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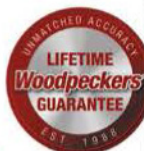
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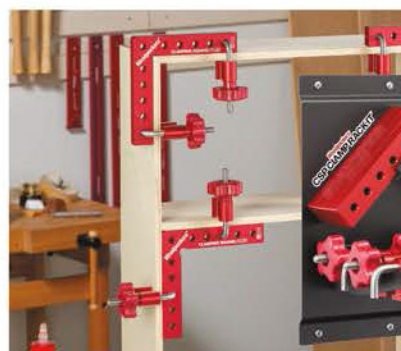
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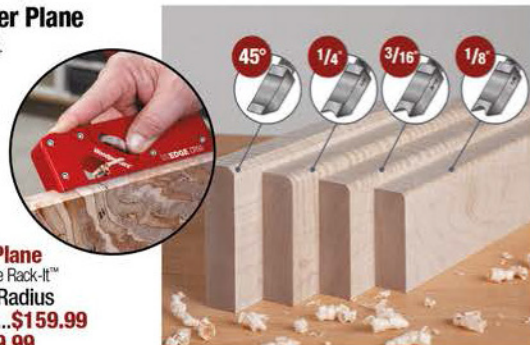
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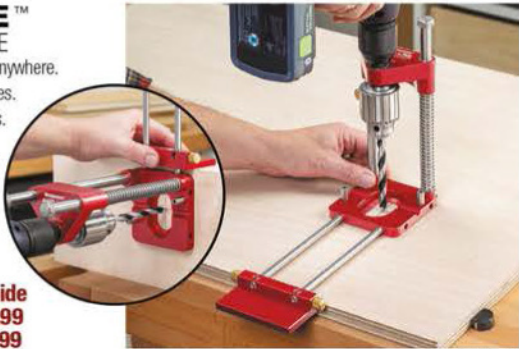
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Woodsmith® (USPS 465-410) (ISSN 0164-4114) is published bimonthly by the Home Group of Active Interest Media Holdco, Inc. The known office of publication is located at 2143 Grand Ave., Des Moines, IA 50312. Periodicals Postage Paid at Des Moines, IA, and additional mailing offices. Postmaster: Send address changes to Woodsmith, Box 37274, Boone, IA 50037-0274. Postmaster: Send all UAA to CFS. (See DMM 507.1.5.2); NON-POSTAL AND MILITARY FACILITIES: Woodsmith, Circulation Department, PO Box 37217, Boone, IA 50037

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 Subscriptions: \$29/year, Single copy: \$7.99
 Canadian Subscriptions: Canada Post Agreement No. 40038201. Send change of address information to PO Box 881, Station Main, Markham, ON L3P 8M6.
 Canada BN 82564 2911

Printed in U.S.A.

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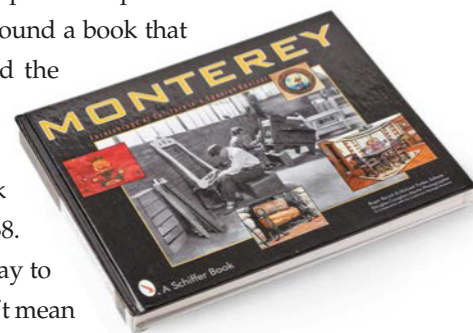
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from the editor Sawdust

Craftsman, Shaker, Queen Anne, Danish Modern ... these are a few of the furniture styles that are well known to woodworkers. The more I talk with Chris, Steve, John, Dillon, and Marc, the more I learn about other design streams. Some of these lesser known styles are regional or focused on a specific person or company.

A few years ago, Dillon came across a photo of a piece in the “Monterey” style. After some research, he found a book that featured other items and highlighted the history of the movement. From this he designed the cabinet featured in Woodsmith 256. In this issue he’s back at it with a buffet that starts on page 38.

Design books like this are a great way to generate ideas for projects. This doesn’t mean you have to build a reproduction. Find inspiration while browsing the pages to discover details you can use to transform your work into something unique. Over time all these bits and pieces combine into yet another design style — yours.



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1. Publication Title: Woodsmith. 2. Publication No.: 0164-4114. 3. Filing Date: September 1, 2023. 4. Issue Frequency: Bimonthly. 5. No. of issues published annually: 6 (six). 6. Annual subscription price: \$29.00. 7. Complete mailing address of known office of publication: 2143 Grand Avenue, Des Moines, (Polk County), Iowa 50312-5306. 8. Complete mailing address of the headquarters or general business offices of the publisher: 2143 Grand Avenue, Des Moines, (Polk County), Iowa 50312-5306. 9. Full names and complete mailing addresses of publisher, editor, and managing editor: Publisher: Active Interest Media Holdco, Inc. 2143 Grand Avenue, Des Moines, Iowa 50312; Editor: Phil Huber, 2143 Grand Avenue, Des Moines, Iowa 50312; Managing Editor: Phil Huber, 2143 Grand Avenue, Des Moines, Iowa 50312. 10. Owner: Active Interest Media Holdco, Inc. 2143 Grand Avenue, Des Moines, Iowa 50312. 11. Known bondholders, mortgagees, and other security holders owning 1 percent or more of total amount of bonds, mortgages or other securities: None. 12. (Does not apply.) 13. Publication Title: Woodsmith. 14. Issue Date for Circulation Data Below: August/September 2023. 15. Extent and nature of circulation:

	Average no. copies each issue during preceding 12 months	Average no. copies of single issue published nearest to filing date
A. Total number of copies (net press run)	140,014	147,634
B. Paid circulation (by mail and outside the mail):		
1. Paid/requested outside-county mail subscriptions stated on PS Form 3541	122,654	115,008
2. Mailed in-county paid subscriptions stated on PS Form 3541	0	0
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F. Total distribution	130,141	121,723
G. Copies not distributed	17,494	18,291
H. Total	147,635	140,014
I. Percentage paid and/or requested circulation	97.87%	97.77%
16. Electronic Copy Circulation: Woodsmith		
A. Paid Electronic Copies	2595	2145
B. Total paid print copies + paid electronic copies	129,964	121,153
C. Total print distribution + paid electronic copies	132,736	123,868
D. Percentage paid (both print and electronic copies)	97.91%	97.81%

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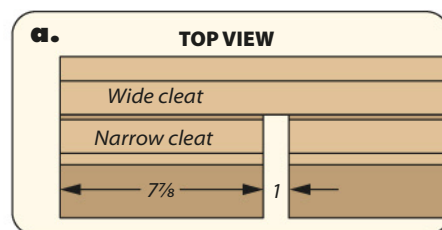
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READER'S Tips



▲ The V-jig works well for any odd shaped pieces, such as when notching or ripping dowels.



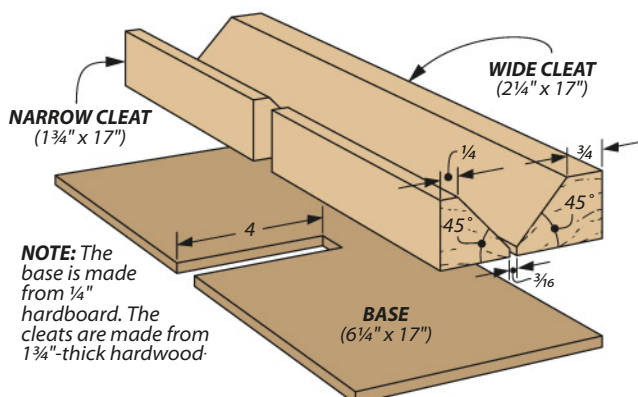
Band Saw V-Jig

Cutting odd-shaped parts always poses an interesting challenge. The band saw is certainly the safest place to get the job done, but it's far from perfect. That said, this V-jig will certainly help when it comes to long workpieces.

The jig cradles the piece, and it works well for a few different operations. Two cleats are mounted on a hardboard base to create the V. A notch into the jig separates the narrow cleat and allows room for the band saw's blade. As you can see above, the jig gets taped to the fence, and the V supports pieces of any shape.

Leonard Wade

Lake Charles, Louisiana



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You'll be able to tell us all about your tip and upload your photos and drawings. You can also mail your tips to "Woodsmith Tips" at the editorial address shown on page 2. We will pay up to \$200 if we publish your tip.

QUICK TIPS



Eraser Air Caps. *Ed Clowers of Marlboro, MA* makes frequent use of his air system — frequent enough that he often forgets where he left the cap. However, he's devised a cheap and easy way to keep debris out of the hose: erasers. These pencil erasers fit over the fitting nicely, keeping dirt and dust out.



Fruit Cup Painter's Points. *Jackie Grider of Bridgeview, IL* makes sure her family holds on to their fruit cups. They've got a number of uses in the shop, but her favorite is what you see above: using them as makeshift painter's points. They contact the piece minimally, and can hold more weight than you think.



Richard Williams
Master Woodworker



Dust Gorilla Pro®
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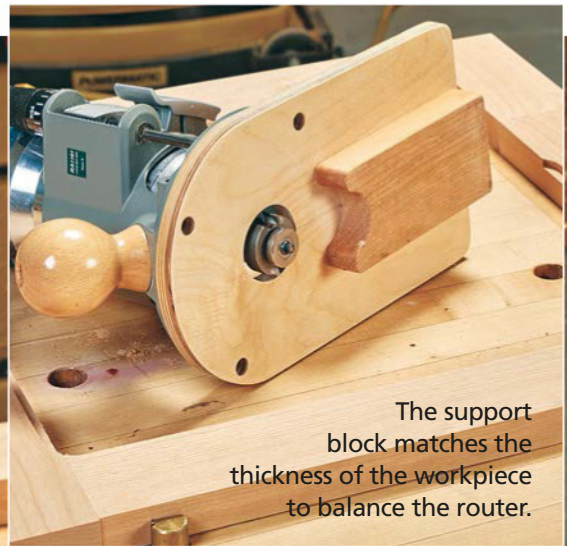
"The dust in my shop has diminished greatly. It's like night and day from my single stage collector."

