

**SPECIAL** Table Saw Issue!

# WORKBENCH®

THE ORIGINAL WOODWORKING HOME IMPROVEMENT MAGAZINE

## Double-Duty Cut-Off Jig

**Table Saw  
Shootout!**  
We Test 6 Models

**Plus:**

- 3 Shop-Built  
Table Saw Jigs
- Quick Tune-Up  
Tips for Your  
Table Saw

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November/December 2000

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*One neat thing about this project is that you can build the individual pieces in the shop, then trim them to match your house.*

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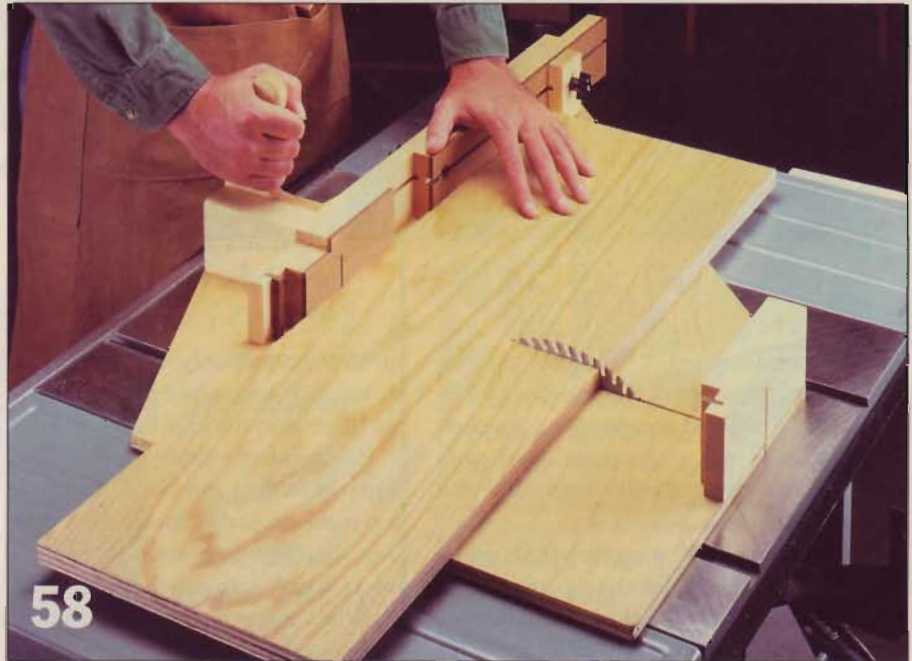
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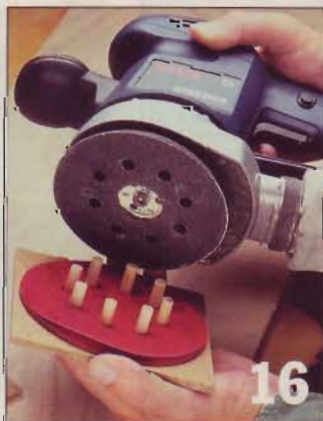


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## EDITOR'S NOTES

Sometimes it just pays to step away from the day-to-day routine and do something different. It gives you a chance to check your perspective and come up with a new idea or two.

One day recently the whole *Workbench* staff left the shop and office and went on a "field trip." We started by walking through a local Home Show Expo where we found seven houses priced from \$500,000 to well over \$1.5 million.

I know, how many people can afford houses like that? Not many. But our goal was to look past the "glitz" for ideas that we could turn into do-it-yourself projects.

Later, we stopped off at a few local building centers. Again we weren't there to buy anything, but to search for new project ideas and products.

The next day we got together to compare notes. Opinions varied on what was good, bad, or ugly. We also talked about what was just strange about the expensive show homes. For instance, why don't they have a conve-

nient place to put your soap in the shower? Or, how come the bathrooms are larger than the kids' bedrooms?

The building centers also generated some interesting questions: How can you make decorative moldings in your own shop? Are laser levels just a gimmick? What's with polyurethane glues?

When it was all over we ended up with over 250 ideas. I'm sure you'll see some in future issues of *Workbench*.

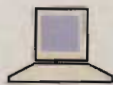
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If you would like to help us work on these ideas and you're enthusiastic about home improvement and woodworking, let me know. We're looking for full-time, in-house editors and illustrators to join us here at August Home Publishing. Just drop me a line and a resume highlighting your experiences. Send them to: Doug Hicks, *Workbench*, 2200 Grand Avenue, Des Moines, Iowa 50312. Or e-mail: dhicks@augusthome.com.

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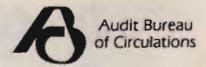
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# Questions & Answers



## Pros and Cons of Different Style Cabinet Doors and Drawers

**Q** Why did you choose lipped drawers and doors for your kitchen cabinet project in the last issue (Sept./Oct. 2000, page 40, see photo above) rather than flush-faced (inset) or overlay? Is one style better?

Sam Mayfield  
Indianapolis, IN

**A** Often decisions about style come down to what you think looks best. There are, however, advantages and disadvantages to the different styles that should be considered.

### OVERLAY FACE

Most stock cabinets feature overlay drawers and doors that lie completely on top of the cabinet face frame (see top drawing). One advantage of this style is that the size of the doors and drawer fronts can be very flexible. However, I think a  $\frac{3}{4}$ "-thick door sticking out from a cabinet always looks a bit clunky.

When fitting overlay doors, you have to be careful that the spacing

between door edges is consistent across the entire face of the cabinet. Even a slight difference will really stand out.

### FLUSH-FACED

The biggest disadvantage of flush-faced (inset) style drawers and doors (middle drawing) is the time it takes to fit them to get a uniform gap all around the face frame opening. If the opening isn't square, you'll have to taper the doors and drawer fronts.

Then, just when you've got a consistent gap, something may shrink or swell. Suddenly, your nice-looking gap is ruined, and the doors or drawers may stick.

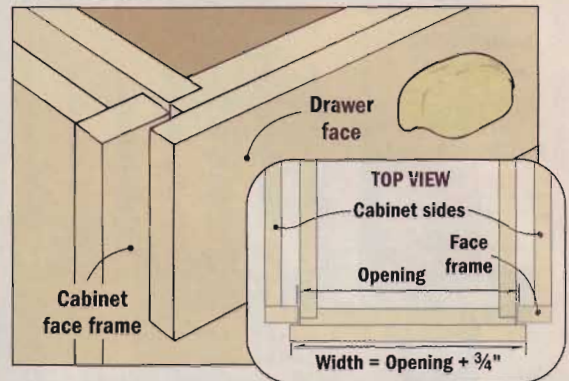
### LIPPED FACE

Lipped doors and drawers (bottom drawing) give you the best of both

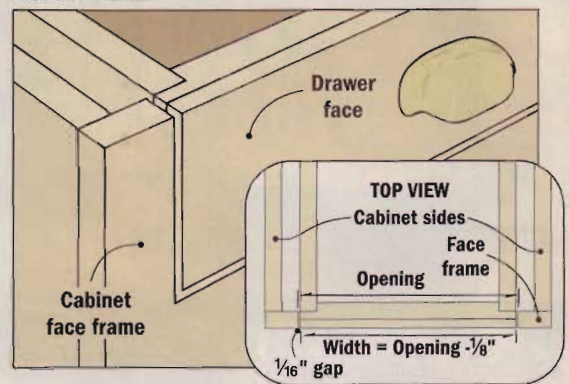
worlds — cleaner lines on the cabinet without the hassle of custom fitting inset doors and drawers.

Another plus is that they're very forgiving. Because part of the door or drawer thickness is inset into the opening and the other part lies on top of the cabinet face frame, you don't have to be as concerned about slightly uneven gaps. The lip will cover up any discrepancies.

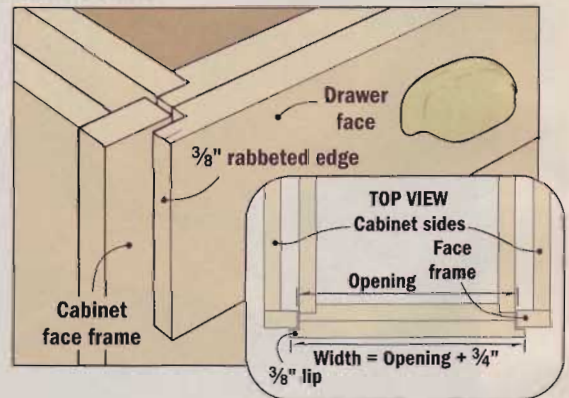
### OVERLAY FACE



### FLUSH-FACED



### LIPPED FACE



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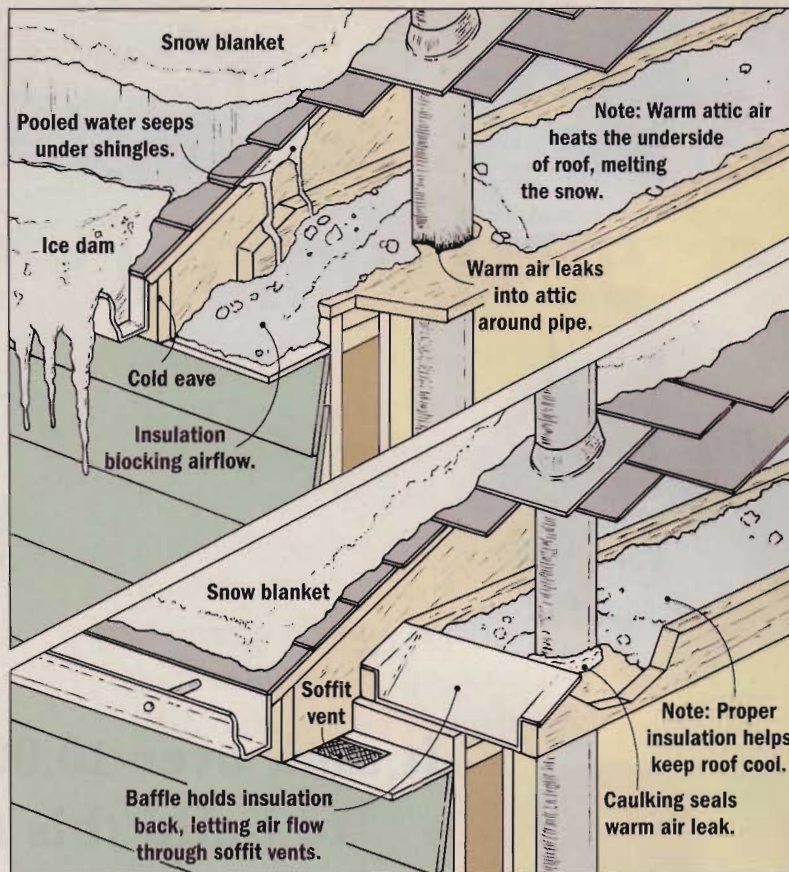
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## Diagnosing and Defeating Ice Dams

**Q** Will icicles hanging from the gutters damage my roof in any way? How can I get rid of the icicles?

Melinda Krantz  
Rochester, MN

**A** Icicles by themselves aren't a big concern unless they get unusually large. But take a good look *above* the icicles. Do you see a continuous chunk of ice along the edge of your roof with a pool of water behind it? This ice dam and water can be the real villains.

In most homes, heat rises into the attic, raising the air temperature and warming the underside of the roof. This is why snow melts off the upper portions of your roof even though the temperature outside may still be below freezing.

When water runs down and hits the cold eaves (that aren't warmed by the attic heat), it freezes again, creating a rim of ice. That's what causes an ice dam. Slowly the pool of water trapped behind the dam

seeps back up under the shingles.

That's when you'll start having problems. Eventually, the water can drip through the roof into the soffits, walls, or ceilings.

The key to preventing ice dams is simply to keep your attic and roof cold. Start by sealing any air leaks around light fixtures, plumbing pipes, chimneys, and gaps in drywall with insulating foam or caulking.

While you're in the attic, take a 1x2 and clear away excess insulation in the spaces between rafters over exterior walls. Insulation here can block airflow through the soffit vents, trapping warm air.

Sometimes a cold roof won't be enough. Next time you reroof, you may want to use an adhesive ice-and-water barrier first. Raking the roof is tedious, but also effective. Just be careful not to break the shingles.

As a last resort, you might want to consider installing heat cables along the roof's edge, along the gutters and inside the downspouts.

## Break the "Code" to Understand Lumber Thickness

**Q** My plans for a child's rocking horse says to use five-quarter boards. What does this mean?  
Herman Brothers  
Neligh, NE

**A** The "quarter" designation is used for the rough-cut thickness (in 1/4" increments)

of hardwood lumber. A 1 1/4"-thick, rough-sawn board is called 5/4 or five-quarter. A 2"-thick rough board is called 8/4 (eight-quarter). After they're surfaced (planed) and sold, the actual thickness of the boards is slightly thinner (see chart below).

This is a little different than with dimensional lumber (usually

softwoods used in construction), which is cut to standard sizes. The length is actual size, while thickness and width are given again in rough size or "nominal" dimensions. Actual thickness and width are 1/4"-3/4" smaller (see chart below).



### HARDWOOD STANDARDS (Thickness)

Quarter Designator	Rough	Actual*
4/4 (Four quarter)	1"	3/4"-13/16"
5/4 (Five quarter)	1 1/4"	1 1/16"
6/4 (Six quarter)	1 1/2"	1 5/16"
8/4 (Eight quarter)	2"	1 3/4"

\* Measured thickness after drying and surfacing.

### SOFTWOOD STANDARDS (Thickness & Width)

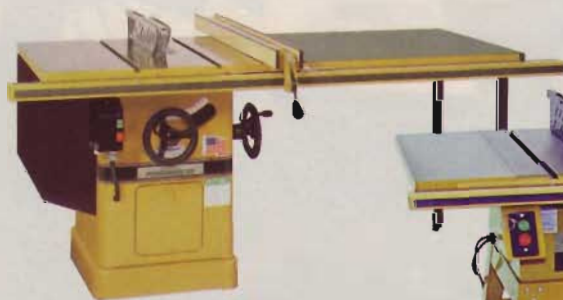
Nominal (Rough) Size	Actual (Surfaced) Dimensions*
1x4 ("one-by")	3/4" x 3 1/2"
1x10 ("one-by")	3/4" x 9 1/4"
2x4 ("two-by")	1 1/2" x 3 1/2"
4x6 ("four-by")	3 1/2" x 5 1/2"

\* Measured thickness and width after surfacing and ripping edges straight.



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## A Simple Method for Fixing Hairline Drywall Cracks

**Q** I have a small crack in one of the corners of my dining room, and I just put up new drywall a few months ago. Is there an easy way to fix the crack without having to replace the two corner drywall panels?

David McDowell  
via the Internet

**A** The crack probably developed as the framing lumber behind the walls dried and

shrank. To fix the crack, you need to fill it with something that's flexible enough to expand and contract as the house continues settling. This may continue for up to a year in some new houses.

You could run a strip of drywall joint tape over the crack, and then reapply new drywall compound. This would be similar to taping and mudding a seam. But you still run the risk of it cracking again.

I prefer an easier fix for hairline cracks that takes no time at all. You'll need some paintable silicone caulk. It's flexible like rubber even after it dries, so it will move as the wall does — avoiding future cracking. Simply apply a single bead just wide enough to fill the crack. Then wipe away the excess with your finger to get a smooth finish. Let the caulk dry overnight before priming and painting.



## Source for Ordering Miniature Hardware

**Q** Can you tell me where George Reid gets authentic smaller hardware to use on his classical miniature furniture (see "Miniature Marvels," Sept./Oct. 2000, page 88).

Clint Asher  
Redland, CA

**A** George Reid gets most of his hardware from Ball and Ball, a company that specializes in antique furniture and cabinet hardware reproductions. You can contact the company at (800) 257-3711 or check them out on the Web by visiting [www.ballandball-us.com](http://www.ballandball-us.com).

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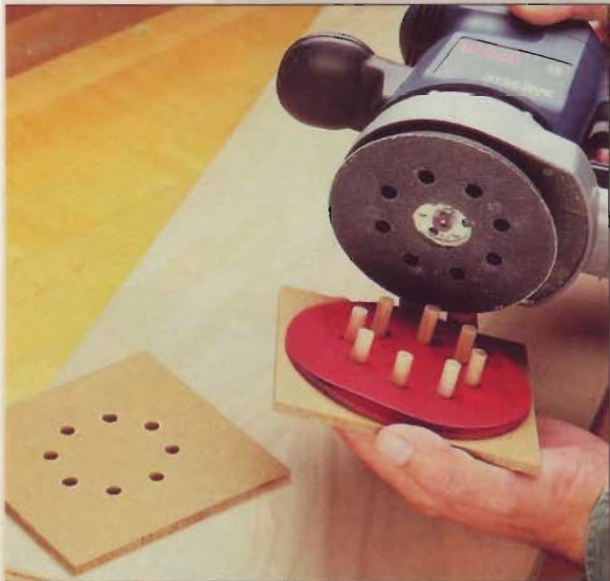


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# Tips & Techniques

## FEATURED TIP



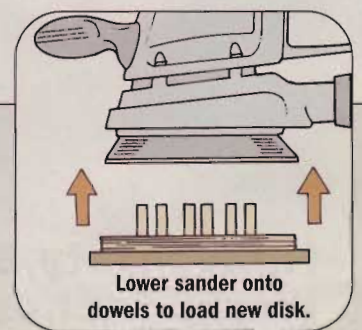
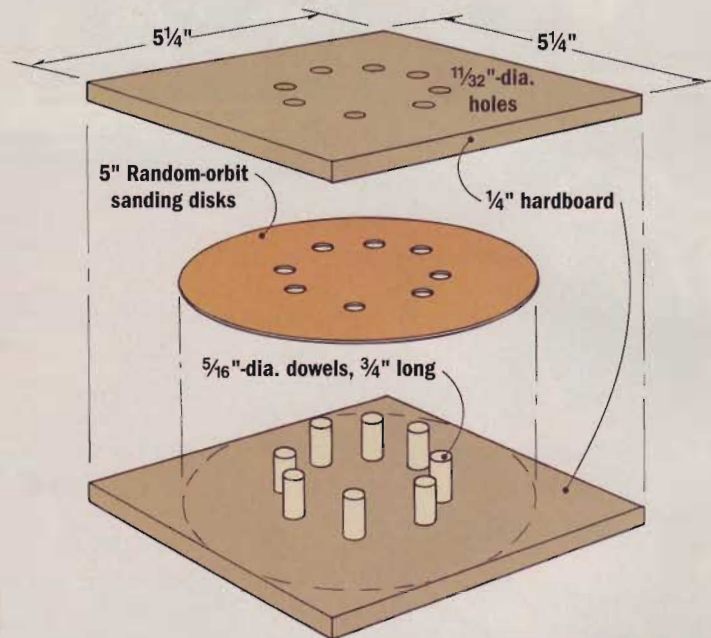
### Jig Stores, Aligns Random-Orbit Sanding Disks

I'm one of those woodworkers cursed with having to wear bifocals. So it's really tough for me to get the holes in the sanding disks lined up with the dust collection ports on a random-orbit sander.

It's also tough getting the disks back in the cardboard sleeves they come in. So they wind up scattered around in my sandpaper drawer with dust and dirt clinging to the fuzzy loop material. Then they don't want to stick to the sander's pad.

The simple jig I built solved both problems. Using a sanding disk as a pattern, I traced the location of the holes onto a  $5\frac{1}{4}'' \times 5\frac{1}{4}''$  piece of  $\frac{1}{4}''$  hardboard. Then I taped this piece of hardboard to another one the same size and drilled  $\frac{5}{16}''$ -dia. holes at each mark.

### CONSTRUCTION VIEW



Next, I separated the two pieces, switching to a slightly larger bit ( $\frac{11}{32}''$ - or  $\frac{3}{8}''$ -dia.) and bored the holes a little larger in the "cover" piece. Finally, I installed  $\frac{5}{16}''$  dowels,  $\frac{3}{4}''$  long in the "base" piece. Rounding over the ends of the dowels makes it easier to slip the cover on.

To store the disks, I simply fit them over the dowels (sandpaper side down) and slide the cover down against them. They stay clean, flat, and organized.

When I need to install a new disk, I remove the cover, position the sander's dust ports over the dowels, then slide the sander down until the pad's "hooks" engage the disk's loops. The holes

align perfectly, the disk stays in place (because it's clean), and I'm quickly back in action.

*George E. Long  
Macon, MO*

*Workbench* offers its congratulations to George Long for submitting this issue's Featured Tip. In recognition of his tip, George will receive \$250 worth of tools from The Stanley Works.

## Bungee Bucket Keeps Tools Organized

I always liked the idea of using a five-gallon bucket as a tool caddy but couldn't see spending money for one of those nylon bucket inserts with lots of pockets. I've used bungee cords on the pegboard in my shop to hold tools and decided I could use the same idea to make my own bucket tool carrier.

I started by drilling a series of 3/4"-dia. holes in the side of the bucket. The holes were drilled in pairs, roughly 2 1/2" apart with about 8" between each pair of holes.

Next, I removed the hook from one end of a rubber bungee cord and

threaded the cord through the holes. The cord goes on the inside between the narrowly spaced holes and on the outside of the bucket between the more widely spaced holes.

When I had threaded the cord around the bucket, I connected the free end with the remaining hook (see the photo).

Since it was hard to hook my tape measure over the cord, I simply drilled a bigger hole (1 1/4"-dia.) in the bucket above the cord to accept the clip on the back of the tape.

*Henry Stern  
Lakeland, FL*



## Masking Tape Makes Paint Pour Spout

Pouring paint from a can into a roller tray can be messy. Paint collects in the rim of the can, then splatters out when you replace the lid.

The last time I was painting, I noticed the roll of masking tape



lying nearby and got an idea for creating a disposable pouring spout.

Taking a piece of wide masking tape about 8" long, I installed it with the sticky side out around the rim of the can. When I poured the paint out, the tape acted as a spout and kept the paint from getting into the groove or running down the side of the can. The excess paint ran back into the can, I peeled the tape off, and replaced the lid without any mess.

*Omar Showalter  
Harrisonburg, VA*

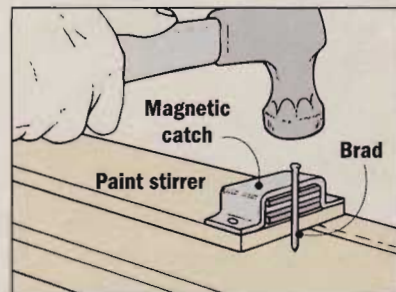
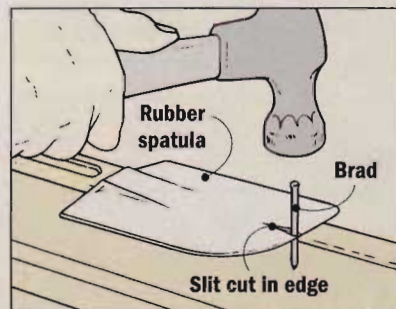
## Brad Holders Prevent Hammered Fingers

After hitting my fingers with the hammer while trying to drive some small brads, I came up with a couple of ways to get the brads started.

"Borrowing" an old rubber spatula from the kitchen, I made a cut along the edge about 1/2" deep. The thin, flexible edge of the spatula has enough give that I can wedge a brad in the cut. The long handle keeps my fingers well out of hammer range.

I made another holder by mounting a magnetic cabinet catch to the end of a wooden paint stirring stick. Since the wood is thin, I used double-sided carpet tape to mount the catch to the stick.

*Kirit Kapadia  
Columbus, OH*



## Share Your Tips, Jigs, and Ideas

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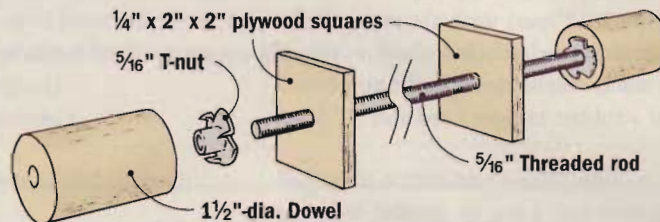
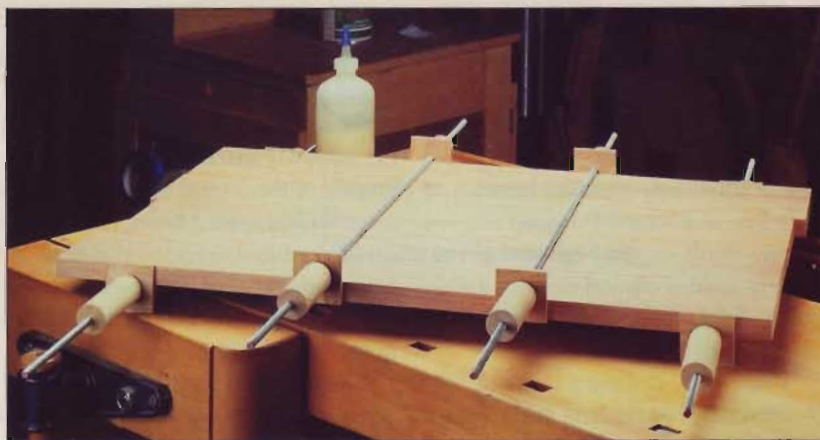
## Quick Clamps From Threaded Rod

Clamps are one of those shop accessories that you never seem to have enough of. When I needed a couple of extra clamps on a recent project, I grabbed some threaded rod I had on hand and built some simple ones like those shown in the photo. They worked so well and are so light weight, I've made some more in various sizes.

Besides the threaded rod, each clamp takes two T-nuts, two 2" lengths of 1 1/2"-dowel (closet rod works fine), and a couple of 2" squares of 1/4" plywood.

Start by drilling a hole lengthwise through the center of the dowels. Since I was using 3/16" threaded rod, I drilled 11/32" holes. Then install a T-nut in the end of each dowel.

Drill a hole in the center of the plywood square. Now slip the square



onto the rod, then thread the handle on, T-nut end first. Finally, do the same at the other end and your clamp is finished.

For short clamps, use a long carriage bolt and just one handle.

Dan Hendricks  
Omaha, NE

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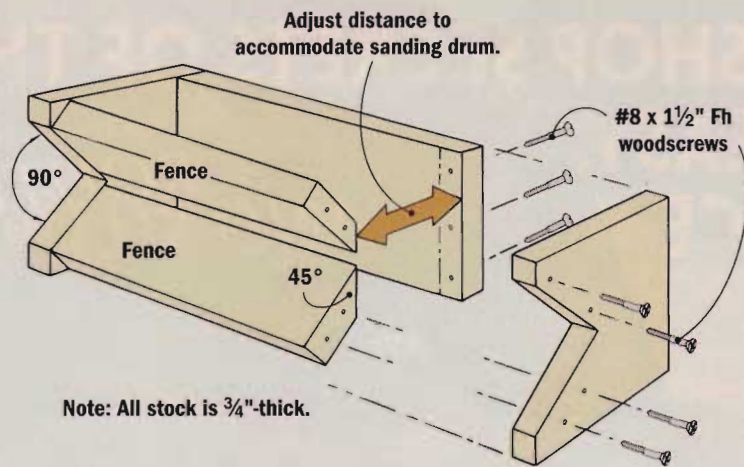
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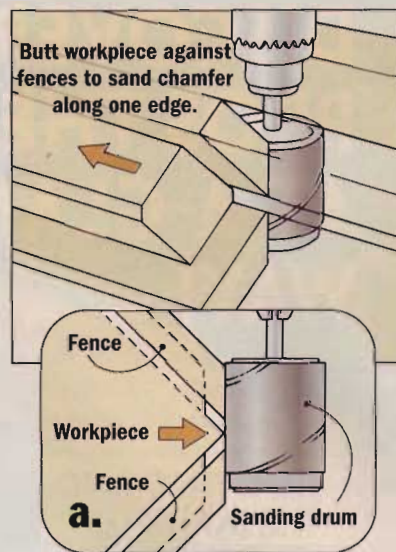


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Note: All stock is 3/4"-thick.



## Sanding Drum Jig Provides Perfect Chamfers

I build wooden toys for my grandchildren, so I don't like to leave sharp edges on the parts. For a while, I hand-sanded chamfers on the parts, but decided there had to be a better way.

The result was a simple V-shaped jig that I use on my drill press with a

sanding drum. The jig has two "fences" mounted at right angles to each other. There's a slot between them where the sanding drum fits.

To put a chamfer on a toy part, I first clamp the jig to the drill press table. Holding the part against the fences I run it past the sanding drum.

Only the corner of the piece contacts the drum (as illustrated in Figure a), leaving a perfectly smooth (and uniform) chamfer. If I want a wider chamfer, I just move the jig closer to the sanding drum.

Isador Schultz  
Lake Havasu City, AZ

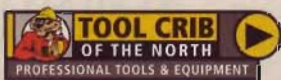
### Introducing the New Makita Store. The Biggest Selection of the Best Known Brand in Power Tools.

Grinders to nailers, sanders to planers. This new Makita web site has them all. You'll find more than 150 tools to help you choose the right tool for the job from one of the best known brands in power tools.



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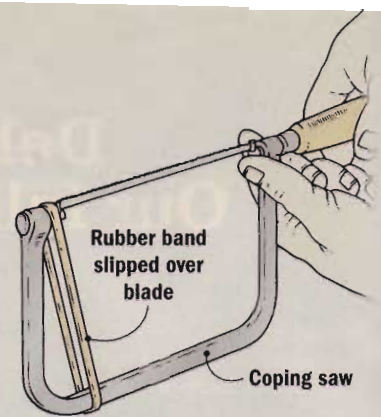
## Rubber Band Helps in Mounting Saw Blade

Sometimes keeping one end of a coping saw blade in the front pin holder while I mounted it in the rear pin holder was a juggling act. Thin, flexible blades always gave me the most trouble.

Then I came up with a trick using a rubber band. I position the

blade in the front slot and slip the band over it and across the back frame of the saw. This leaves both hands free to position the blade in the rear slot and hold the assembly steady while I tighten the handle.

*Jim Heiberg  
Springfield, VA*



## Timer Ends Late Night Compressor Starts

Most air compressors are noisy, but when they start up in the middle of the night they can make you sit straight up in bed. When that happened to me twice in one week, I decided to come up with a way to shut the compressor off automatically.

I bought a heavy-duty (20 amp) outdoor timer and plugged my compressor into the timer. Now when I want to use the compressor, I use the

timer's "manual on" switch and set the timer for the amount of time I'll be in the shop.

The timer will shut off the compressor even if I forget or leave the shop early. And if I wind up working a little longer than expected, it's a simple matter to reset the timer to get more working time.

*Jeff Johnson  
Stillwater, MN*

## Stud Finder Retread

When heat and age caused the protective pads on my stud finder to fall off, I replaced them with the loop portion of some adhesive-backed Velcro strips. Rather than throw away the hook part of the strips, I attached them to the inside of my toolbox. Now I have a handy place to hang the stud finder when it's not in use.

*David Peters  
San Ramon, CA*

### If Nothing But Heavy-Duty Will Do, Demand Milwaukee.

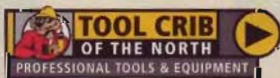


Professionals turn to Milwaukee for powerful, durable, and heavy-duty tools. The new Milwaukee store has over 500 tools featuring everything from circular saws to blades, drills to their renown Sawzalls®. Everything for the pro is here. So, if nothing but heavy-duty power tools will do, demand Milwaukee.

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Product Information Number 207



# Workbench Interactive

www.WorkbenchMagazine.com

## A Workbench Editor “Plunges” Into Online Shopping



I like to *touch* tools when I’m shopping for them. If I’m going to shell out two hundred bucks for a plunge router, I want to get to know it. I want to feel the heft and balance of the router, click the trigger on and off a few times, test the smoothness of the plunge action — all the important stuff.

So the idea of comparing online tool retailers and making some recommendations about virtual tool shopping left me a little uncertain, if not downright anxious. Sure, the Internet has a lot of information to offer the DIYer — I’d be the first to tell you that. But actually buying tools online — is that a good idea?

After all, how could looking at pictures and reading an online “buyer’s guide” be as helpful as holding the tools in my hand? And what if I hate the tool after I get it? Can I return it? Could I buy the same tool for less money at the store down the street?

So many questions and only one way to get answers: Get online and buy some tools. And then send them back — just to see if the “satisfaction

guaranteed” policies the sites all brag about are for real. And while this sounds like a cushy job, it did have some challenges. The first was where to begin.

I’m not sure how many Web sites sell tools, but there are plenty. I needed a relatively short list to begin with.

So I started at a site called Gómez.com. Among other things, Gómez is an online consumer advocate. They rate e-commerce sites based on customer confidence and satisfaction. For more on Gómez, see *Rating E-tailers*, below.

I used Gómez’s list of the 10 best home improvement sites as my starting point. From that list, I wanted to narrow it down to the five I thought were the best to do business with. After all the time spent online comparing the sites, I can honestly say there are only three of them I’ll buy tools from in the immediate future. Those sites are [www.Amazon.com](http://www.Amazon.com), [www.CornerHardware.com](http://www.CornerHardware.com), and [www.OurHouse.com](http://www.OurHouse.com).



I’ve included some comments about those sites on page 26, along with a key explaining the scoring system.

But before you read those, there is one positive thing I want to say about all 10 sites, and that is: They all accepted returned tools with no questions asked. That’s very reassuring.

Finally, on page 29, I’ve charted some more of the results of my shopping spree, including comparing the cost of buying tools locally versus buying them online.

For comments on all 10 sites, log on to [www.WorkbenchMagazine.com](http://www.WorkbenchMagazine.com).

## RATING E-TAILERS: Gómez GOES THE DISTANCE



I spend a lot of time on the Internet. Probably more than I should. Despite that, I was completely lost as to where to begin rating e-commerce sites. Even I hadn’t seen them all, much less actually done business with them.

Fortunately, I heard about Gómez.com just in time to keep from randomly clicking all around

the Web trying to figure out where to shop.

Gómez is in the business of evaluating online companies to help them make the most of their e-commerce efforts. They currently look at 32 industries ranging from investment brokers to pet supply stores. Each industry is scored against criteria specifically created by Gómez analysts.

Take the home improvement industry, for example (that’s where I went looking for the best online

tool sellers). Gómez started with a list of 63 sites for this category. Then they applied more than 150 scoring criteria and thinned the list to the 10 best sites in five subcategories.

The list I used was the 10 Best Overall sites, but they also ranked the sites as best for the Weekend Warrior, First Time Buyer, Professional, and Bargain Shopper.

For more information about Gómez and the scorecards they use to measure e-tailers, visit their site at [www.Gómez.com](http://www.Gómez.com).

