs down or stalls, the blade wanders and makes an irregular rough cut.

For sawing hardwoods less than 2 in. thick, 3/4 hp is plenty. You can resaw wood of any thickness with a 3/4-hp motor, but you must carefully monitor the feed rate to keep the motor turning at top speed. A 1-hp motor is much better for wood up to 6 in. thick. Look for 1-1/2 to 2 hp to cut wood from 6 to 12 in. thick.

VOLTAGE

Most saws with 3/4- to 1-1/2-hp motors can be plugged into a standard 120-volt outlet. Every saw with a 2-hp motor requires a 240-volt outlet.

FRAME AND BASE STYLE

The rigidity of a saw's frame and base really counts when you're cutting big, heavy stuff. You want the table to stay put, not wiggle. Bandsaws have cast-iron or welded-steel frames (see "Features to

Consider," page 72). The most stable saws have a welded-steel column that runs to the floor.

Some saws with a separate base have an annoying front-to-back shake when you cut thick wood. It's most pronounced on saws with open stands. The amount a closed-stand machine shakes depends on how much the base's top is reinforced.

Frame style in general, though, doesn't affect how much the upper wheel flexes under a load, or the vibration and noise levels, which vary widely.

RESAW CAPACITY

If you want a saw that's ready for any job, look for one with a 12-in. maximum resaw capacity. For most work, 6- to 8-in. capacity is plenty. But once in a while, you may wish you had more. Woodturners prefer 12 in. of resaw capacity for making large bowl blanks from logs.

Welded-steel saws have a fixed capacity, but 14-in. cast-iron saws are more flexible. Their capacity can be increased when you need it. At the base prices we list, cast-iron saws have a 6-in. capacity. This can be increased to 12 in. by inserting a riser block. Add the riser block's cost (\$50 to \$100 extra) when you compare saws by price. Unfortunately, riser blocks aren't available on some cast-iron saws.

WHEEL DIAMETER

Power, capacity and price don't necessarily increase with the size of a saw's wheels. Some 14-in. saws have very powerful motors, for example. A 16-in. saw may have less capacity than a 14-in. saw with a riser block, and cost less, too.

So what do you get with bigger wheels? Clearly, you get a bit more throat capacity left of the blade, but that's not a big deal. The most important advantage of a wheel over 14 in. is being able to easily run big, wide blades for ripping and resawing. You get more traction and transmission of power with a large-diameter wheel, because the blade contacts more surface area than on a small-diameter wheel.

Thick blades last longer on large wheels. Most blades up to 1/2 in. wide are 0.025 in. thick. Most 3/4-in. and wider blades are 0.032 in. thick or more. Carbide-tipped blades are often extra-thick, too. Thick blades are prone to prematurely breaking from metal fatigue on 14-in.-dia. saws because they're constantly bent around a wheel

TYPES OF BANDSAW GUIDES



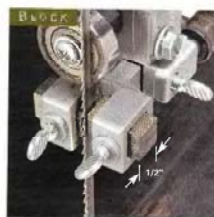
What keeps a bandsaw blade from twisting or wandering side to side? It's the guides. They may be small, but they're a critical part of any bandsaw.

You've got a choice of three different types of guides: block, ball bearing and disc. Ideally, guides should be easy to set up, support the full width of a large blade and require little or no maintenance.

BLOCKS

Blocks are the most versatile guide. They're our pick for a saw that's often asked to run both narrow and wide blades. There are four types:

Steel. Steel blocks can dull a blade's teeth if they touch, so setup is tricky with 1/4-in. and smaller blades.



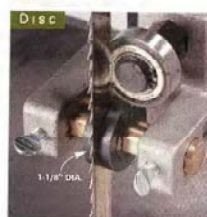
Block guides support a blade up to 1/2 in. deep. This width is important for steadying wide blades.

The faces of steel blocks are long-lasting, but you must occasionally redress them to stay flat. They can be tedious to file or grind.

Polymer. These blocks won't dull a blade, but they wear quickly. They're easy to redress.

Phenolic. Sold under the trade name "Cool Blocks" (and shown below), these are our favorite because they're so forgiving to set up. They won't harm a blade's teeth. On small blades, you can set them right up to or on top of the teeth. They wear slowly and are easy to dress flat.