- Richard Williams

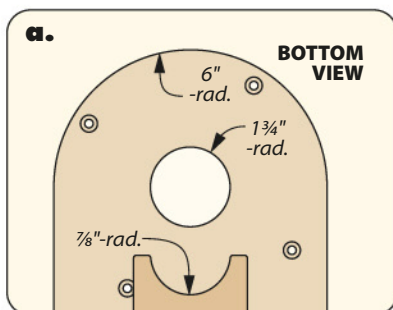
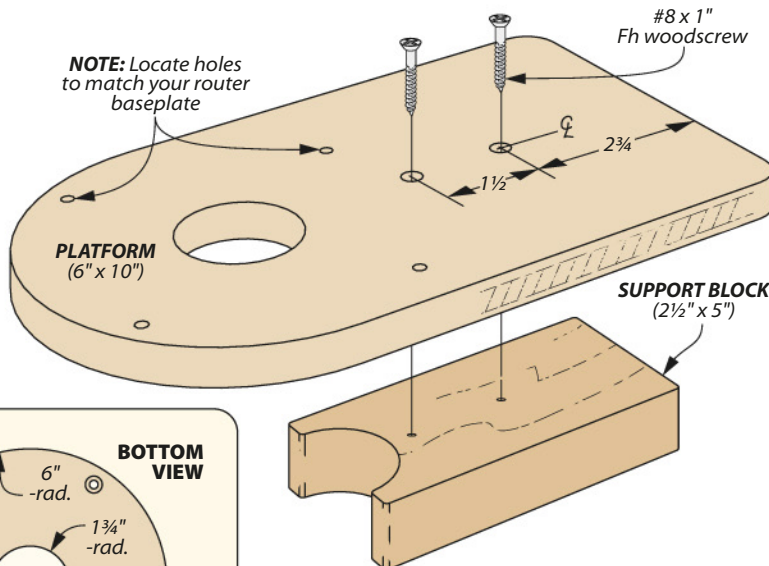
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The support block matches the thickness of the workpiece to balance the router.



NOTE: Platform is made of 1/2" plywood. The support block is hardwood of the same thickness as the workpiece

Router Support Platform

During some operations, such as when routing the rabbeted edge on the frame in the photo above, tipping becomes a big issue. One tilt and you've ruined the frame. To solve this problem, I built the accessory you see to the left.

It consists of just two pieces. First is the platform. It's plywood with a clearance hole for the router bit, and screw holes to allow it to attach to the router base.

Second is the support block. This piece has a notched end, but, more importantly, it's sized to the same thickness as the piece you're working on. This provides solid support even when the platform only rests on a small part of the workpiece.

Dan Martin
Galena, Ohio

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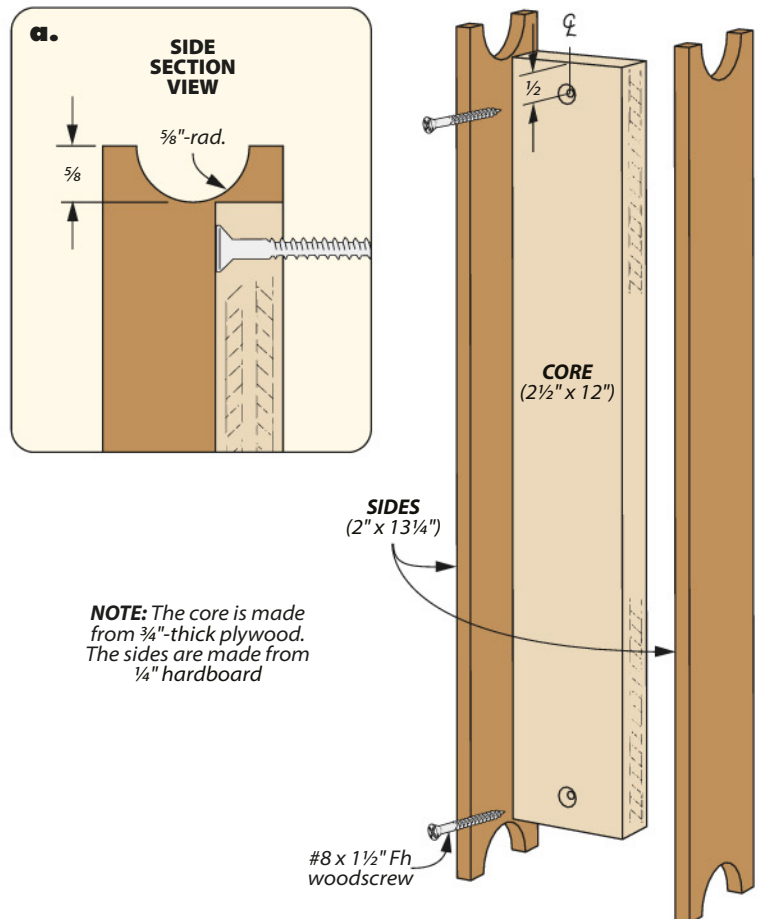
Handy Power Strip

I use my workbench for cutting stock and sheet goods, as an assembly space for projects, and for sanding and finishing. This means a number of power tools come out in a single session, which in turn means me continually plugging and unplugging the tools from an extension cord. To make this all simpler, I mounted a power strip to a leg of my bench, as you see above.

I formed the power strip mount from three simple pieces: a core and two sides. The sides have a circular notch at each end (detail 'a') which allows the strip's cord to wrap around the body of the mount when not in use (right photo above).

To put it all together, start by gluing the sides around the core. Finish the assembly if you'd like, then attach the power strip. Clamp it to your workbench (or sawhorse). Drill the pilot holes and install the screws to complete the project.

Jacob Stier
Salisbury, Maryland



QUICK TIPS



Router Cone. Gary Johnson of Livermore, CA noticed that during certain cuts at the router table chips would rain down over the router body. Afraid the inlets might clog, he found a simple solution. He placed a veterinary dog cone around the motor body and secured it with Velcro strips, as shown above.



Soften the Blow. Mike Moeller of Loup City, NE has a particular preference when it comes to mallets. Because he appreciates the weight and grip of his claw hammer, he decided to turn it into a non-marring mallet. By adding a rubber table leg tip to his hammer, he ensured it wouldn't ding up his pieces.

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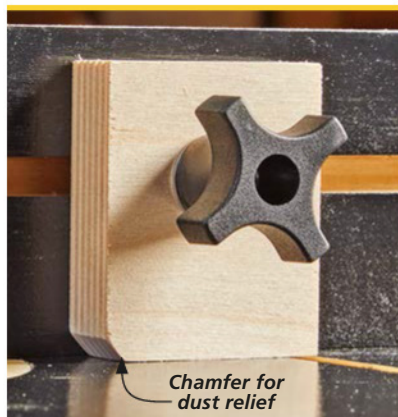


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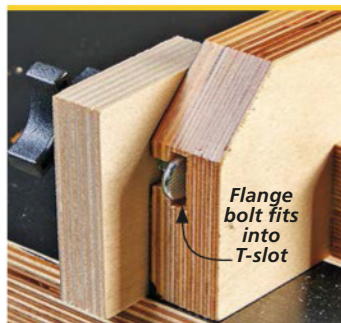




Drill Press Stop Blocks & Spacers



Chamfer for
dust relief



Flange
bolt fits
into
T-slot

▲ A fence with a T-slot makes it easy to set and adjust a stop block at the drill press.

When I was a kid, one of my favorite toys was a set of blocks at my grandmother's house. They were the old-school kind: a letter on one face, number on another, grooves milled into the top and bottom, and a couple images to round it out. I think it's safe to say that many woodworkers share a similar affinity for blocks, whether from childhood memories or their current shops.

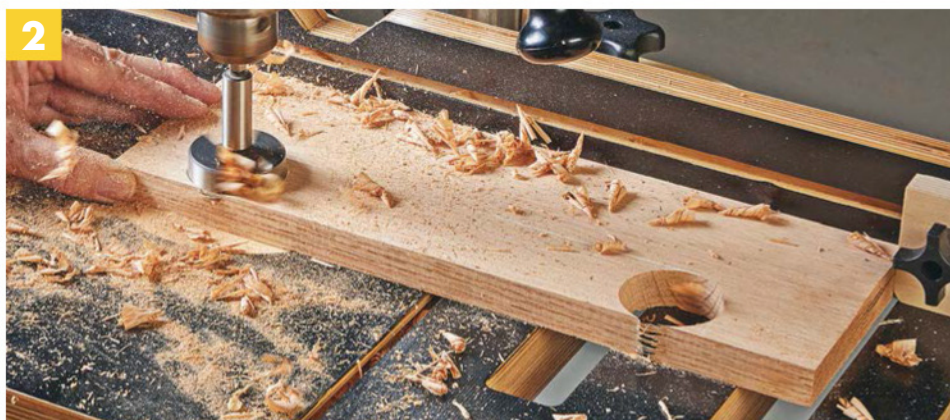
I've found that many woodworkers I meet have quite a few shop blocks — and they aren't for visiting grandkids (necessarily). The blocks may be used for gluing and clamping, raising a workpiece

off the benchtop, or to improve the accuracy of power tools. It's this last function that I want to focus on here. We'll zero in on the drill press for the simple reason that a few pages down the road, we show how to make a drill press table and fence.