Scoring Key

Tool Selection	P+
User Friendliness	P+
Customer Service	P+
Shipping Cost	P
Best Price	3 of 7
<b>Total Score</b>	<b>6</b>

**1** [www.Amazon.com](http://www.Amazon.com)  
It's not surprising to find Amazon.com at the top of this list — their name is practically synonymous with online shopping. And after taking over the world of online book, CD, and video sales, they got into the tool game by acquiring Tool Crib of the North (a mail-order catalog tool retailer).

But Amazon.com wasn't my first choice because they're a household name. They earned the #1 ranking with an easy-to-use site, best overall tool selection, and excellent prices.

Finding anything on this site was easy using the Directory or by typing an entry onto their search engine.

Since I found the list of 10 home improvement sites on Gómez.com, I borrowed some inspiration from their grading system as well. So each site I reviewed received a rating of Pass, Pass+, or Fail in each of the following categories:

- Tool Selection**
- User Friendliness**
- Customer Service**
- Shipping Cost**

To Pass, a site only had to do what was expected of them. To receive a Pass+, there had to be something about that site that really made it stand out in a category.

Not meeting basic expectations earned the site a Fail in a category.

To come up with an overall score for the sites, I gave each grade a numeric value. In order to keep the math simple, I valued the grades this way:

- Fail = -1**
- Pass = 0**
- Pass+ = 1**

Scoring in the Best Price category was a little different. Rather than Pass/Fail, each store earned one point for every tool they offered the best price on.

Then I added up the numbers and ranked the sites accordingly.

They also scored well in customer service. One of the customer service reps did a nice job of helping me get my purchase worked out over the phone when the *Workbench* "tool test" credit card maxed out. (We buy a lot of tools.) They also made it easy

for me to return a tool I bought with no questions asked.

In short, Amazon.com deserves its place at the top of the e-commerce heap and will stay there as long as they keep providing this combination of product, price, and service.



Tool Selection	P+
User Friendliness	P+
Customer Service	P+
Shipping Cost	P
Best Price	2 of 7
<b>Total Score</b>	<b>5</b>

**2** [www.CornerHardware.com](http://www.CornerHardware.com)  
You may recognize this site from "Five Must-See Web Sites for Every Home Improver" (see *Workbench Interactive*, September/October 2000). It's the only site that made both lists.

In fact, this site only missed tying for the #1 spot by one point. This site is as good as any when it comes to price and selection. And it's better than most in customer service.

It's the real-time chat that makes customer service such a standout for

this site. This feature lets you type questions directly to the customer service staff and get immediate responses.

Even better, the customer service reps will answer questions about using the site or technical stuff about tools. CornerHardware.com is the only site that currently has this feature, and they score big for it.

With competitive pricing, large selection, and unmatched customer service, CornerHardware.com shows how good online shopping can be.



Tool Selection	P+
User Friendliness	P+
Customer Service	P+
Shipping Cost	P
Best Price	0 of 7
<b>Total Score</b>	<b>3</b>

**3** [www.OurHouse.com](http://www.OurHouse.com)  
Prices on this site tended to be a little higher than on others, but they still beat local prices in most cases. (See the chart on page 29 for side-by-side price comparisons).

OurHouse.com also scored well for ease of use and tool selection (only Amazon had more of the tools on our list). I was impressed by how clean the site looked and how clearly

they led me through the registering and purchasing process.

Interestingly enough, the tool I wanted to purchase here was out of stock. Fortunately, the site told me that immediately instead of accepting the order only to cancel it later via e-mail like other sites did.

Overall, this is an excellent site that could challenge the top two by pricing tools a little more competitively.

## FINAL STATS FOR ALL 10 SITES

For a full explanation of the criteria used to evaluate these sites and some expanded comments on

each, visit our Web site at [www.WorkbenchMagazine.com](http://www.WorkbenchMagazine.com) and click on the *Interactive* link.

Rank	Company	Friendliness Selection	User Friendliness	Customer Service	Shipping Cost	Price	Total
1	Amazon.com	P+	P+	P+	P	3	6
2	CornerHardware.com	P+	P+	P+	P	2	5
3	OurHouse.com	P+	P+	P+	P	0	3
4	HomeTownStores.com	P	P	P	P	0	1
5	TrueValue.com	P	P	P	P	0	0
6	MichaelHoligan.com	P+	F	P	F	1	0
7	Buildscape.com	P	P	P	P	0	-1
8	Sears.com	F	F	P	F	1	-2
9	ToolsAmerica.com	F	F	F	P	0	-2
10	doitbest.com	F	F	P	F	0	-3

Key: Price=Points out of a possible 7; P+=1 point; P=0 points; F=-1 point

## LOCAL vs ONLINE: DOLLAR FOR DOLLAR

Router	Best Local Price	Best Online Price
Bosch 1613 EVS	\$210.94	\$204.08
Porter Cable 693	\$208.82	\$200.93
Porter Cable 7529K	\$230.02	\$219.98
Craftsman 2HP	\$211.99	\$207.99
Skil 1840	\$84.76	\$91.77
DeWalt DW621	\$221.54	\$207.99

Local prices include 6% sales tax; Online prices include shipping and handling.

## Brick & Mortar vs Click & Order

One of the biggest questions is how online shopping compares to shopping at local stores. And to be quite honest, they each have their advantages and disadvantages.

In a local store, I can put my hands right on the tools and see up close what I'm paying for. There are also real live people to talk to if something goes wrong or if there's a question. It's also nice to know that you can get the tool immediately, instead of having to wait for it to be delivered.

On the Internet, I can compare prices at several retailers without leaving the house. And chances are, the best price is somewhere online

(see the table above). And quite frankly, waiting for a tool to arrive isn't so bad if you know it's exactly what you want and the price is right. And besides, CornerHardware had a router in my hands just one day after I ordered it. That's hardly a long wait.

So really, online shopping is hard to beat as long as you follow three simple rules:

1. Know about the tool you're buying.
2. Know what the tool is worth.
3. Know the company you're buying from so you know your purchase is secure and your satisfaction is guaranteed.

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# FACT:

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# Around The House

## This Knock-Down Miter Station Handles Long Stock



One of the great things about miter saws is that they “travel” well to a job site for trimming molding. But you need a stand to keep from making cuts on your knees. So when *Workbench* reader Tom Gamble of Rotonda West, Florida, shared his idea for a miter saw stand, we decided to pass it along (with a few minor modifications).

The base part of the stand is built like a street barricade. You need to build a pair of triangular-shaped legs with a notch at the top. A 2x6 “beam” slides into the notch.

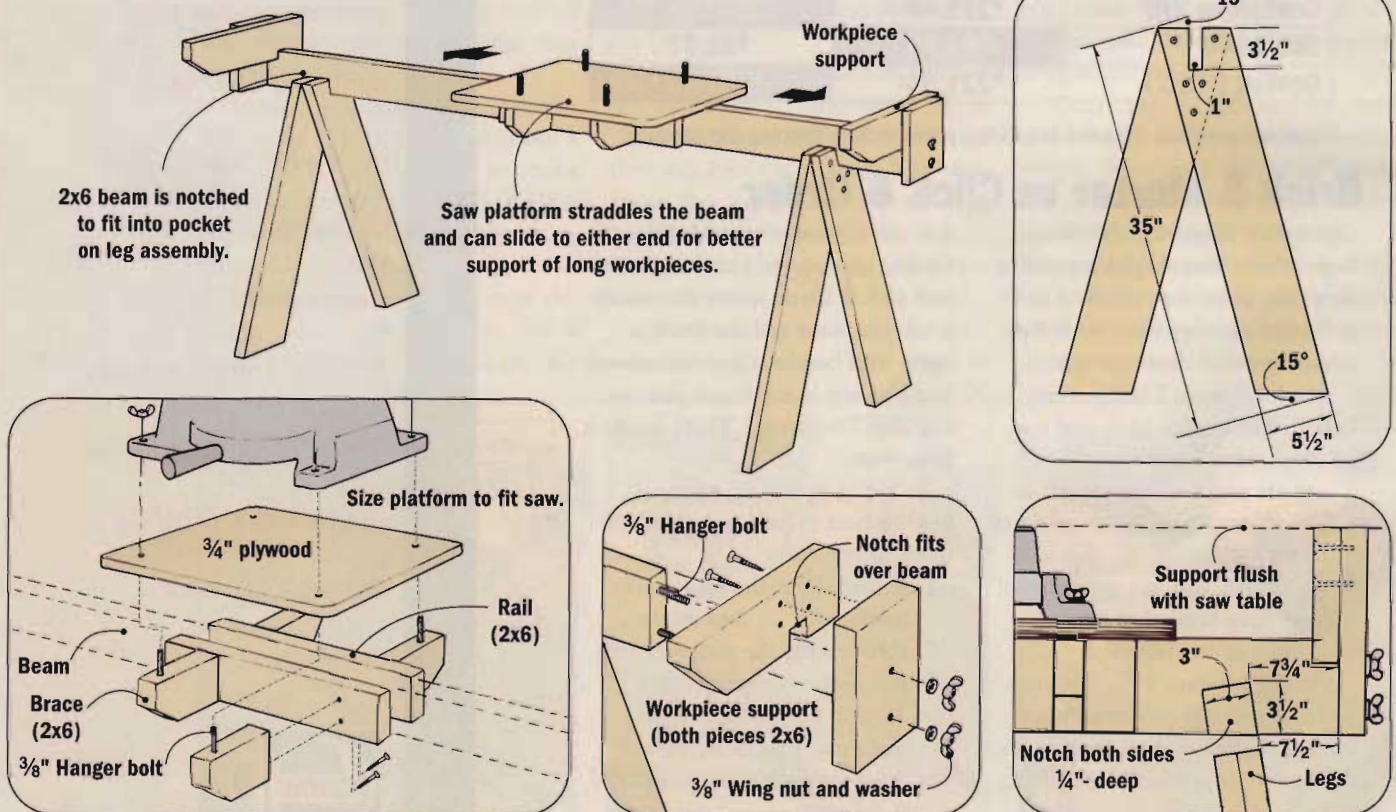
The miter saw mounts to a 3/4" plywood platform that fits over the 2x6 like a saddle. Two rails “sandwich” the 2x6 beam. Braces along both rails help hold the rails perpendicular to the platform.

Finally, two L-shaped workpiece supports hold the stock level with the miter saw table. To make it easy to get the supports flush with the saw table, a couple of hanger bolts are driven in each end of the 2x6 beam. The supports fit over these hanger bolts and are held in place with wing nuts.

The great feature of this stand is that you can position the saw platform anywhere along the beam. This comes in handy when you need to trim just a little from the end of a long board. Just slide the saw close to one end of the beam. The support at the opposite end holds up the workpiece while you make the cut.

When you're finished, the stand knocks down into easy-to-carry and store pieces.

### CONSTRUCTION DETAILS



## Stop Drafts by Sealing Around Doors and Windows

That cool breeze in the air is a sure sign winter's coming. And if your house is like most, some of that chill is making its way inside. That's because every house — old or new — is full of nooks and crannies where air can leak in or out. So now's the time to seal up the leaks. But with all those nooks and crannies, where should you start?

### A 20% SOLUTION

Most experts agree that one of the most time- and cost-effective things a homeowner can do is weatherstrip around doors and windows. Gaps around them account for about 20% of air leakage.

Adhesive-backed foam and vinyl are tempting since they are cheap and quick to install, but they wear quickly. For a permanent fix, I prefer spring-metal "V" strips made of bronze. This stuff has been around for years, and it lasts for years, too. In my area, a 17-foot roll (easily enough for one window) costs less than \$6.

The way the strips work is simple. They get nailed into the door or window frame, with the open edge of the "V" pointing toward the outside (see the drawings at left). The bronze is flexible, so when the window or door closes against it, the sides of the "V" push out to fill the gap, stopping air from coming through.

### SEALING WINDOWS

Before applying the strips, lightly sand down any bumps or rough spots in the window tracks. This helps the strips sit flat.

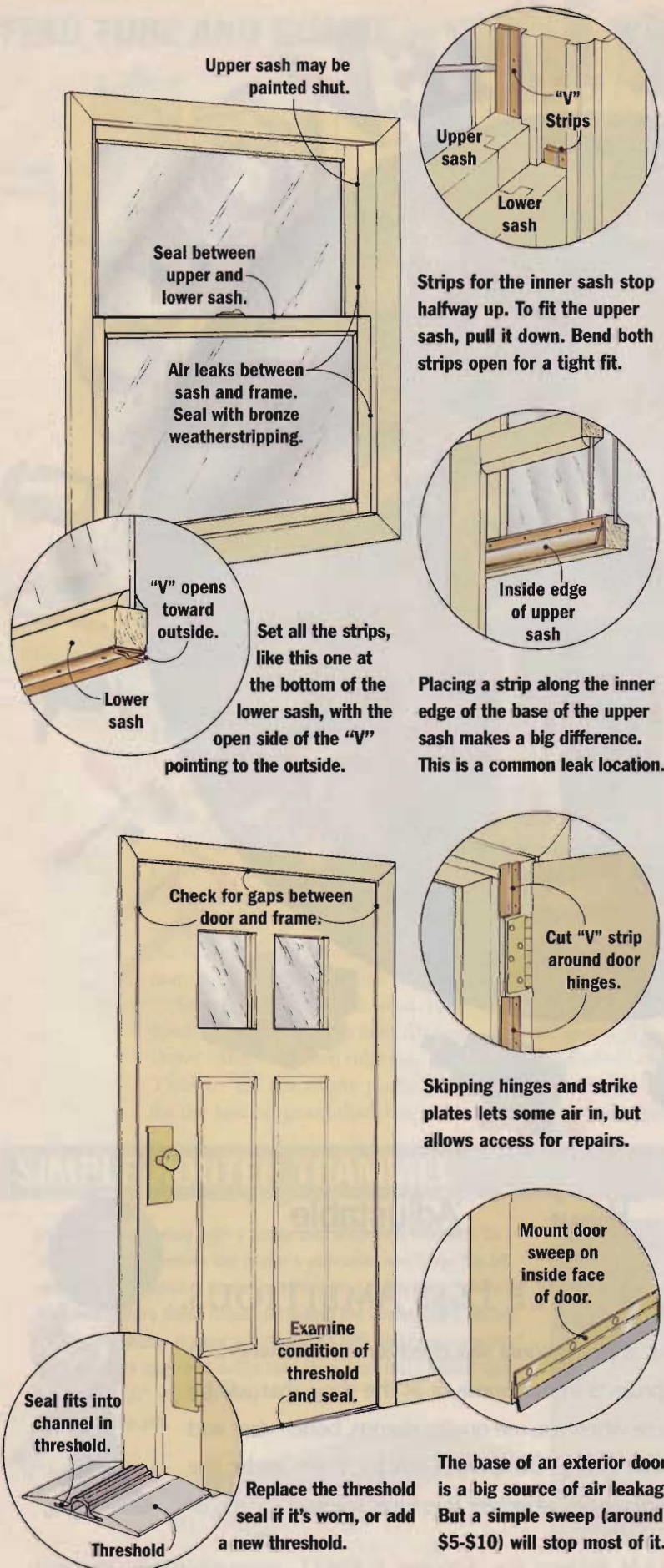
As shown in the top drawing, the strips don't need to extend the full length of the frame. Just cut two strips the same length as the sash height. Then raise the lower sash as high as possible and push the strips into place. Now nail down the strips and gently pry the "V" open. Also place a strip on the bottom of the lower sash.

Provided that the upper sash isn't painted closed, put strips along its sides as well. One strip between upper and lower sash completes the job.

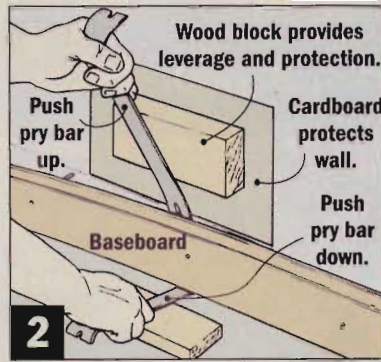
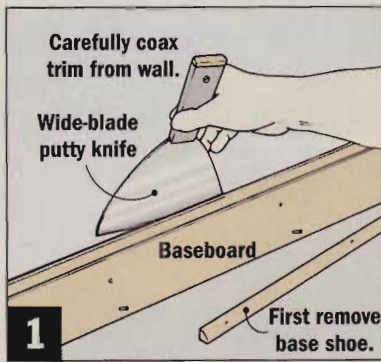
### AROUND THE DOOR

Adding "V" strip around a door is even easier. Just cut lengths to fit along the sides and top of the door, skipping over the hinges and strike plates.

At the bottom of the door, check the condition of the threshold seal (lower left). You can pick up a new seal for around \$3, then just slip it in place. If your threshold doesn't have a seal, consider covering it with an adjustable replacement threshold. In either case, a sweep (near left) also helps.



# Remove Base Molding Without Damaging Trim or Wall



When you build projects such as the built-in bookcase and window seat featured on page 38, you often run into the problem of having to cut out baseboard to get the built-in to fit right. When this happens, I prefer to remove the trim first rather than cut into it and risk damaging the baseboard or surrounding wall. Then you can simply cut the pieces to exact size before reattaching them.

If the base shoe is painted, start by scoring along its top edge with a utility knife to break the paint seal. Otherwise, you might break the thin shoe when prying it loose.

Base shoe is fairly easy to remove by inserting a flat pry bar behind it and pulling slowly. When you feel a few nails pop, move farther along and pry again. A small piece of cardboard behind the pry bar will help protect the baseboard.

After the shoe is removed, again score along the top edge of the baseboard. This will help prevent any paint from pulling away behind the trim. Just be careful you don't accidentally scratch the wall or trim.

Next, wedge a stiff, wide-blade putty knife behind the top edge of the trim as shown in *Figure 1*. Don't pry the baseboard with the putty knife. All you want to do is coax the trim away from the wall far enough to insert a pry bar behind it.

You'll notice in *Figure 2* that I use two pry bars to remove baseboards. This lets me push up on one and down on the other for the best leverage. It's a good idea to use two wood blocks, too. By lifting the trim slightly off the floor, you can avoid damaging its bottom edge or the flooring.

Once you have all the trim separated from the walls, don't forget to remove the finish nails. I don't recommend trying to hammer them back through the trim. Instead, simply pull them out the back side of the trim using a locking pliers. This keeps the wood around the nails from splintering.

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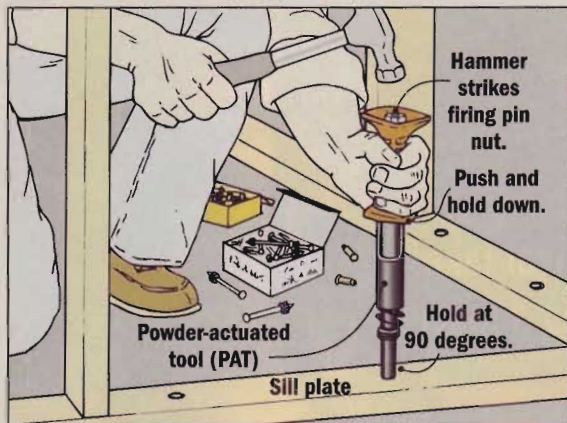
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## Put a Charge Into Nailing

Carpenters and home builders have known for years that a powder-actuated tool (PAT) is the easiest — not to mention the quickest — way to anchor partition walls to a concrete slab (see drawing at left). I used to think these tools were reserved for professionals only, until I discovered they're available at home centers for about \$20 (see page 95 for more information).

A PAT works much like a .22 caliber rifle. After inserting a special hardened steel nail (power fastener) into the muzzle of the tool, you load a gunpowder-filled blank cartridge into the chamber (see below). A hammer strike (or spring-loaded trigger) sets off the cartridge and releases pressure inside the chamber. This pressure forces a piston inside the tool against the fastener, driving it through the wood into concrete.

I'll admit the first time I used one of these tools, I didn't know what to expect. I soon discovered



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(20mm)



1"  
(25mm)

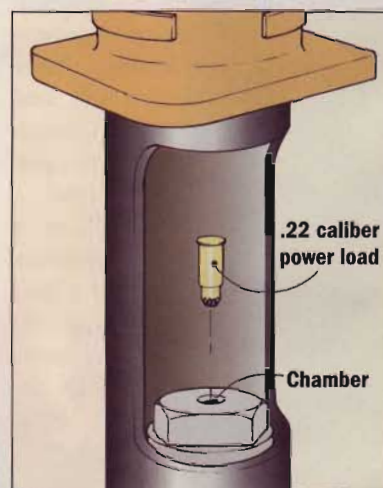






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you have to keep your arm fully extended and your body balanced as the tool fires because it does deliver a recoil.

PATs can misfire, too. So it may take you a few tries before you're hitting the firing pin just right. But once you get the hang of it, you won't want to use anything else to fasten wood to concrete. Just don't ever plan on removing anything.

Of course, when you use a PAT, be sure to follow the manufacturer's instructions and safety precautions. For example, always wear safety goggles (not glasses) and some type of hearing protection. Never use anything but the specified fastener and proper charge in the tool. And be sure to keep the tool and unspent power loads locked up away from children.



# Custom-Fit Wall Unit

*This wall system is what customizing is all about. It's built in sections so you can design it to fit your home.*

Looking at the picture of this freshly-built bookcase and window seat, you can probably imagine that this room looked a whole lot different just a few days ago. Sawdust everywhere. Tools scattered all over the place. It looked more like a shop than a den or family room. That's just the price you pay for built-ins, right?

Not this time.

Instead, this project was built in pieces — in the shop. Then it was moved in, fastened to the wall, and trimmed to look like part of the house.

The mess inside the house didn't amount to much more than the basic tools it took to install the pieces and a little dust from pre-drilling holes for the mounting screws.

I even left my miter saw set up in the shop while I cut and fit the molding. It meant a few trips back and forth, but a whole lot less cleanup inside the house.

Speaking of molding, it's a mix of shop-built and store-bought designs that pull double duty by trimming out the installation and tying the unit to the rest of the room.

Probably the nicest feature of this unit's design is its flexibility. Even though it looks like it was designed to fit a specific room, it's actually very easy to make the bookcase and window seat work anywhere.

That's another reason building it in pieces is a good idea. You can build as much or as little of the project as you want depending on the space you've got. Take a look at the inset photo at left, for instance. It's the same room with just the window seat and one bookcase. It makes a perfectly good reading spot just the way it is, but there's always the option of adding more bookcases later.

And making any of the pieces fit any room takes just a few changes in the overall dimensions.



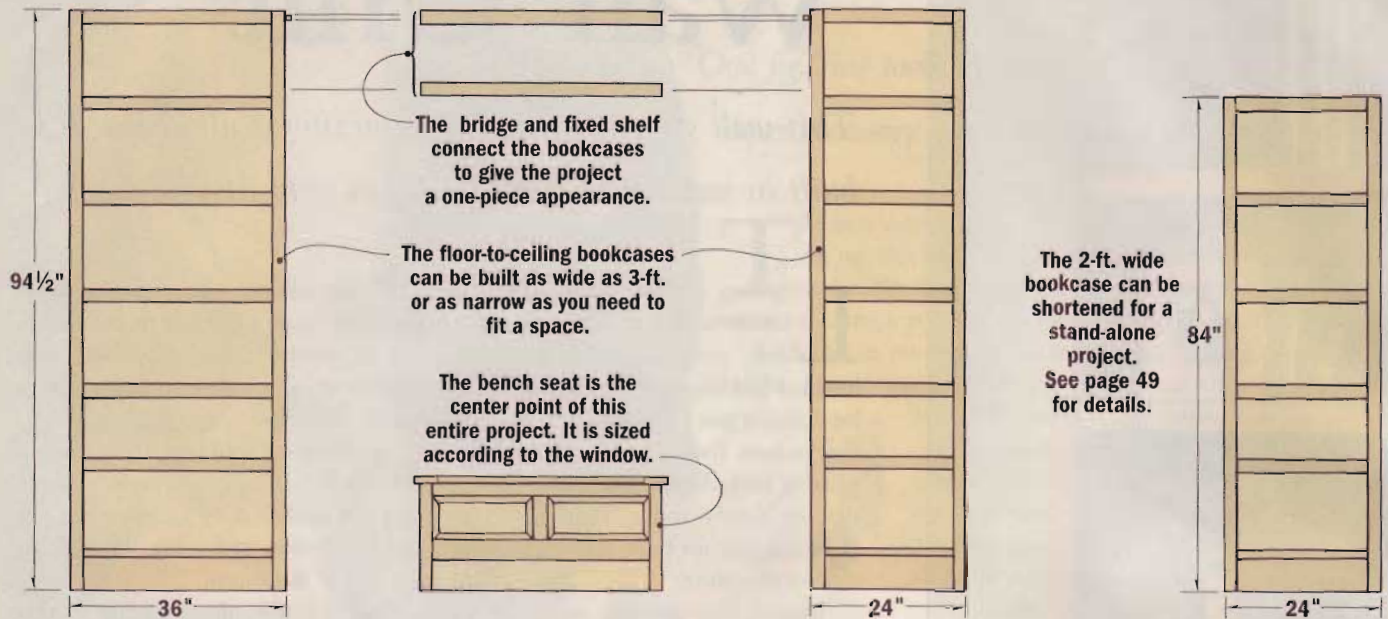
## DESIGN FLEXIBILITY LETS YOU CUSTOM FIT YOUR ROOM

Since not everyone has a wall with a window in it just like mine, I designed this project in pieces. You can easily change the length of the window seat or the height of the bookcase to fit your space.

But even more than that, the "piece-by-piece" approach lets you decide which pieces fit your room and which ones you don't need.

If you don't build the full wall unit like I did, maybe one bookcase

and a window seat will work for you. If you want to devote an entire wall to the project, plan the position of the seat and fill in around it with 3-ft. wide bookcases. Then build one last bookcase to fill any



leftover space. In my case, I had to build a 2-ft. wide bookcase to fill in the corner (shown at left).

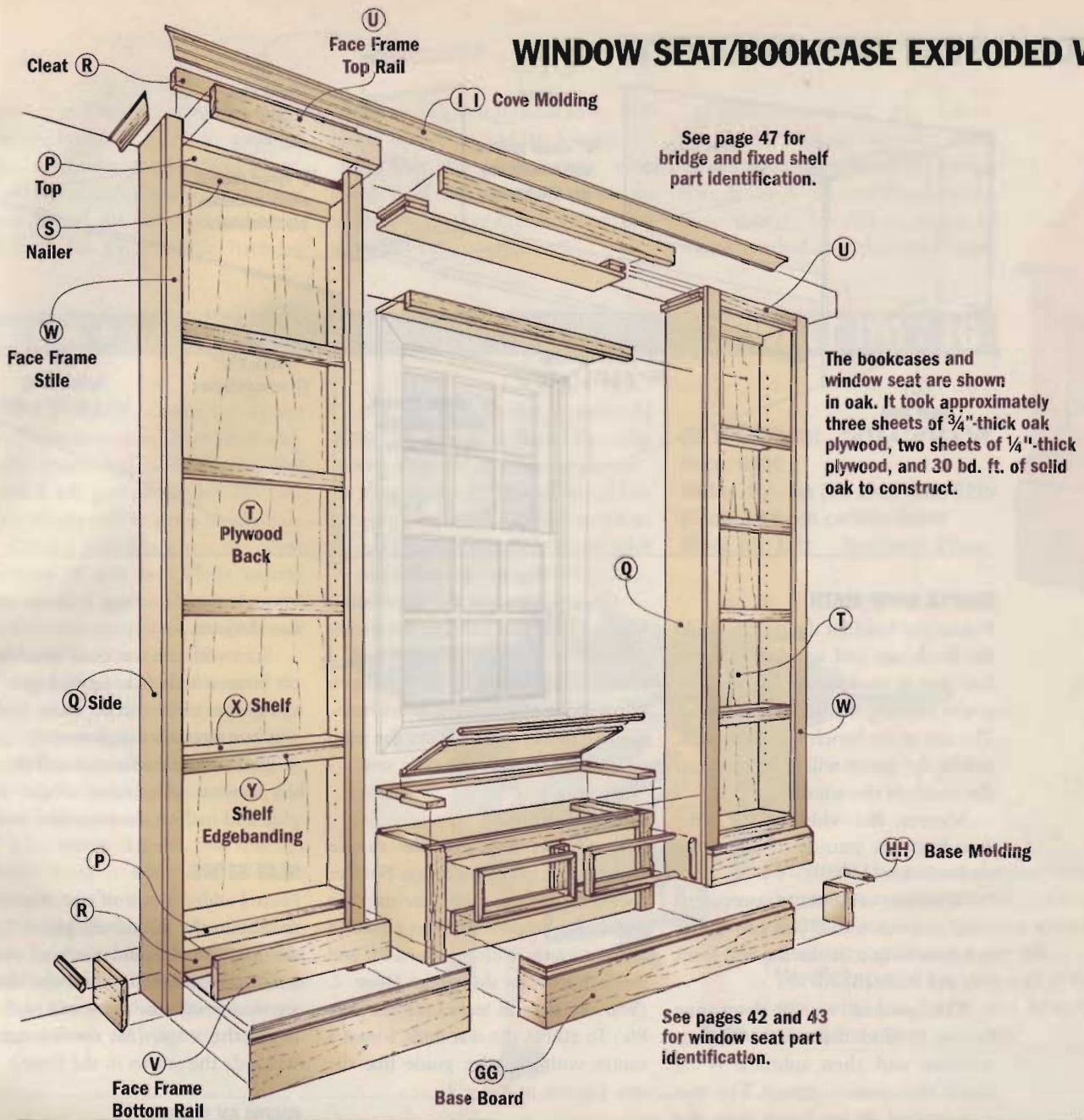
One thing I really liked about this piecemeal building approach is that I didn't have to wait to finish the entire project before moving it into the room. I started by building one 3-ft. wide bookcase and the window seat and then installed them. The room stayed like that for a couple weeks until I had time to get back in the shop and build another bookcase and the bridge pieces. Then I installed those pieces.

A week or so later, I finished the whole thing off with the 2-ft. wide bookcase and molding.

You might want to consider building just a stand-alone bookcase. In that situation, you probably don't want it to run floor-to-ceiling.

That's exactly what I had in mind when I built the "Tower Bookcase" on page 49. I changed the design by shortening the whole project and using a different molding to cap the top of the bookcase.

# WINDOW SEAT/BOOKCASE EXPLODED VIEW



The bookcases and window seat are shown in oak. It took approximately three sheets of 3/4"-thick oak plywood, two sheets of 1/4"-thick plywood, and 30 bd. ft. of solid oak to construct.

## WINDOW SEAT

A (1) Seat Front	3/4" x 17 1/4" x 40"
B (1) Seat Back	1/4" x 16 1/2" x 40"
C (2) Seat Ends	3/4" x 17 1/4" x 17 1/4"
D (1) Seat Bottom	3/4" x 16 1/2" x 39 1/2"
E (2) Seat Stops	3/4" x 2 1/4" x 16 1/4"
F (1) Top Rail	3/4" x 2" x 36 1/2"
G (1) Bottom Rail	3/4" x 3 1/2" x 36 1/2"
H (2) End Stiles	3/4" x 2" x 17 1/4"
I (1) Center Stile	3/4" x 2" x 7"
J Panel Molding	3/4" x 5/8" x 9 lin. ft.
K (1) Frame Back	3/4" x 3" x 40 1/2"
L (2) Frame Ends	3/4" x 3" x 15 1/2"
M (1) Lid	3/4" x 14 13/16" x 34 7/8"
N (2) Edgbd - Ends	1/4" x 3/4" x 14 13/16"
O (2) Edgbd - Frnt/Bk	1/4" x 3/4" x 35 3/8"

\* These pieces are cut from 3/4"-thick plywood.

## 3-FT. BOOKCASE (2)

P (4) Top/Bottom	3/4" x 10 3/4" x 35 1/4"
Q (4) Sides	3/4" x 11 1/4" x 94 1/2"
R (4) Cleats	3/4" x 1 1/2" x 34 1/2"
S (2) Nailers	3/4" x 1 1/2" x 34 1/2"
T (2) Plywood back	1/4" x 35 1/2" x 87"
U (2) FF Top Rail	3/4" x 2 3/4" x 32"
V (2) FF Bottom Rail	3/4" x 4" x 32"
W (4) FF Stiles	3/4" x 2" x 94 1/2"
X (12) Shelves	3/4" x 9 7/8" x 34 3/8"
Y (12) Shelf Edgbd	3/4" x 1 1/2" x 34 3/8"

(150)	1" Finish nails
(64)	#8 x 1" Fh woodscrews
(64)	#8 x 1 1/4" Fh woodscrews

\*\* These pieces are cut from 1/4"-thick plywood.

## BRIDGE, SHELF, MOLDING

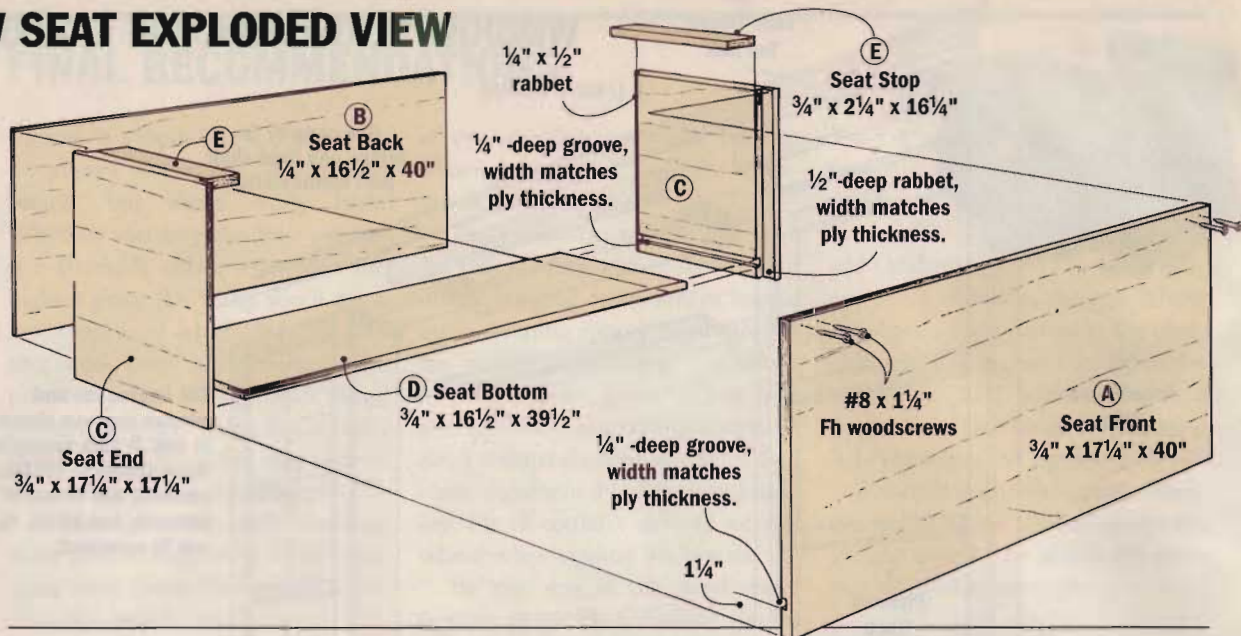
Z (1) Fixed Shelf	3/4" x 11 1/4" x 40 1/2"
AA (1) Fixed Shelf Edgbd	3/4" x 1 1/2" x 40 1/2"
BB (1) Bridge Base	3/4" x 11 1/4" x 40 1/2"
CC (1) Bridge Fascia	3/4" x 2 3/4" x 40 1/2"
DD (2) Bridge Spacers	3/4" x 2" x 11 1/4"
EE (2) Bridge Hangers	3/4" x 2 3/4" x 11 1/4"
FF (2) Bridge Cleats	3/4" x 3/4" x 11 1/4"
GG Base Board	3/4" x 5 1/2" x 14 lin. ft.
HH Base Molding	3/4" x 5/8" x 14 lin. ft.
II Cove Molding	1 1/16" x 1 1/16" x 12 lin. ft.