Ceramic. White ceramic blocks are low maintenance because they don't wear down. They'll dull a blade's teeth if they touch them, though, so they're hard to set up with



Disc guides can use their full diameter to support the blade.

small blades. They also make small but harmless sparks.

Most blocks are interchangeable. We recommend replacing steel and polymer blocks with phenolic ones. They cost about \$12 for a set of four, and are available from Itura Design, (888) 722-7078. Ceramic blocks are also available from Itura at \$16 a set of four.

BALL BEARINGS

The primary virtue of ball bearing guides is that they're low maintenance. Their faces spin and can't wear down. Setting these guides is very easy on wide blades, but on narrow blades you must be careful to avoid contacting a blade's teeth.

Ball bearings come in three sizes. The most important difference is how much support they offer a blade. Stacked and large bearings do a better job than small bearings on wide blades.

DISCS

Discs' best feature is the huge amount of support they offer a blade. Their faces are hardened, so they shouldn't require redressing. They must be set away from a blade's teeth.

Discs have two disadvantages. They're hard to position on 1/4-in. and smaller blades. They can also wear inside their shafts, causing them to wobble or freeze. Discs must be replaced as a whole unit.



Small ball-bearing guides support 1/4 in. worth of blade. Stacked bearings (see photo, top of page) double that support.

WHAT'S THE DEAL WITH QUICK-RELEASE TENSION LEVERS?

Woodworkers have been told for years to take the tension off the blade after using a bandsaw. That's supposed to prevent flat spots on your tires and prolong the life of your blades. Reality check: Who actually does this? Turning and turning the tension knob is just too much trouble, particularly when it's high on a saw with a riser block.

Manufacturers have been listening to our complaints. They've introduced a number of different levers that quickly reduce tension. The best type of lever takes all the tension off the blade, so it's loose from the wheel (see Chart, page 84). This makes it much easier to change blades—a huge bonus. Other levers only partially release blade tension. That helps the tires, but you still have to turn an awkwardly located tension knob to change blades.

Speaking of tension knobs, why doesn't anyone install a crank instead? A crank is much easier to turn and is the next best thing to having a quick-release lever.



that's too small. They're better suited for 16-in. or larger saws. (For thin 3/4-in. blades suitable for 14-in. saws, call Suffolk Machinery, 800-234-7237).

BLADE CAPACITY

Most saws claim to take up to a 3/4-in. blade, which many woodworkers prefer for resawing. It's true that they do fit, but that's not the whole story. It's impractical to run most 3/4-in. blades on 14-in. saws, because they're too thick. Fortunately, a 3/4-in. blade is not a must for resawing. Yes, it's less prone to bending in the cut than a narrower blade, but you can get very good results with 1/2- and 5/8-in.-wide blades.

At the other extreme, all saws can handle 1/8-in. blades, but some guides are easier to set than others (see "Types of Bandsaw Guides," page 75).

TABLE SIZE AND RIGIDITY

A bigger table is a real bonus, because it's easier to support long and wide stock.

A rigid table helps improve a saw's performance. Press down hard on the edge of some tables and you'll see them wobble or tilt. This doesn't affect small work but does matter when you're resawing large, heavy timbers or cutting bowl blanks from heavy, green wood.

OTHER FEATURES

- **Quick-release tension lever** (see sidebar, left).
- **Dust ports.** Dust collection isn't terrific on most saws, but a 4-in. port helps if you have a large dust collector. Smaller, 2-1/2-in. ports don't work very well. Two ports are better than one. The upper port, located below the table, strips dust directly from the blade. The lower port cleans the bottom of the wheel cavity.
- **Motor upgrade.** You can soup up many 3/4- and 1-hp saws with a more powerful, similar-speed motor when your budget allows. Upgraded motors generally aren't available from manufacturers, however. Before you upgrade, ask the manufacturer whether the machine can handle extra power. You'll have to match the mounting plate and pulley size. Also, match the switch's horsepower rating and cords' amperage to the new motor. Some motors have special mounts that are difficult to replace.
- **Fence.** Many saws come with a fence that's suitable for short joinery cuts. None are ideal for ripping or resawing because, with most blades, you must slightly angle the fence to cut a long, straight line. We're disappointed that these fine fences can't be easily adjusted to compensate for blade drift.
- **Easy left tilt.** All tables tilt left and right. Left tilt is useful for cutting dovetails or angled tenons. To tilt a table left on most saws, though, you must remove the 90-degree stop and reset it when you're done. Some saws have stops that easily swing out of the way.
- **Two speeds.** Some bandsaws have an additional low speed that's useful for resawing wood and cutting aluminum. You get more torque in low gear, so there's less strain on the motor. It's easier to maintain a steady feed rate. That's a big plus for 1-hp or smaller saws. For wood, slowing down the blade often produces a more corrugated surface, however.