MAKE TWO. A stop block attached to the fence provides an additional reference point. The fence sets the distance from an edge. The stop block adds a dimension from an end.

On the previous page, you can see the kind of stop block I like. A chamfer on one corner provides dust relief for most tasks. The other corner I leave square. This comes into play when drilling thin stock (like metal) where the chamfer could hamper accuracy.

It's a good idea to make two stop blocks. This allows you to perform two operations with different locations. The two right photos illustrate one example of how this works.



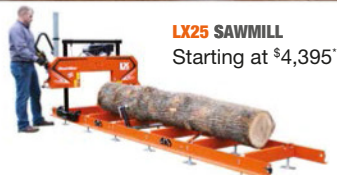
▲ A Forstner bit works great for forming an inside radius. A pair of stop blocks accurately locates the holes relative to the ends of the workpiece. On this piece, the location is different for each end. Slide the workpiece from one stop to the other for each radius.



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▲ Drilling out the waste in a mortise is a common drill press task. Using a stop block and a spacer block adds consistency to the process for a low investment in time and effort.



▲ Hold the workpiece against the spacer to drill out one end of the mortise (left photo). Remove the spacer and shift the piece against the stop block to drill out the other end.

WHY NOT THREE? If two stop blocks are handy, more is better, right? Not really. There's only so much room on the fence for additional stops. And you run into the issue of needing to remove one to access the benefits of another further down the line.

SPACER BLOCKS

The solution to incorporating multiple setups into a drilling operation is to make some spacer blocks. The difference between a stop and a spacer is minimal,

but important. A spacer isn't attached to the fence like a stop is. Instead, a spacer is designed to locate the workpiece a specific distance away from an existing stop block.

The two photos above show a basic example. I've set a stop block and spacer to drill one end of a mortise, as shown in Step 1. Remove the spacer, slide the workpiece down to contact the stop and you're ready to drill the opposite end of the mortise, as you can see in Step 2.

Used like this, the spacer functions similar to using a second stop block. The spacer is a good approach when the workpiece is longer than the fence.

STACK THEM UP. Think beyond a single spacer to maximize their full potential. A set of identical blocks can be used for drilling a series of holes along the length of a workpiece. The photos below show how this works for making shelf pin holes in a case side. The best part is that you can easily drill perfectly aligned



▲ When you need to drill shelf pin holes in case parts, consistent spacing is critical. Set up a stop block on the fence then add multiple spacers that match the hole spacing you require.



▲ Drill a hole, remove a spacer, and slide the workpiece down. That's all it takes to drill as many holes as you need. You can repeat this process on any number of parts.



▲ A long hook stop clamped to your drill press fence to extends its reach. For taller parts, attach the stop with double-sided tape or even use woodscrews.

holes in several pieces with this method.

THOUGHTFULLY MADE. You can make spacers out of anything. They're the perfect use for scrap. However, you may want to consider making two different types of spacer blocks.

I have a set of spacers made out of MDF. These are cut into 2" x 3" and 2" x 4" blocks. These are ideal for serial drilling.

I use both 1/2" and 3/4" MDF for these. The consistency of MDF allows you to mix and match the width, length, and thickness to dial in a dimension.

The other blocks I've made are done in a cut-as-needed fashion. They're designed around the needs of a particular project.

In either case, it's a good idea to label the block with its size. This makes it easier to reuse later on. You can now see how some woodworkers can end up with quite a collection of blocks.

HOOK STOP

One advantage of building your own table and fence is the capability to support long parts. But some pieces will still be considerably longer than the fence. For these situations, I made a hook stop, as shown in the photo above. With it you can extend the reach of your fence to take advantage of a stop block's accuracy.

Stacking blocks wasn't just playing. Those toys were developing your woodworking skills. **W**

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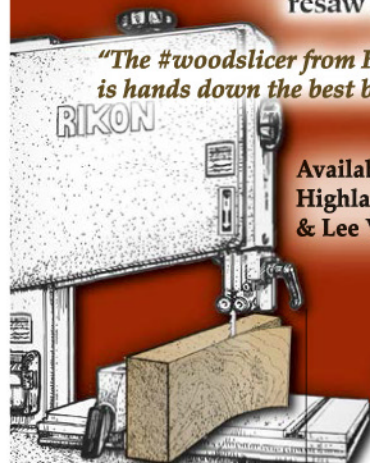
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Crackled Paint Effect



▲ Considering the dramatic results you end up with, it's surprising that just a few "ingredients" and basic finishing tools are all that's necessary.

Finishing techniques seem to fall into one of two poles: "quick & easy" and everything else. Allow me to present a mid-level technique: a crackled paint finish that's worth some extra time and effort. It's the technique used on the door panels of the Monterey buffet on page 38 and shown above. There's a lot to love here.

An aged finish holds more visual interest than a flat, blemish-free surface. This painting method also incorporates contrasting colors in a subtle way.

For the one applying the finish, there's a fun moment when the crackle effect begins that seems like magic.

WHAT YOU NEED. The photo at left shows the supplies you'll need. At the heart are two colors of paint separated by a layer of liquid hide glue.

The glue creates the crackling effect. Its smooth surface prevents the top coat of paint from remaining even. I use liquid hide glue to assemble many of my projects. So I always have a bottle in my shop. Most home



▲ Working the direction of the grain, brush on a base layer of paint. If necessary, you can mask the edges of a workpiece to preserve the surface for a glue joint.



▲ Roll or brush an even coat of liquid hide glue over the dried base coat of paint. A thicker coat of glue creates a larger crackle pattern than a thinner coat does.



▲ Work quickly to apply the top coat to the dry glue. A well-loaded brush lets you apply the paint in a single pass. Even it out with another swipe, then let it be.



▲ The best crackle finish will have a random look to the patterns. The base coat color peeks through to increase the effect. Allow the paint to dry overnight before handling.

centers and hardware stores carry it if you don't have any.

For the paint, you'll need to use flat or matte acrylic/latex paint, or traditional milk paint. As I said earlier, contrasting colors result in a stronger effect.

As for application tools, you can use whatever you're comfortable using. I used foam brushes for the paint and a firm roller for the glue.

THREE-STEP PROCESS

Any time you're learning a new technique, it's a good idea to run through the steps on test pieces. The photos highlight the steps.

BASE COAT. The starting point for this process is just like any painted finish: apply a coat of paint to a sanded surface, as shown in Step 1. (I don't usually sand past 150-grit.)

Since this coat is mostly concealed by the top coat, a flawless application isn't necessary. I applied two coats so that the paint had the full depth of color.

THEN GLUE. Allow the paint to dry completely. The next step is to apply the glue. Your goal is a full, wet coat of glue across the entire surface (Step 2). I used a firm foam roller to quickly spread the syrup-like glue.

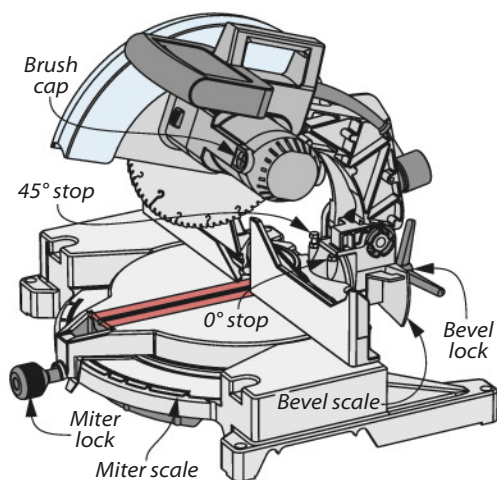
On the late summer day I did this, it took about 2 hours for the glue to dry to the touch. You can let it dry longer, but it shouldn't feel gooey.

TOP COAT. Applying the second color of paint requires confidence. Multiple brush strokes across the paint spoils the crackle effect. I apply it pretty heavy then go over it once more and that's it, as in Step 3.

The crackle effect begins in a couple minutes and never ceases to amaze. Let the paint dry overnight. You can leave the surface as is or apply an oil or lacquer finish for protection. **W**



Miter Saw Tune-up



Compound Miter Saw. A saw like the one shown here will need to be checked for squareness to the fence and table, in addition to checking the stops.

When it comes to making crosscuts, there tends to be two types in my shop. First, the rough cut, initially trimming a piece down to a workable size. For efficiency's sake, the saw above is my choice here.

The second type of cut is a precise one. When cutting a board to final length, I prefer a cross-cut sled at the table saw. I may be a bit biased, but I find the stationary blade provides far more accuracy than my sliding compound miter saw.