### HARDWARE

(4)	#8 x 2 1/2" Fh woodscrews
(48)	Spoon type shelf supports
(1)	1 1/2" x 35" Brass piano hinge w/screws



# WINDOW SEAT EXPLODED VIEW



## SIMPLE SHOP MATH

Before you head for the shop to build the bookcases and window seat, the first step is to measure the window you're building this unit to fit around. The size of the bench seat, fixed shelf, and bridge pieces will all be based on the width of the window.

Measure the width of the window from the outside of the casing on both sides.

With this window measurement fresh in your mind, you can figure out how long to make the seat front (A) and back (B).

The quickest way to determine this is to find the width of your window and then subtract  $\frac{1}{4}$ ". I know that sounds strange. The seat is supposed to be larger than the window, so why subtract? Because when you add the end panels, the length of the seat will total  $\frac{1}{4}$ " more than the width of the window.

Once you've got the dimensions worked out, you can cut the pieces of the carcass (*Exploded View*). I found it was easiest to cut full sheets of plywood into smaller, more manageable pieces and then cut the parts to finished size on the table saw.

## CARCASE JOINERY

The grooves that join the carcass could be cut on the table saw. But I've always found it more accurate to match the thickness of the plywood using a router with a pattern bit and guide boards as shown in *Figure 1*. (You can see this technique on page 86.) To rabbet the seat ends, I used a router with an edge guide like the one you see in *Figure 2*.

## ASSEMBLE THE CARCASS

Bringing several pieces together at one time always feels like a juggling act. Fortunately, this carcass is small

enough that handling it alone isn't too difficult.

Start with the seat front facedown on your workbench. Spread glue in the groove on the front. Then fit the seat bottom into the groove.

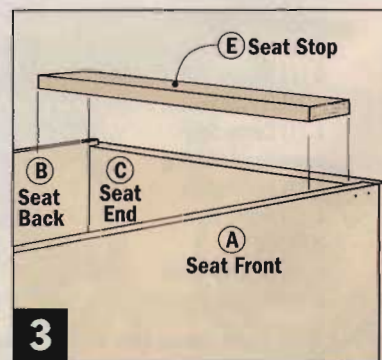
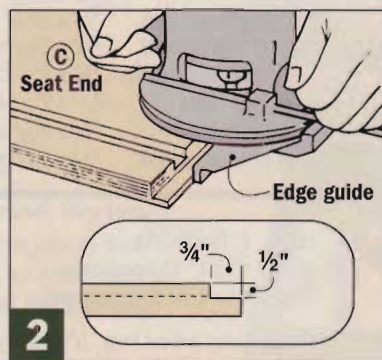
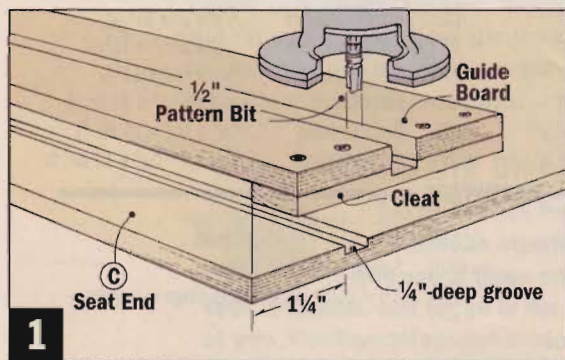
Next add the seat ends and clamp the carcass lengthwise while you glue and nail on the plywood back.

## SEAT STOPS

Next I added a pair of seat stops (E) to support the lid and seat pieces. Cut the stops to size and position them inside the carcass (*Fig. 3*). Now drive screws through the front and back to fasten the stops. (An overlay frame will hide the screws in the front.)

## OVERLAY FRAME

To keep things simple, I decided to apply the overlay frame directly to the front of the carcass in separate pieces as shown in *Step 1* on the next page.



Start by cutting the end stiles (H) to size. Then freehand rout stopped chamfers on each one (Detail a). After gluing and screwing (from the inside) the stiles to the carcass, measure between the stiles to determine the length to cut the rails (F, G). Rip and cut the rails and the center stile (I) to size, and glue and screw them to the carcass.

Finally, apply panel molding as shown in Step 2. Pre-drill the narrow molding to avoid splitting it.

### SEAT TOP

As you can see in Steps 3 and 4, the top of the window seat is made up of a three-piece hardwood frame and an edgebanded plywood lid.

The frame back (K) is rabbeted to join the plywood back. Notice in the Top View the narrow notches in the frame ends (L). They let the bookcases set snug against the seat carcass and help tie the sections together.

Some things to keep in mind here are, if you're only building one bookcase to stand next to the seat, only the frame end on that side of the seat needs a notch. You'll also have to lengthen the frame back (K) by  $\frac{1}{2}$ " to match the extra width.

Start applying the frame by gluing and clamping the back in place. Now drive 1" finish nails through the plywood back and into the frame back. Then glue and clamp the ends (L) to the carcass.

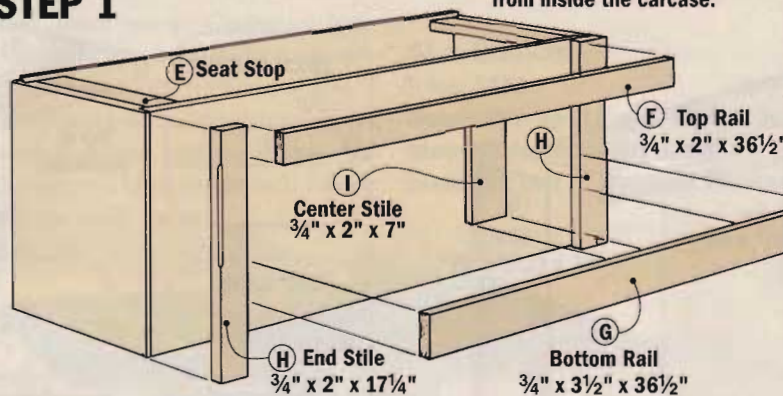
The seat lid is next (Step 4). Start by cutting the  $\frac{3}{4}$ "-thick plywood lid (M) to size. Now rip enough  $\frac{1}{4}$ "-thick edgebanding (at least 102") to wrap the lid. Make the banding slightly wider than  $\frac{3}{4}$ ". That way you won't have to worry about lining it up perfectly — you can plane it flush after the glue sets.

Glue on the side edgebanding (N) first, then add the front and back pieces (O).

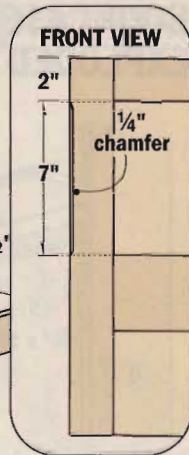
Finally, install a piano hinge between the lid and the carcass. I did this by attaching it to the lid first. Then it was easy to just eyeball the lid into the center of the carcass, open the lid up, and pre-drill and drive the mounting screws.

## ASSEMBLY SEQUENCE

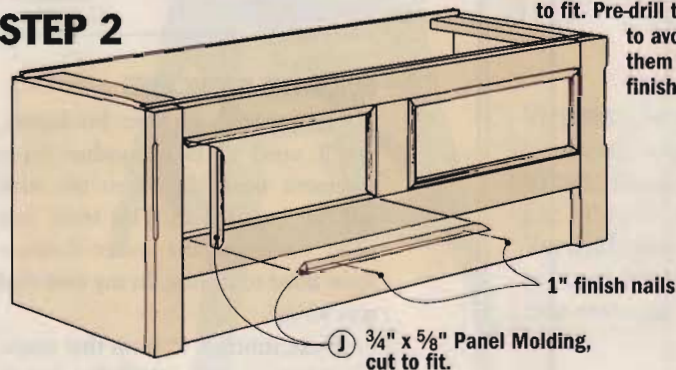
### STEP 1



Glue and screw the rails and stiles to the carcass. Drive screws from inside the carcass.

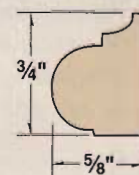


### STEP 2

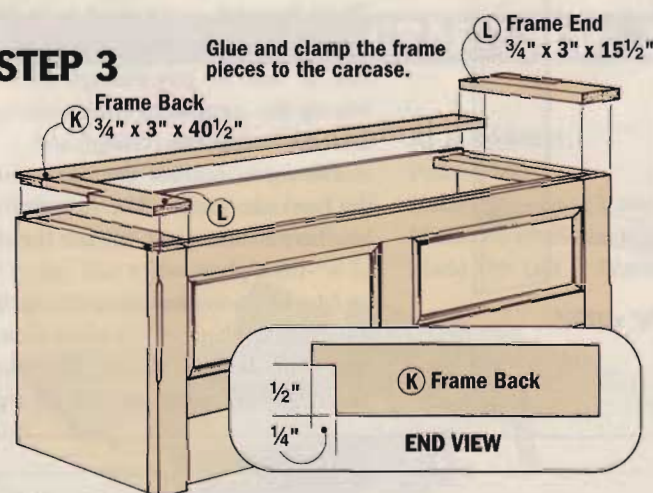


Miter the panel molding to fit. Pre-drill the pieces to avoid splitting them with the finish nails.

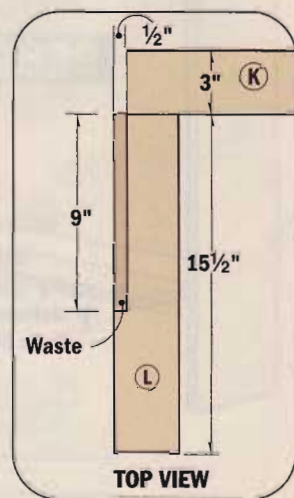
#### STORE-BOUGHT PANEL MOLDING



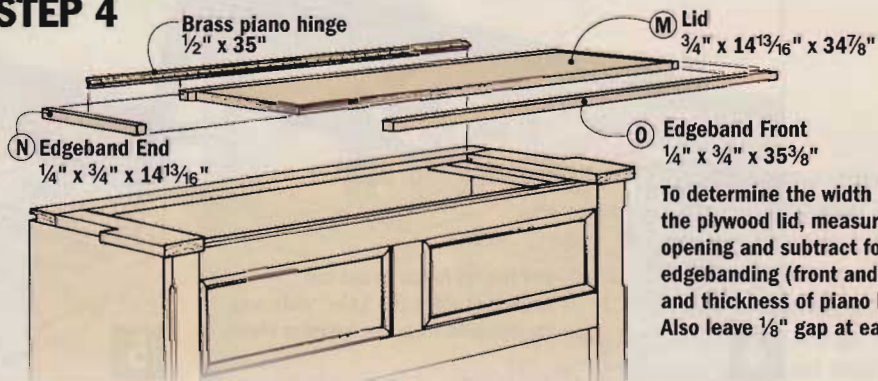
### STEP 3



Glue and clamp the frame pieces to the carcass.

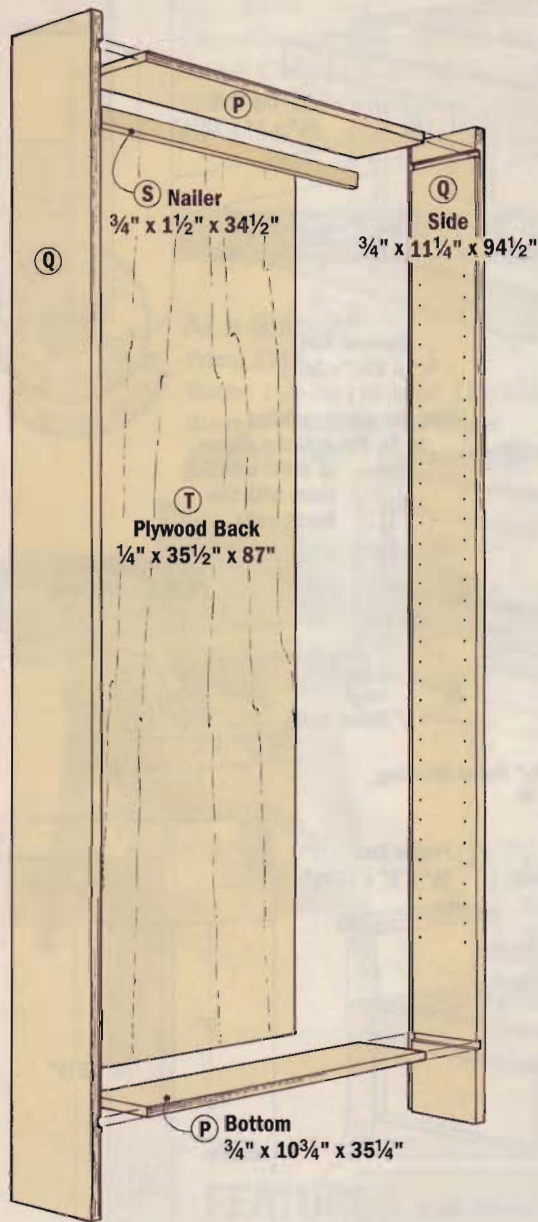


### STEP 4

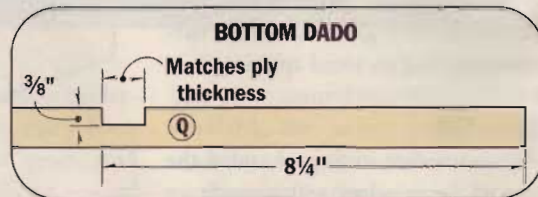
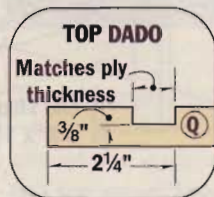
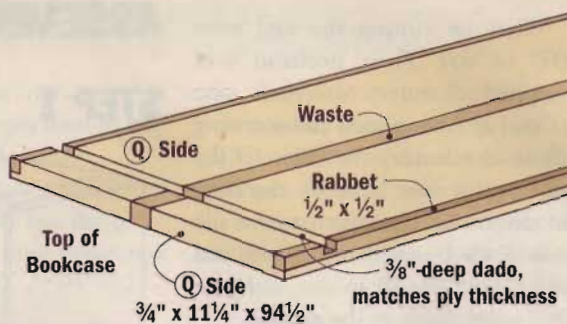
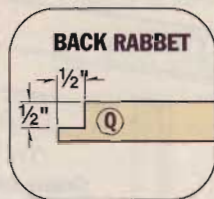


To determine the width of the plywood lid, measure the opening and subtract for the edgebanding (front and back) and thickness of piano hinge. Also leave  $\frac{1}{8}$ " gap at each end.

## BOOKCASE CARCASE EXPLODED VIEW



## BOOKCASE JOINERY



### BUILD THE BOOKCASES

To get started on the bookcases, you'll need to take another measurement from the room this unit will be installed in. This time, you need to know the exact distance from floor to ceiling. In my case that was  $95\frac{1}{2}"$ .

Next, subtract 1" from that number (that equalled  $94\frac{1}{2}"$  for mine). That's how tall you'll need to build your bookcases. (Believe it or not, that 1" will be just enough to let you tip the completed bookcases up without hitting the ceiling.)

Now you can cut the pieces for the bookcase carcass. The first problem here is managing full-size sheets of  $\frac{3}{4}"$ -thick plywood.

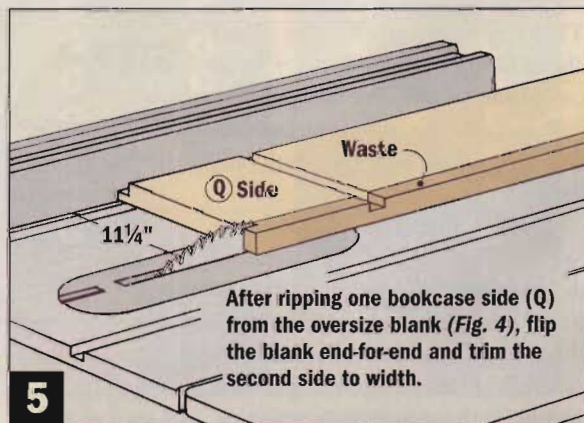
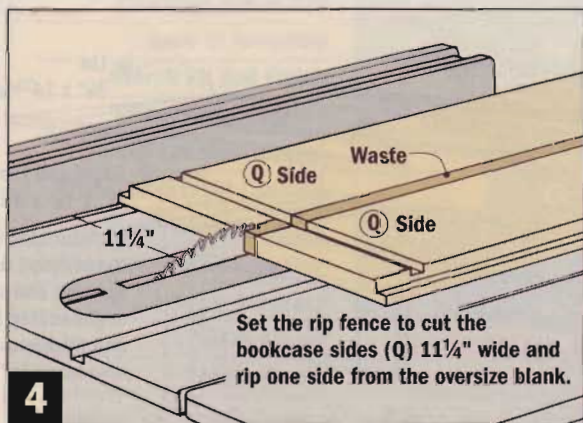
My solution was to first rip a  $24\frac{1}{2}"$ -wide blank of plywood from one full length sheet (*Bookcase Joinery*). That's wide enough to rip

two sides (**Q**) out of with just a little waste in between for good measure. (The leftover piece will yield up to four shelves.) But before ripping the sides to finished size, you need to cut the blank to length and then rout the joinery.

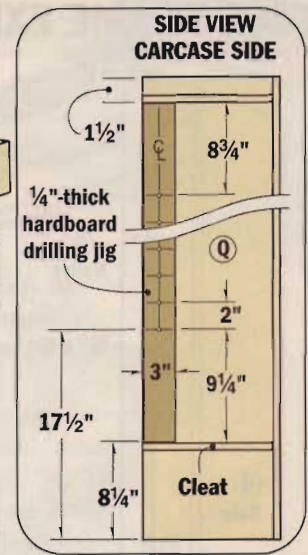
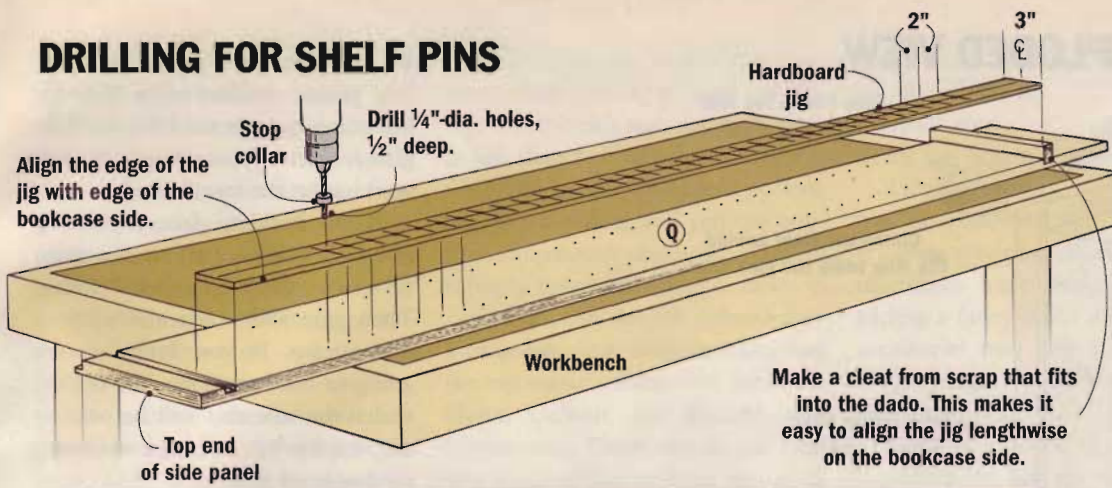
To trim the blank to length, I used a circular saw and an edge guide. Then I set up to cut the dadoes for the top and bottom pieces (as shown above).

This is another instance when using a router and guideboards for the joinery is a better choice than the table saw. (Again, that technique is explained on page 86). Just imagine trying to feed an 8-ft. long board crossways through the table saw.

When the dadoes are cut in the side blank, you can set up your router and cut a rabbet in the edges of the blank (as shown above). These



## DRILLING FOR SHELF PINS



rabbets are wide enough to accept the 1/4"-thick plywood back and still leave another 1/4" for scribing the cabinets to the wall.

With the joinery routed, you can rip the sides (Q) to finished width as shown in Figures 4 and 5 at left.

### SHELF PIN HOLES

An 8-ft. tall bookcase can hold a lot of shelves, provided you're willing to drill enough shelf pin holes.

A jig like the one shown above is the best way to keep the holes lined up. You could use a piece of pegboard. But I decided to make a jig with holes spaced specifically for this project. It's a little extra work, but it kept me from drilling holes I didn't mean to.

### COMPLETE THE CARCASE

After wrestling the sides around, cutting the smaller carcass pieces is a nice break.

The plywood top and bottom (P) are identical rectangles that you can cut on the table saw along with the hardwood nailers (S).

With those pieces cut to size, begin assembling the carcass as shown below. I assembled my bookcase facedown, beginning with the carcass pieces. Then I glued and screwed the nailer directly to the bookcase top. These nailers will add strength for attaching the bookcases to the wall. When you do this, be careful that the nailer and the carcass tops are flush on their back edges so

the plywood will set flat against them both.

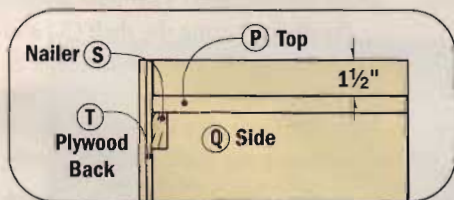
### SIZE THE BACK

After all the carcass pieces are glued and clamped together, measure the back of the bookcase to find the dimensions for the 1/4" plywood back (T). I always try to do this soon enough after gluing the carcass that I can still use the plywood back to square the assembly up before the glue sets.

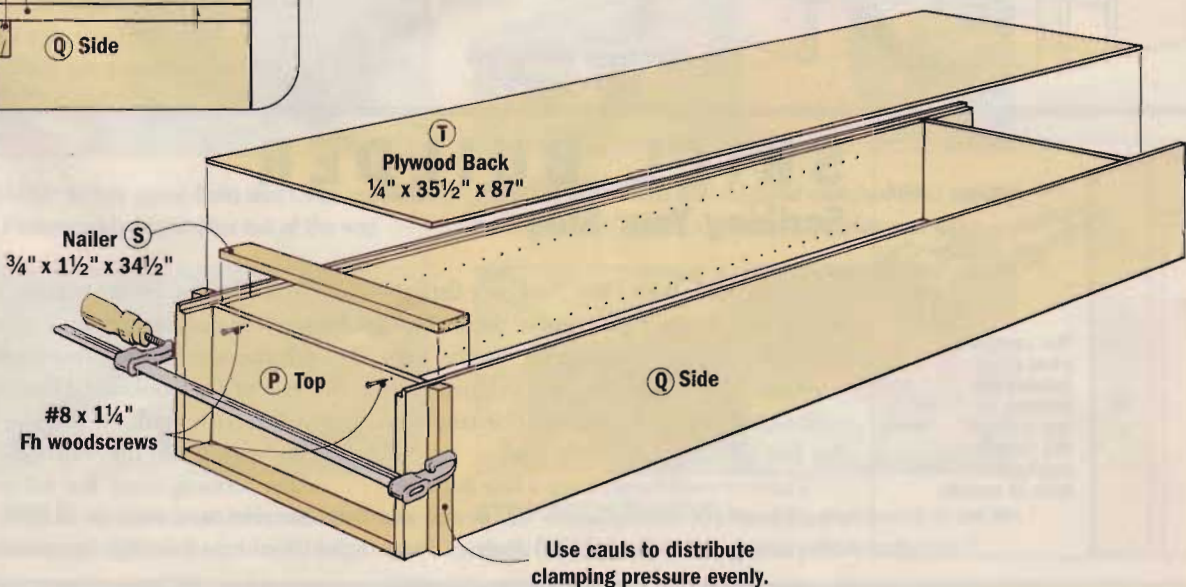
Finally, glue and nail the back into the carcass.



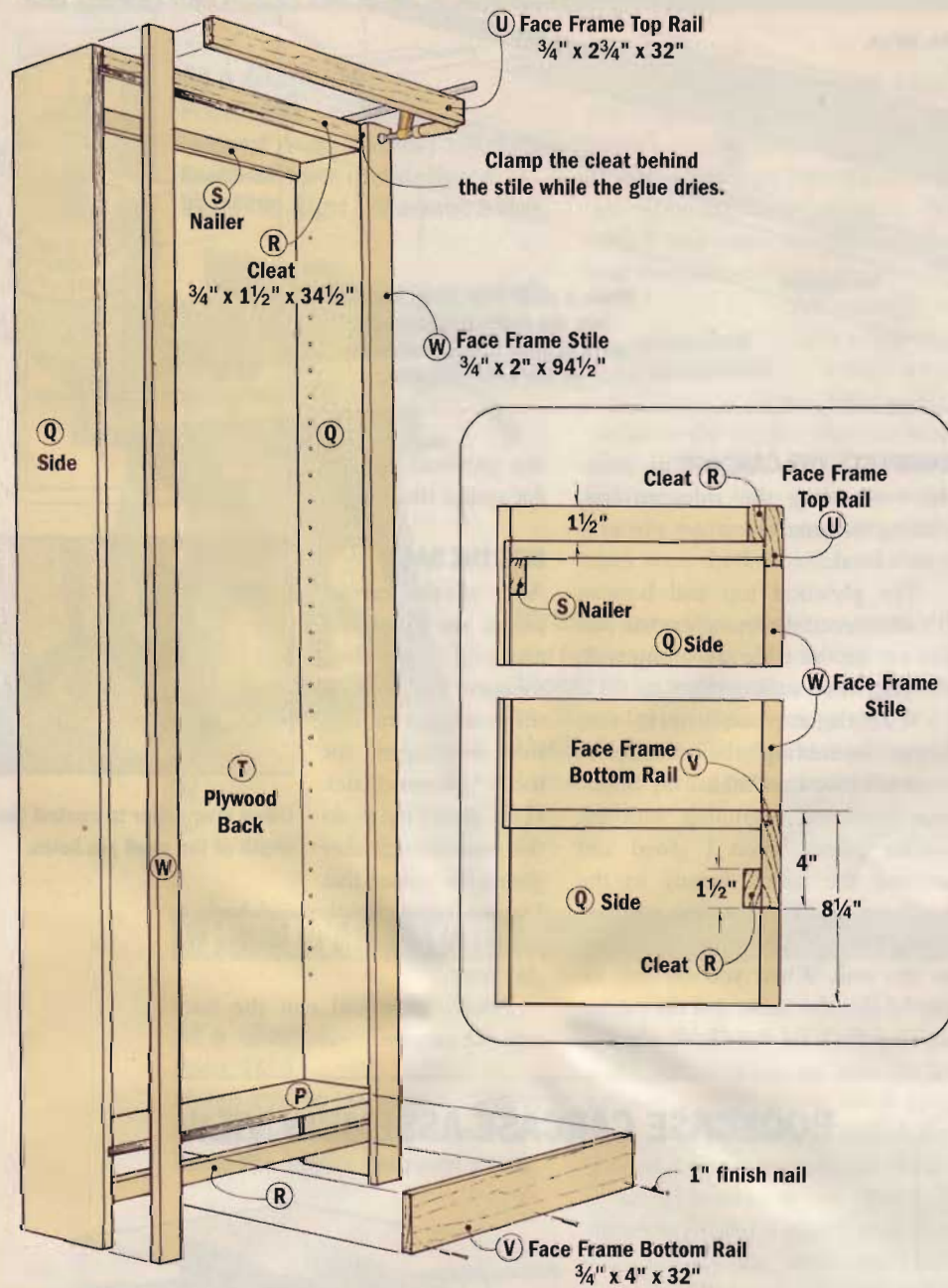
Use a stop collar to control the depth of the shelf pin holes.



## BOOKCASE CARCASE ASSEMBLY VIEW



## FACE FRAME EXPLODED VIEW



By now your shop is probably getting pretty crowded with 8-ft. tall bookcases lying around. So you'll be glad to stand them upright to start working on the face frames.

Begin building face frames by cutting the stiles (W) to size from 3/4"-thick stock (*Exploded View*). Then glue and clamp the stiles to the carcass. If you know you're going to have to scribe, (see below) widen the stile that will be next to the wall by 1/2" and let it overhang the bookcase side.

Next cut the rails (U and V) to fit. You can also cut the cleats (R) that add support behind the rails now.

Install the cleats behind the stiles by gluing and clamping them at the corners, as shown at left.

Attaching the rails at the top is a simple matter of gluing and clamping. At the bottom, though, the plywood back gets in the way of clamping. So you have to use a couple finish nails to secure the rail to the carcass bottom. The nail holes can be filled before applying a finish.

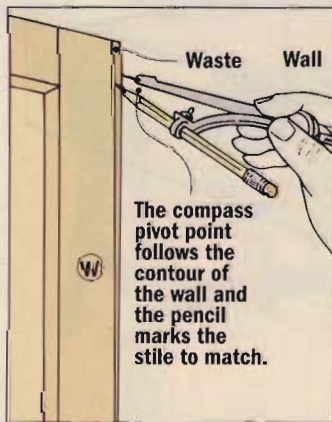
### SHELF PRODUCTION

Building all the shelves (W) that go into the bookcases is simple, but repetitive work. There aren't even any shortcuts to make the process go faster. So this is a good time to think about safety.

As you're cutting the shelf (X) and edgbanding (Y) pieces, remember to cut them slightly long to begin with. That way you don't have to worry about lining the banding up perfectly

## SKILL BUILDER

### Scribing Your Stile



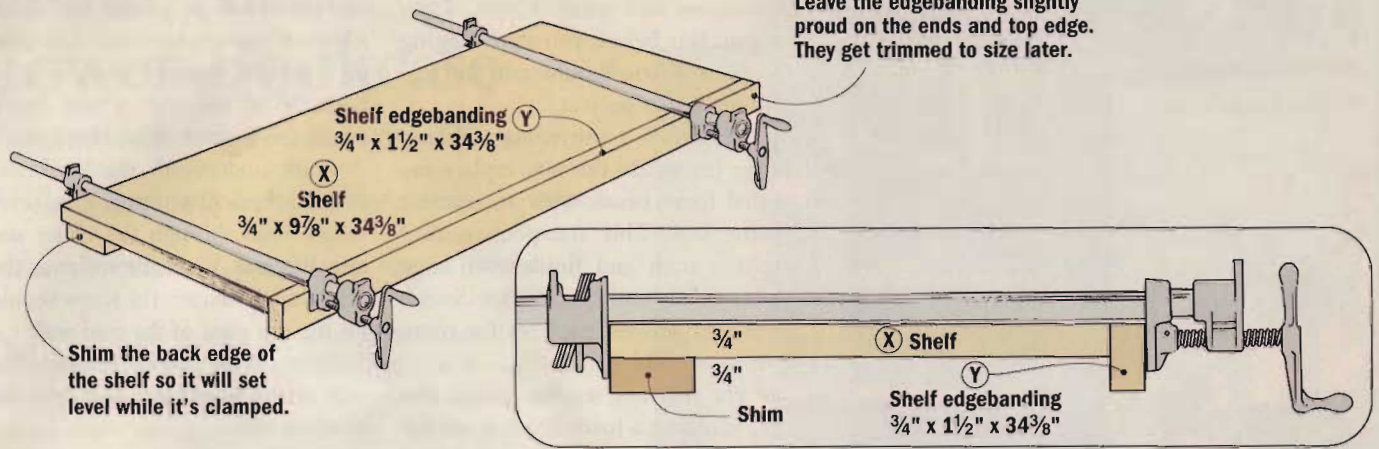
Walls often aren't very flat. So a nice flat cabinet won't fit up tight against them. That's the time you need to trace (or "scribe") the contours of the wall onto the cabinet. After scribing, the cabinet can be cut or sanded to the line for a tight fit to the wall.

The best tool for scribing a line is a compass because it can be set so the pencil and the pivot point stay a specific distance apart.

To scribe the bookcases, set the distance between the compass point and the pencil to match the widest gap between the wall and the stile of the bookcase. That way the pencil will leave a mark on the stile as you pull the compass down the wall.

After scribing along the full height of the cabinet, cut or sand to the line. Then the cabinet should nestle in tightly against the wall.

# SHELF CONSTRUCTION VIEW



Leave the edgebanding slightly proud on the ends and top edge. They get trimmed to size later.

on the ends. You can cut the shelves to finished size using a sliding cut-off jig like the one shown on page 58.

When all the shelves and edgebanding pieces are cut, glue the edgebanding to the front of the plywood as shown above. Then cut the shelves 1/8" shorter than the inside width of the bookcase.

## BRIDGE AND FIXED SHELF

Building the bridge and fixed shelf that tie the two bookcases together is a lot like building the other shelves.

The only real difference is the way these pieces get attached to the unit.

In the case of the fixed shelf (Z) (shown below), you build it exactly the same way except that it's sized to fit over the window (the width of your window plus 1/4"). Then it's mounted between the bookcases. Screws driven through the inside of the bookcases hold the front of the shelf. The back of the shelf rests on the window casing.

The bridge is a little more involved. In the drawing below, you

can see that the bridge is made up of several parts.

First is the bridge base (BB) which hides the ceiling over the window. The front edge of the base has a fascia (CC) that matches the top rail on the bookcases.

The bridge is held in place with a spacer (DD), a hanger (EE), and a mounting cleat (FF). The assembled bridge will slide onto the mounting cleats. Cut the cleats now, but wait to install them until you've got the unit in place inside the house.