PROFILES



DELTA GROUP



DELTA 28-475X

	DELTA 28-276	DELTA 28-208
• Price:	\$500	\$600
• Power:	120 volts, 3/4 hp	120 volts, 1 hp
• Maximum resaw capacity:	12 in.	12 in.
• Wheel diameter:	14 in.	14 in.

PROS
Delta bandsaws have consistently ranked well for user-friendliness in our tool tests. These two models continue that tradition and slightly edge out comparable machines from Jet. (However, we'd be happy to buy either brand for a discounted price.) Both Delta saws are essentially the same above the base. Setting the blade guides and thrust bearings is a breeze. Only Delta bandsaws have lower-guide micro-adjust knobs located front and center under the table, where they're easy to reach. The lower blade guides on all Delta 14-in. saws are positioned much higher up and closer to the table than most other saws' guides. This minimizes the length of unsupported blade, so there's less chance it will bow or twist. Both saws feature quick-release tension levers and 4-in. dust ports.

CONS
All Delta saws come with steel guide blocks. We'd switch right away to phenolic Cool Blocks (\$12). You need an Allen wrench to set the guide blocks. Reaching the lower ones requires some dexterity. Vibration from the motor on the closed-base model transmitted from the motor on the closed-base model can be a problem. (The motor isn't bolted down; it pivots and hangs from the drive belt, like a contractor's saw.) On both models, the table isn't very rigid. The base on the closed model could be better reinforced to prevent the frame from shaking when cutting big stuff. Delta's riser-block kit (\$100) is more expensive than others' kits.

- Price: \$900
- Power: 120 volts, 1-1/2 hp
- Maximum resaw capacity: 12 in.
- Wheel diameter: 14 in.

PROS
This versatile saw is our favorite 120-volt machine. It's equally good at resawing and detail work. On the outside, this saw looks like an upgrade of the other two Delta models, but it's not the same machine. It's made to higher standards in a different factory. Two outstanding features of this saw are its powerful motor and excellent quick-release tension lever. This is the only lever that automatically adjusts to different blade sizes. In addition, the table is more rigid than those of the other Delta models. The Powermatic PMBS-14CS, with more built-in accessories, is a close second choice for the best 120-volt saw, but the Delta feels as though it delivers more power.

CONS
The price tag for versatility is quite high. Most of the bugs were worked out of this saw a long time ago, but we'd quickly replace the steel blocks with phenolic Cool Blocks. Setting the spacing of the guide blocks requires an Allen wrench, and the lower ones are awkward to reach. (Other saws use thumbscrews.)



JET GROUP

	JWBS-14OS	JWBS-14CS	JWBS-14X
• Price:	\$530	\$575	\$715
• Power:	120 volt, 3/4 hp	120 volt, 1 hp	120 volt, 1-1/4 hp
• Maximum resaw capacity:	11-3/4 in.	11-3/4 in.	11-3/4 in.
• Wheel diameter:	14 in.	14 in.	14 in.

PROS
All three of these Jet models are fine general-purpose saws. The major difference among them is horsepower. All three have guide systems that don't require tools to adjust and are fairly easy to set up.

The 14OS and 14CS models are priced about the same as their Delta counterparts, the 28-276 and 28-206. Picking between the two brands is a close call. Your best bet is to wait for a rebate or sale price and buy the less-expensive saw. The JWBS-14X has better dust collection than the other Jet models, stiffer and heavier cast-iron (rather than aluminum) wheels and a quick-release tension lever.

CONS
The guide-system micro-adjust knobs under the table on all three models are awkward to reach. We recommend replacing the polymer guide blocks on all models with phenolic Cool Blocks. The guide blocks' thumbscrews have small heads that are hard to grasp, and those holding the upper guide blocks obscure your line of sight. The quick-release tension lever on the JWBS-14X doesn't fully release the tension, so you still have to turn the tension knob to change blades. It's similar in design to the Grizzly G0555.