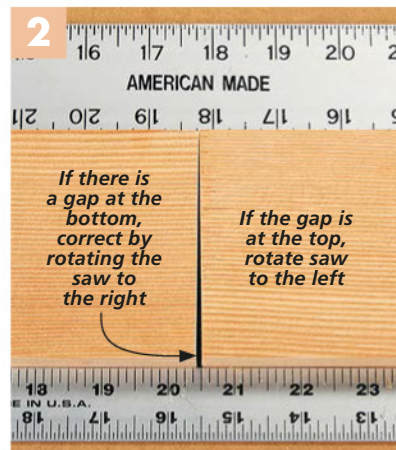
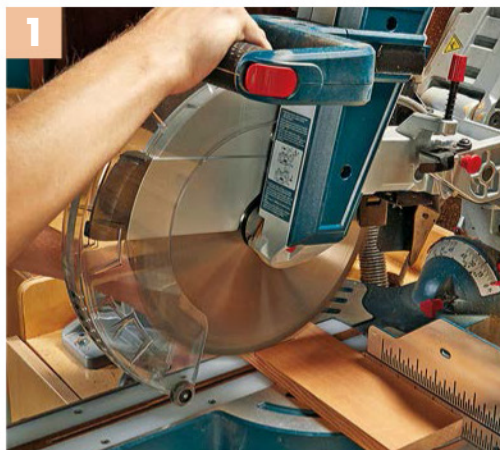
However, there are some workpieces that are too long to crosscut reliably or safely on

the tablesaw. The long walnut frame pieces for the gaming table on page 52 (which you can see being cut above) are a prime example. For these, the miter saw is a must.

FINE-TUNING. The miter saw is a great — dare I say necessary — tool in the shop. However, most people's miter saws leave something to be desired in the accuracy department. Through adjustments and use, the gauges, indicators, and even fences can come untrue. However, with a bit of time and work invested in the saw, you'll be able to make precise cuts on any workpiece.

FINDING THE 0°

Test Cuts. Begin by setting your saw to the 0° position and cutting a test piece in half. Then, flip the cutoff piece and butt the two ends together with rulers alongside the pieces. If there's a gap, this means the blade isn't square with the fence. If the gap is located at the bottom (as in Figure 2), then the saw is too far left. If the gap is at the top, then it's too far to the right.



SQUARE TO THE FENCE

One of the most important qualities of a miter saw is being able to make consistently square cuts. This is easy to do with a few scraps for test pieces. The box above shows how to test.

How you adjust your saw will differ by brand. For the *Bosch* you see here, I can adjust the turntable relative to the gauge by loosening a few screws in the gauge itself. Once you've made the initial adjustment, make another test

cut and check the pieces. It can take a few tries, but once you have the two cut ends sitting flush between the straightedges, your saw blade is sitting square to the fence, and everything can be tightened again.



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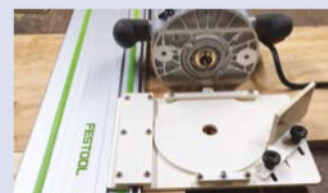
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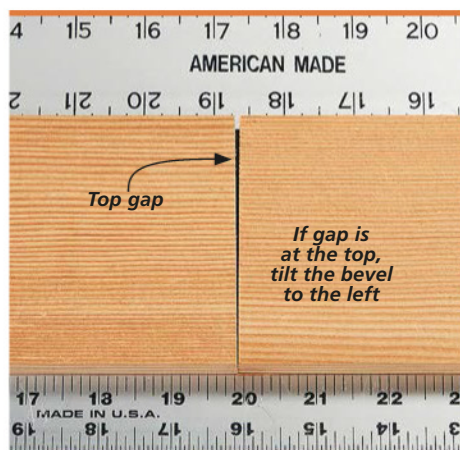
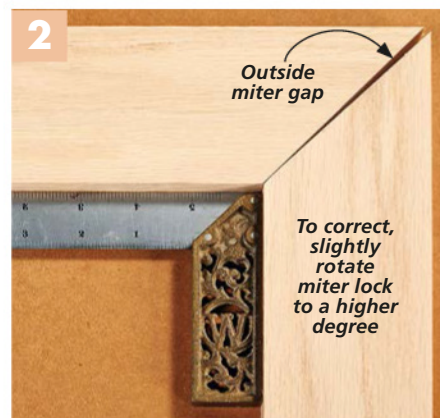
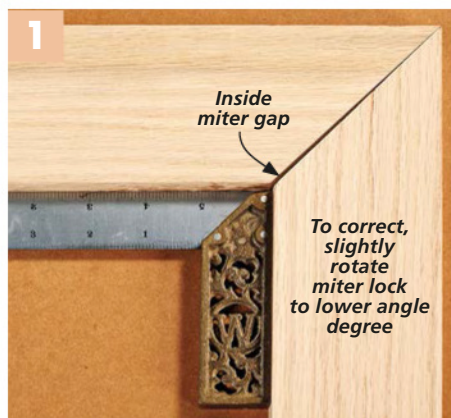


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FINDING YOUR MITER

Testing the 45°. With your blade rotated to a 45°, make a cut on a test piece. Flip the cutoff and put the cut ends together with a square inside their corner. If the gap is on the inside of the corner, the saw is further than 45° (Figure 1). If the gap is on the outside of the corner, the saw is actually under 45°. Once the pieces form a gap free corner with the square, the miter is set.



▲ Check squareness to the table in the same way you checked squareness to the fence.

MITER ADJUSTMENT

Now that the blade is set square to the fence, you'll need to check the 45° stops on either side. To set the miter angles, you'll need another test piece and a square. Follow the steps in the box above to see if and how your saw needs to be adjusted.

Again, how you make this adjustment will depend on your saw. Luckily, it rarely requires anything more than loosening a screw (usually below the turntable) and making the adjustment manually. After adjusting, make

another cut in a test piece to see if the miters fit perfect with the square. If that didn't do the trick, adjust and cut as needed until you've dialed the saw in.

BEVEL ADJUSTMENT

Most miter saws today are compound ones, which means that miters aren't the only angles to worry about. Luckily, checking for the correct bevel angle isn't much different than checking the miter angles, just with a few shifts in orientation to work with the bevel tilt.

SQUARING & BEVELING

Test to the Table. To square your saw blade relative to the table, you can start by using a square to eyeball the correct angle (Figure 3). Cutting the test pieces and adjusting the saw follows the same process as squaring it to the fence. The only difference is that the pieces will be cut on-edge, as in Figure 4. When adjusting the 45° bevel positions of the saw, you'll follow a similar process as adjusting the 45° miters above.



SQUARE TO THE TABLE. Squaring the blade to the table is similar to squaring it to the fence. Begin by locking down the blade and unlocking the bevel tilt. From there, I begin by eyeballing the position with a square. This will get me close, but not perfect.

After sighting the angle, I lock the bevel tilt and cut a test piece on edge. Checking the test pieces and adjusting accordingly follows the same process as setting the saw square to the fence, as shown on page 19.

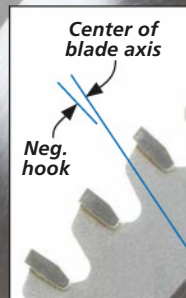
Once you've found the right angle, you'll need to adjust the 0° bevel stop. On my saw, this can be found on the back, and all I had to do was loosen a few screws and adjust a set screw.

45° BEVEL. Finally, you'll want to check the 45° bevel of the saw. Much like when squaring it to the table, you can get close to the proper angle if you have a plastic triangle on hand.

CHOOSING THE RIGHT BLADE

Negative Hook. At first glance, a miter saw blade looks nearly identical to a crosscut blade you'd use at the table saw. Where the two differ however is in their hook angles. Saw teeth are always skewed to help them slice through the wood fibers (rather than slap against the wood straight-on). On table saw blades, the teeth have an aggressive, positive hook since the workpiece is pushed into the blade. On a miter saw

blade, the teeth are positioned for a negative hook. Like a skew plane, this makes for a smoother cut and a crisp, clean edge. It's also a bit of a safety precaution; negative hook teeth are less likely to bite into a board and grab it or self-feed the saw toward you.



Now, to check the angle, cut a test piece. As with the miter cuts on the previous page, flip the cutoff and put the mitered ends together alongside a square. If they form a perfect 90° then the

saw is at 45°. After testing the saw's current setup (Figures 1 and 2), make any adjustments and repeat the cuts until you've got the perfect fit. Once there, you can set the 45° bevel stop.

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MAXIMIZE YOUR SAW

Getting your saw dialed into its precise adjustment will dramatically improve its performance. However, if you're looking to get the most out of your miter saw, there are a few additional steps you can take to improve your results.

ZERO-CLEARANCE. When a saw blade exits a workpiece, there's always a risk of chipout if the wood fibers aren't properly supported. You may be familiar with zero-clearance inserts from table saw work, and it's much the same with the miter saw. As the blade's teeth exit the workpiece, they can tear

out unsupported wood fibers, but the right insert will support those fibers for a crisp edge. Additionally, just as you'd use an auxiliary fence on a miter gauge, you'll want a fence as well as an insert. Luckily, as you can see above, both are easy parts to make yourself.

SMALL PART SPACER. Making small, identical parts is a tedious task. However, the miter saw can be a great tool for the job with the right technique. A stop block attached to the fence would seem like the easiest way. However, that would risk the cutoff binding between the blade and the stop block.

The answer is to use a spacer between the workpiece and the stop block. After you've positioned the piece, remove the spacer and make the cut. Then remove the cutoff, replace the spacer, and reposition the piece for the next cut.