Bridge Hanger (EE)  
3/4" x 2 3/4" x 11 1/4"

Bridge Spacer (DD)  
3/4" x 2" x 11 1/4"

Bridge Cleat (FF)  
3/4" x 3/4" x 11 1/4"

AA Fixed Shelf Edgebanding  
3/4" x 1 1/2" x 40 1/2"

(Z) Fixed Shelf  
3/4" x 11 1/4" x 40 1/2"

## BRIDGE EXPLODED VIEW

CC Bridge Fascia  
3/4" x 2 3/4" x 40 1/2"

BB Bridge Base  
3/4" x 11 1/4" x 40 1/2"

Bridge Cleat (FF) Bridge Hanger (EE) Bridge Spacer (DD)

CC Bridge Fascia

BB Bridge Base





With some creative molding application, this entire project can be made to look as though it was built right where it stands.

## FINISH FIRST

You're just about ready to install the bookcases and window seat in the room. But before you start lugging sections in, you should stain and finish the entire project.

One trick I use when finishing large pieces like this is to replace my usual foam brush with an interior paint pad. This inexpensive tool applies stain and finish over large areas evenly and quickly. See *Sources and Resources* on page 94 for more on paint pads.

For finishing smaller pieces like the molding, a foam brush is still the best choice. By the way, the base board (GG) shown in *Figure 7* is nothing more than  $\frac{3}{4}$ " x  $5\frac{1}{2}$ " lengths of hardwood. You can rip it from wider boards like I did, or buy it from your local supplier. The cove molding (II) at the top and the base molding (HH) are also store-bought.

## POSITION AND FINE-TUNE

Begin the installation by centering the seat under the window. Then move the bookcases in next to the seat. Now you need to fine tune the pieces to fit into the room.

First of all, the bookcases need to be scribed to the wall (see page 46). Once that's done and the bookcases are back in position, use a level to

make sure they're not leaning right or left. But as important as it is that the bookcases be plumb and level, it's even more important that they be the right distance apart — particularly at the top where you'll install the fixed shelf and bridge.

Shim underneath the bookcases to hold them in position, then drive woodscrews through the nailer and into the wall. With the nailer at the top of the bookcase, the screw should hit the top plate of the stud wall.

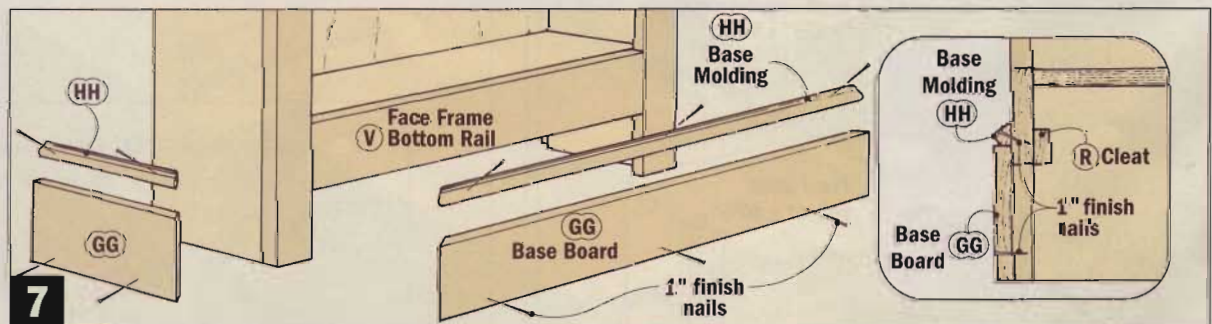
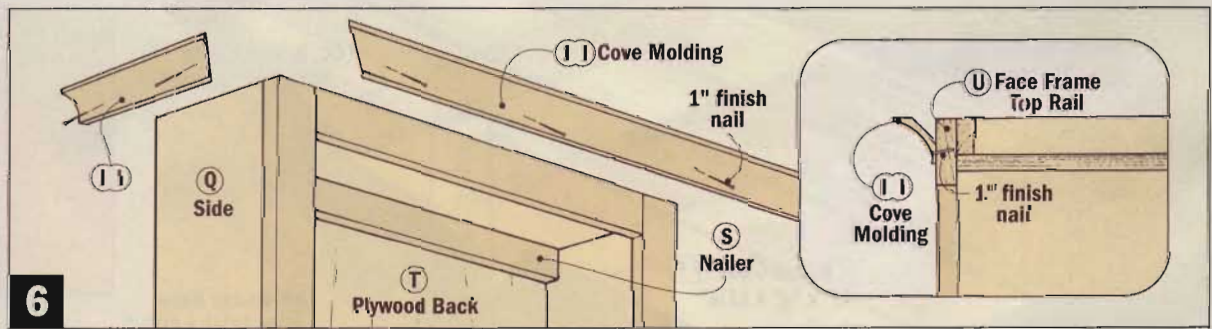
Next, drive screws through the side of the bookcases and into the window seat.

## BRIDGE THE GAP

The bridge gets installed next. Start by attaching the mounting cleats to the bookcases with screws. Then hang the bridge in place.

To install the fixed shelf, rest its back edge on the window casing. Then hold it level and drive screws through the bookcases into the ends of the shelf. I tried to position the screws as closely behind the bookcase face frame as possible to keep them out of site.

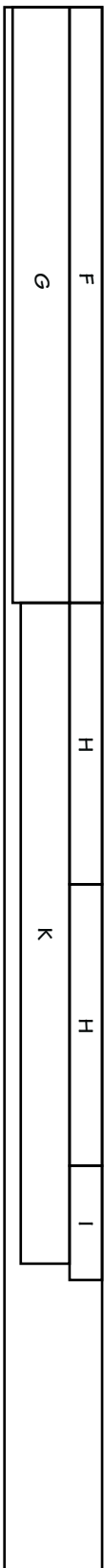
Finally apply the molding around the top and bottom of the unit (shown below). To keep the mess out of the house, cut the pieces in the shop and then bring them inside.



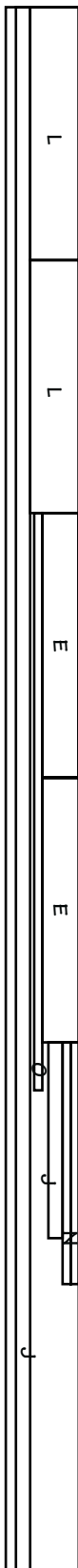
WB 262

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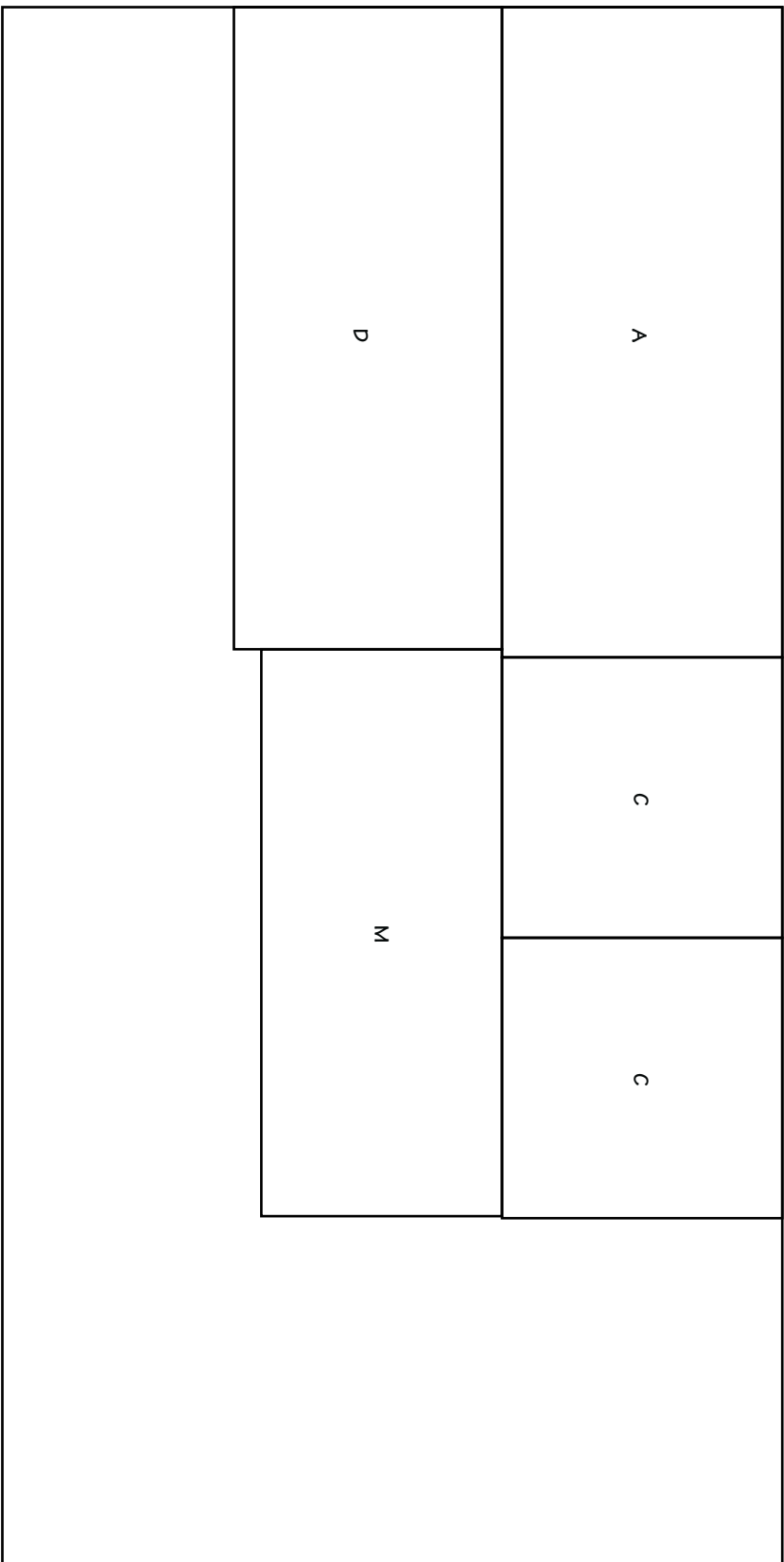
3/4" x 6" - 96"



3/4" x 4 1/2" - 96"



3/4" x 48" x 96"



ALSO NEEDED; ONE PIECE OF 1/4" PLYWOOD 16 1/2" x 40" FOR PART (B)

NOTE: DOES NOT INCLUDE BASE OR BASE MOULDING

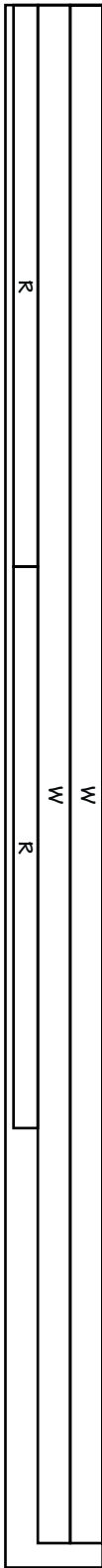


WB 262

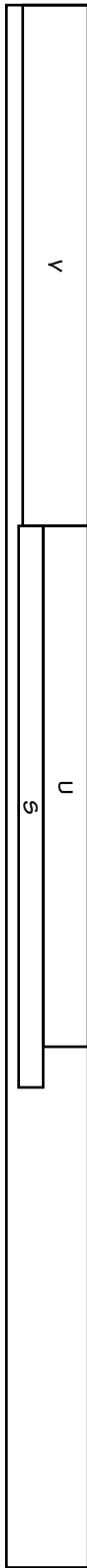
**(MATERIALS FOR ONE)**

NOV/DEC 2000

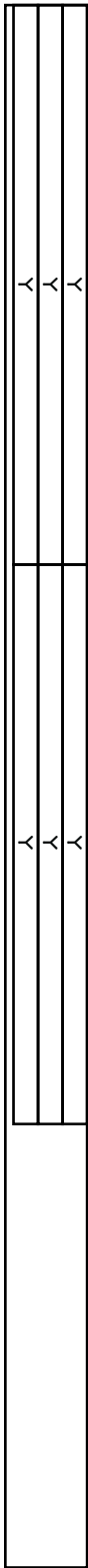
3/4" x 6" - 96"



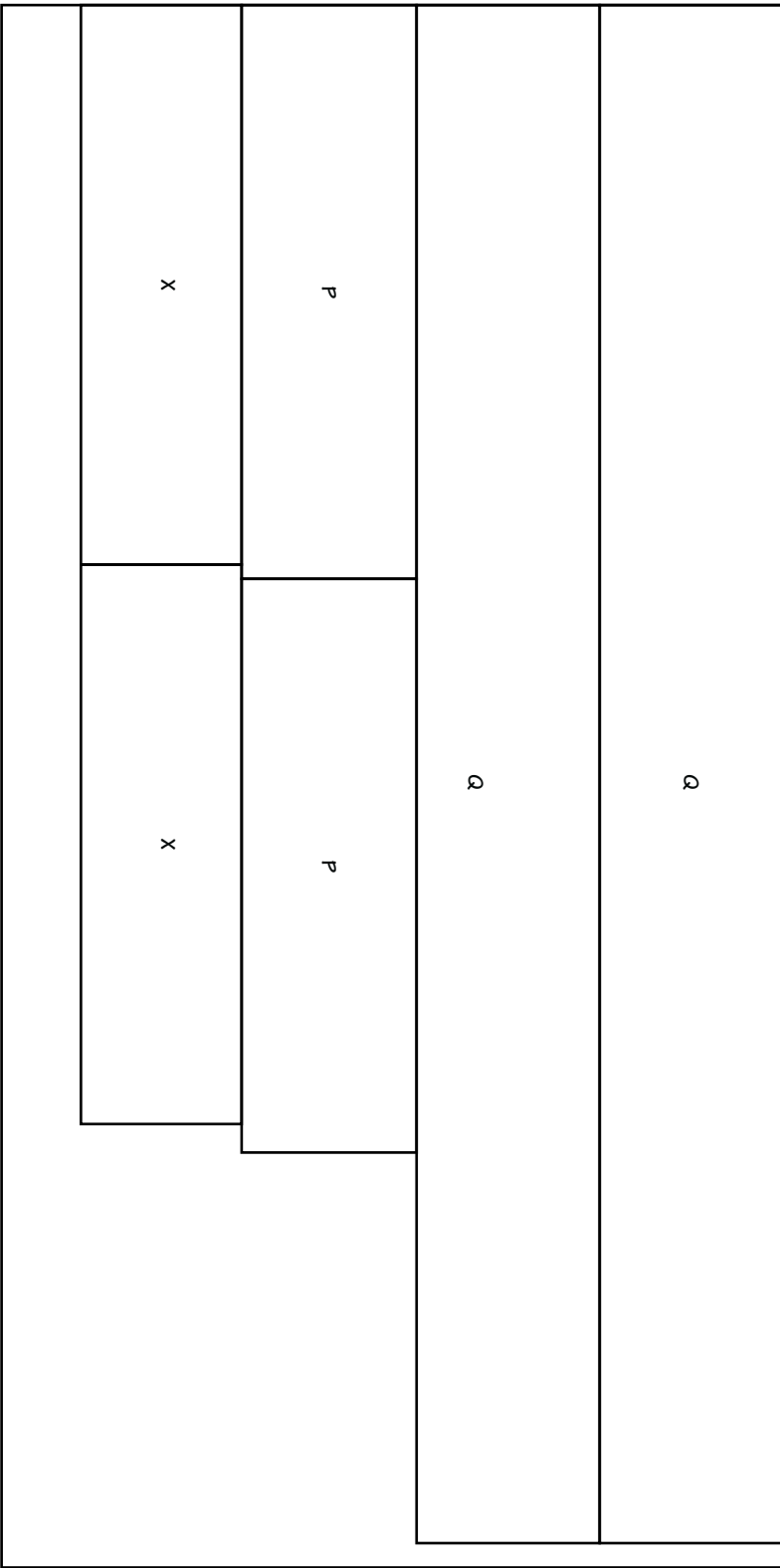
3/4" x 5" - 96"

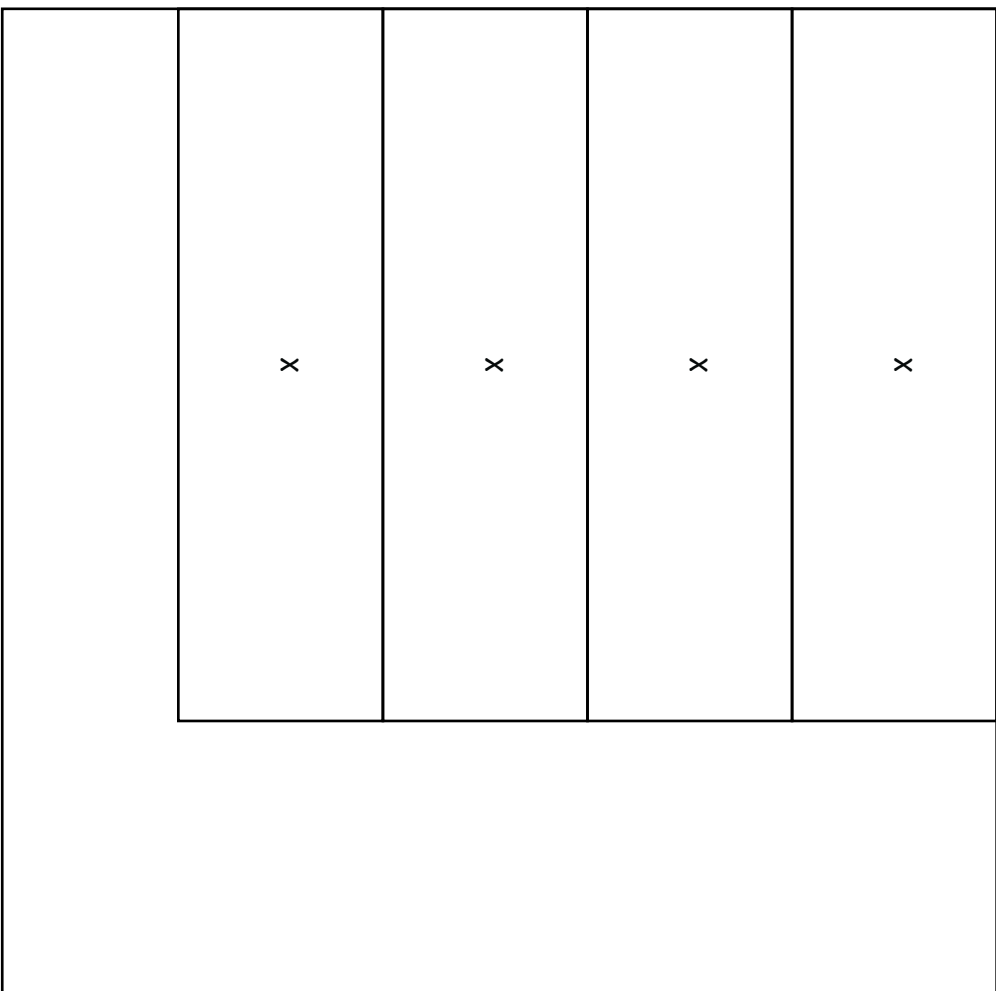


3/4" x 5" - 96"



3/4" x 48" x 96"



**(CONTINUED)** $\frac{3}{4}$ " x 48" x 48"

ALSO NEEDED; ONE PIECE OF  $\frac{1}{4}$ " PLYWOOD  $35\frac{1}{2}$ " x 87" FOR PART (T)

NOTE: BOOKCASE MATERIALS CUTTING DIAGRAM DOES NOT INCLUDE BASE, BASE MOULDINGS,  
TOP COVE MOULDINGS, OR MATERIALS FOR THE BRIDGE

# Stand-Alone Tower Bookcase

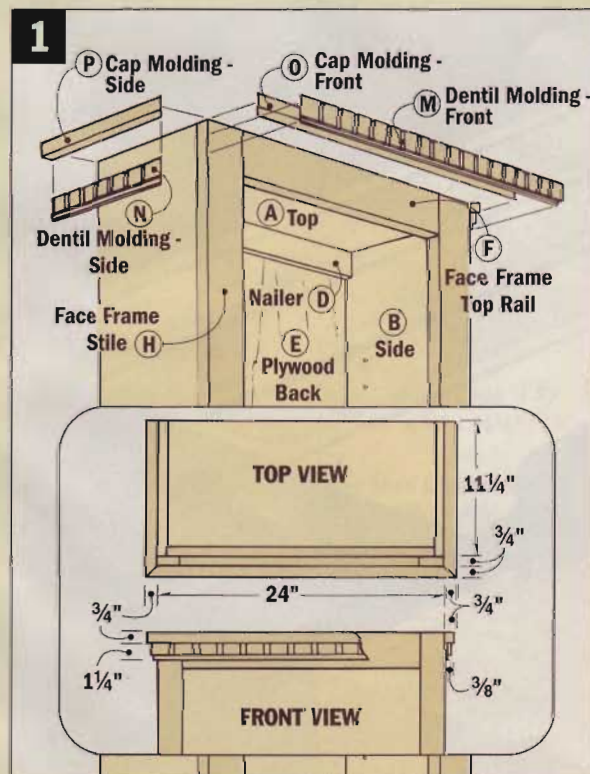
This stand-alone unit looks very different from the floor-to-ceiling cases on the previous pages, but underneath they are very much the same.

Not everyone wants a room full of bookcases like the ones shown in the previous pages. But this is really a nice-looking design, so I thought I'd downsize it a bit and use it as a stand-alone unit in another room.

This bookcase is about a foot shorter than the original. It also has dentil molding in place of cove molding at the top. The cove molding wouldn't work for this bookcase since it doesn't abut the ceiling. The dentil molding, along with a simple piece of shop-made cap molding finishes off the top nicely, though.

Since this bookcase is shorter, I built fewer shelves to go inside. Otherwise, it's the same bookcase.

One thing to keep in mind when installing this unit is that the nailer will not be high enough to line up with the wall top plate. Even though this version is smaller, it should still be screwed to the wall to prevent it from accidentally tipping forward. So you'll need to locate wall studs behind the bookcase to attach it to.



## MATERIALS LIST

A (2) Top/Bottom*	$\frac{3}{4}$ " x $10\frac{3}{4}$ " x $23\frac{1}{4}$ "
B (2) Sides*	$\frac{3}{4}$ " x $11\frac{1}{4}$ " x 84"
C (2) Cleats	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $22\frac{1}{2}$ "
D (1) Nailer	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $22\frac{1}{2}$ "
E (1) Plywood back*	$1\frac{1}{4}$ " x $22\frac{1}{2}$ " x $76\frac{1}{2}$ "
F (1) FF Top Rail	$\frac{3}{4}$ " x $2\frac{3}{4}$ " x 20"
G (1) FF Bottom Rail	$\frac{3}{4}$ " x 4" x 20"
H (2) FF Stiles	$\frac{3}{4}$ " x 2" x 84"
I (3) Shelves*	$\frac{3}{4}$ " x $9\frac{7}{8}$ " x $22\frac{3}{8}$ "
J (3) Shelf Edgeband	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $22\frac{3}{8}$ "
K (1) Base Board	$\frac{3}{4}$ " x $5\frac{1}{2}$ " x 5 lin. ft.
L (2) Base Molding**	$\frac{3}{4}$ " x $\frac{5}{8}$ " x 5 lin. ft.
M (1) Dentil Molding - Front**	$\frac{3}{8}$ " x $1\frac{1}{4}$ " x $24\frac{3}{4}$ "
N (2) Dentil Molding - Sides**	$\frac{3}{8}$ " x $1\frac{1}{4}$ " x $12\frac{3}{8}$ "
O (1) Cap Molding - Front	$\frac{3}{4}$ " x $\frac{3}{4}$ " x $25\frac{1}{2}$ "
P (2) Cap Molding - Sides	$\frac{3}{4}$ " x $\frac{3}{4}$ " x $12\frac{3}{4}$ "

## HARDWARE

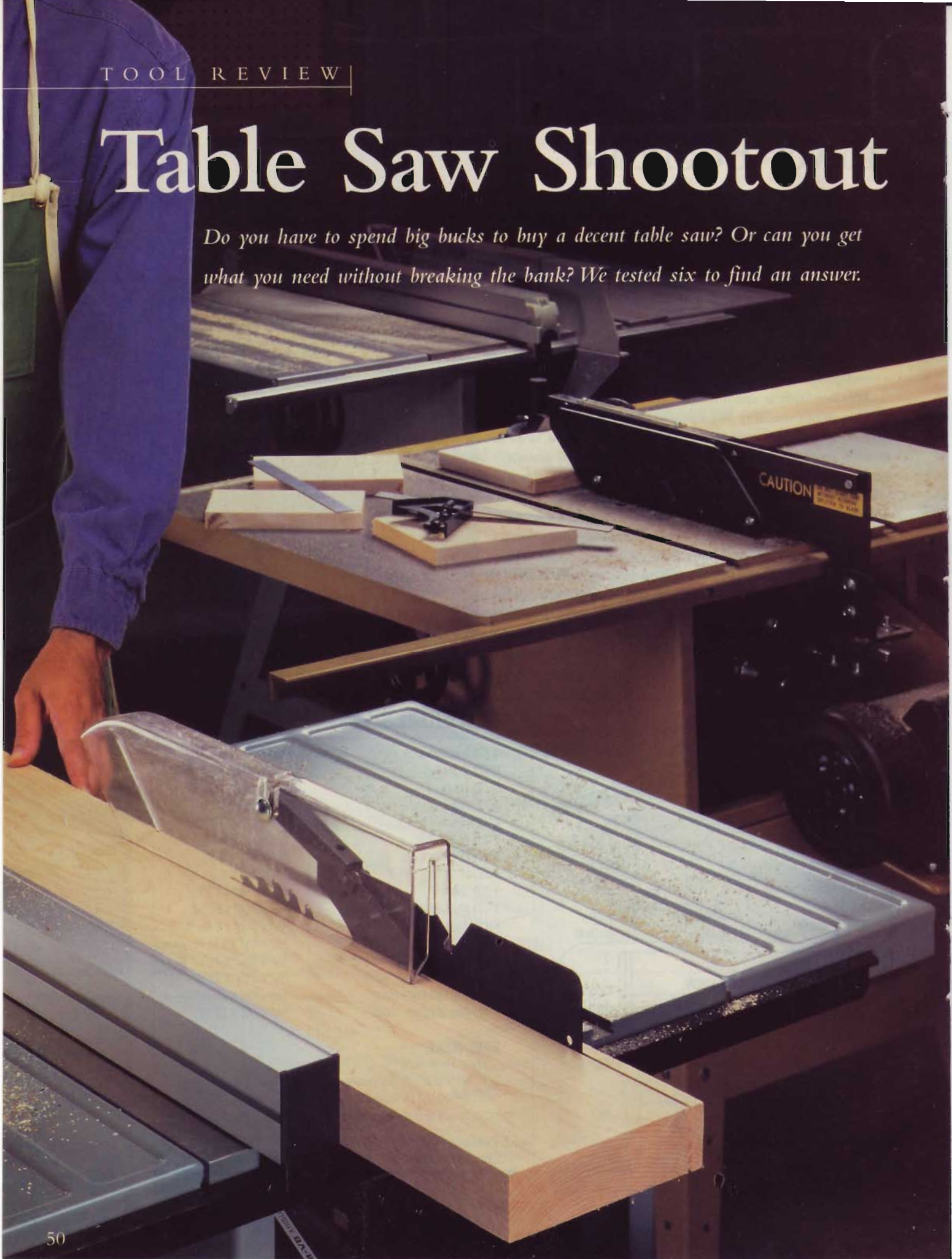
- (37) 1" Finish nails
- (3) #8 x  $1\frac{1}{4}$ " Fh woodscrews
- (2) #8 x  $2\frac{1}{2}$ " Fh woodscrews
- (12) Spoon type shelf supports

\* These pieces are cut from plywood.

\*\* The dentil molding and base molding are store-bought millwork.

# Table Saw Shootout

*Do you have to spend big bucks to buy a decent table saw? Or can you get what you need without breaking the bank? We tested six to find an answer.*



For many woodworkers and do-it-yourselfers, a table saw is probably the most expensive tool they'll ever purchase. And if you've shopped around, you know there's a variety of saws available, with prices ranging from a couple hundred dollars (benchtop saws) to several thousand dollars (big, stationary cabinet saws).

But to my eye, it's the in-between saws, the "contractor's saws," that are perfect for the home shop. They have the features I'm looking for — cast iron tables, good rip fences, and decent-size motors (around 1½-hp).

A cabinet saw may offer a more powerful motor, some beefier components, and a fence with greater ripping capacity than a contractor's saw. But these features are designed for the needs of a commercial shop. For a home shop, the performance difference isn't that necessary.

The differences in saw styles are pretty clear. Pricing is more confusing. Contractor's saws generally start at less than half of what you'd pay for a cabinet saw. Of course, options are almost endless, and you can outfit a contractor's saw with a larger-capacity fence and a bigger table.

For this test, though, I decided to look at base-level saws from some of the top manufacturers — Craftsman, Delta, DeWalt, Jet, Ridgid, and Powermatic. There are several reasons I selected these tools instead of more expensive models.

For one, not everyone needs big ripping capacity. And outfitting a saw with a large-capacity fence adds cost. Plus it means giving up more space in the shop. It's a trade-off.

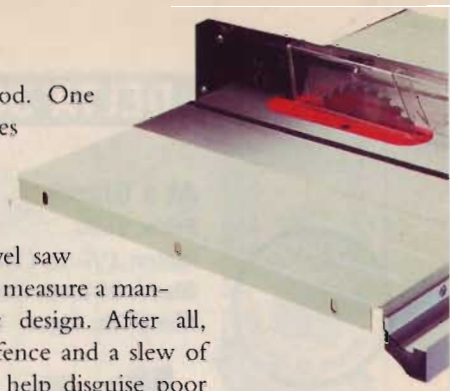
Also, one of the biggest reasons for upgrading a contractor's saw used to be the fence. These days, manufacturers have improved fences so much that even base models are

pretty darn good. One of these fences may suit your needs just fine.

Finally, testing the base-level saw is a great way to measure a manufacturer's basic design. After all, adding a fancy fence and a slew of accessories may help disguise poor engineering, but it won't make a bad saw good.

It's worth noting that not every manufacturer has the same definition of base level (see page 54). The Craftsman, Delta, Jet, and Ridgid are priced in the neighborhood of \$500. The Powermatic and DeWalt, on the other hand, sell for \$750 and \$900 respectively.

I wasn't sure if those higher prices would mean better performance. So to keep things fair, I tested the pricier saws the same ways, but I'll discuss them separately.



## DETAILS THAT MAKE A DIFFERENCE

To the uninitiated, all contractor's saws look alike — a cast iron table, 10"-dia. blade, open stand, and a midsize (about 1½-horsepower) motor. But subtle differences (and a few more obvious ones) can affect how well they operate.

**Blade Guard:** Check the guard to make sure it moves smoothly and stays aligned with the blade. Flimsy models get out of whack easily.

**Switch:** The on/off switch should be easy to operate. DeWalt's knee switch is a novel approach.

**Table:** A smooth surface and flat table show careful machining. A beveled front edge is a nice touch.

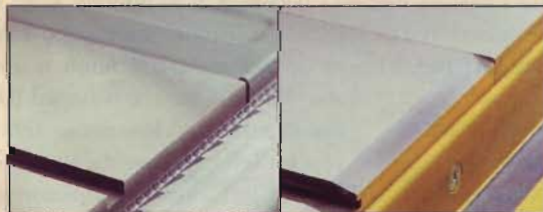
**Adjustments:** You shouldn't have to change setups often, but stops that are accessible from above make the process much simpler.



**BLADE GUARD:** Delta's guard (left) won't stay up, which is awkward. Powermatic's (right) flips out of the way.



**POWER SWITCH:** Rail-mounted switches (left) are the norm. DeWalt's (right) can be shut off with your knee.



**BEVELED TABLE:** A square front table edge (left) can catch the miter gauge. A beveled edge (right) helps.



**STOP ADJUSTMENTS:** Reaching underneath to set the stops (left) is tougher than up-top adjustments (right).

## DELTA 36-650



### At a Glance:

**Price:** \$500

**Motor:** 1½-hp (15 amp) 110/220v

**Blade:** 36-tooth carbide-tipped

**Blade Tilt:** Right **Warranty:** 2-Year



In a tightly-bunched field, Delta's new 36-650 brings home our Editor's Choice award by delivering the best performance overall. It didn't run away with any category, but offered that extra margin in a few areas that pushed it over the top.

An example of this is the new fence. It's a no-frills model, similar to the Jet. But this one locks easily, and is very adjustable for rack and toe-out. One quirk with this fence is that the measurement indicator is on the left side. I usually rip

with the fence to the right of the blade, which means that a work-piece covers up the indicator. That makes it tough to fine tune a cut.

I do like the power switch mounted out on the front rail. You lift up a guard to access the "on" switch, but just push on the guard with your hand or thigh to shut the saw down.

The 36-650 also ran quietly, and cut smoothly in every type and thickness of stock I tried.

Delta does produce this saw overseas, which helps make the price one of the best in the test group.

The blade guard is this saw's biggest disappointment. It's flimsy, and the guard can't be flipped it up out of the way, which is a real hassle when setting the blade height.

Overall, though, the 36-650 offers the best combination of performance, features, and price in this test.

**Virtues:** Competitive price; fence moves and locks easily; quiet; well-balanced.

**Vices:** No leg levelers; flimsy blade guard that won't stay up; cheap miter gauge.

**Verdict:** The 36-650 offers rock-solid performance, but please Delta, give it a better blade guard.

## JET JWTS-10JF



### At a Glance:

**Price:** \$525

**Motor:** 1½-hp (18 amp) 110/220v

**Blade:** 28-tooth carbide-tipped

**Blade Tilt:** Right **Warranty:** 2-Year



Check the charts on the next two pages, and you can see that the Jet measured up in almost every category. Just a couple complaints slipped this saw into second place.

Most notable is the fence. It moves easily, and is plenty beefy. But the locking mechanism isn't very positive. That may be due to a very short locking handle that doesn't offer much leverage. The short length also puts your thumb close to the lever's mounting hole, where it can get pinched. The fence isn't bad, it's

just getting a bit long in the tooth, and newer designs have gotten better.

I also couldn't get the fence's measurement indicator to align with the scale on the rail. Apparently the scale was located in the wrong spot. To fix the problem, I had to cut a notch in the indicator before mounting it to the fence.

The 45° and 90° blade stops are also located under the table. That's not a big deal other than during the initial setup.

Back on the positive side, the JWTS-10JF does have good things to offer. The fit and finish is great, and the table surface is honed flat. I also like this saw's low stance. It helps you get leverage over the workpiece.

The Jet's cutting performance is also first rate. There's plenty of power, and the cut edges are smooth.