JET JWBS-16

- Price: \$875
- Power: 120 volt, 1-1/2 hp
- Maximum resaw capacity: 12 in.
- Wheel diameter: 16 in.

PROS
This sleek-looking saw has a sturdy frame and can easily take a wide blade. It only requires 120-volt power. The table is large and stiff. A crank adjusts the height of the guide post, and an easily accessible wheel located below the upper frame adjusts tension.

CONS
Other 1-1/2-hp saws seem to have more guts. The lower guides are very frustrating to precisely adjust front-to-back. Removing the table makes it easier, but that's a pain. It's hard to adequately lock down the small thumbscrews on the thrust bearings.



POWERMATIC PWBS-14CS

- Price: \$900
- Power: 120 volts, 1-1/2 hp
- Maximum resaw capacity: 12 in.
- Wheel diameter: 14 in.

PROS
This powerful saw runs on household current and is loaded with accessories. The list of extras includes a good Carter-brand quick-release tension lever, guides with two bearings per side for extra support on wide blades, a gooseneck light and an effective blower and nozzle to remove dust on top of the workpiece. All that adds up if purchased separately, but you get it all for about the same price as the Delta 28-475X, which doesn't have many of these goodies.

CONS
There's nothing to dislike. The blade guides are maintenance-free, but fussier to adjust than phenolic blocks in a Delta when running a narrow blade. The lower guides aren't as close to the table as in the Delta saws, so there's 1-3/4 in. more unsupported blade. Although there's a quick-release tension lever, you still have to turn a tension knob to change blades.



BRIDGEWOOD BW-14WBS

- Price: \$600
- Power: 120 volts, 1 hp
- Maximum resaw capacity: 8 in.
- Wheel diameter: 14 in.

PROS
This saw has easy-to-adjust ball bearing guides and micro-adjust knobs both above and below the table. It's got a reasonable amount of power. Other features are also up-to-date: You get a first-class quick-release tension lever and a 4-in. dust port.

CONS
Resaw capacity is limited to 8 in. The table is small and not as rigid as we'd like. The largest blade setting on the tension scale is 5/8 in., although the spring can handle a 3/4-in. blade. The guides are single, small bearings. They don't support wide blades as much as other styles of bearings do.



BRIDGEWOOD BW-17WBS

- Price: \$900
- Power: 240 volts, 2 hp
- Maximum resaw capacity: 11-3/4 in.
- Wheel diameter: 17 in.

PROS
This welded-frame saw has plenty of power and a huge resaw capacity. It runs quietly and smoothly, due in part to its heavy, rigid cast-iron wheels. The guides are large-diameter ball bearings. Setting blade tension is very convenient with a hand-wheel under the upper arm, and you get a good quick-release tension lever. There's a rack-and-pinion mechanism for raising and lowering the large blade-guide post. The oversize table is very rigid, perfect for cutting logs into bowl blanks. The saw has two 4-in. dust ports and is one of the few saws with a magnetic switch and thermal-overload protection.

CONS
It looks enormous, but this saw has a footprint no larger than open-base 14-in. saws. (It weighs 286 lbs., however.) The lower blade guides are awkward to adjust. They work fine, but you can't be in a hurry. The table is low at 37-1/2 in.; we'd put this saw on a stout 5-in. tall box as large as the saw's base.



LAGUNA LT-14

- Price: \$950
- Power: 120 or 240 volt, 1-1/2 hp
- Maximum resaw capacity: 8-5/8 in.
- Wheel diameter: 14 in.

PROS
This is one solidly built saw. There's virtually no vibration when resawing at full capacity. The motor is a Baldor, reputed to have a long, service-free life. Extra-wide, maintenance-free ceramic guides offer more support than on any other saw. You can get substitute phenolic blocks from Laguna for 14-in. and smaller blades (\$85). Other nice features include heavy cast iron wheels, a solid table, a magnetic switch and a rock-solid fence. You can buy the saw prewired for 120 or 240 volts. Although it has a single port, dust collection is very good.

CONS
Resaw capacity is limited to just over 8 in., but that's plenty for most work. The ceramic guides occasionally send off small sparks. The dust port is an odd size (3 in.). The stand under the saw shown above is a \$50 accessory. There's one frustrating aspect to this saw: setting the guides. It takes patience. You need three different wrenches to set the lower guides, and you must follow a particular order.