CLEANING & MAINTAINING

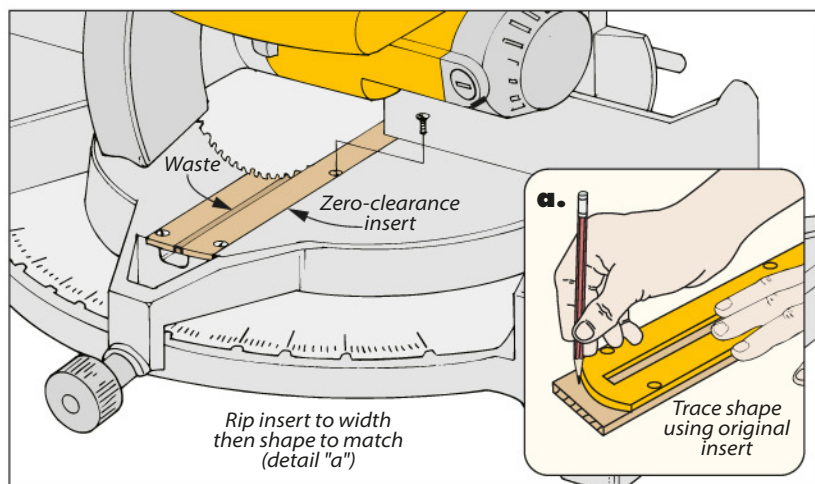
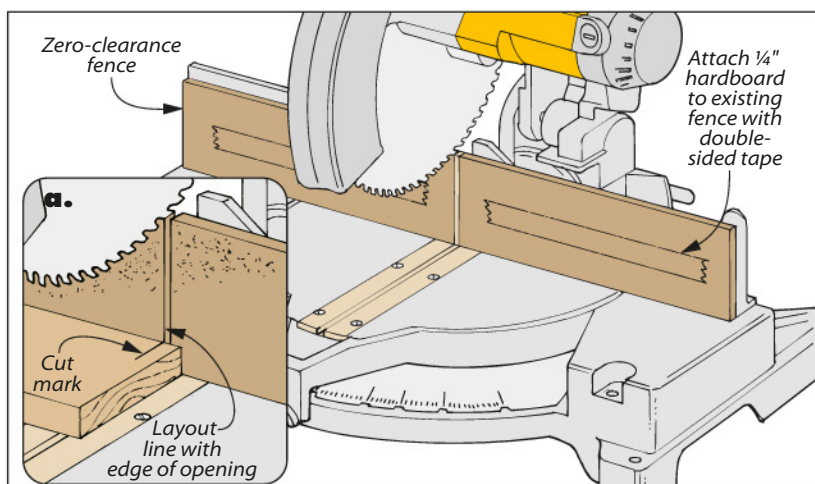
Last comes the topic of upkeep. It may not be the most riveting subject, but it's one that will help any tool stay at peak performance. For the miter saw there are a few things to look at.

CLEANING. This first item on the checklist is easy: cleaning. It may seem obvious, but miter

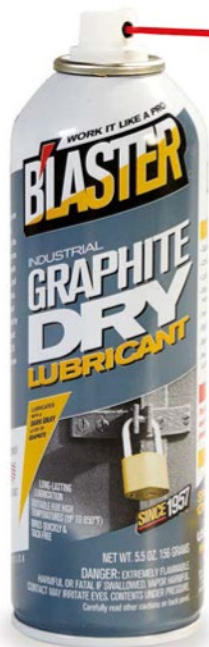
ZERO-CLEARANCE CUTS

Fence. As the blade exits the workpiece out the back, wood fibers left unsupported by the fence are at risk of chipping out. While the fence that comes with your miter saw likely won't come close enough to the blade to support the areas beside the cut, a zero-clearance fence can be attached to keep those edges crisp. As shown in the illustration at right, the fence can be as simple as a long piece of hardboard taped to your original fence. To create the kerf, simply cut it with the saw. A zero-clearance fence also makes it easy to line up your workpiece to the edge of the blade.

Insert. A zero-clearance insert will help support the wood fibers on the bottom of the workpiece, and is similar to one you might use for your table saw. Simply size a piece of hardwood to match the insert that came with your saw (detail 'a'). Then drill out a few countersunk holes for the screws that hold the insert in place. After seating the screws, you simply need to run the saw across the insert to create the kerf. It's a good idea to have two inserts: one for a 0° bevel and one for 45°.



SMOOTH MOTION



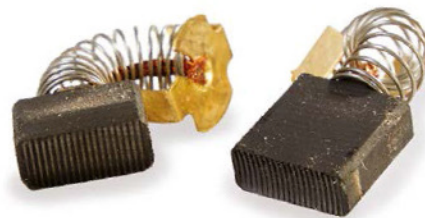
Dry Lubricant. The same properties that make graphite great for pencils also make it an excellent lubricator. Graphite molecules are layers of carbon that bond together weakly. These layers easily separate and slide over each other, keeping friction low until the graphite wears away entirely.



◀ Graphite-based dry lubricant can be found cheaply at most hardware stores.

STRONG MOTOR

Brushes. Like many electric motors, the brushes of a miter saw transfer electricity to the motor while it stays in motion. Modern brushes are hardened graphite blocks attached to a spring that keeps them pressed against the motor. Of course, friction will wear away the graphite through use. These brushes are cheap and easy to replace, so I make it a point to check their condition when tuning up my saw.



▲ Graphite blocks wear slower than the true copper brushes of the past, as the graphite significantly lowers the friction caused by the motor.

saws make a mess. Caked-on sawdust and gunked-up pitch or resin take a toll on the tool. Be sure to clean the blade off consistently as well, as that will massively affect how it cuts. A clean machine goes a long way.

LUBRICATION. While on the topic of articulating parts, I'd be remiss to not bring up lubrication. All that dust can often find its way into the many joints on a miter saw, and may cause it to squeak or move stiffly. That sawdust also means that WD-40 isn't going to cut it.

Dry lubricant is the way to go. Sprayable graphite lubricates without the risk of attracting dust and chips, making it ideal for the woodshop. The drawback is that it won't last as long as an oil-based option would. Given the alternative however, that's fine with me.

FENCE. Sometimes all the adjusting in the world may

seem to make little difference as to how your saw cuts, and in that case you may need to look to the fence. Fences can come out of alignment through use (or they may even ship that way), but the good thing is that they're easy to adjust. For instance, the saw you see pictured in this article can be adjusted with a couple hex-headed set screws in the back of the fence.

BRUSHES. The final thing to address is the brushes. If your saw motor begins to feel sluggish, it may be a sign that the brushes have worn down. These graphite blocks (pictured above) will wear over time, but are easy to replace.

After going through this checklist, you'll find your saw cutting like (or better than) new. With the right preparation, a miter saw can be just as accurate as the table saw. 

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Clean Shop Allies



▲ The *Dust Collector Hero* comes with everything you see here. The kit lets you build an air tight replacement for your existing bag and its retainer ring or band clamp.

Keeping your shop clean and tidy takes time away from the fun stuff — like making messes while shaving, chopping, or sawing away at your current project. We'll take a look at three products that help you stay clean, tidy, and orderly while you're working in your shop. Let's start with a kit that takes some of the hassle out of emptying your dust collector.

THE DUST COLLECTOR HERO

The Dust Collector Hero is a kit that replaces the dust collection bag on your dust collector.

Here's a quote from their website on what the "Hero" does. *"The Hero is an air tight chamber that eliminates the need for a bag or drum to be directly connected to the dust collector debris outlet. An optional DC Guard Dog gently reminds users when the catch container needs attention to avoid overfilling and causing an awful mess to clean up."*

Their website can be found at DustCollectorHero.com. And it walks you through the options available. The chamber comes in three sizes: Basic, Large, and Extra Large.

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Router not included.



▲ The latch provides an air-tight grip for the hatch door of the collector. The light of the *DC Guard Dog* comes on to let you know it's time to empty the bag.

Depending on your dust collector, the routine for changing the dust bag can be a bit of a chore. For example the dust collector shown here and on the previous pages is a *Jet* that's used in the *Woodsmith* video studio.

When the bag is full you have to reach underneath the collector and pop the retaining ring out of the groove it's locked into. Once you've emptied or replaced the bag, you have to wrangle it back into the groove. Just be careful not to pinch your fingers in the process and make sure you have the bag wrapped tightly. The Dust Collector Hero eliminates all that struggling.

HOW IT WORKS. From the kit you receive you'll assemble a chamber that replaces the legs of your dust collector. There's a neoprene sleeve and four segmented rings that fasten the dust collector to the chamber. The sleeve also directs the dust into the bag that's clamped to the ring of the catch container.

There's an optional element to this kit called the *DC Guard Dog*. It's just two panels that are hinged together on one end. When the weight of the dust bag presses the panels together the switch between the two turns on a light notifying you it's time to empty the bag (photo above left). Emptying the bag is just a



▲ Changing out dust bags couldn't be simpler. Remove the hatch door and slide out the catch container by grabbing the upper layer and sliding it out off the rails and down. Replace the bag and slide the container back in place.



▲ *Kaizen Foam* provides a safe space for each of your tools to live their best life. There's no reason for them to get nicked up or knocked out of tune.

matter of popping off the hatch door, like you see in the top photo. If you put off changing the dust collector bag because of the hassle, this kit is for you.

ORGANIZING WITH FOAM

Now let's look at a product that just screams tidy. Your shop time is more enjoyable when all of

your tools have a home. So when a product comes along to help in this regard, I have to take a look. *Kaizen Foam* sold by *FastCap* is a multi-layered foam that's ideal for the task of tool storage.

Kaizen is a Japanese word that loosely translates to "improvement." In manufacturing, it's a process of making small changes



▲ After cutting the foam to its final size, lay out your tools for the easiest access and organization.



▲ Once you have the tools placed to your liking on the foam, trace their profile on the surface of the *Kaizen Foam* with the marker you see here.

to improve a process or product. One of the keys is making sure everything has a place.

As you see in the photos, *Kaizen Foam* comes in a thick sheet. The idea is that you arrange the tools to suit your needs, trace an outline around them, then create a pocket, or recess, by removing one or more layers.