In the end, the Jet landed into second place by a slim margin.

**Virtues:** Great fit and finish; convenient height; smooth adjustments; powerful.

**Vices:** Open legs won't accept pads or levelers; fence lock isn't positive.

**Verdict:** The JWTS-10JF has been a top contender in this category for years. It just needs freshened up to stay in that spot.



## RIDGID TS2412

Right out of the box, the Ridgid impressed me with labels identifying every box and bag of parts. It's a small touch, but a thoughtful one.

The Ridgid also has a fence with a positive locking mechanism. The fence does tend to rack when slid back and forth. But push the fence head forward against the rails (like the little label says to), and it locks down parallel to the blade.

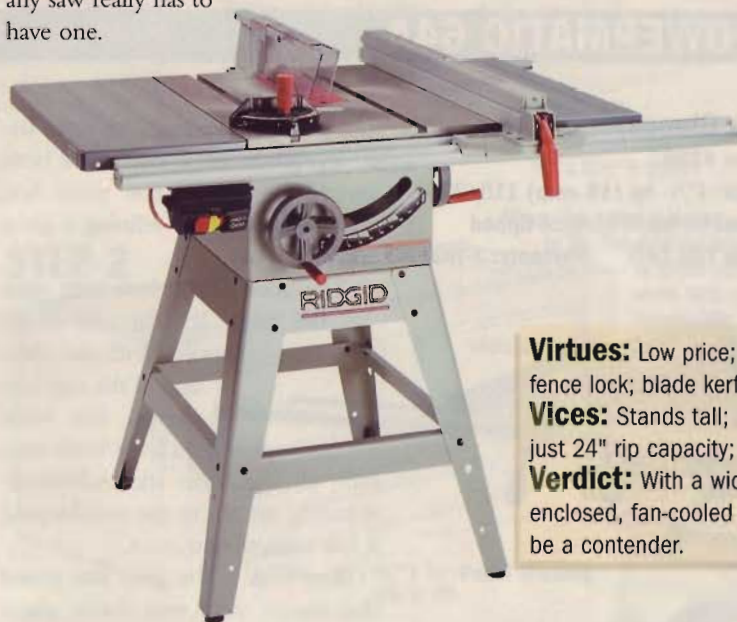
Another positive that's hard to ignore is this saw's lifetime warranty. Few tools can match it.

What cost this saw a lot in our standings is the motor. Most of the other saws use totally-enclosed fan-cooled (TEFC) motors. But this motor is open, so sawdust can easily get into the works. The motor did offer plenty of power, and drove the blade easily through all cuts I made.

Another downside is that the Ridgid offers only 24" rip capacity.

The others (except Craftsman) have 30" capacity. And Ridgid doesn't offer a larger-capacity fence option.

Some of these complaints can be worked around, but one that can't is the lack of a blade height lock. I think any saw really has to have one.



### At a Glance:

**Price:** \$470

**Motor:** 1½-hp (13 amp) 110/220v

**Blade:** 24-tooth carbide-tipped

**Blade Tilt:** Left **Warranty:** Lifetime

**Virtues:** Low price; lifetime warranty; good fence lock; blade kerf indicator on table.

**Vices:** Stands tall; open-housing motor; just 24" rip capacity; no blade height lock.

**Verdict:** With a wider rip capacity and an enclosed, fan-cooled motor, this saw could be a contender.



## CRAFTSMAN 22839

If all it took was a good fence to make a great table saw, the new Craftsman model 22839 would win this test. To say this fence surprised me would be an understatement.

When I got the saw, I was suspicious the fence rails were missing, because there was only one shipping box. It turns out that the rails are each two pieces. That sent up the red flags. But the pieces aligned fine.

The fence that rides those rails is about as resistant to racking as any I've used — even very expensive models. Plus, it locks down tight.

But a good fence doesn't do it all. When tilting the blade, the 45° and 90° stops seemed mushy. I soon realized the stops were fine. The problem is that the saw's metal housing is so thin, that the sides flex as you crank the adjustment wheel against either stop. A reinforcing plate behind the wheel mount does little to help.

And I don't understand why this saw comes with a steel blade. Craftsman needs to wake up and spend the few extra dollars for carbide. I'd also like to see more than 24" rip capacity.



### At a Glance:

**Price:** \$500

**Motor:** 1½-hp (13 amp) 110v

**Blade:** 64-tooth steel-tipped

**Blade Tilt:** Left **Warranty:** 1-Year

**Virtues:** A surprisingly easy-to-move, accurate, and rack-free fence; good miter gauge.

**Vices:** Open-housing motor; no carbide-tipped blade; thin metal housing.

**Verdict:** The fence is fantastic, but the saw does have a few shortcomings. Fix those, and this saw would rank much higher.

## DIFFERENT DEFINITIONS OF BASE-LEVEL

If you've ever shopped for a new car, you know that a base-model Chevrolet is different than a base-model Cadillac. The Cadillac costs more, but has more standard features. Of course, you can get the same

features as options on the Chevy. It's just a matter of how you want to buy — all-included or à la carte.

The dollar amounts are different with contractor's saws, but the principles are the same: One company's

idea of base may just be different than another company's.

Take the Powermatic saw for example. It costs half again more than most of these saws. But it comes standard with cast iron exten-

### POWERMATIC 64A



#### At a Glance:

**Price:** \$750

**Motor:** 1½-hp (15 amp) 110/220v

**Blade:** 40-tooth carbide-tipped

**Blade Tilt:** Left    **Warranty:** 1-Year



The 64A from Powermatic is the latest evolution of a saw that's been around for quite a few years. And this saw shows how refining a good design can pay off.

The good things here start with the table. It's flat and finely honed. With the addition of the cast iron wings, the table provides a large work area. Plus, all that iron adds vibration-reducing weight to the saw, helping it run smooth and quiet.

The 64A is the only saw tested that comes with two throat plates

(the plate around the blade). One is standard, the other has a wider opening to accept a dado set.

Above the throat plate sits the best blade guard of the bunch. It has two halves that move independently. And those sides can be secured up out of the way when necessary.

Secure is also a good word for the fence. It's based on the Biesemeyer design, and is built tough enough to park a tank on. It does rack a bit when slid back and forth, but locks down solid and parallel to the blade.

On the downside, adjusting the 45° and 90° stops does require reaching under the table, and it's not an easy task. Also, removing the blade guard takes a little work.

So is this saw worth half again more than the others? Well, yes. Outfit any of them with cast wings and an equivalent fence, and you'll spend the same money.

**Virtues:** Cast iron wings; heavy-duty fence; best blade guard in the test; good switch.

**Vices:** Heavy; fence racks when moving; blade tilt wheel a bit hard to reach.

**Verdict:** This saw has everything you'd want for the price, including performance. But the lower-priced saws are closing in.

FEATURES AND QUALITY	Craftsman	Delta	Jet	Ridgid	DeWalt	Powermatic
Condition out of Box	G	G	G	G	G	G
Ease of Assembly	G	G	G	G	E	G
Overall Fit and Finish	F	G	G	G	G	G
Table/Wing Flatness	G	G	G	G	F	E
Switch Location/Action	F	G	G	F	E	E
Blade Height/Tilt Controls	F	G	G	F	E	G
Bevel Scale Accuracy	G	G	G	F	G	G
Fence Movement/Locking	E	G	F	F	E	G
Fence Scale Accuracy	G	G	F	G	E	G
Blade Guard	F	F	F	G	F	E
Miter Gauge	F	F	F	G	F	G

To contact the manufacturers of these saws, see Sources & Resources on page 94. P=Poor; F=Fair; G=Good; E=Excellent



sion wings. They provide a flat, stable surface, but cost more to produce than other saws' stamped steel wings.

Powermatic's fence is also beefier than any of the lower-priced saws. In fact, this fence would have no

problems in a commercial shop. In a home shop it should last forever

DeWalt also offers a very nice fence. And the company touts its table saw as very refined. But this saw costs even more.

Manufacturers of the lower-priced saws we tested also offer models equipped the same as the pricier saws. And you can do it for about the same money. It's just a matter of what's standard and what's an option.



## DEWALT DW746

It's not a contractor's saw, but it's not a cabinet saw either. That's what anyone — including the folks at DeWalt — will tell you about the DW746. It's a tough tool to get a handle on.

On the plus side, I love the compactness of this saw. That's mainly due to the motor that's mounted underneath instead of hanging out the back like the other saws.

I also like the shroud around the blade that directs dust and chips right into a dust collection port.

And the fence leaves you longing for very little. It's hefty, accurate, and has an adjustable face.

The switch is great, too. You can simply bang it with your knee to shut the saw down.

On the downside, the cast table wasn't very flat, at least on the saw we tested. And the motor — touted as 1/4-hp stronger than the others — bogged down on tough rip cuts.

But the bottom line is price. At \$900, it's just too high. For that money I can set up a regular contractor's saw with a 52" fence and still buy accessories. I think DeWalt needs to knock a couple hundred off the price to make this saw competitive.

### At a Glance:

**Price:** \$900

**Motor:** 1<sup>3</sup>/<sub>4</sub>- hp (15 amp) 110/220v

**Blade:** 30-Tooth carbide-tipped

**Blade Tilt:** Left **Warranty:** 2-Year



**Virtues:** Under-mounted motor; heavy-duty fence; knee switch; integrated dust pickup.

**Vices:** Price is too high; saw whined when resawing; cast table not very flat.

**Verdict:** DeWalt has done a lot of things right on this saw. But the price is too high, almost into cabinet saw range.

SETUP AND CUTTING	Craftsman	Delta	Jet	Ridgid	DeWalt	Powermatic
Trunnion Alignmt/Adjustment	G	G	F	G	G	G
Fence Alignmt/Adjustment	G	G	G	G	G	G
45°/90° Blade Stop Adjustment	E	E	F	E	E	F
Rip Power (1" and 2" Stock)	F	G	G	G	F	G
Smoothness of Rip Cut	F	G	G	F	G	G
Accuracy of Rip Cut	G	G	G	G	G	G
Crosscut Power (1" stock)	G	G	G	G	G	G
Smoothness of Crosscut	F	G	E	G	G	G
Accuracy of Crosscut	G	G	G	G	G	G
Vibration Suppression	G	G	G	E	E	E
Noise/Sound Quality	F	G	G	F	F	E

To contact the manufacturers of these saws, see Sources & Resources on page 94. P=Poor; =Fair; G=Good; E=Excellent

## FINAL RECOMMENDATIONS

I know it sounds like a cop out to say there's not a bad saw in this bunch, but there really isn't. Whether you buy the least expensive (Ridgid) or the one with the highest price (DeWalt), you'll get a saw capable of handling most cutting needs. Look at the charts on the previous pages. Ratings *could* range from Poor to Excellent. But you see that no saw scored less than Fair in any category. That says a lot.

There are differences between these saws, though. And in the end, some fared better than others. Here are a few reasons why.

### PRECISION AND POWER

I said up front that the rip fence is one area that's gotten better on these saws. In the past they were clunky, inaccurate, or hard-to-adjust.

The biggest surprise is the Craftsman fence. It's very good, and rivals models that cost a heck of a lot more. Even the two-piece rails — an item I was skeptical about — work well, with no alignment problems.

Powermatic's Biesemeyer-style fence and DeWalt's fence are also both very good. Of course, I expect more from both fences, given the higher price of these saws. Jet's fence did push it back in the rankings. The fence isn't bad. It's been around a while though, while newer designs have improved.

As far as cutting power goes, you shouldn't run into problems with any of these saws. And I tried to trip them up. For example, I ripped 8/4 (2"-thick) hard maple, and on some passes I fed the stock too quickly and forcefully on purpose. I'm sure I could have stalled any

of the saws, but not while making what anyone would consider a reasonable cut.

The Craftsman and DeWalt saws did balk at tough cuts more than the others, bogging down and/or letting out a whining sound. But both did the job. I figured the Craftsman might complain, given its low-cost steel blade. But the DeWalt surprised me. I even rechecked the fence and blade alignment. Nothing was binding, but I couldn't get rid of the whine when ripping thick stock.

By the way, if you need more oomph, all but the Craftsman can be rewired to run on 220-volt (instead of 110-volt). This drops the motor's amp draw in half, yielding more efficient power.

### SETUP AND CONTROLS

Setup and adjustment of these saws was also pretty easy. They come out of the box with many parts already assembled. You'll have to put together the stand, mount the motor, add the wings and fence rails, then align and tune everything. (The DeWalt is the exception. It's assembled, except the wings and fence.)

Figure on spending a few hours getting the saw up and running. You'll just need a few hand tools. In each case, the 45° and 90° stops needed tweaking. I didn't have to mess much with trunnion adjustments, though.

Blade height and tilt controls are similar on all of the saws, with handwheels that control

both functions.

Ridgid and Craftsman are a bit different, though. Those saws have a lever that locks the blade tilt angle, rather than a knob on the handwheel. And neither saw has a height lock. That could be annoying when trying to cut a groove or dado.

I should mention that the blade tilts to the left on all saws except the Jet and Delta. The blades on these two saws tilt to the right.

### THE FINAL CUT

So, they're all decent saws. How do you know which to buy? I think it depends on your budget.

If you've got around \$500 to spend, the Delta 36-650 is the best choice. So it gets the Editor's Choice Award in that group. I'd like to see a better blade guard, but I think it offers the best combination of features, quality, and performance in the group.

Powermatic's 64A gets the award in the high-price group. This saw offers a lot of refinement and precision to go with its price.



### SOUND OFF ON-LINE



Tell us how you feel about this test, or share the experiences you've had with one of these saws, or contractor's saws in general. Just log on to the *Tool Reviews* page at [www.WorkbenchMagazine.com](http://www.WorkbenchMagazine.com).

# Must-Have Table Saw Jigs

These three easy-to-build accessories will improve the performance of any table saw.

Whatever type of table saw you own, there are a few jigs I recommend. Three of the most useful just happen to be jigs you can make yourself.

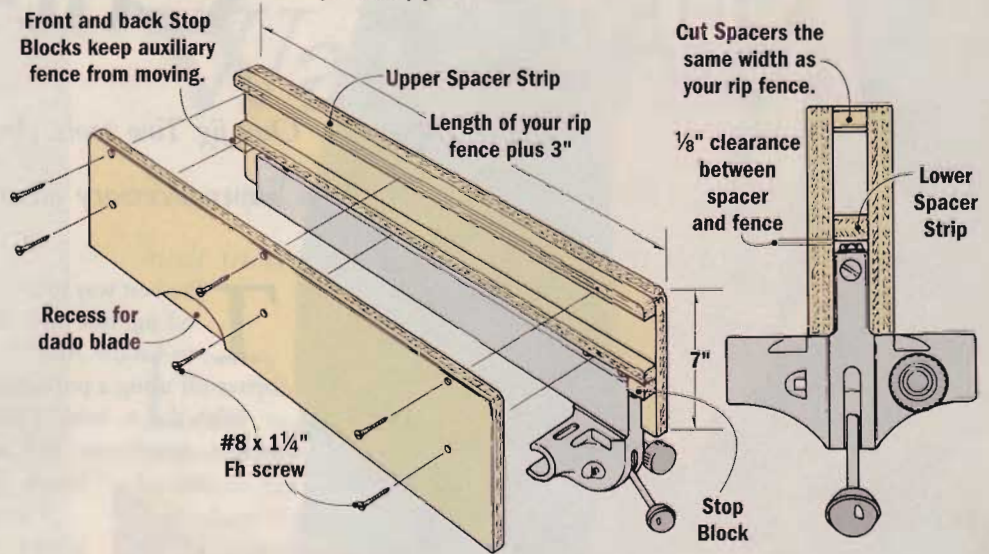
**Auxiliary Rip Fence:** When cutting with the blade close to the fence, or when using a dado blade, it's a good idea to protect the fence with an auxiliary face. This one has tall sides that also make it useful for cutting pieces on edge, or even making raised panels. The jig is just two pieces of plywood joined by spacers that straddle the rip fence.

**Miter Gauge Extension:** Here, a rectangular piece of plywood gets screwed to the miter gauge to support long stock during crosscuts. That's nothing new. But take the time to make a simple stop block, and the extension really becomes useful for making accurate repeat cuts.

**Zero-Clearance Insert:** If you're going to cut thin or small pieces, this is a must. Make one by tracing the outline of your saw's throat plate onto plywood, then cutting and sanding the piece to match. Finally, raise the blade through the plate (with the saw on) to cut an opening.

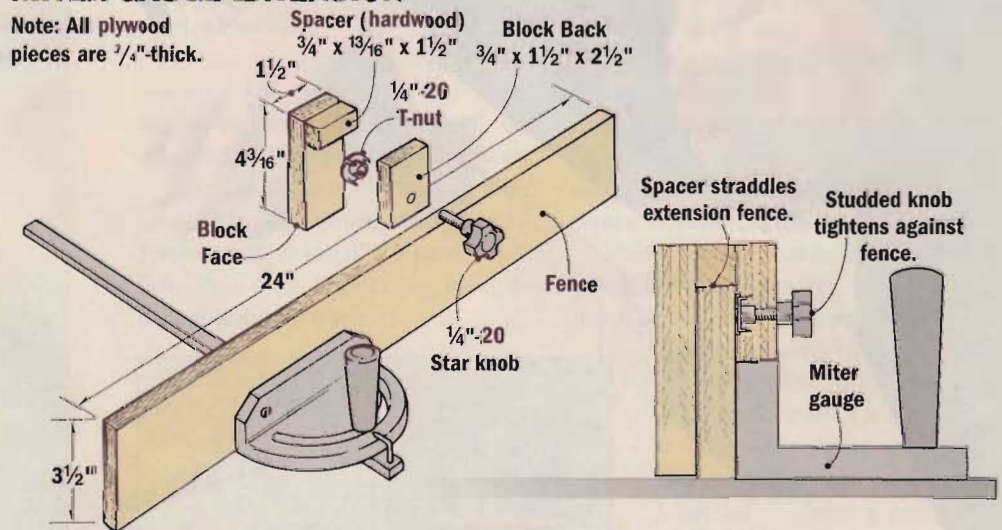
## AUXILIARY FENCE

Note: All pieces are  $\frac{3}{4}$ "-thick plywood.

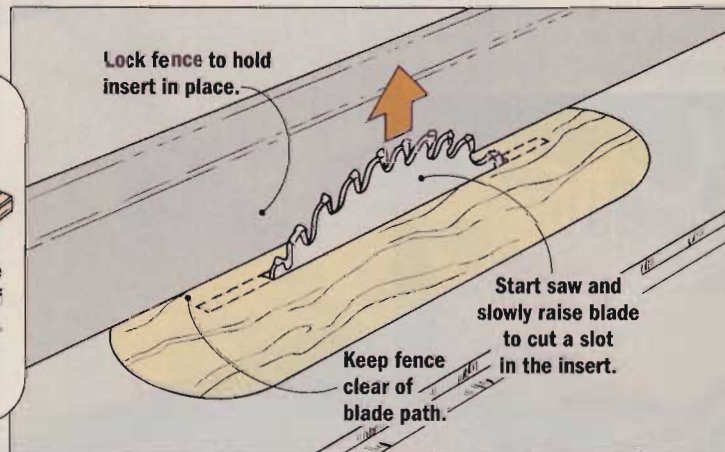
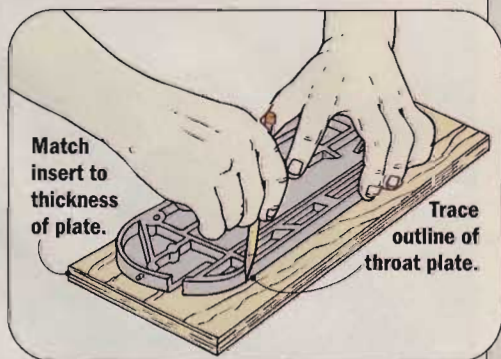


## MITER GAUGE EXTENSION

Note: All plywood pieces are  $\frac{3}{4}$ "-thick.



## ZERO CLEARANCE INSERT



# Double-Duty Cut-off Jig

*One jig. Two tools. Any way you slice it, this super accessory gives you square cuts every time.*

The best way to crosscut panels on a table saw is with a cut-off jig. But most of the jigs I've seen are heavy and hard to handle. And to trim long, awkward panels, you're still better off using a portable circular saw.

With that in mind, I set out to design a cut-off jig that's lightweight, easy-to-use, and versatile enough to trim panels of any length. The result is this two-in-one jig.

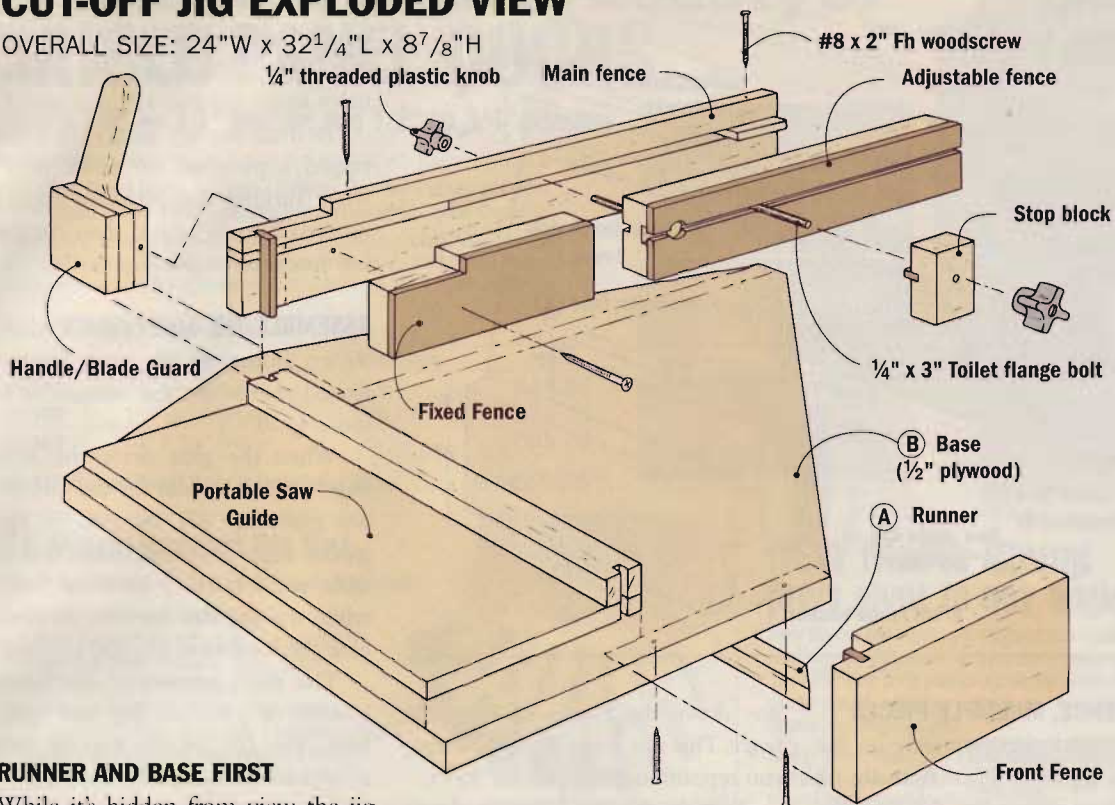
The angular base means reduced weight and greater visibility — there's no front fence blocking your view when you line up the runner in the miter gauge slot. It has a sliding fence with an adjustable stop to cut multiple panels to the same length. And to whittle long boards down to size, it has a circular saw guide (inset).

to size, it has a circular saw guide (inset).



# CUT-OFF JIG EXPLODED VIEW

OVERALL SIZE: 24"W x 32<sup>1</sup>/<sub>4</sub>"L x 8<sup>7</sup>/<sub>8</sub>"H



**NOTE:** You'll need to custom fit the jig to work with your saw. It's important that the portion to the left side of the blade overhangs the extension wing by <sup>3</sup>/<sub>4</sub>". (The measurements shown here are for a Delta contractor's saw.)

## RUNNER AND BASE FIRST

While it's hidden from view, the jig has a runner (A) underneath that fits in the saw's miter gauge slot. This runner is key to making the jig track squarely, so that's where I started.

To make the runner, start by ripping a <sup>1</sup>/<sub>2</sub>" strip from the edge of a piece of <sup>3</sup>/<sub>4</sub>"-thick hardwood. Sand the edges until the runner will slide smoothly in the miter slot.

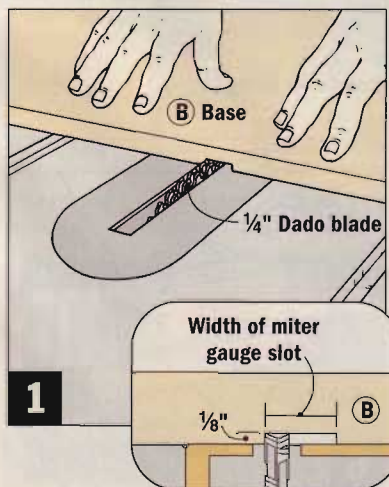
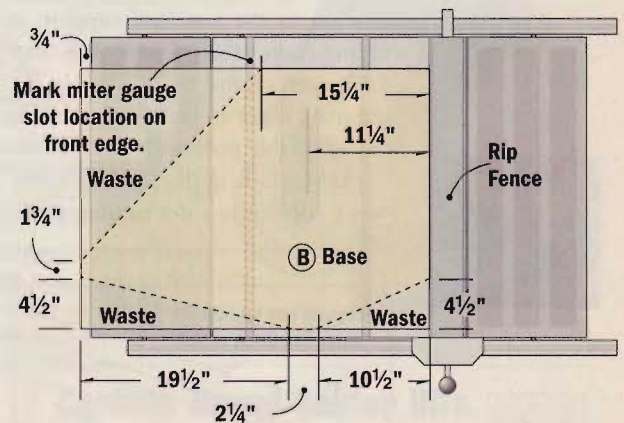
Next, cut the <sup>1</sup>/<sub>2</sub>" plywood base (B) to length and width, but don't make the angled cuts yet (*Base Detail*). It's easier to mark the position of the runner while the piece is still rectangular.

Now, set your rip fence 11<sup>1</sup>/<sub>4</sub>" from the blade. With the blade lowered, lay the base on the saw table and butt it against the fence. Then mark the location of the miter slot on the leading edge of the base.

To help "lock" the runner to the base, I cut a shallow dado in the bottom of the base (*Fig. 1*). Use a <sup>1</sup>/<sub>4</sub>"-wide dado blade and sneak up on the final width.

Finally, trim the base to shape (see the *Base Detail*) and sand the edges smooth. (You'll attach the runner later during the assembly phase.)

## BASE DETAIL



## MATERIALS LIST

### LUMBER:

- A (1) Runner 1/2" x 3/4" x 23 1/8"
- B (1) Base 1/2" x 24" x 32 1/4"
- C (1) Main Fence Rail - L 3/4" x 1 3/8" x 25"
- D (1) Main Fence Rail - U 3/4" x 1" x 25"
- E (1) Rail Spacer 1/4" x 3/4" x 8"
- F (1) Key Spacer 1/4" x 1" x 2"
- G (2) Saw Guide Keys 1/4" x 7/16" x 3"
- H (1) Fixed Fence Backer 3/4" x 3" x 6 1/2"
- I (1) Fixed Fence Face 1/4" x 2 7/8" x 6 1/2"
- J (1) Front Fence Backer 3/4" x 3" x 8"
- K (1) Front Fence Face 3/4" x 3" x 6 1/2"
- L (1) Adj. Fence Backer 3/4" x 3" x 17"
- M (1) Adj. Fence Face 1/4" x 2 7/8" x 17"

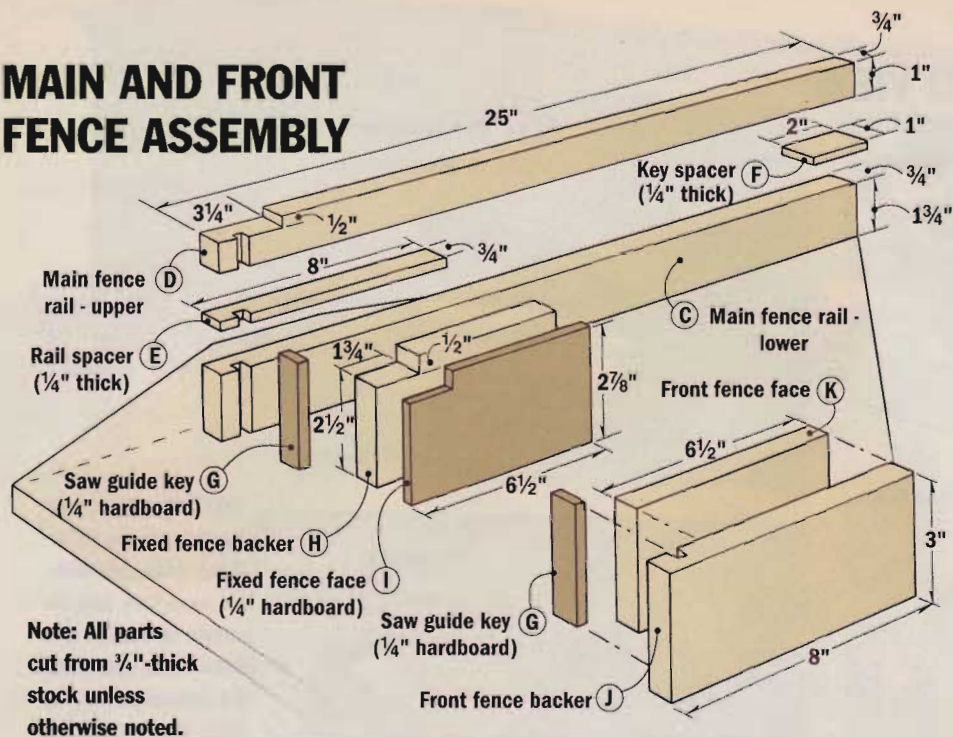
- N (1) Stop 3/4" x 2 7/8" x 2"
- O (2) Stop Keys 1/4" x 7/16" x 1/8"
- P (1) Handle 3/4" x 4 1/2" x 8"
- Q (2) Blade Guards 3/4" x 3" x 4 1/2"
- R (1) Safety Stop 3/4" x 1 1/2" x 1 3/4"
- S (1) Saw Guide Base 1/2" x 8 3/4" x 17 1/8"
- T (1) Saw Guide Rail 1/2" x 3" x 17 1/8"

### HARDWARE:

- (2) 1/4" x 3" Toilet Flange Bolts
- (2) #8 x 3" Fh woodscrews
- (2) #8 x 2" Fh woodscrew
- (8) #8 x 1 1/2" Fh woodscrews
- (4) #6 x 3/4" Fh woodscrews
- (2) 1/4" threaded plastic knobs

\*Size width to fit smoothly in miter gauge slot. \*\* 1/4" hardboard

# MAIN AND FRONT FENCE ASSEMBLY



groove in the adjustable fence (you'll build this part on the following page). This key-and-groove helps keep the two fences aligned.

To make the key spacer (F), I first ripped a piece of  $\frac{1}{4}$ " stock to 1" wide. Turning this piece on edge, I resawed it to  $\frac{1}{4}$ "-thick, then cut the key spacer to length (Fig. 2).

## ASSEMBLE THE MAIN FENCE

When gluing up the main fence, I placed clamps on the vertical faces too (Fig. 3).

When the glue dries, the next step is to cut a dado for the circular saw guide key (G). Because the key spacer (F) will rub against the saw table, you'll need to shim the fence when making this cut (Fig. 4). Then glue the hardboard key (G) in place.

The fixed portion of the fence consists of a backer (H) and hardboard face (I). Notice that the face is  $\frac{1}{8}$ " narrower than the backer, creating a sawdust relief notch along the bottom edge. Glue the two pieces together with their top edges flush. Then glue and clamp the fixed fence to the main fence (Fig. 5).

You might have wondered about the notch in the top of the main fence. It's there to allow clearance for the circular saw motor when

## MAIN FENCE, MULTIPLE PIECES

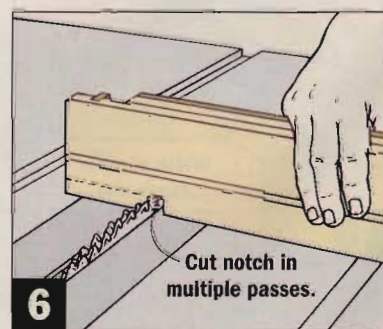
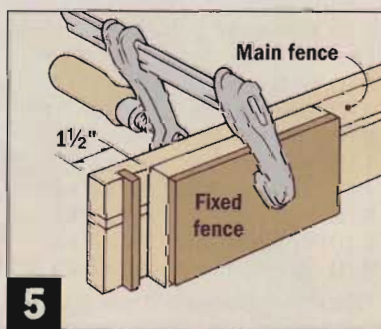
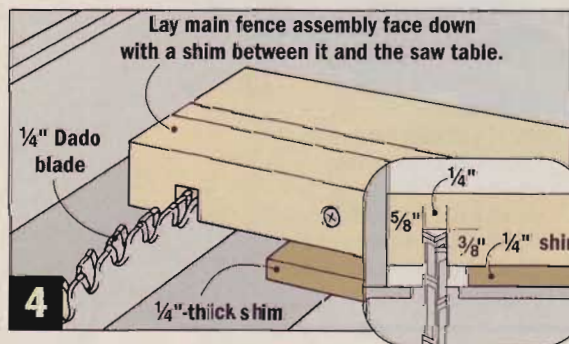
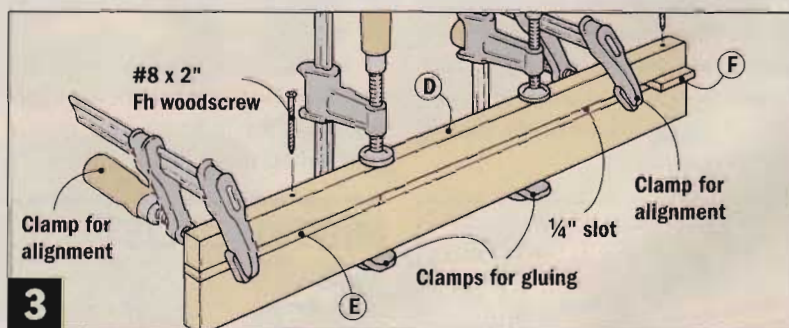
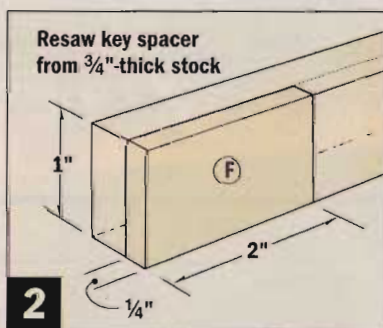
To hold workpieces squarely on the base, the jig has a fence. Actually, it's a three-part system (see the *Exploded View* on page 59). The main fence attaches to the base and supports a sliding, adjustable fence. And the fixed part of the fence attaches to the main fence to make it flush with the adjustable portion.