GRIZZLY G0555

- Price: \$375
- Power: 120 volt, 1 hp
- Maximum resaw capacity: 12 in.
- Wheel diameter: 14 in.

PROS
Here's the saw with the most features for the lowest price. It's easy to set up and can do a reasonably good job cutting thick or thin boards. The motor has enough power for resawing at a reasonable pace. You get easy-to-adjust ball bearing guides, micro-adjust knobs all around, a 4-in. dust port and a fence.

CONS
The short arm of the quick-release tension lever is awkward to pull. It reduces, but doesn't completely release, tension. You still must turn the tension knob to change blades. On our saw, the tensioning spring was almost fully compressed at the 1/2-in. mark. Extra available tension is always handy for tweaking a blade's performance and protecting a saw's frame and bearings from a sudden shock, but this spring doesn't have much slack.



GRIZZLY G1073

- Price: \$625
- Power: 240 volt, 2 hp
- Maximum resaw capacity: 7-5/8 in.
- Wheel diameter: 16 in.

PROS
This is the least expensive saw in our test with a 2-hp motor and a wheel diameter over 14 in. It'll easily handle any 3/4- or 1-in. blade. You don't need any tools to adjust the guides. The table is quite large. The fence is exceptionally sturdy for resawing heavy boards.

CONS
This saw promises a lot for resawing, but the cons outweigh the pros. A few more inches in resaw height would be great, but you can't extend the saw's capacity. Although the table is large, it also flexes easily under a heavy load. The blade guides are small steel rods that don't offer as much support for large blades as other guide systems do. There's no tensioning scale and the dust port is small.



GRIZZLY G0513

- Price: \$750
- Power: 240 volts, 2 hp
- Maximum resaw capacity: 12 in.
- Wheel diameter: 17 in.

PROS
This saw has many, but not all, of the same terrific features as the Bridgewood BW-17WBS for \$150 less. It's the best value saw in its price range. This 2-hp saw has a slightly more powerful motor than the Bridgewood, but it, too, requires 240-volt power.

CONS
You get disc guides with this saw (the Bridgewood has ball-bearing guides). They're slightly harder to set up with small blades. The wheels are not cast iron and are lighter in weight. The power switch isn't magnetic.



CRAFTSMAN 22424

- Price: \$500
- Power: 120 volts, 1 hp
- Maximum resaw capacity: 6 in.
- Wheel diameter: 14 in.

PROS
This is a fine, no-frills machine. For the price, this saw packs plenty of power. Resawing at its 6-in. max. capacity is no problem. Changing blades and setting guides are easy enough, although there aren't any micro-adjust nuts on the guides below the table. The power switch has a removable child-safety key.

CONS
Craftsman doesn't make a riser kit for this saw. The maximum blade capacity is only 1/2 in. The guides are steel blocks, but you could easily substitute phenolic Cool Blocks for easier setup. The table is larger than those on many saws, but not particularly rigid. Dust collection isn't very effective.



GENERAL INTERNATIONAL 90-150 M1

- Price: \$620
- Power: 120 volts, 1 hp
- Maximum resaw capacity: 7-3/4 in.
- Wheel diameter: 14 in.

PROS
This is a good general-purpose saw, with adequate power for its capacity. You don't need any tools to adjust the guides. There's a quick-tension release lever and a crank for raising and lowering the guide-post assembly. This saw is light in weight but the frame is exceptionally stiff.

CONS
This is the only saw with a built-in dust blower and bag, but it doesn't work as well as we'd like. You're better off hooking up a dust collector to the 4-in. port. You don't get a full 12 in. of resaw capacity to complement the width of a portable planer, but you get enough to match the capacity of an 8-in. jointer.



RIDGID BS1400

- Price: \$380
- Power: 120 volt, 3/4 hp
- Maximum resaw capacity: 12 in.
- Wheel diameter: 14 in.

PROS
The best features of this saw are its low price and ready availability (it's sold exclusively at Home Depot). It's a straight-ahead machine: nothing outstanding, but no deal-breakers, either. The blade guide adjustments are tool-free and easy to use. There's a removable child-safety key on the power switch.