MAKING CUTOUTS. The first thing to do is cut the foam to the overall size of the drawer or storage space. The foam cuts easily with a knife you have on hand or one you can order from *FastCap*.

Take a little time to lay out the items on the foam (photo above left). Once you're happy with the layout, you're ready to

mark the foam in preparation for making the cutouts.

To trace the outlines of the items on the foam, *FastCap* has a unique, long-nose marker. It fits tight against the tool for an accurate layout. You can see this in action on my collet wrench in the photo at the top right.

MAKING THE CUTS. Creating the recess for each item is a two-step process. You first cut the outline and then excavate the layers of foam.

When cutting the outline, it's best to cut inside your traced line as is shown in the bottom left photo. This ensures that the tool will nestle snugly in the recess. Make the cut as deeply

as needed to allow the item to sit at the desired depth.

DIGGING IT OUT. The next step involves removing foam to create the recess. It's not an exact process and it takes a little practice to get the hang of it. Start by digging your finger under one corner. Just keep working your finger under the foam and peeling it out. You can see how it's done in the right photo below.

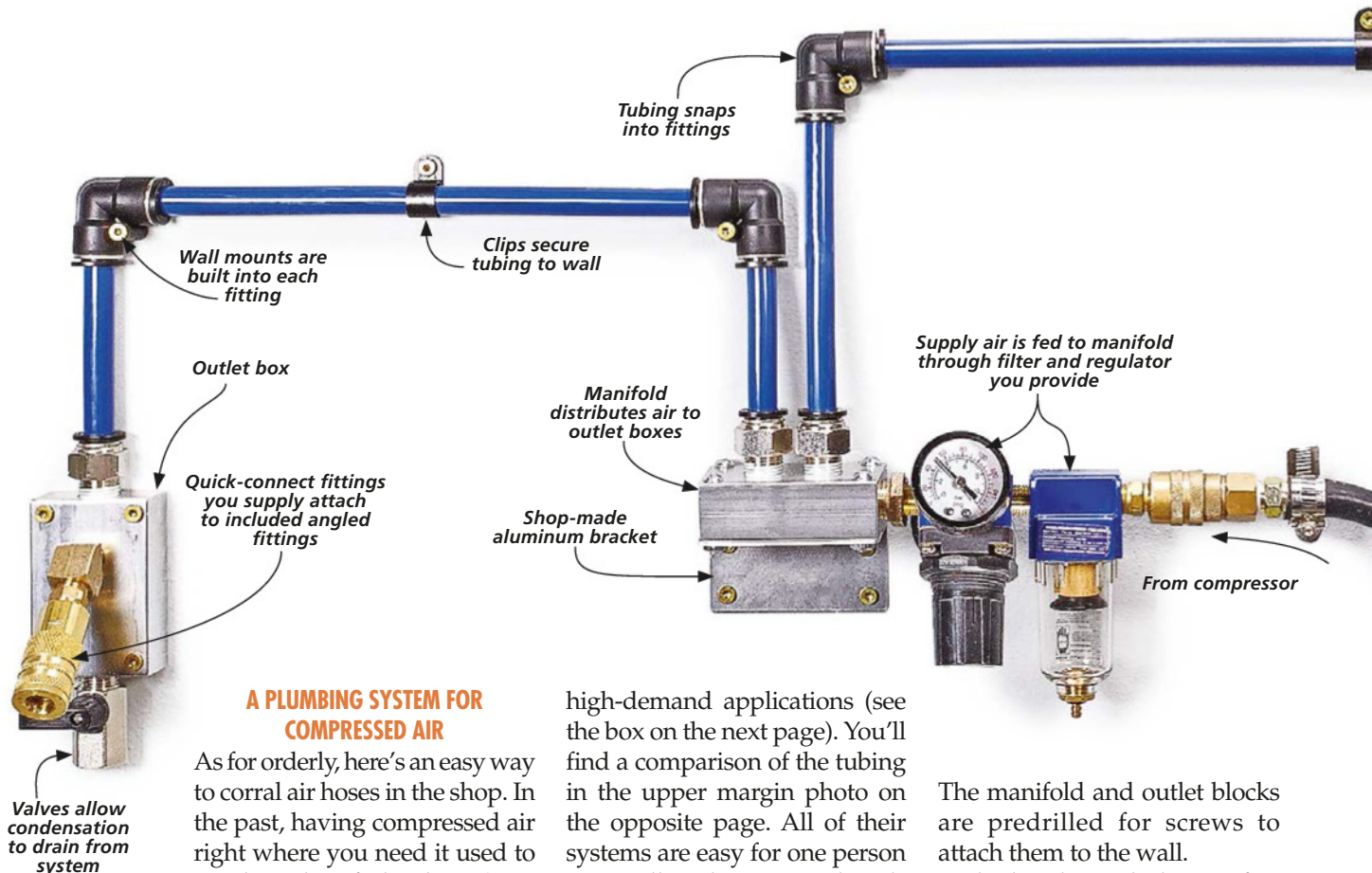
Once that's done, pinch away any high spots of the layers and test the fit of the tool. If you need to go a little deeper, just repeat the process. For thin items like metal rules, all you need to do is cut a slit to match the length of the tool.



▲ A utility knife with a narrow blade works best to cut through the foam and follow the tool's profile. Stay to the inside of the line for a snug fit.



▲ Dig your finger down to the desired depth, then work to peel back the foam. Flip back and pull away additional layers until the tool sets flush to the surface.



A PLUMBING SYSTEM FOR COMPRESSED AIR

As for orderly, here's an easy way to corral air hoses in the shop. In the past, having compressed air right where you need it used to involve a lot of plumbing (copper piping) work. Now, there's an affordable way to plumb your shop for compressed air.

EASY INSTALLATION. *RapidAir Products* markets several lines of plumbing systems. These systems range from the inexpensive *RapidAir* system shown here to more robust systems for

high-demand applications (see the box on the next page). You'll find a comparison of the tubing in the upper margin photo on the opposite page. All of their systems are easy for one person to install without special tools (refer to Sources, page 58).

RAPIDAIR MASTER KIT. The system you see here was designed for home workshops and small commercial shops. It's rated for up to 150 PSI. You can buy a master kit that includes a manifold and two outlet blocks. These are milled from solid aluminum.

The aluminum manifold distributes air to the outlet blocks.

The manifold and outlet blocks are predrilled for screws to attach them to the wall.

The kit also includes 100 feet of $\frac{1}{2}$ " O.D. ($\frac{3}{8}$ " I.D.) tubing and a variety of fittings. The clips used to secure the tubing to the wall are sold separately. Extra outlets and fittings are also available separately as needed.

IN-WALL OR SURFACE-MOUNT. What I like about this system is that it can be mounted on the wall or inside the wall. So it's easy to install in an existing shop. And if you're building a new shop,



▲ There's a cutter included in either kit. The tool makes it easy to cut the tubing square for an air-tight fit.



▲ To install the tubing simply push the squared-up end into the fitting until it's firmly seated. Teeth inside the coupling holds the tubing in place.

you can hide the plumbing for the compressed air system.

The manifold and outlet blocks have ports on the back to use when the plumbing is installed inside the wall. For surface-mounting, simply use the included plugs to plug the hole on the back side of the block.

START WITH THE MANIFOLD. When installing a compressed air system, I like to start working from the compressor end. So the first order of business is mounting the manifold block near the compressor. As shown in main photo, I made a bracket from aluminum angle to mount the manifold. But before securing it to the wall, I added a regulator, filter, and quick-connect fitting for the compressor hose that supplies the system. If you need to regulate the pressure at each outlet, it's a good idea to install a regulator before each outlet instead of a regulator at the manifold.

Once the manifold is in place, it's an easy task to branch to the

outlets using the two ports. I used the straight fittings included in the kit. To prevent leaks, *RapidAir* recommends wrapping the threads with *Teflon* tape and then applying a pipe sealant.

PUSH TO CONNECT. Since your tools connect to the outlet boxes, I like to mount them in convenient spots around the shop. Then you can go back and plumb between them using the tubing and included fittings. The best part is the design of the fittings eliminates the hassles of typical plumbing jobs, like sweating copper or threading black pipe.

To install the tubing, all you need to do is first use the supplied cutter to cut the ends of the tubing square. You can see the cutter in the lower left photo, opposite page.

The tubing is simply pushed into the fitting. Small "teeth" inside the fitting engage the outside of the tubing to lock it in place. The end of the tubing seats against an internal rubber seal. That's why the end of the

Quick-connect fitting

Solid aluminum block serves as outlet box

▲ Maxline tubing (bottom) can handle higher pressure than RapidAir tubing (top).

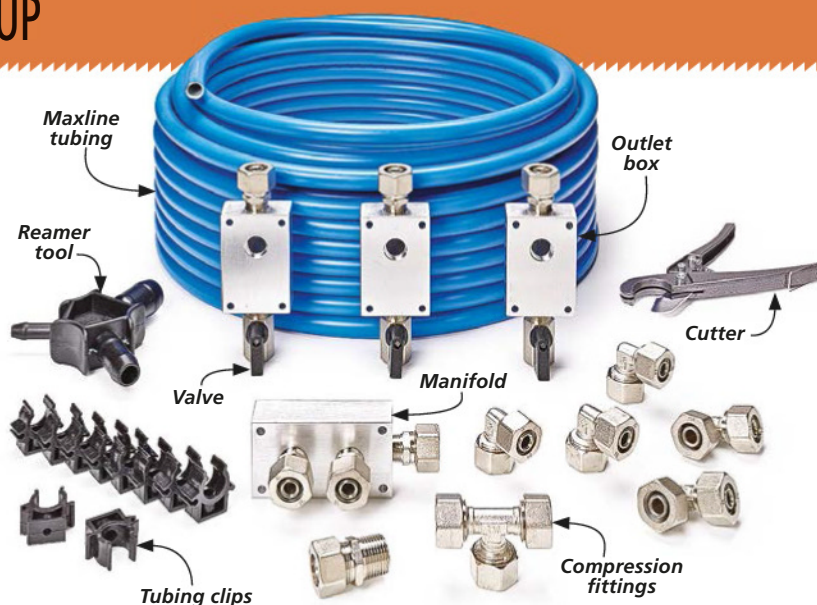
tubing needs to be cut square and pushed all the way into the fitting (about $\frac{3}{4}$ ").