As you look at the *Exploded View*, you'll also notice a slot running part-

way down the length of the main fence. This slot accepts a bolt, letting you reposition the adjustable fence.

To make this slot, I laminated two  $\frac{1}{4}$ "-thick spacers (E and F) between the fence rails (C and D), as shown in the drawing above. I cut both rails to size, then ripped a  $\frac{1}{4}$ "-thick strip from the edge of a piece of  $\frac{1}{4}$ " stock for the rail spacer (E).

The other spacer (F) is 1" wide and forms a key that fits into a



# ADJUSTABLE FENCE ASSEMBLY

you're using the jig's portable saw guide. I cut this notch in multiple passes with a dado blade (Fig. 6).

The front fence is made from two pieces of  $\frac{3}{4}$ "-thick stock as shown in the drawing at left. But before you glue them together, cut a dado in the fence backer (J) for the saw guide key (just like you did back in Fig. 4).

## BUILD THE ADJUSTABLE FENCE

One of the neat features of the adjustable fence is the T-slot on the front face that allows the use of a sliding stop block.

Making the T-slot is simple, but it takes several steps to complete. Start by cutting a groove in the face of the backer (L), as shown in Figure 7. (The head of a toilet flange bolt will ride in this groove.)

Next, glue the hardboard face (M) to the backer. Take care to keep excess glue out of the groove.

The adjustable fence is held to the main fence with a toilet flange bolt. It fits through a hole in the adjustable fence and rides in the slot in the main fence.

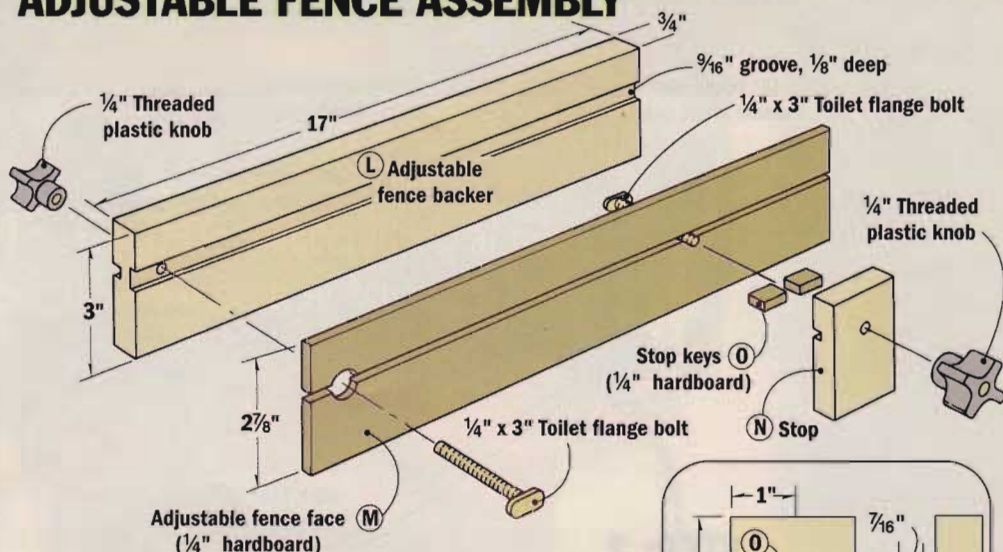
To make the hole, start by drilling a  $\frac{3}{4}$ " counterbore in the hardboard for the bolt head (Fig. 8a). Then switch to a  $\frac{1}{4}$ "-dia. bit and drill the through hole (Fig. 8b).

The key in the main fence rides in a groove in the adjustable fence. To make sure this groove lines up perfectly with the key in the main fence, I used the main fence to set up the cut on the table saw (Fig. 9).

After cutting the groove for the key in the back face of the adjustable fence (see Figure 10), I flipped the piece face down and cut the slot in the hardboard face (Fig. 11).

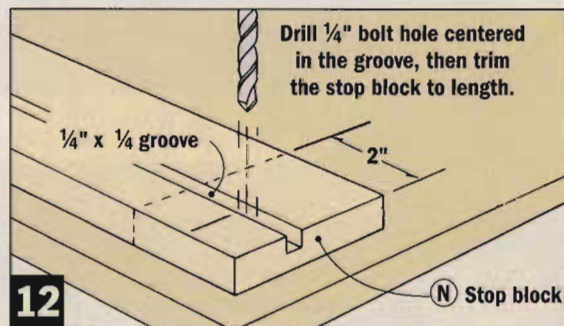
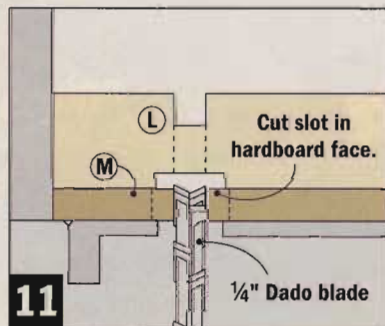
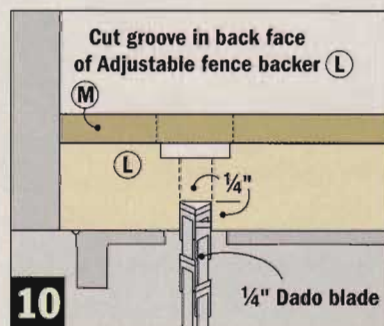
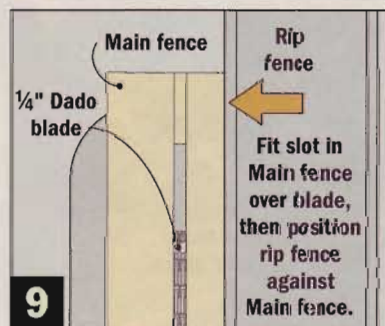
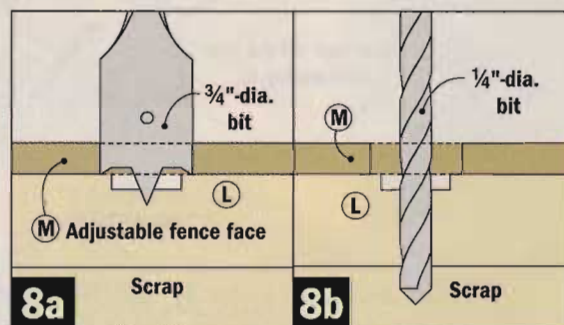
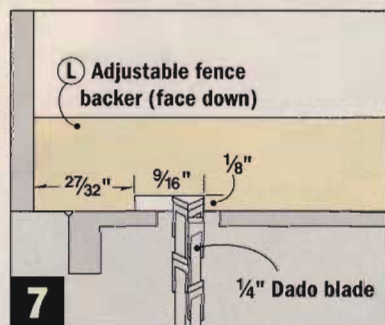
## ADD THE STOP BLOCK

The stop block (N) is a small piece with a groove in it (Stop Block Detail). To safely machine it, I started out with a 10"-long blank. After cutting the groove and drilling a hole in the blank as shown in Figure 12, cut it to final length (2"). Then cut two stop keys (O) to fit in the groove and glue them in place.

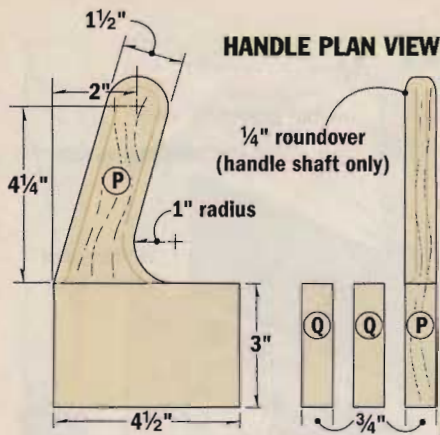


**Note:** The hardboard adjustable fence face (M) is glued to the backer (L) in one piece (after the  $\frac{9}{16}$ "-wide groove is cut in the backer). A slot is later cut in the face (see Fig. 11) to create a T-slot for the toilet flange bolt.

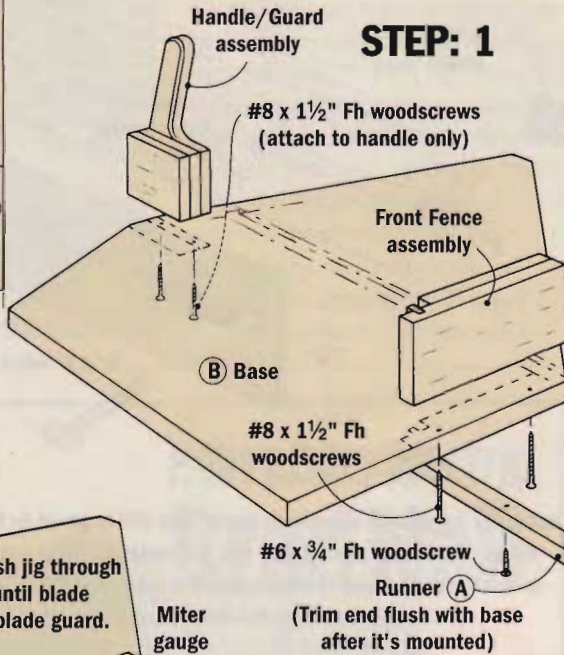
## STOP BLOCK DETAIL



# ASSEMBLY SEQUENCE



## STEP: 1

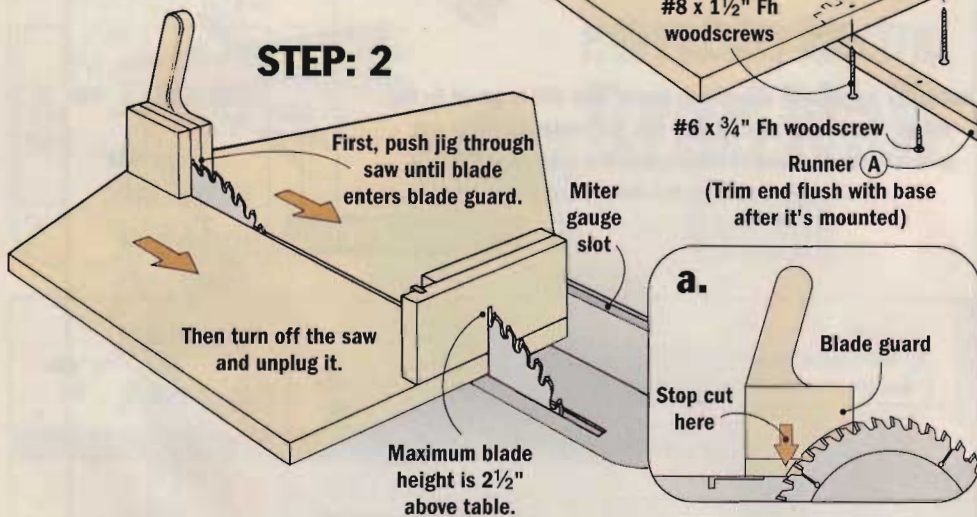


### HANDLE AND BLADE GUARD

A handle on a jig like this serves two purposes. The obvious one is to give you a way to push the jig. But more importantly, when your hand's on the handle, it's safely away from the blade. The handle (P) is cut to shape from a 3/4"-thick rectangular hardwood blank (*Handle Plan View*). For the greatest strength, make sure the grain runs the length of the handle.

The blade guard (Q) is two pieces of 3/4"-thick stock glued together. These are then glued to the right side of the handle.

## STEP: 2



### ASSEMBLING THE JIG

At this point, the jig is ready to assemble. I'd recommend using just screws — no glue — to mount the handle, runner, and fences to the base. That way, you can make minor adjustments later to keep the jig cutting squarely.

Start by screwing the runner, front fence, and handle/guard assembly to the base as shown in *Step 1*. Countersink the screw holes on the bottom of the sled so the screw heads won't rub against the saw table. And be sure to keep the screws away from the blade's path.

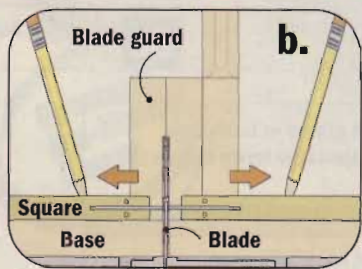
Now raise your saw blade to 2 1/2" above the table. This is the maximum cut you should make to avoid weakening the front fence. (See how the front fence bridges the saw kerf.)

Next, turn on the saw, fit the runner in the miter gauge slot and push the jig through the saw until the blade partially enters the blade guard (*Step 2* and *Detail a*). Then turn the saw off and unplug it.

Here's where you make sure the fence will be installed perfectly square to the blade. Place a square against the saw blade and jig handle, as shown in *Step 3*. Now draw a line on the base perpendicular to the blade.

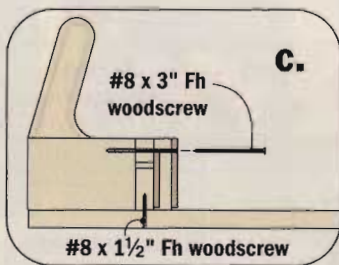
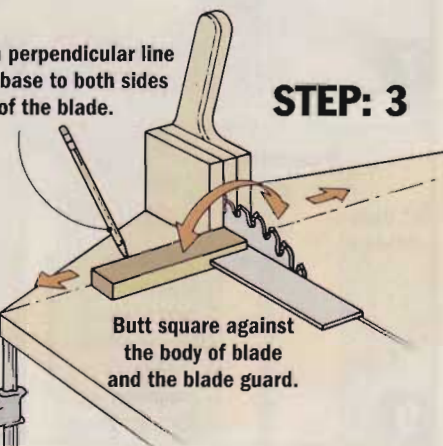
Next, remove the jig from the saw and extend the pencil lines to the edges of the base.

Finally, position the main fence on the base, aligning the back edge with the line you just drew. Clamp the fence to the base and handle (*Step 4*). Then drill countersunk screw holes

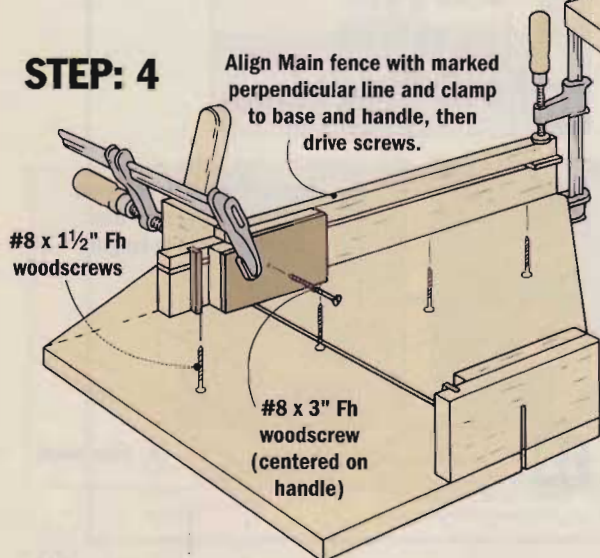


Mark a perpendicular line on jig base to both sides of the blade.

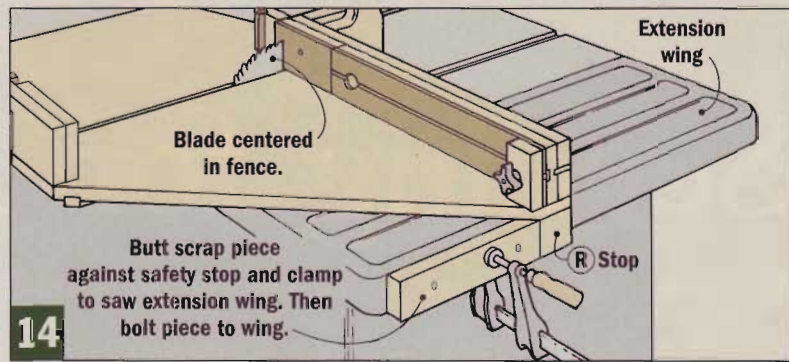
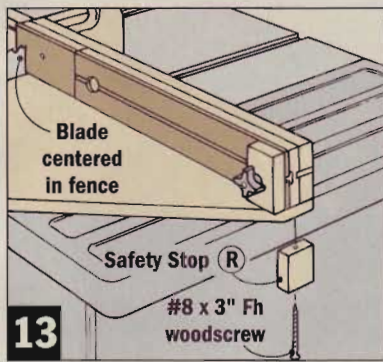
## STEP: 3



## STEP: 4







from underneath and mount the fence to the base. Drill another hole and drive a screw to hold the fence to the handle (*Detail c*).

### ADDITIONAL SAFETY

This jig has one more important feature — a safety stop system. It prevents you from accidentally sawing through the blade guard and possibly a finger.

It's a two-part system. The main piece is a safety stop (R) which is glued and screwed to the outboard end of the jig (*Fig. 13*). With the block in place, start the saw and push the jig until the top center of

the blade is centered in the hard-board fence face. Then turn off the saw and unplug it.

Without moving the jig, clamp a short length of hardwood to the saw's extension wing so it butts up against the safety stop (*Fig. 14*). Then permanently mount this piece to your saw with screws or bolts.

### PORTABLE SAW GUIDE

The only thing missing now is the guide for the portable circular saw. As shown below, it's just two pieces — a base (S) and a guide rail (T).

After gluing the pieces together, you need to cut a notch at each end.

These notches fit over the guide keys installed earlier in the front and main fences. I made each notch by taking a single pass over the dado blade (*Fig. 15*).

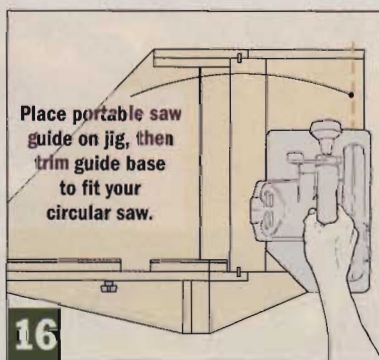
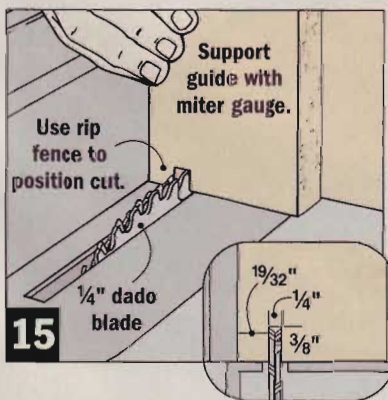
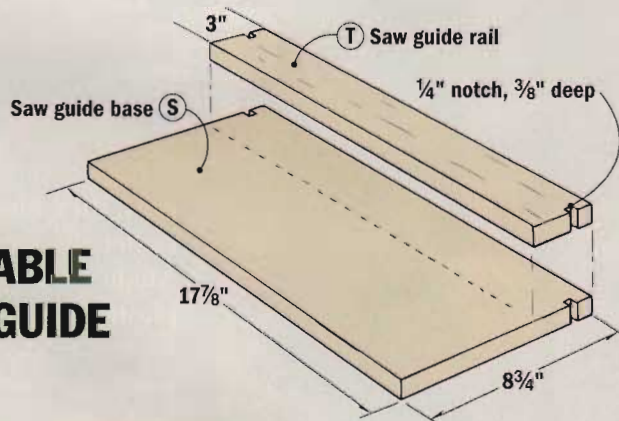
Once the notches are cut, slip the saw guide into place on the jig. Then use your circular saw to trim both the guide and jig base to finished size (*Fig. 16*). This lets you use the edge of the guide to line up future cuts — provided you use the same blade. (A wider or thinner kerf will throw the cut off slightly.)

To use the jig with a circular saw, I found I could clamp the jig to one sawhorse, as you can see in the photo. That way, I could use the other sawhorse to support the other end of the stock being cut.

Here are a couple more tips you might want to consider. If your workpiece is less than 12" wide, you may want to slip a piece of scrap the same thickness under the guide toward the front fence. This keeps the saw guide from tipping down during the cut.

Also, keep the jig in an accessible spot in your shop. With two ways to use it, you'll want it close by.

## PORTABLE SAW GUIDE



# Seeding for Two

*This project solves the two biggest problems with bird feeders. It has a unique lid that makes it a breeze to fill, and a guard that helps keep squirrels out of the food.*

When I'm not in the shop or working on the house, one of the things I like to do is relax and watch the birds. What I don't enjoy is watching the squirrels steal all the birds' food. And these fuzzy little thieves figure out some ingenious ways to pilfer the food from most feeders. So when I designed this bird feeder, I came up with a simple but effective squirrel-proofing system.

First, the feeder sits on a post made of 2"-dia. copper plumbing pipe.

It's slick and tough to climb. And the post is set at least 10 feet from the nearest tree. That means squirrels can't jump to the feeder.

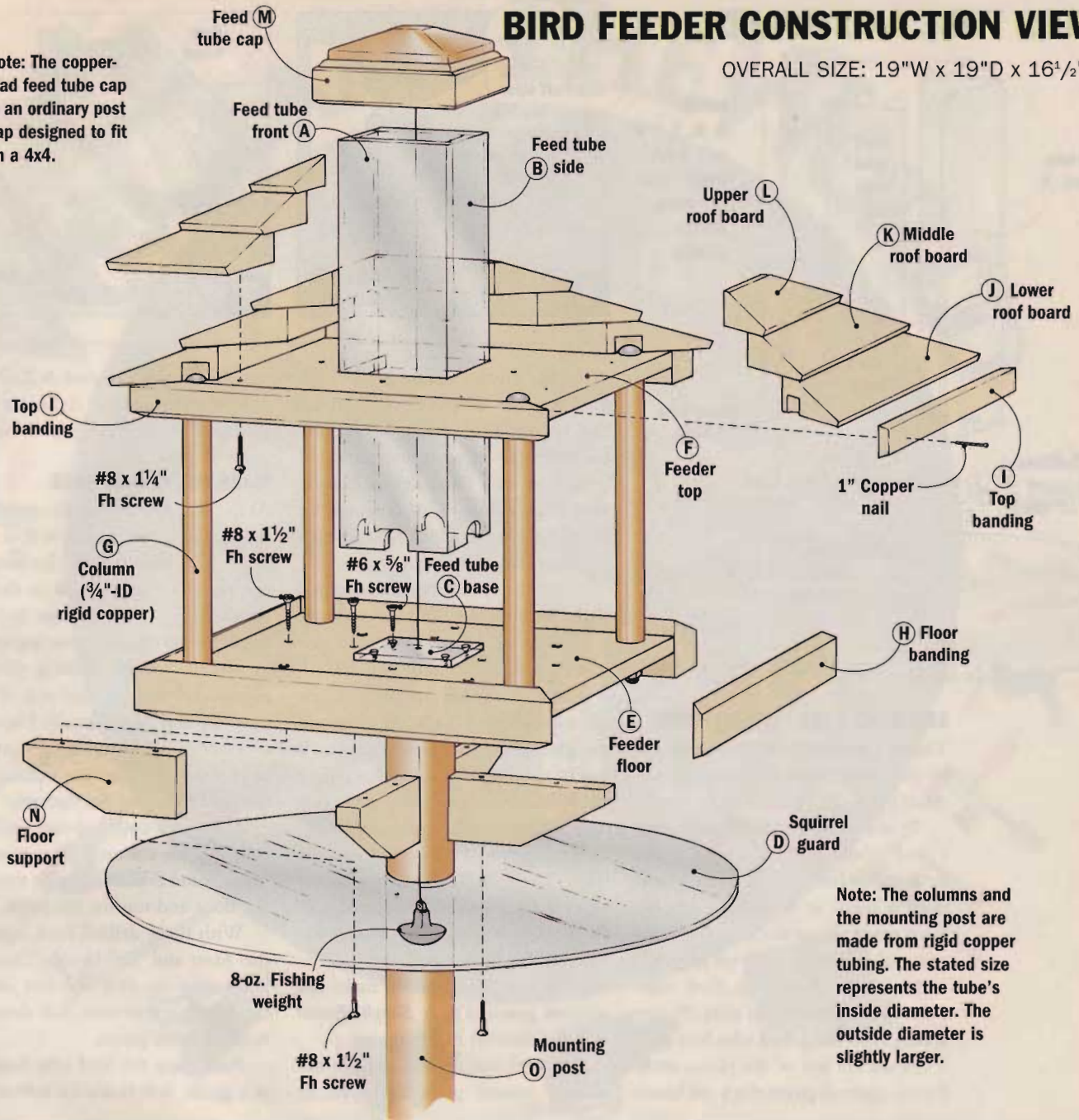
If any squirrels do manage to climb the post, they find a guard under the feeder base. Made of clear acrylic plastic, the guard is large enough that a squirrel can't reach out and grab the edge without losing its grip on the post.



# BIRD FEEDER CONSTRUCTION VIEW

OVERALL SIZE: 19"W x 19"D x 16½"H

Note: The copper-clad feed tube cap is an ordinary post cap designed to fit on a 4x4.



Note: The columns and the mounting post are made from rigid copper tubing. The stated size represents the tube's inside diameter. The outside diameter is slightly larger.

Since the squirrels don't steal the food, I don't have to fill the feeder as often, but it's easy to do. The cap lifts off so food can be poured right in.

There's another feature you can't see in the photo, but it's visible in the *Construction View* above. To keep the cap in place, it's tied to a long string and a weight hidden inside the post.

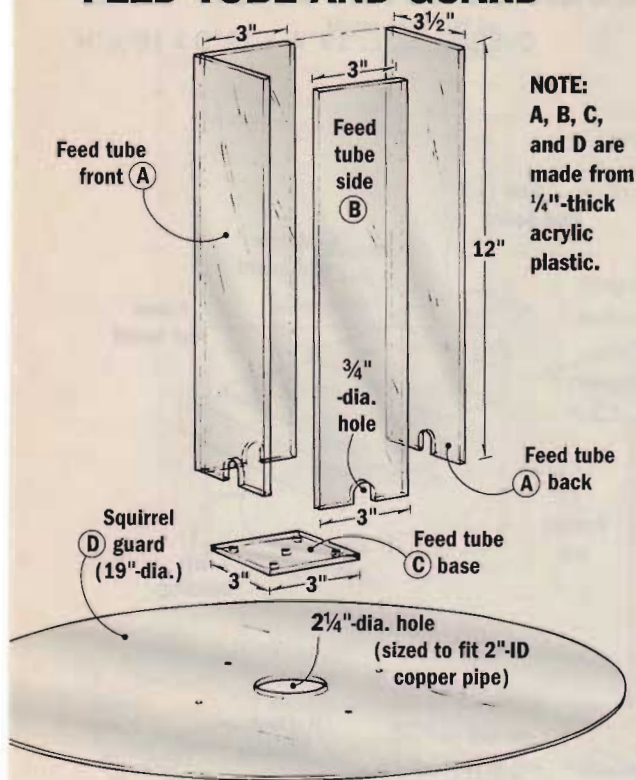
I wanted the feeder to function well, but it had to look great, too. So I used cedar for most of the parts, and more copper for the columns.

But don't worry. Even with multiple materials, it's not tough to build.

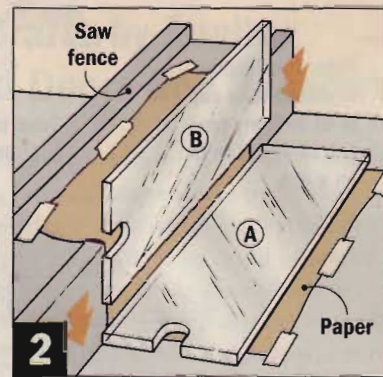
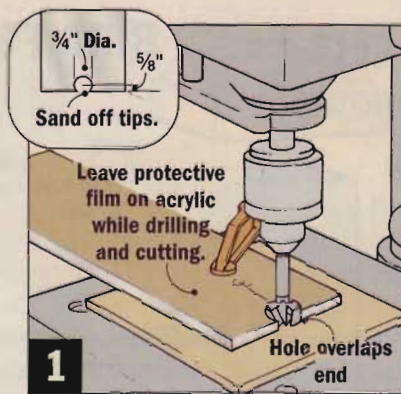
## MATERIALS LIST

A (2) Feed Tube Frt/Bk	1/4" x 3 1/2" x 12"*	N (4) Floor Supports	3/4" x 2" x 4 15/16"
B (2) Feed Tube Sides	1/4" x 3" x 12"*	O (1) Mounting Post	2"-ID copper pipe, 10-ft. long
C (1) Feed Tube Base	1/4" x 3" x 3"*	<b>HARDWARE</b>	
D (1) Squirrel Guard	1/4" x 19"-dia.*	(4) Carriage Bolts	3/8" x 10" long with washers, lock washers, and nuts
E (1) Feeder Floor	1/2" ply x 12" x 12"	(12) #8 x 1 1/2" exterior Fh woodscrews	
F (1) Feeder Top	1/2" ply x 12" x 12"	(20) #8 x 1 1/4" exterior Fh woodscrews	
G (4) Columns	3/4"-I.D. rigid copper tubing, 8 1/2" long	(4) #6 x 5/8" exterior Fh woodscrews	
H (4) Floor Banding	1/2" x 1 3/4" x 13"	(16) 1"-long copper or coated-metal brads	
I (4) Top Banding	1/2" x 1" x 13"	(1) 1/4" Screw eye	
J (4) Lower Roof Bds	1" x 2 1/2" x 14"	(1) Spool nylon mason's line	
K (4) Middle Roof Bds	1" x 2 1/2" x 10 3/4"	(1) 8-oz fishing weight	
L (4) Upper Roof Bds	1" x 1 7/8" x 7 1/2"	* These parts are made from 1/4"-thick acrylic plastic.	
M (1) Feed Tube Cap	Std. 4x4 post cap		

## FEED TUBE AND GUARD



**NOTE:**  
A, B, C,  
and D are  
made from  
1/4"-thick  
acrylic  
plastic.



Next, create openings for the bird feed to drop through. To do this, lay out a 3/4"-dia. hole centered on the width of each piece, and 5/8" from one end. Then drill a hole as shown in *Figure 1*. A Forstner bit bores a clean hole. Finally, sand each opening into a "U" shape.

Now the feed tube can be glued together. To hold the pieces square while gluing, I used my table saw and rip fence as a guide (*Fig. 2*).

Once you're set up, place a side (B) against a front/back (A). Then add the glue. (This sounds strange, but it works, see page 83.) Instead of gluing all four pieces at once, glue two halves, then join the halves together.

Next, test fit the base (C) into the tube. Then drill mounting screw holes in the base, and a centered hole for the weight cord. Don't mount the base yet. It gets installed later on.

This is a good time to make the squirrel guard (D). A *Simple Router Trammel* (below) makes it easy.

After it's cut to size, enlarge the guard's center pivot hole to fit

around a mounting post. A 2 1/4"-dia. hole saw cut just the right size hole for the 2"-ID copper pipe I used.

### MAKE THE FEEDER BASE

As the *Base Assembly* on the next page shows, the feeder base is simple — a floor and top joined by copper columns. The columns sit in shallow counterbores, and carriage bolts in the columns snug the base together.

Get started by cutting the 1/2" plywood floor (E) and top (F) to size (*Top and Floor Details*). Then use a jigsaw to cut an opening centered in the top (F). Size the opening so the feed tube just fits through.

Now drill counterbores and bolt holes for the columns. The counterbores come first, then holes through the floor and top for the bolts.

With these drilled, look again at the *Floor and Top Details*. This is a good time to drill the rest of the mounting screw, vent, and drainage holes in both pieces.

Also, using the feed tube base (C) as a guide, drill holes for screws that

### START WITH THE PLASTIC PARTS

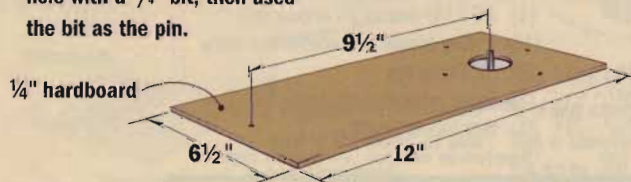
The best place to start this project is by making the feed tube. Then the other parts can be built around it.

To make the feed tube and guard, I used 1/4"-thick acrylic plastic. It can be found at home centers, and you'll need a piece at least 24" x 36". To learn more about working with this material, see *In the Shop* on page 82.

Start by cutting two feed tube front/back (A) and two sides (B) (see above). Also cut a feed tube base (C). Then set the rest of the plastic aside for the squirrel guard that's cut later.

## SIMPLE ROUTER TRAMMEL

Circle cutting is easy with a router and shop-built trammel. To make one, first remove the router's sub-base, and trace the bit opening and mounting screw locations on a rectangular piece of hardboard. Bore these holes and mount the router. Next, install a bit in the router (I used a 1/4" straight bit). Then measure 9 1/2" from the bit's edge and drill a hole for a pivot pin. I drilled this hole with a 1/4" bit, then used the bit as the pin.



hold the base to the floor. You'll also have to extend a hole through the floor for the weight cord.

### CREATE THE COLUMNS

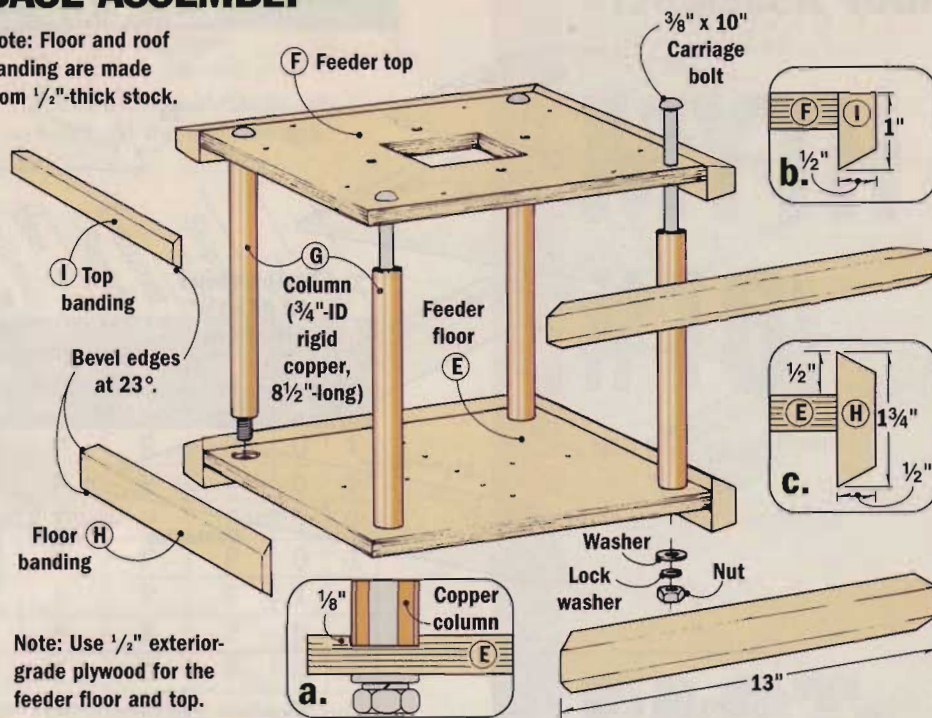
The columns (G) are cut from 3/4"-ID rigid copper plumbing pipe. I advise using a pipe cutter. It cuts square and smooth, meaning there's no need to sand or file the ends.