CONS
Resawing goes more slowly than on more powerful saws. The saw comes with steel guide blocks. They're OK, but we'd upgrade with phenolic Cool Blocks. Dust collection isn't very effective and the table isn't as rigid as other models. Like other open-stand saws, it shakes more than we'd like when resawing very large boards.



RIKON 10-320

- Price: \$500
- Power: 120 volt, 1 hp
- Maximum resaw capacity: 6 in.
- Wheel diameter: 14 in.

PROS
Rikon's new handsaw has several innovative features. It has a wide, fairly rigid table with two miter slots, one on either side of the blade. There's 3 in. more support on the right side of the blade than on most other 14-in. saws. You can square the table to the front of the blade with micro-adjust screws. The blade slot in the table faces you, rather than facing right. That makes installing a blade much easier and reduces the risk of linking. This saw, like a few others, has two speeds. The second speed is quite low, so there's plenty of torque for demanding jobs. That's very welcome on a 1-hp motor. Changing speeds is exceptionally easy. A handy blade selection and troubleshooting chart is posted inside the upper door.

CONS
The guide system can be finicky to set precisely. Its parts tend to creep out of position when you give them a final tightening. The guides have no micro-adjust nuts. This saw is noisier than most.



MINIMAX S14

- Price: \$650
- Power: 120 volts, 1-1/2 hp
- Maximum resaw capacity: 7-3/4 in.
- Wheel diameter: 14 in.

PROS
This is a powerful, extremely sturdy machine for the money. It's fine for both resawing and detail work. You can resaw at full capacity without slowing down the motor. The blade guides are stacked ball bearings, a type that offers quite a bit of support for wide blades. They're fairly easy to adjust, too. The wheels are heavy cast iron. For convenience, this saw has a very good quick-release tension lever, a crank for raising the blade guide post and a magnetic switch.

CONS
You can't increase this saw's capacity with a riser block. The table is somewhat small. The heads of the blade-guide thumbscrews are small, too, and hard to tighten. As with many other tools, the list price is higher than the street price we show. This saw is only available directly from MiniMax, so ask for the company's best price.

If all you need is a good saw for light-duty work, there's no need to spend more than \$400 on a bandsaw. Our Best Buy, the Grizzly G0555 (\$375), is a terrific value.

Normally, we pick an Editors' Choice in a tool test. That's the single machine that stands out as the best of its class. But with bandsaws, there aren't easily-defined classes from which to choose. You have no reason to limit yourself to a 14-in. saw, for example, when there are good 16-in. or larger saws that cost less. Rather than select a single Editors' Choice, we've chosen our favorite saws from four different price ranges.

If your budget is from \$400 to \$500, the choice is easy. We recommend the Grizzly G0555. It's a good, basic machine and can take a riser block for a full 12 in. of resaw capacity.

From \$500 to \$625, we'd be happy with either the Delta 28-206 or the Jet JWBS-14CS. Sure, these two models have differences, but not overwhelming ones. We'd buy whichever is on sale or comes with more accessories. Unlike the Grizzly G0555, both use block-

From \$625 to \$750, 120 volts, we like the Jet JWBS-14X and the MiniMax S14. Both have more powerful motors than saws in the less-expensive saws categories. In this price range at 240 volts, we recommend the Grizzly G0513. This large 17-in. saw has a 2-hp motor. It's not ideal for small blades, but it resaws like a champ.

From \$750 to \$950, we like an old 120-volt favorite, the Delta 28-475X. It's easy to set up with any size of blade and has as much power as you're likely to get on a 120-volt circuit. The Powermatic PWBS-14CS is a close second, though. Compared with Delta's block-style guides, the Powermatic's bearing-style guides are a bit harder to set up with 1/4-in. and smaller blades. At 240-volts, we like the 2-hp Bridgewood BW-17WBS. It's very similar to the Grizzly G0513 but runs more

One saw that stands out in a class by itself is the Laguna LT-14. It runs like a well-made Swiss watch and has a maintenance-free blade guide system that offers more support than virtually any other saw. Truth is, though, the guides are awkward to adjust. If you use the same size blade for most of your work, this saw is a fine choice. **N**

COMING NEXT ISSUE
In this article, we reviewed band-aids that cost up to \$1,000. There's nothing significant about this particular price: it's just a round number. You can spend more on a band-aid, however. In our next issue, we'll test some that cost up to \$1,500.