It's clear that all three of the products featured here go a long way in making your shop life tidier and cleaner. **W**

CHOICES FOR YOUR SHOP SETUP

The Whole Kit and Caboodle. If your shop tools consume large volumes of air, you may want to consider the *Maxline* system from *RapidAir Products* (shown here). It's available in several configurations from *Northern Tool*. The system is rated for up to 175 PSI. The 100-ft. $\frac{3}{4}$ " Master Kit you see at right starts at around \$220. The 100-ft. $\frac{1}{2}$ " *RapidAir* Master Kit (above on both pages) is \$125.

Compression Fittings. The compression fittings are easy to install with common tools. The kits include a heavy-duty cutter and a reamer for cleaning up the inside edge of the tubing. This ensures a tight seal on the O-ring on each fitting. It's good to have all you need in one place.





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Happy Trees

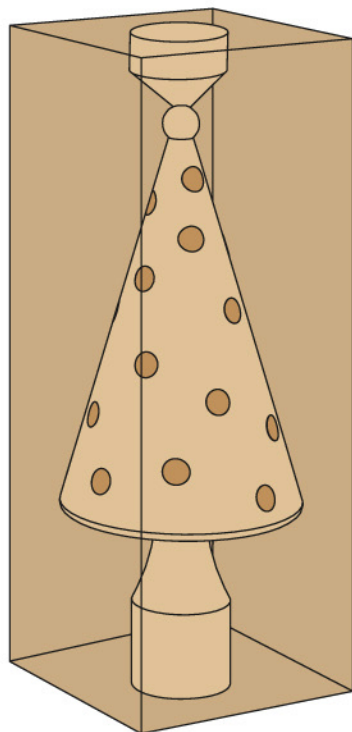


▲ Create a forest of turned trees on your mantel shelf. The ornaments look just as good on display as they do hanging from a Christmas tree.

Turn out a bunch of these ornaments for gifts this year and enjoy them for years to come.

Part of the joy of turning is how quickly you can go from a block of wood to a completed project. Small projects on the lathe are ideal for gifts, too. Once you get the hang of one, it's pretty easy to make multiples.

Think of these tree ornaments as a fun turning class. The designs build on each other. The skills you develop progress from simple to more complex. By the time you've finished, you have far more than trees to show for it.



NOTE: Blank is 7" long

Sleek **TAPERED TREE**

The tree shown on this page gets the ball rolling with a simple taper and is dressed up with decorative plug "ornaments." This allows you to focus on the fundamentals.

The left drawing above shows the starting point: an oversize rectangular blank. This allows extra length for clearance with the workpiece held between centers, as shown in Figure 1.

ROUND, THEN TAPER. I've made a few things on the lathe — mostly tool handles. However "expert turner" isn't a title I claim. My tools of choice are carbide tools that work well for learning to turn.

Begin with a square tool to round the blank. Then use a pencil to define the lengths of the trunk, tree, and topper. The main drawing above has all the numbers you need.

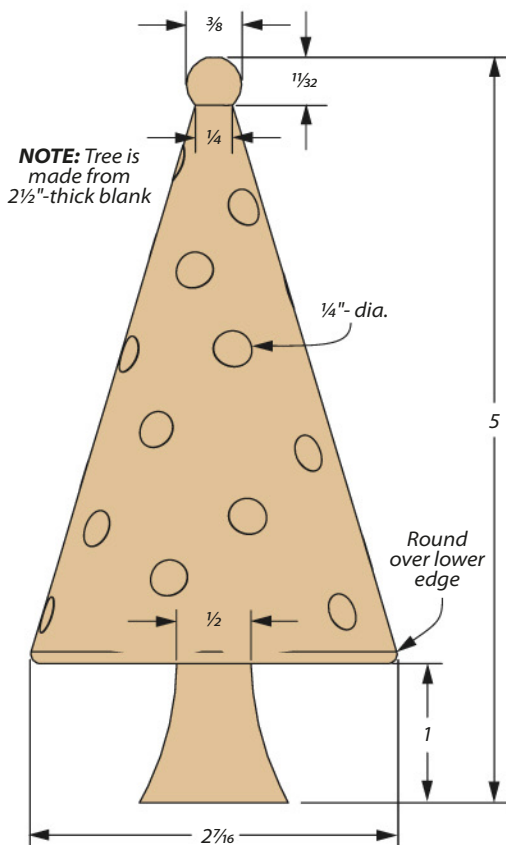
DEFINE DIAMETERS. A set of calipers (or two) comes in handy for defining specific diameters. For example, turn the trunk to its

largest diameter. Reset the calipers for the base of the tree and the top, just below the ball. Then you can connect the two with a straight taper.

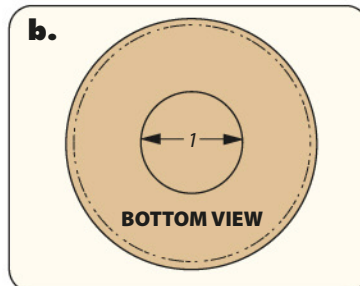
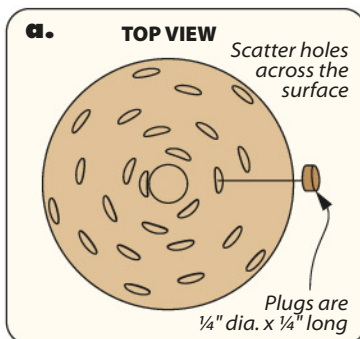
TRUNK & TOPPER. The trunk has a curved taper formed in it. The ball at the top requires a gentle hand. Shape the lower half without cutting away too much of

the support at the end. Finish shaping that after it comes off the lathe. The topper is sized to provide enough material to install a small screw eye for hanging.

ORNAMENTS. Figure 2 shows how to add the plug ornaments. Glue in plugs and sand them flush.



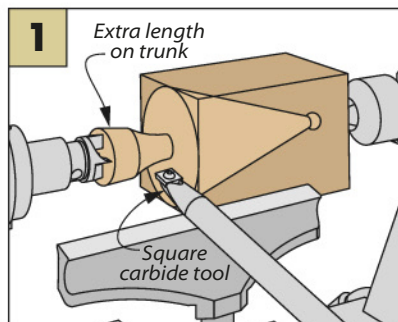
NOTE: Tree is made from 2½"-thick blank



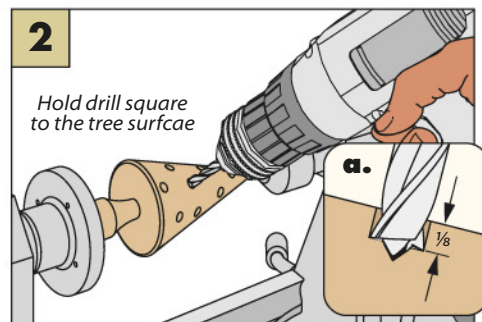
► Small plugs mimic the look of ornaments scattered around the tree.



TAPERS & PLUGS



Tapered Turning. With a square carbide turning tool, turn the blank round, then begin tapering the tree.



Lathe Vise. Leave the tree mounted in the lathe while you drill holes, install, and trim the wood ornament plugs.



Curved & PAINTED

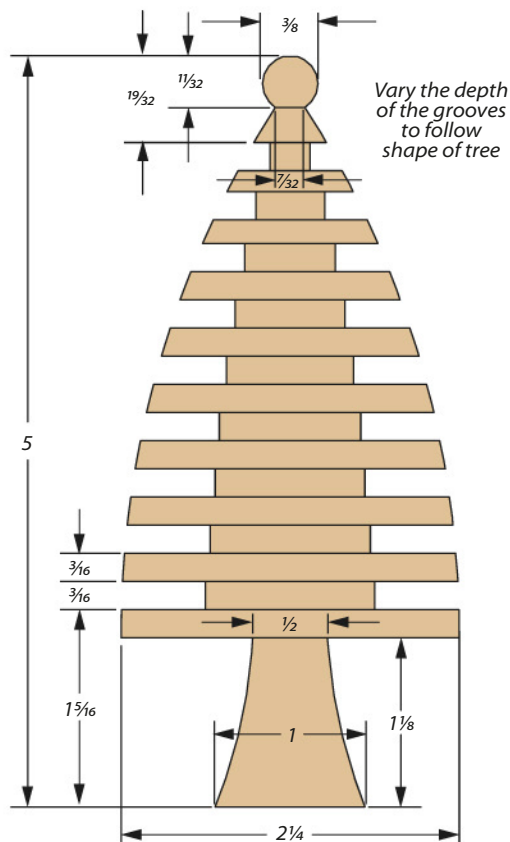
Let's consider the first tree design as a warmup. The goal now is to add some new skills.