With the columns cut, it's time to assemble the base. First, slip four carriage bolts through the holes in the feeder top. Then place this setup upside down on your bench.

Next, slide the copper columns on the bolts and seat them in the counterbores in the feeder top. Then slide the floor in place and slip a washer, lock washer, and nut on each bolt (detail a at right). As you tighten the nuts, make sure the assembly stays square.

## BASE ASSEMBLY

**Note:** Floor and roof banding are made from 1/2"-thick stock.



### ADD THE BANDING

Now that the main part of the feeder base is together, it's time to add some cedar edge banding (see b and c in the *Base Assembly*). The banding is made from 1/2"-thick cedar, which you can plane down or resaw from 1x or 2x stock.

The floor banding (H) sticks up above the floor, preventing birdseed from spilling over the edges. It also covers the plywood edges and the floor supports that get added later.

The top banding (I) simply hides the plywood edges and echoes the look of the floor banding.

Making either the top or floor banding starts off the same way.

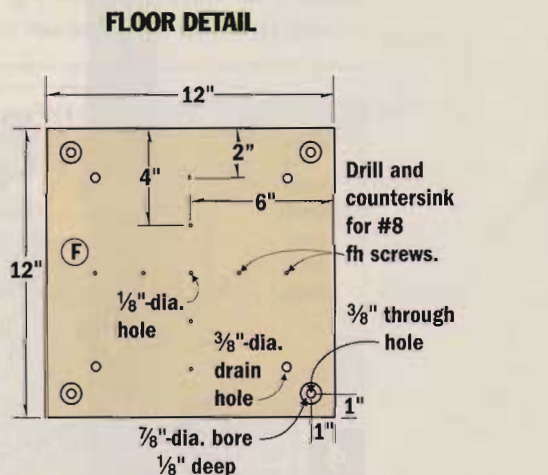
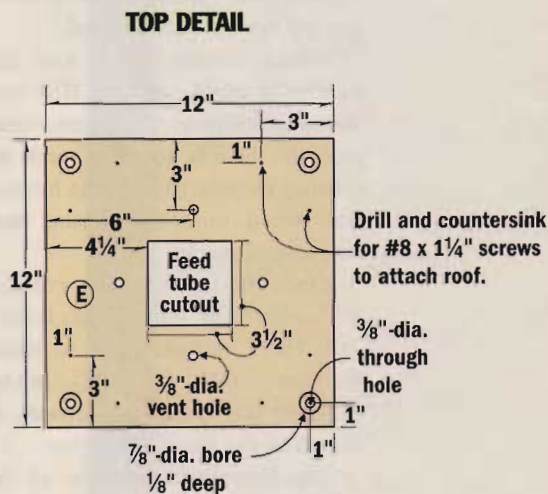
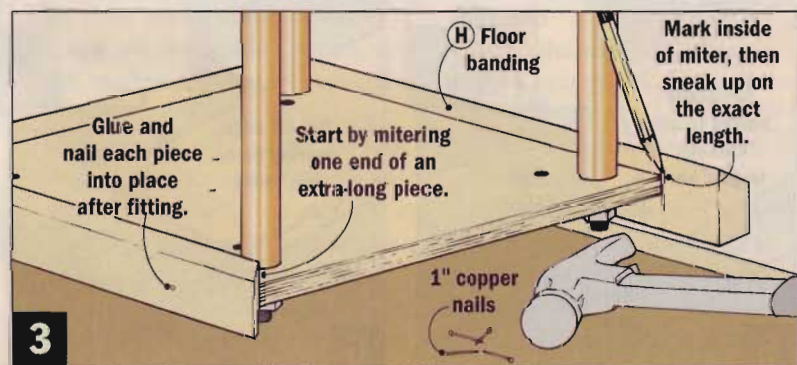
First, rip four 2"-wide x 30"-long strips from your 1/2"-thick stock.

Next, tilt the saw blade to 23° and bevel both edges of two strips, leaving the pieces 1 3/4"-wide. To make the top banding, bevel one edge of each of the two remaining strips, so the pieces end up 1" wide.

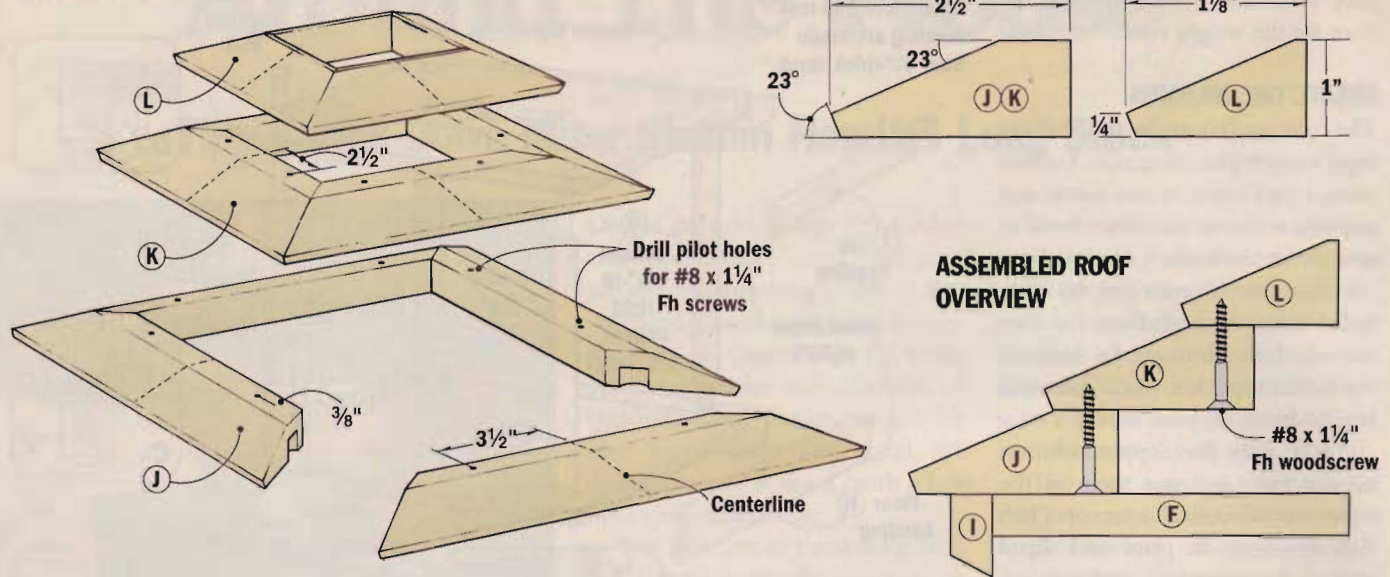
Now miter each banding piece to fit. When I do this, I miter each piece to fit as I go around, as shown in the drawing below.

Use the same process to add the top banding. But this time, mount each piece so its square edge is flush with the upper face of the feeder top.

## INSTALLING THE BANDING



# ROOF ASSEMBLY



## ON TO THE ROOF

The first step in building the roof is selecting your stock. You should choose the flattest, straightest-grained boards you can find.

Before cutting, make sure the lumber is good and dry. If it was stored indoors at the lumberyard, give the boards about a week to stabilize in your shop. If the lumber was stored outdoors, drying may take several weeks.

Once the lumber dries, cut five 2 1/2"-wide x 36"-long blanks from a 2x4. That's enough stock to make four each of the lower (J), middle (K), and upper (L) roof boards, as shown in the drawings above.

The first cut to make on all the blanks is an angled cut (see Fig. 4 below). How you set up the saw for

this depends on which way the blade on your saw tilts. If it tilts toward the right, move the rip fence to the left side. On left-tilt saws, the fence should be positioned on the right side of the blade.

Now tilt the blade to 23° and raise it to make a 2"-deep cut, as shown in the detail in Figure 4. Lock down the fence 1/4" from the base of the blade.

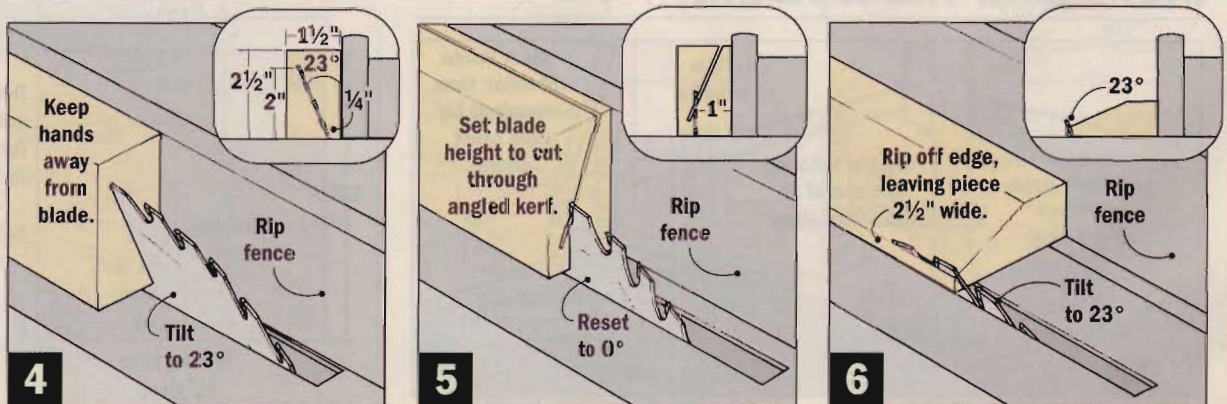
With all the blanks kerfed, reset the blade to 0° and lower it as shown in Figure 5. Adjust the fence, then rip into each blank. This cuts away the waste leaving a long, tapered blank. Be sure to use a push block and hold the workpiece down and against the fence as you cut.

The next step is to add the decorative bevel to the thin edge of

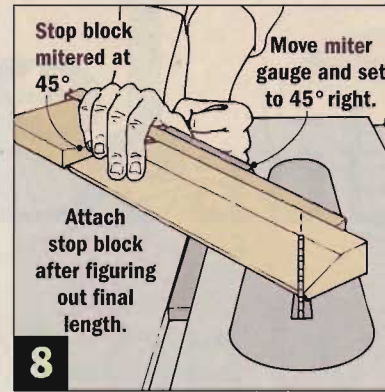
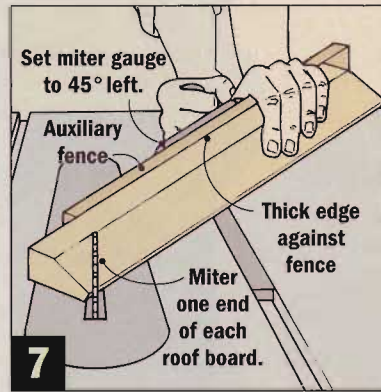
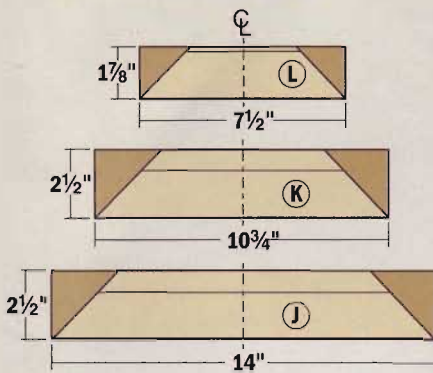
each blank. This is shown below in Figure 6. Tilt the blade to 23° again and readjust the fence. Then back bevel a thin edge on each piece.

As can be seen in the *Roof Board Details* on the next page, the lower (J) and middle (K) roof boards stay the same width. The upper boards (L), however, are narrower. So on one blank, rip away most of the flat section, leaving these boards 1 7/8"-wide.

Once the blanks are to final width, they can be cut to rough length. Start with the wide blanks and use them to cut four lower boards (J) to about 16"-long, and four middle boards (K) about 13"-long. Then crosscut the narrow blank into four pieces about 9"-long for the upper roof boards (L).



## ROOF BOARD DIMENSIONS



## MITER ROOF BOARDS TO LENGTH

The next step in building the roof is mitering the roof boards to length. But don't do it just yet. I've got a little secret for making and keeping tight miter joints in thick stock.

If possible, let the workpieces sit for another few days after they're cut to rough length. Cutting this deep into 2x stock exposes a lot of trapped moisture, even in "dry" stock. Letting it dry some more lowers the risk of the mitered corners opening up later.

With the blanks dried, they can be mitered to final length. To do this, install a long auxiliary fence on the miter gauge. Then place the gauge in the left-hand slot on the saw, and tilt it 45° away from the blade (Fig. 7).

Now miter one end of each of the 12 roof blanks. Make sure the thick edge of each piece is against the miter gauge fence.

After cutting one end of all 12 pieces, move the miter gauge to the right-hand slot and tilt it 45° the opposite way. Figure 8 shows this. Now sneak up on the final length of a lower board (J). When you find it, clamp or screw a mitered stop block to the miter gauge fence (Fig. 8). Then cut the other three boards for that layer. Repeat the process for the middle (K) and upper (L) boards.

## INSTALL THE ROOF

Before gluing up the roof, make a test run as shown in the drawing below. That way, you can mark where each layer overlaps. Also check the

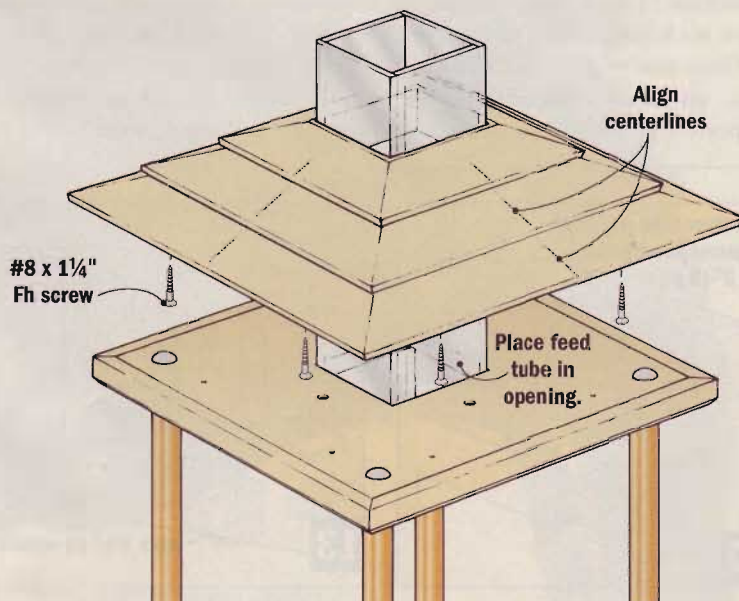
overhang on the lower roof layer, and the clearance for the feed tube. If the tube fits too snug, disassemble the upper roof boards and sand each inside edge to enlarge the opening.

Once you're satisfied, apply epoxy to the ends of each roof board and glue the individual layers. When these joints are set, glue and screw all three layers together as shown in the *Assembled Roof Overview* on the opposite page.

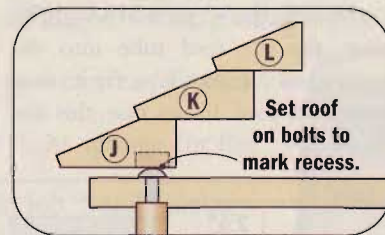
For the roof to fit properly, there's one more area that needs attention. Since the carriage bolt heads stick up above the feeder top, you need to drill relief holes in the lower roof layer. See below.

For now, set the roof aside. Mounting it to the base is one of the last steps in the project.

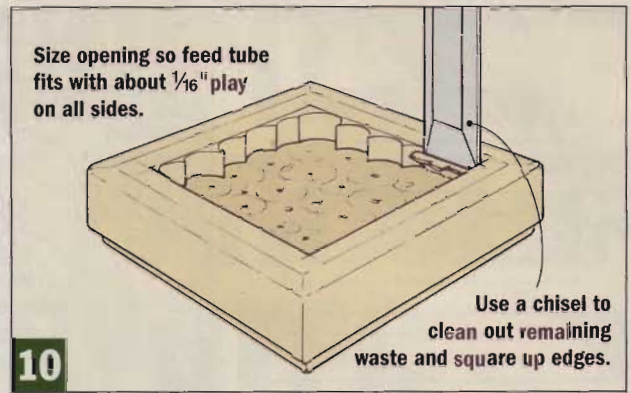
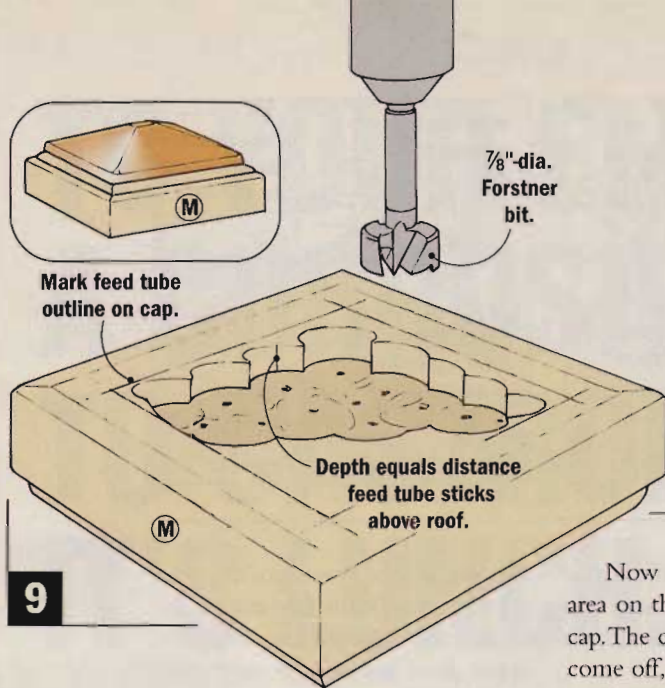
## DRY-FITTING THE ROOF



## BOLT RECESS DETAIL



Set the roof in place to mark the carriage bolt location (a dab of paint on each bolt head works great), then drill a 1/4"-deep relief hole at each spot.



### CAPPING IT OFF

Making the feed tube cap (M) is one of the easiest parts of this project. It's just a cap for a 4x4 post.

The one I bought from a local home center is 5"-square, with a pyramid-shaped copper cap. The flat bottom on the cap means it has to be hollowed out to fit over the feed tube, as you can see above.

The home center I visited also had post caps with moldings applied around the bottom. These create a recess so the cap will slip over a 4x4 post. But the mitered corners on these moldings were pretty lousy. If this is the only type cap you can find, simply remove the moldings and recess the underside of the cap.

Making the recess isn't tough. To start, slip the feed tube into the feeder and measure how far it sticks above the roof. In my case, this was about 1/2".

Now you can mark the recess area on the bottom underside of the cap. The cap's copper pyramid should come off, allowing you to lay the cap upside down on your bench. Place the feed tube on the cap to make sure the cap overhangs the tube evenly on all sides. Then trace the tube's outline.

Now drill out the bulk of the area inside the layout lines using a Forstner bit (Fig. 9). This lets you drill overlapping holes. Then clean up the edges with a chisel (Fig. 10).

To complete the feed tube cap, mount a small screw eye in the recess. This will hold a string tied to a weight that rides inside the mounting post. See the photo and margin drawing on the next page.

### SUPPORT THE FLOOR

To hold the feeder in place on the mounting post, there are four supports under the floor. You can make them from 1x stock, or again plane or resaw stock from a piece of 2x cedar.

Once you've got stock that's 3/4" thick, go ahead and cut four floor supports (N) to size as shown in

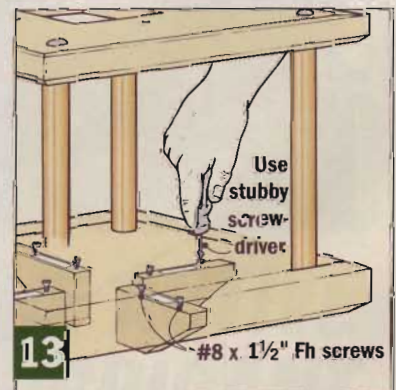
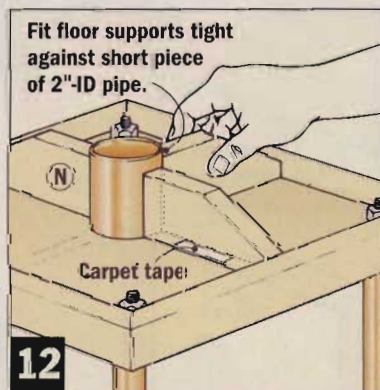
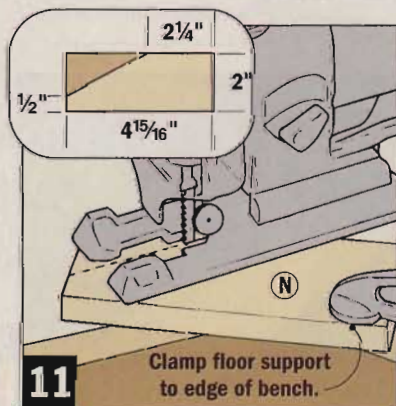
Figure 11. Using a jigsaw makes quick work of the angled cuts.

The four supports need to fit tight around the mounting post. To determine their positions, start with a short (3") length of the copper pipe. Then position the supports snug against the short post section (Fig. 12). Putting double-sided carpet tape on the supports holds them in place while you flip the feeder over and drive in the mounting screws, as shown in Figure 13.

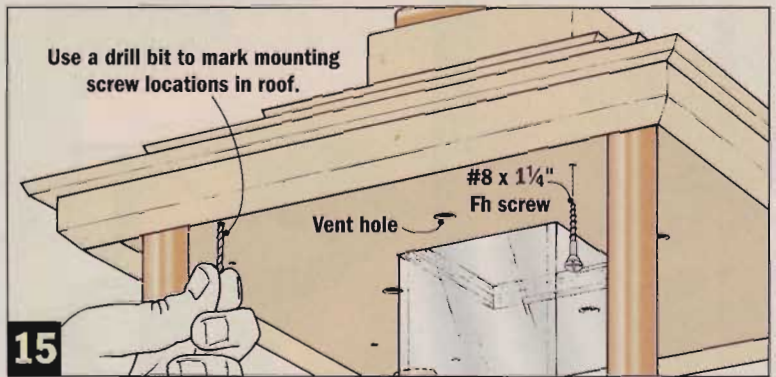
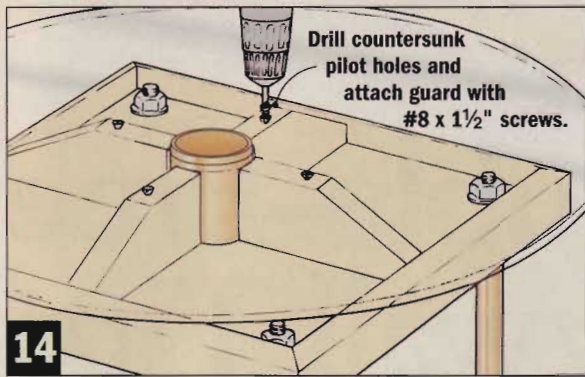
### ADD THE FINISH

Before doing the final assembly, it's a good idea to protect all the wood surfaces with a few coats of finish. I used an exterior varnish made by Olympic. Spar varnish would be a good choice, too. Just be sure to use a finish with ultraviolet inhibitors to keep the cedar looking its best.

And I mean coat *all* the wood surfaces. That includes the underside of both the floor and roof. These surfaces won't ever see rain, but they'll still be affected by changes in moisture and temperature.







### FINAL ASSEMBLY

To complete the feeder, start by mounting the feed tube base to the feeder floor. Make sure to align the centered string holes.

Next, turn the feeder upside down and mount the squirrel guard. Once again, the short post section comes in handy. Slip it in place and guide the squirrel guard on, as shown in *Figure 14*. Drill countersunk pilot holes through the guard and into the supports, and drive home the mounting screws.

Now flip the feeder right side up and set the roof in place, as shown in *Figure 15*. Double-check the overhangs, and make sure the feed tube fits through the roof opening.

Then push an awl or drill bit through the mounting screw holes to mark the locations for pilot holes in the lower roof layer. Finally, drill pilot holes and drive home #8 x 1/4" flathead screws.


Adding the weight for the tube cap comes next. The 8-oz. weight is the one piece of this project I couldn't find at my local home center. It came from the fishing department at a sporting goods store. The weight is tied on with nylon mason's line.

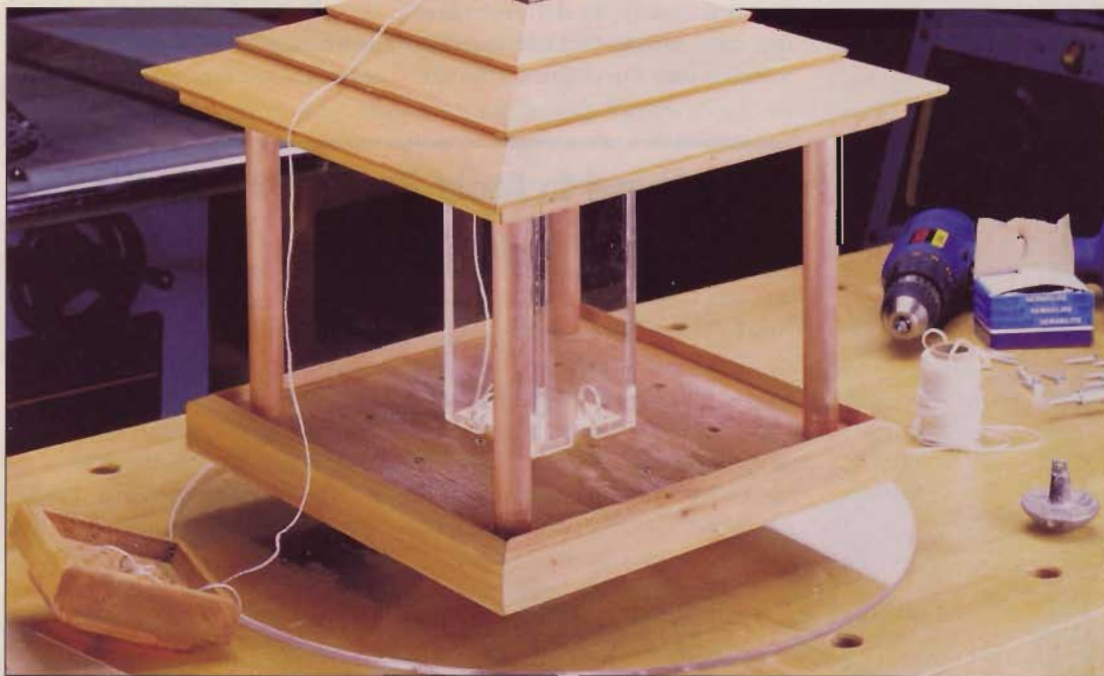
### MOUNTING THE POST

Before anchoring the mounting post in the ground, it needs to be cut to length. Remember that you need to be able to lift off the

feed tube cap to pour in food, so don't mount the feeder too high. In my case, I cut the post about 7 1/2-ft. long, and sunk the lower 2 feet into a hole dug in the ground.

A simple method for anchoring the post is shown at right. Just dig a hole and drop in a few inches of pea gravel. Then set in the post and fill the hole a few inches at a time, compacting the gravel after each layer. Recheck the post for plumb as you go.

All that remains is filling the feeder and waiting for the birds to arrive. It shouldn't take long. And it won't take long for people to notice the feeder's great looks as well. The only ones who won't like it will be the squirrels. 



# Trouble-Free Drywall Tips

*Even your first drywall project will be a big success when you follow the advice of a 30-year rock-hanging veteran.*

Okay, what's all the fuss about drywall? Screw big, flat panels to some studs. Cover the screws and corners with tape and mud (compound). Sand until you get a smooth surface. Then paint. Sounds easy enough.

Flat walls. Tight seams. Mud that spreads like butter. If you've ever watched a professional drywall crew in action, you'd think these things were deceptively simple.

Well, wait just a minute. You and I both know beautiful rooms don't just magically appear. So what exactly do the pros know that we don't? To find out, I spent a few days with Daryl Eklov, a 30-year

veteran of the drywall trade. Daryl has hung enough rock to build a double-lane highway from Seattle to Boston.

Some of what he told me was common knowledge. For example, if you've never used a taping knife or drywall trowel before, you aren't going to create smooth joints right away. It'll take practice. No news there.

"It's like a puzzle. All the pieces must fit in the right order to get a beautiful picture," Daryl says.

*"It's like a puzzle. All the pieces must fit in the right order to get a beautiful picture."*

That's just one of the tips you'll pick up from this article. So why not try some or all of these trade secrets next time you finish a room. You'll be amazed at the final results.

## Plan Ahead to Avoid Frustration and Waste

Interestingly, the first thing to consider when working with drywall doesn't really have anything to do with the drywall itself. Long before you grab that first piece of rock, take a few minutes to think about what you're going to be covering up.

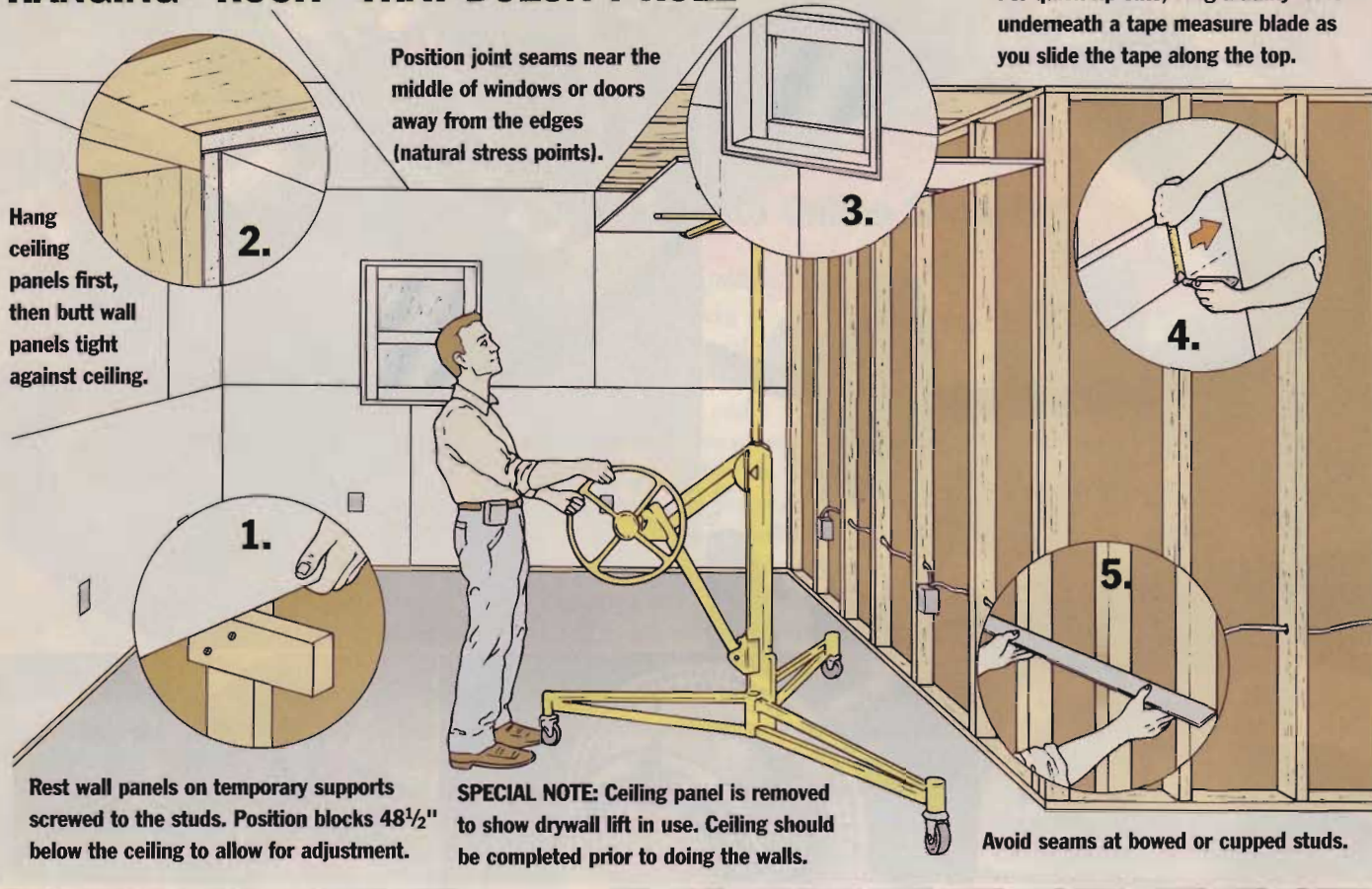
Take some time to check for leaky pipes. You might also want to consider installing extra electrical outlets, switches or phone jacks.

When you get ready to buy your drywall, get enough sheets to

fit the space you want to cover, but not a lot of extra. Drywall sheets usually come in either 4x8 or 4x12 sizes. Keep in mind that an 8-foot sheet weighs 55 lbs. and a 12-foot sheet weighs about 82 lbs. So decide whether you're Olive Oyl or Popeye.

If you think you can handle them, 12-footers are definitely the way to go for larger rooms. You'll have less waste and fewer seams to tape (see tip on page 74).

# HANGING "ROCK" THAT DOESN'T ROLL



For quick rip cuts, drag a utility knife underneath a tape measure blade as you slide the tape along the top.

Position joint seams near the middle of windows or doors away from the edges (natural stress points).

Hang ceiling panels first, then butt wall panels tight against ceiling.

Rest wall panels on temporary supports screwed to the studs. Position blocks 48½" below the ceiling to allow for adjustment.

**SPECIAL NOTE:** Ceiling panel is removed to show drywall lift in use. Ceiling should be completed prior to doing the walls.

Avoid seams at bowed or cupped studs.

## BONUS TIP

Don't toss small pieces. Use them in closets or wherever you need cutoffs.

### 1 Save Your Back, Use a Lift And Temporary Supports

Even if you've bribed a helper, hanging drywall on the ceiling isn't fun. A rented drywall lift (see above) is the best \$30 a day you can spend.

To hang the top row of wall panels, screw or nail support blocks to the studs at both ends of the panel for temporary support (Figure 1).