*** Excellent ** Above average * Average • Below average
NA Not Available 1 Includes riser block, measured to the nearest 1/4-in. 2 Rounded up to the nearest inch
3 Disc above table, blocks below table 4 Above/below table 5 UN = Unnecessary; motor has ample horsepower

DOUBLE-DUTY FILE CABINET

I don't have enough room for a permanent outfeed table for my saw. Instead, I mobilized my file cabinet (it's great for storing saw blades, sandpaper, etc.) and added a melamine "flight deck" so it could serve double duty. It's even got a pop-up extension to reach over the saw's motor. Now I can safely rip boards up to 8-ft.-long.

First, I made a dolly for the cabinet. To make the base, I cut a piece of 3/4-in.-thick plywood 1-1/2-in. longer and wider than the cabinet. After installing the locking swivel casters, I captured the cabinet with 3/4-in.-wide edging.

I built the flight deck by screwing the melamine top to a pair of skirts. Cleats and screws fasten the deck to the file cabinet.

The extension mounts on sturdy folding shelf brackets that are super easy to install and use.

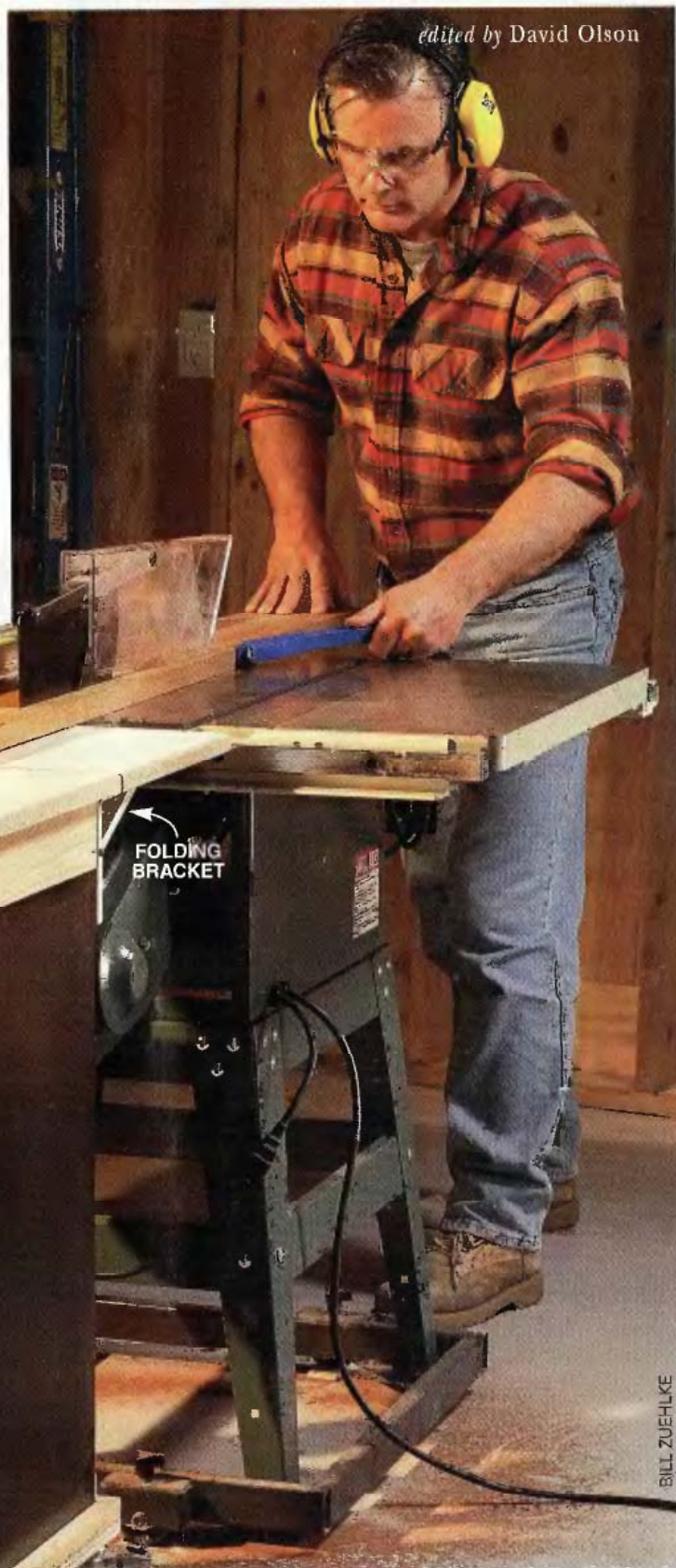
Michael Herberger

MELAMINE

FOLDING BRACKET

LOCKING SWIVEL CASTERS

DOLLY



edited by David Olson

BILL ZUEHLKE

Sources

Highland Hardware
(800) 241-6748
www.highlandhardware.com
Locking swivel casters,
084050, \$8 each (4 required).

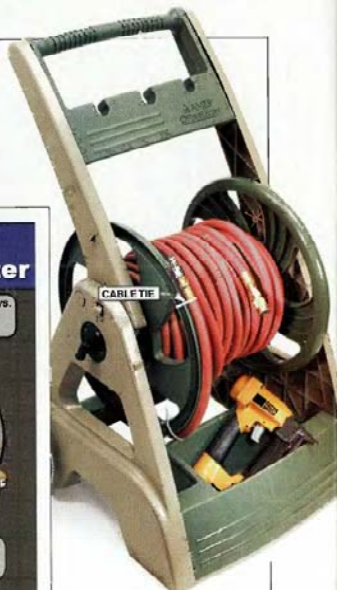
Woodcraft
(800) 225-1153
www.woodcraft.com
Folding shelf brackets,
#128944, \$14.

SMALL SHOP TIPS

ECONOMICAL AIR-HOSE REEL

I use air tools for sanding, nailing and finishing. I usually work in my garage, but when the weather is nice, I often grab my sawhorses and move outdoors. I have a 100-ft. air hose, so I can work a long way from my compressor.

However, this long hose used to drive me crazy, because it was always tangled and difficult to coil.

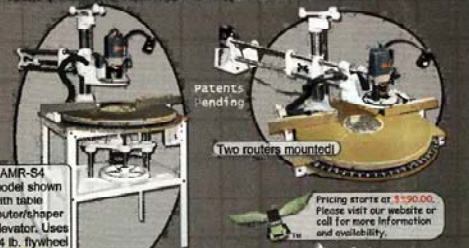


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Then I found an old garden-hose reel at a garage sale for only \$10. I fastened one end of my air hose to the edge of the reel and easily wound up all 100 ft.

Now I just unwind as much hose as I need and then connect the tied-on end to a short hose that runs to my compressor. When I'm done, I disconnect the short hose and wind the long hose back on the reel. It works great!

Dave Jarboe

If you have an original Small Shop Tip, send it to us with a sketch or photo. If we print it, you'll get \$100! Send to: Small Shop Tips, American Woodworker, 2015 Commerce Drive, Suite 700, Eagan, MN 55121 or email to smallshoptips@woodworker.com. Submissions can't be returned and become our property upon acceptance and payment. We may edit submissions, and use them in all print and electronic media.

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SMALL SHOP TIPS

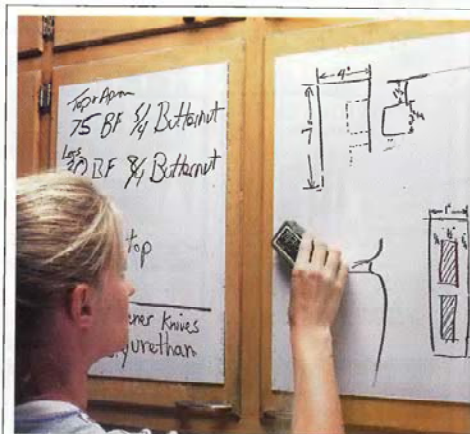
TILE BOARD DRAWING PAD

While working on a project, I used to draw sketches, keep notes and record shopping lists on writing pads. Unfortunately, they always got lost.

Then I discovered tile board at my local home center. Designed for bath and shower enclosures, the 1/8-in.-thick tile board is smooth, white and easy to clean—just like dry-erase board.

Using hot-melt glue, I mounted tile board on every cabinet door in my shop. Maybe I got a little carried away, but a 4 x 8-ft. sheet costs only \$10 and it can cover a lot of cabinet doors. Besides, I like to draw.

Steve Jones
IN



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