### 2 Hang Ceilings First, Perpendicular to Joists

Using the lift you just rented, hang the lids (ceilings) first. That way, the top row of wall pieces will help support the ceiling pieces as shown in Figure 2.

And keep in mind that drywall panels have grain that runs parallel to the long side of the sheets, so hanging

the drywall perpendicular to the ceiling joists helps reduce sagging.

### 3 Watch Where Your Joints Break to Avoid Cracking

The edge of windows and doors are natural stress points. So it makes good sense to avoid breaking joints here. Instead, try fitting pieces so joints fall in the middle of a window or door as shown in Figure 3.

### 4 Use a Tape Measure for Quick Horizontal Cuts

You'll notice in Figure 4 that a tape measure and utility knife can be used to get a straight, accurate cut.

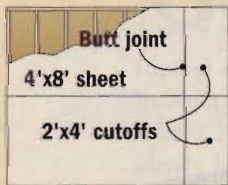
### 5 Don't Break Panels on Misaligned Studs

Before hanging any rock, use a straightedge to check for misaligned studs (Fig. 5). Rather than fasten to a stud that stands shy or proud, cut the drywall back to the first good stud. Otherwise, you'll be fighting a rolling wall when taping and mudding.

## Getting the Most Out of Your Materials

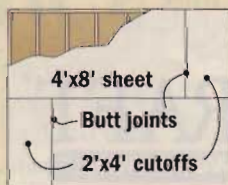
Here are three ways to hang panels on a 10 ft.-long wall. Notice how option three

uses larger pieces to avoid butt joints and creates the least amount of joint to tape.



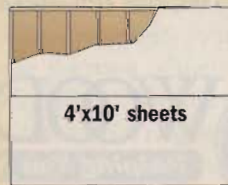
#### NOT RECOMMENDED:

This layout creates butt joints, lots of joint to tape, and two short cutoffs.



#### BETTER CHOICE:

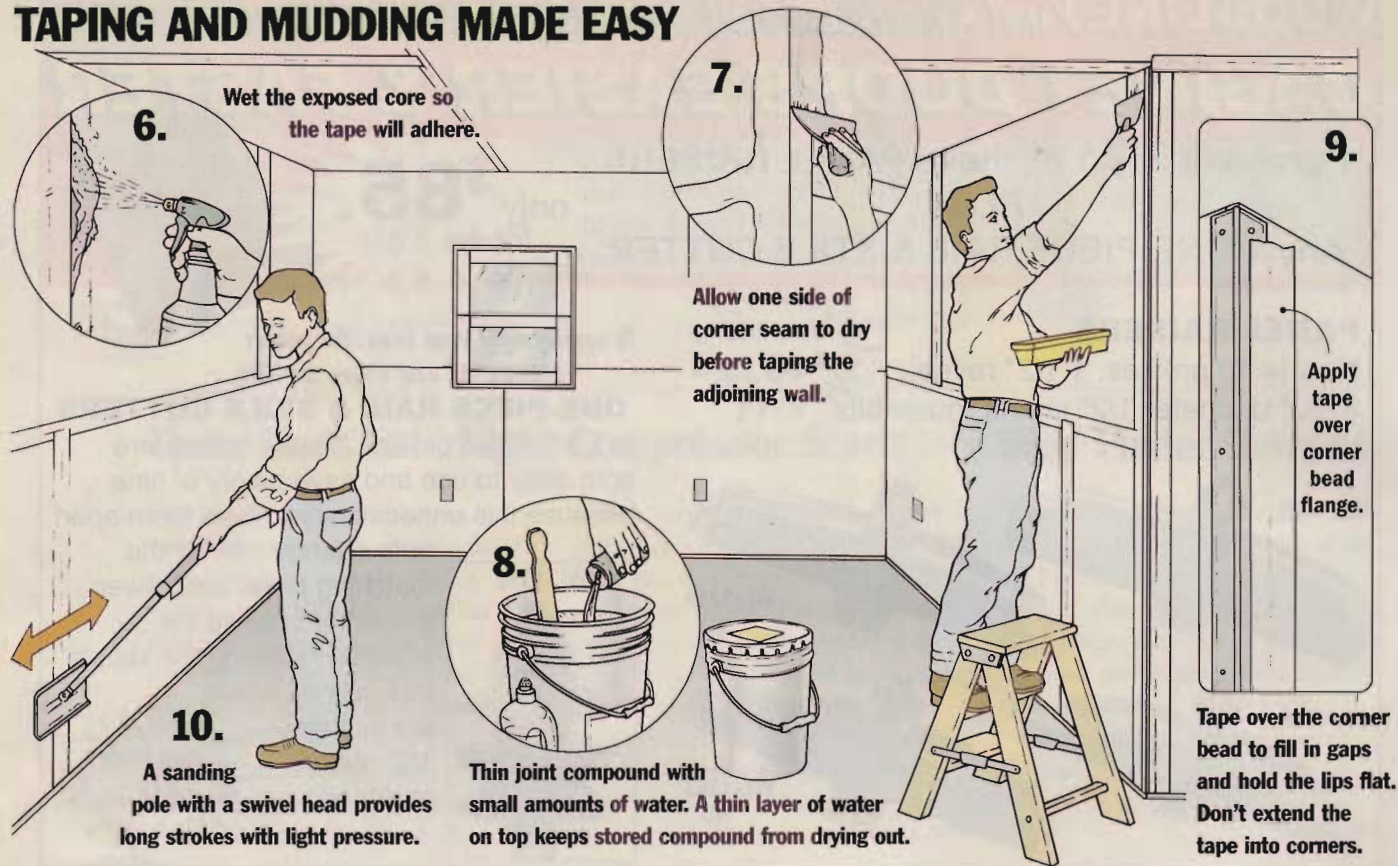
Here, the butt joints are staggered (better). But this layout still uses cutoffs.



#### BEST OPTION:

Using larger pieces gets rid of both butt joints and cutoffs, with less joint to tape.

# TAPING AND MUDDING MADE EASY



**6.** Wet the exposed core so the tape will adhere.

**7.** Allow one side of corner seam to dry before taping the adjoining wall.

**8.** Thin joint compound with small amounts of water. A thin layer of water on top keeps stored compound from drying out.

**9.** Apply tape over corner bead flange. Tape over the corner bead to fill in gaps and hold the lips flat. Don't extend the tape into corners.

**10.** A sanding pole with a swivel head provides long strokes with light pressure.

## BONUS TIP

Add a few squirts of dish soap to your mud to help it spread easier.

### 6 Wet Gypsum Core Behind Torn and Soft Spots

When the edges of drywall sheets get crushed or spots get torn — and they do — it exposes the moisture-hungry gypsum core. Covering bad spots with tape and mud isn't enough because the exposed core will suck moisture out of the joint compound

before your tape has a chance to adhere to the wall.

So, what should you do? Start by trimming away the loose paper. Then wet the core behind (Figure 6). This creates a wet surface for the tape so it doesn't bubble and peel away.

### 7 Tape Opposite Walls to Avoid Dragging Mud

A tendency when taping is to work your way around a room. The problem with this is that you often end up scraping mud off one wall when applying it to an adjoining wall.

The easy way around this is to tape the long walls first, working your way into the corners (Fig. 7). Then come back later and tape the short walls. This gives all the seams time to dry before you scrape against them.

### 8 Think Smooth & Creamy When Mixing Mud

Joint compound is like butter, Daryl says. "If butter is hard, it'll tear your bread when you spread it. Likewise, dry joint compound will tear your rock and won't spread easily."

If your compound is hard or difficult to mix, try adding some water (start with 1/2 cup per 5 gal. bucket) plus a few squirts of dish soap until you get the right consistency (Fig. 8).

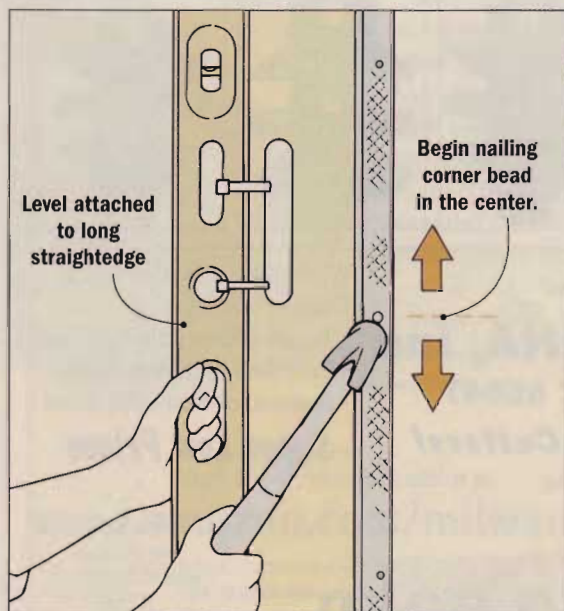
### 9 Nail and Tape Metal Corner Bead in Place

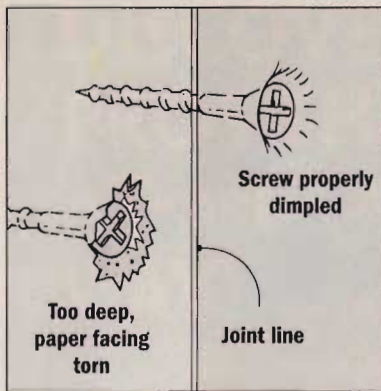
Take a look at the drawing at left for a trick to getting plumb corner beads. By using a level attached to a straightedge, you can force a bead plumb while holding it in place to begin nailing. Start nailing in the center so the bead doesn't twist, and tack along one side first. Then nail the other side as seen in Figure 9.

It's also smart to tape along the edges of each flange. This holds the lips down and starts to fill in the gaps.

### 10 Use a Pole When Sanding

It's very easy to oversand drywall and tear through the paper. To avoid this, consider using a sanding pole (Fig. 10) rather than a hand block or sponge. The pole will force you to take longer, even strokes with less pressure.





## 11 Dimple the Rock

Unlike carpenters who abhor nail marks, you'll want to leave a slight dimple when fastening dry-wall. Just be careful you don't break the paper face (see above).

## 12 Cleanliness First

Tack up all your rock first, then clean up the waste. It's much easier to move around a clean work area when fastening and taping.

## 13 Don't "Sew" the Rock

A screw every 6" is overkill. This just creates more spots to cover with tape and mud. Space screws every 12" on ceilings, 16" on walls.

## 14 Leave a Small Gap

In a case of standing water, the last thing you want is your walls soaking it up. So leave a slight gap ( $1/2$ " or less) at the floor.

## 15 Get Rid of "Ghosting"

Always use a primer before painting. Primer will keep the seams from bleeding through the paint.

## 16 Skimping Doesn't Pay

Don't try to save a few bucks by using scraps of drywall rather than a full sheet. The extra taping and mudding isn't worth it.

## 17 Sweat the Details

If you ignore details, they'll show up as flaws later. And remember, texture won't hide a poor job.

Workbench would like to thank Daryl Eklov, a veteran drywaller, for assisting with this article.

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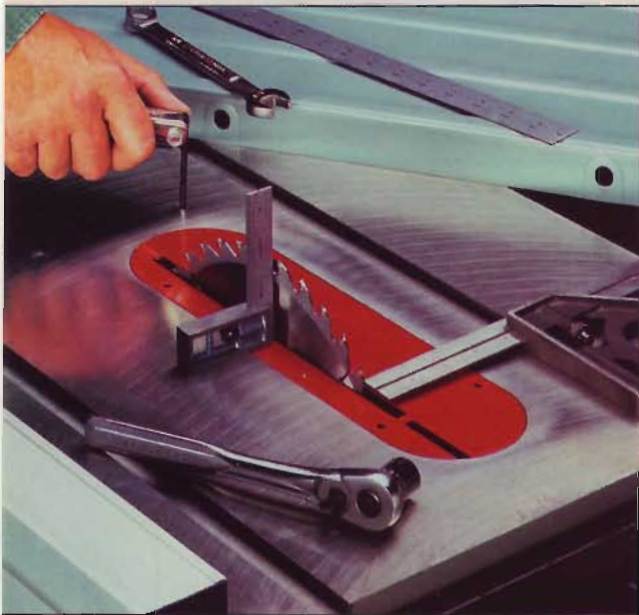
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# In The Shop



## Tune Up Your Table Saw for Better Cuts

When you consider how much you use your table saw, shouldn't it be in top working order? With some simple tools and the techniques below, you can have your saw cutting straight and true in less than an hour.

Before making any adjustments, unplug the saw (and leave it that way) and vacuum out the inside of the housing. A blast of compressed air can get sawdust out of the hard to reach areas.

Apply graphite, paraffin wax, or white lithium grease to the internal moving parts (such as the blade height and tilt adjusting screws).

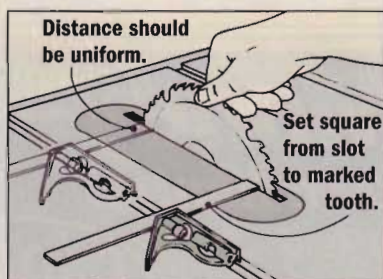
While you're at it, inspect the belt and pulleys for signs of wear. Also make sure the arbor spins freely with no play in the bearings.

As far as adjustments, the main things to check are the blade alignment with the miter gauge slots, and the fence alignment with the blade.

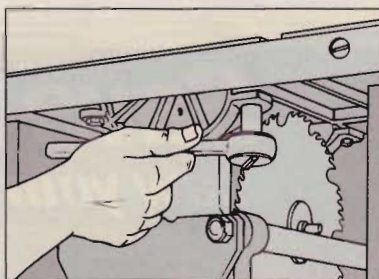
If the blade's not aligned squarely with the miter gauge slots, you can't make accurate crosscuts. And if the fence isn't adjusted properly to the blade, the workpiece can bind and cause a dangerous kickback.

The techniques shown work for most saws, but consult your owner's manual for specific instructions.

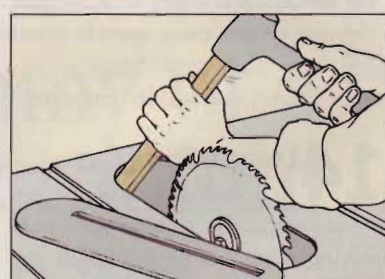
### First, Align the Trunnion and Blade to the Miter Slots



Raise the blade and mark one tooth. Set your square to this tooth. Rotate blade to the back — the distance to the marked tooth should be the same.

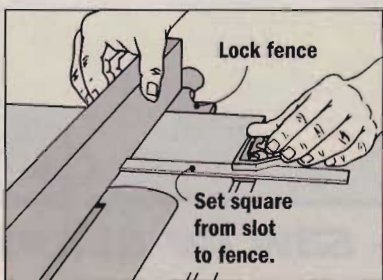


If the distance from the miter gauge slot to the blade varies, loosen the trunnion bolts. These hold the trunnion/arbor assembly to the table.

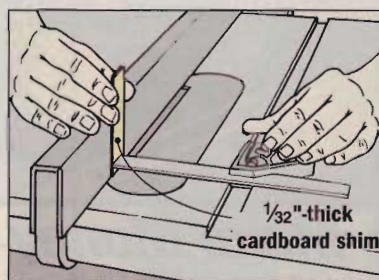


With a block of scrap and a hammer, tap the trunnion to bring the blade into alignment with the slots. Repeat Step 1, then tighten the trunnion bolts.

### Second, Align the Fence to the Blade

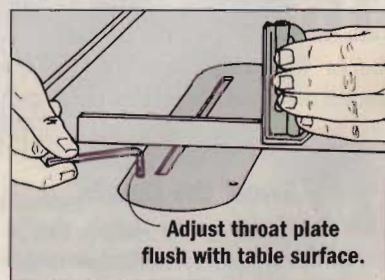


Once the blade and table are square, lock down the rip fence and set your square to gauge the distance from the miter gauge slot on the infeed side.



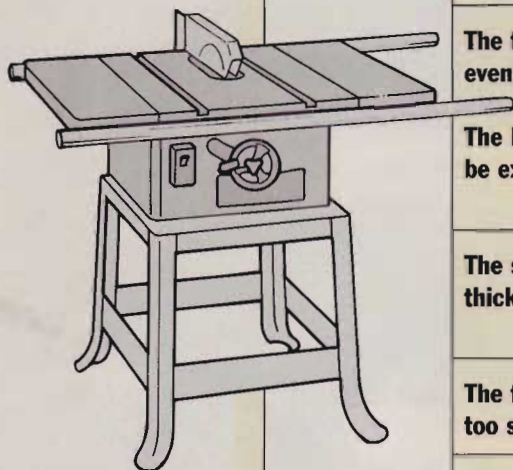
Move the square to the outfeed side and adjust the fence so it's  $\frac{1}{32}$ " further away than the front. This helps insure the workpiece won't bind.

### Last, a Flush Throat Plate



To prevent the workpiece from catching, the throat plate must be flush with the table surface. Masking tape can shim plates lacking levelers.

## Workbench Table Saw Troubleshooting Guide



PROBLEM	CAUSE	SOLUTION
<b>WHEN RIPPING, THE BLADE STALLS OR THE EDGES BURN.</b>	Using a blade with too many teeth.	Change to a combination or rip blade.
	The blade may be dull.	Sharpen or replace the blade.
	The saw blade may have a build-up of pitch.	Clean the blade with ammonia or pitch remover.
	The teeth on the blade may not be set evenly.	Have the teeth reset or replace the blade.
	The blade may be warped or there may be excessive runout.	Have the blade flattened or replaced. Check condition of arbor and arbor bearings.
	The saw lacks power to cut through thick stock.	Switch to a thin-kerf blade, replace drive belt and pulleys, or get a saw with more powerful motor.
	The feed rate is too fast (blade stalls) or too slow (wood burns).	Adjust the feed rate.
	The blade height is too low — more teeth in contact with the wood creates more friction.	Raise the blade so fewer teeth contact the stock.
<b>CROSSCUTS AREN'T ACCURATE</b>	The blade may be "heeling" — the out-feed side is closer to the blade than the infeed side — pinching the stock.	Adjust the fence alignment (see the previous page).
	The bar on the miter gauge may not fit tightly in the slot in the table, allowing the miter gauge to pivot slightly.	Use a punch to make a dimple in the edge of the bar.
	The miter gauge may not be 90° to the saw blade.	Use a square to set the miter gauge.
	The degree markings on the miter gauge are too coarse to make accurate setups.	Use an adjustable drafting triangle to set the miter gauge angle.
	The blade may not be parallel to the miter gauge slots.	Adjust the position of the trunnion (see the previous page).
	The piece may not have been held tight to the miter gauge.	Add an auxiliary fence to the miter gauge for extra support. Clamp the piece to the fence or attach sandpaper to the fence face to prevent slippage.
	Sawdust or wood chips may be lodged between the workpiece and the miter gauge (or auxiliary fence).	Keep the top of the saw clean. Provide dust relief by cutting a small rabbet in the bottom edge of auxiliary fences.

## Tips On Working With Acrylic

Occasionally, a project comes along that incorporates materials other than wood, such as the bird feeder on page 64. Cutting the copper tubing isn't so much of a problem — just use a hacksaw or a tubing cutter. But the 1/4"-thick acrylic plastic may be a different story.

Generally speaking, you can use woodworking tools to machine acrylic. But it takes some different techniques to keep this brittle stuff from chipping, cracking, or melting.

First, you need to use higher speeds and faster feed rates with acrylic than with wood. You want to keep the blade or bit moving fast enough (less friction) so the plastic doesn't melt. Go too fast, though, and the acrylic will chip.

### MAKING STRAIGHT CUTS

You'll get the best results if you cut acrylic on a table saw equipped with a fine-toothed (80-100 teeth, 10"-dia.) carbide-tipped blade.

When making a cut, leave the protective masking on the acrylic to prevent scratches and reduce edge chipping. Raise the blade 1/8" to 1/4" above the surface. Holding the acrylic firmly against the saw table, feed it past the blade quickly (about 10"/sec.) and evenly.

You can also use a jigsaw or router to cut acrylic as shown at right. And to smooth or true-up a straight edge prior to gluing, you can run acrylic over a jointer. Sanding (use 220-grit or finer) or a cabinet scraper can also be used to remove saw marks.

### USE A ROUTER FOR CURVES

When it comes to cutting curves, you'll get the best results by making a hardboard template and using a router equipped with a pattern bit to make the cut. That's because the high speed shearing action of the bit cuts cleanly and smoothly without impacting the surface like a saw. (For circles, see the trammel on page 66.)



Start by roughing out the cut with a jigsaw or band saw, cutting 1/4" to 1/2" outside the pattern line. Then clamp the template in position to make the finish cut with the router.

Again speed is important. For variable speed routers, use the highest setting available. Be sure to use a two-flute or spiral-flute carbide pattern bit and keep the router moving smoothly along the template.

### DRILLING HOLES

This task probably causes the most headaches. Ordinary twist-type drill bits, designed for cutting metal, have too much "bite." Brad-point wood bits aren't much better.

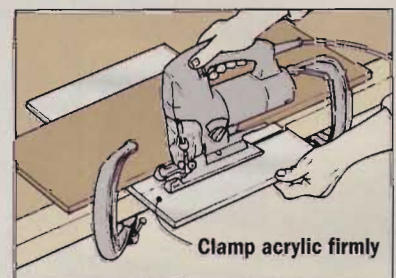
To drill acrylic, you need a bit that scrapes instead of digging in. You can modify a twist bit (below), but I decided it was worth it to just buy a bit designed specifically for drilling acrylic (see *Sources and Resources* on page 94).

If possible, use a drill press and

back the acrylic with a scrap of wood. Use fairly high speed — 2,500 rpm — for small holes (3/16"-dia.) and slow to about 450 rpm for 1"-dia. holes. For large holes, you can use a hole saw, but a circle cutter will give better results. And since acrylic doesn't give like wood, drill fastener holes slightly oversized so they will clear the bolt or screw threads.

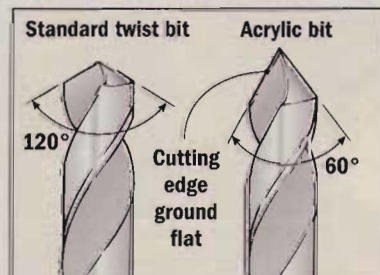
(Continued on page 84)

### Cutting With a Jig Saw

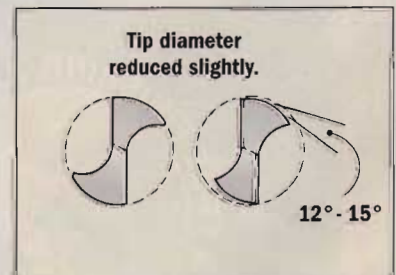


To reduce vibration and possible cracking, clamp the acrylic tightly to a benchtop near the line of cut.

### The Right Bit Makes a Difference



Drill bits for acrylic have a steeper grind angle than normal twist-type drill bits. The bits also have a less aggressive cut-



ting edge and smaller point. This cuts the hole more gradually, reducing friction and the chance of cracking.



## Working with Acrylic (Continued from page 82)

### GLUING SECRETS

To join pieces of acrylic, it's best to use a special solvent cement (see page 94). This solvent actually dissolves the material. As the solvent evaporates, the acrylic fuses together.

The solvent comes in liquid and gel forms. I find the liquid is easiest to use because you clamp (or tape) the pieces together *before* you apply the solvent.

Because it's a thin liquid, you apply the solvent with a syringe-type applicator along the joint, as shown at right. Capillary action sucks the solvent into the gap and the pieces are fused together.

### FINISHING TOUCHES

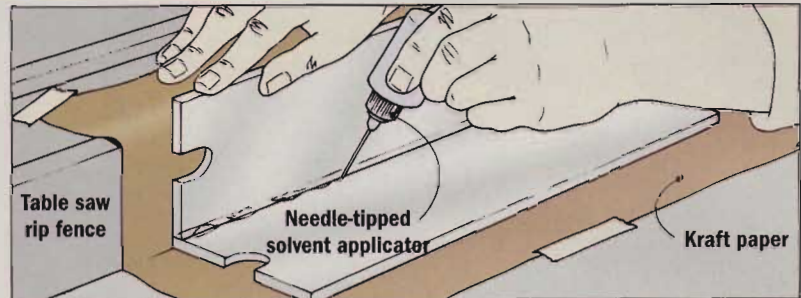
While the birds won't notice on the feeder project, you may have other projects where you want the

edges of the acrylic to be clear and smooth. One way is to sand it with 400-grit wet/dry sandpaper, then buff it with a muslin wheel charged with buffing compound.

Another way is to flame polish the edges using a propane torch or

heat gun. To do this, hold the flame 8-10" from the edge and swing the flame gently back and forth for a few seconds. When you see the edge start to go from white to clear, you're done. It's probably a good idea to practice on some scrap.

### Great Glue Joints



To join two pieces of acrylic at 90°, butt the pieces against a square surface, such as your table saw rip fence.

Then apply a fine bead of solvent along the joint line. The solvent will actually wick back into the joint.

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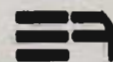
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## Cut Custom-Fit Dados With A Router

Most plywood you buy is slightly undersized. For example, material sold as  $\frac{3}{4}$ "-thick is usually  $\frac{23}{32}$ "-thick but it can be even thinner.

Since dado joints cut to  $\frac{3}{4}$ " would leave a sloppy fit, I custom fit the dado to match the plywood. And I do it with a simple jig and a router equipped with a pattern bit.

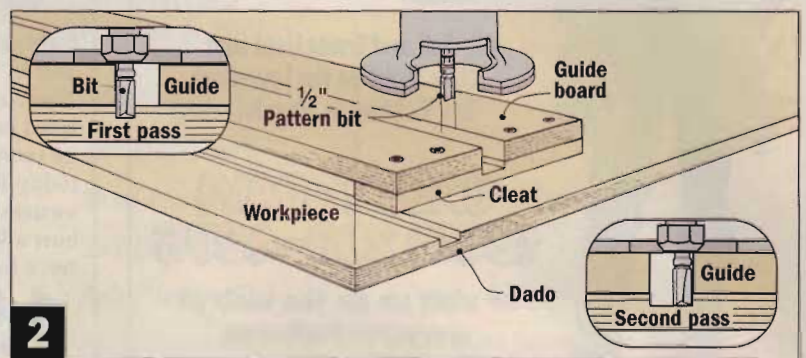
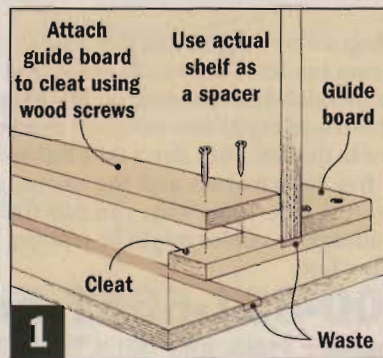
Start by cutting some 1x4 cleats about 12" long and two 1x4 guide boards roughly 8" longer than the

width of the piece getting the dado. Next, stand the shelf (or mating piece) on edge on top of the cleats (Fig. 1).

Without moving the vertical piece, place a guide board on each side of it. When the guides are resting snugly against the vertical piece, screw them to the cleats, as shown in Figure 1. With the guide boards set at exactly correct distance apart, you can remove the vertical piece.

Now you can use the jig to rout the dado. First, align the gap in the jig over the dado location. Set a router equipped with a  $\frac{1}{2}$ " or  $\frac{3}{8}$ " pattern bit on top of the guide boards at the edge of the workpiece. Then adjust the bit depth to make the proper depth dado cut.

Finally, rout the dado, guiding the pilot bearing down one guide board, then cross over and come back down the other side (Fig. 2).



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# Sources & Resources

## How to Find Acrylic Plastic and Supplies

Finding the 1/4"-thick acrylic you'll need for the cedar bird feeder (see page 64) at a home center or hardware store could be difficult.

Before you shop, check the *Yellow Pages* under "Plastics - Rods, Tubes, Sheets, Etc."

The listings will include specialty plastic distributors in your area who carry acrylic and other types of plastic, as well as

related supplies such as adhesives, cutters, drill bits, cleaners, and polishes. While most companies will cut full 4-ft. x 8-ft. sheets in fractional sizes, you may be able to find what you need in the scrap bin. Scrap typically sells for less than \$1 per pound.

If you can't find acrylic locally, you can purchase it from Ridout Plastics Company (800)474-3688 through its E-Com Plastics Web site at [www.ecomplastics.com](http://www.ecomplastics.com). The site contains a variety of products and information.

The adhesives we used were from Craftics. For most applications, we use Acrylic Solvent Cement and apply it with a needle applicator. The thin solvent is drawn into the joint through capillary action and fuses the mating pieces, leaving a clear joint.

A thickened cement version is handy when gluing vertical surfaces or hard-to-reach areas. Contact Craftics at (773)235-3307 or visit the company's Web site at [www.craftics.com](http://www.craftics.com). They also carry cutting tools and accessories.



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[www.WorkbenchMagazine.com](http://www.WorkbenchMagazine.com) and click on the *Workbench Interactive* icon. Watch for updates in the coming months.

You can also download a Free Cutting Diagram for the *Custom-Fit Bookcase and Window Seat* project (see page 38) from our Web site. Just click on:

### CUTTING DIAGRAMS

If you don't have Internet access, you can still receive a Free Cutting Diagram by sending a self-addressed stamped envelope to:

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Write clearly on the envelope which cutting diagram(s) you'd like to receive.

In this issue, you discovered six affordable saws and a few jigs that help your saw perform better. But let's face it: It's hard to get enough table saw information. So we're giving you even more great saw tips and techniques online. Log on to [www.WorkbenchMagazine.com](http://www.WorkbenchMagazine.com), then click on:

### 101 TIPS

Search under the "Table Saws" category for helpful information.

You might also be interested in the special table saw issue from *ShopNotes*, one of our sister publica-

tions. It's issue #25. To order a copy — or any other back issues from August Home Publishing's other publications — log on to: [www.backissuestore.com](http://www.backissuestore.com).



## Table Saw Manufacturers

Craftsman (800)377-7414  
[www.sears.com/craftsman](http://www.sears.com/craftsman)

Delta (800)438-2486  
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DeWalt (800)433-9258  
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## Talk About Tools

When woodworkers aren't talking about projects, they're discussing tools. Hand, power, old, new. Whatever tool you're passionate about, you'll find someone who shares your enthusiasm at [www.forums.WoodNet.net](http://www.forums.WoodNet.net), our online tool and woodworking community. You can also swap or sell a tool here. Or sign up for FREE woodworking tips by E-mail.

## DIY Drywall Kits

Now that you have some drywall tips from a pro (see page 72), you may want to test them out. One inexpensive way is to use Marshalltown Trowel Company's DIY drywall kit. It's designed to be used once or twice, and then thrown away. Each kit contains a



10" mudpan, a triple-edge knife, a corner tool, and a flat knife. You can also choose from a drywall sanding sponge or a traditional hand sander.

For information about purchasing a kit, call Marshalltown Trowel at (800) 987-6935 or check out [www.marshalltown.com](http://www.marshalltown.com).

## Power Nailing Device

Desa's Remington powder-actuated tool (PAT) is available in both hammer and trigger activated models. The hammer-type shown below



and on page 36 is a single-shot, low-velocity model. Ideal for the homeowner, it shoots 1/2" to 2" power fasteners (nails) with .22 caliber power loads. You can get this basic model for about \$20. To find a local distributor, call (800) 626-2237. For more information about PATs, check out the company's Web site at [www.desaint.com/remington.html](http://www.desaint.com/remington.html).

## "Padding" the Bookcase Finish

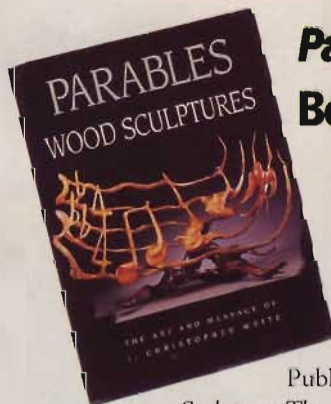
Rather than brushing a finish onto the bookcases featured in this issue (see page 38), I used interior paint pads to apply stain to the larger side pieces. You should be able to find the pads locally at most paint stores or home centers.

The finish I chose is a 50-50 blend of Sealacell Golden Oak and Honey Maple from General Finishes (see photo). I really like this combination tung oil sealer and stain because it creates a moderately tough finish after only a couple coats.

You can learn more about using General Finishes by calling the manufacturer at (800) 783-6050.



You might also want to visit the company's Web site at [www.generalfinishes.com](http://www.generalfinishes.com) for more information.



## Parables: Wood Sculptures Book Will Inspire You

The ideas for our *Craftsmanship* articles come from a variety of places and people. The inspiration for this issue's featured craftsperson, Christopher White (see *Designed to Shine*, page 96), came from a recently published book by Fox Chapel

Publishing Company titled *Parables Wood Sculptures: The Art and Message of J. Christopher White*.

The book features more than 50 examples of White's sculptures and accompanying Christian poems. It just might be the best place to enjoy White's work because most of his finished pieces are sold to private collectors. A few sculptures can be viewed in art galleries around the country. The hardcover coffee table book sells for \$34.95, plus shipping. To order a copy by phone, call (800) 457-9112. You can also place an order online at [www.carvingworld.com](http://www.carvingworld.com).

## Pattern Bit Cuts Custom-Fit Dadoes

For the project featured on page 38, we used a 1/2" pattern bit in a hand-held router to cut custom-fit dadoes. We found this setup easier to use than a table saw and dado set (more on *In the Shop*, page 86).

A pattern bit works like a flush trim bit, except the bearing is located next to the shank instead of at the end, see photo. This allows the bit to follow a template (or guides) set on top of a workpiece. We purchased an Amana bit (\$16.95) from the Woodsmith Store, (800) 835-5084. Several manufacturers make pattern bits. They're available through woodworking stores and many tool catalogs.



# Designed to Shine

*Meet a Colorado artist who turns aged, weathered juniper trees into shining sculptures of grace and movement.*

For Christopher White, the challenge of transforming old dead trees into sculptures that shine like glass begins long before any tool ever touches wood. With an image in mind, White first searches the canyons of his native west Texas for a tree or stump with just the right shape.

"I have an idea; a tree has potential. We strike a compromise," White says. Once he finds the tree he wants, White sketches the image and begins carving its rough shape using hand tools. Typically, a workpiece can lose as much as 90 percent of its mass.

Back in his Loveland, CO, studio, White uses rasps and second-cut files to define lines and form details. Sanding starts with 150-grit paper and ends with 1,500-grit. As a final touch, White buffs with rouge on leather. A finish of Danish oil completes the transformation.

This fish, sculpted in a rare species of striped curly juniper (ripplewood), took about 150 hours to complete. It sold for \$8,750.

For more about White's sculptures, turn to page 95.



Photographs by Mel Schockner