CURVED TAPER. The photo shows the finish line. The overall profile is a rounded cone instead of a straight taper. Another detail to note is the series of grooves that create branches.

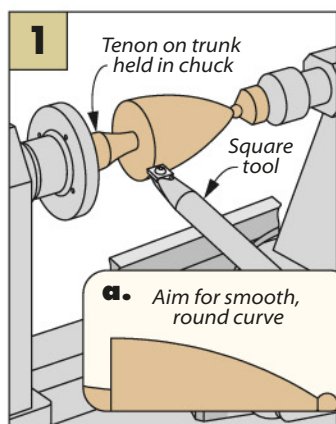
I used walnut for this tree. It's an even-grained wood that turns beautifully.

GETTING STARTED. Rounding the blank is the first order of business. Then I turned the trunk with a tenon extension on the end, as shown in the lower right drawing.

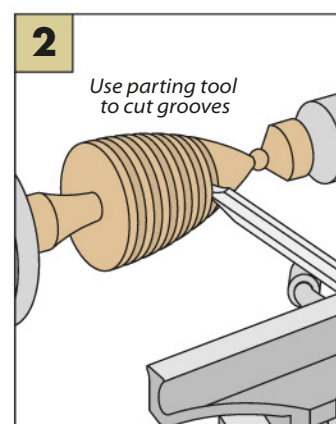
▲ Walnut and green paint make a fitting complement to a turned tree.



TAPER, THEN BRANCH OUT



Rounded. After defining the diameters, shape a rounded taper from large to small.



Groovy. Mark the grooves with a pencil then make straight plunge cuts.

This allows you to hold the end of the blank in a chuck for a secure grip while shaping and cutting the grooves. This is a different approach than I took on the first tree.

Figure 1 above shows the midpoint of the turning process. Form the rounded taper by eye,

taking smooth passes from end to end. You want to avoid lumps.

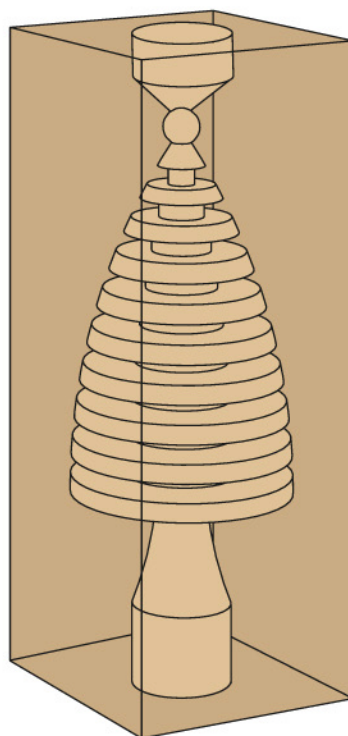
The trunk has the same profile as the previous tree. The ball tree topper is slightly larger. Once these details are formed, sand the outside smooth.

BRANCHING OUT. Cutting grooves forms the branches, as you can see in Figure 2. For this step, you'll need a narrow cutting tool. There are some small carbide tools, but I used a parting tool here.

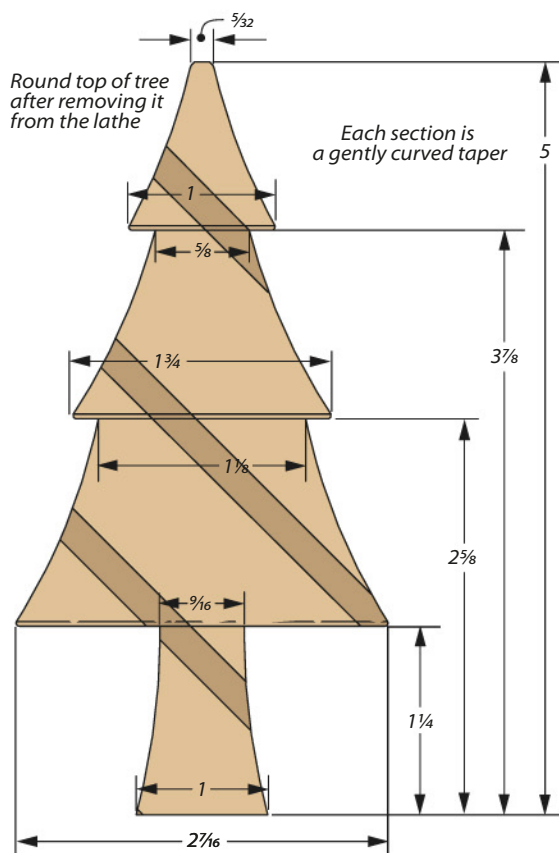
There are two keys to keep in mind: first, space the grooves evenly. Then insert the parting tool straight so that the grooves are square to the long axis. The drawing at left shows how the depth of the grooves varies — shallower at the top, deeper as you go down.

WHEN NUMBERS MATTER. Starting with this tree, you'll notice more dimensions shown in the drawings. Don't get hung up on them. They're included as a guide for layout purposes. Slight variations make the tree unique.

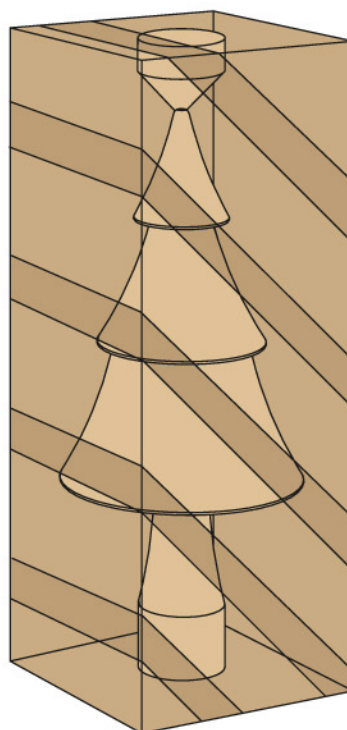
After removing the tree from the blank, paint the branches. A "dry" brush prevents the paint from seeping into the grooves.



NOTE: Blank is 7" long



NOTE: Turning blank is glued up from 1/4"-thick and 3/4"-thick layers of hardwood



▲ Contrasting angled stripes gives this tree a unique look.

NOTE: Blank is 2 1/2" x 2 1/2" - 7"

Try some STRIPES

Changing the technique isn't the only way to step up the challenge. Another way is to up the creativity of the turning blank.

CLEVER GLUEUP. This tree definitely has a candy cane flavor. At first glance, the blank looks like a glueup nightmare. But Chris Fitch, our resident tree designer, had a secret up his sleeve. The blank actually starts by gluing up alternating layers of wood. This is similar to gluing up a cutting board.

Lay out two turning blanks at 45° to the edge. Figure 1 picks up the story. Head to the band saw and cut along your layout lines. Exact cuts aren't necessary. Just aim for the ends to be parallel.

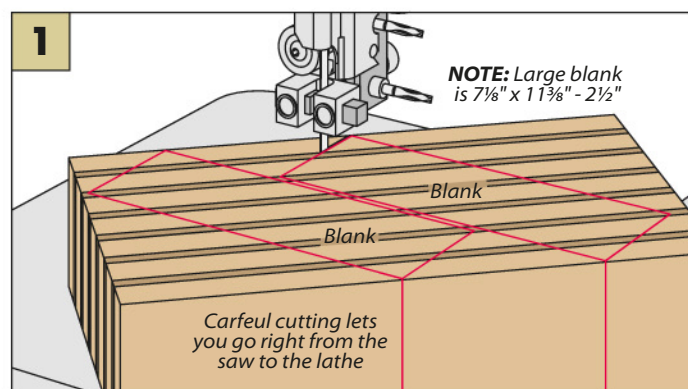
STEPPED TURNING. The previous trees featured smooth profiles. For this one, the profile incorporates graduated steps, as you can see in the drawing above.

This builds on the skills you've been working on in this clinic.

Use calipers along with your parting tool to define the major and minor diameters. Blend these together with swooping tapers. You may need to use a diamond point tool in order to form crisp lines at each step.

Depending on the thickness of the layers and how the turning blank is cut from the main glueup, each tree will have a unique stripe pattern. The effect even changes as the ornament turns while hanging on the tree.

BIAS-CUT BLANKS



Layered Glueup. Wide and narrow layers of contrasting wood form a wide blank. You can get two trees from each blank.



Incorporating CURVES

In my woodworking journey, many of my early projects consisted of mostly straight lines.

Learning to create smooth curves represented a milestone. In the same way, we're going to use curves to level up with this next Christmas tree.

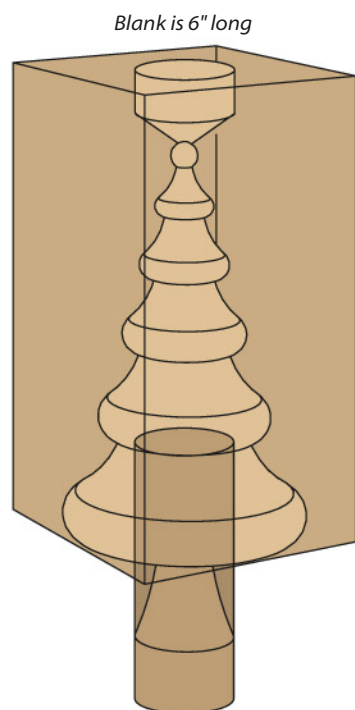
Turning a single curve isn't too difficult. However for this tree, the challenge is in making several curves that look proportional and related.

DARK TRUNK. In addition to the rounded branches, there's another twist to this ornament. The trunk is made from a

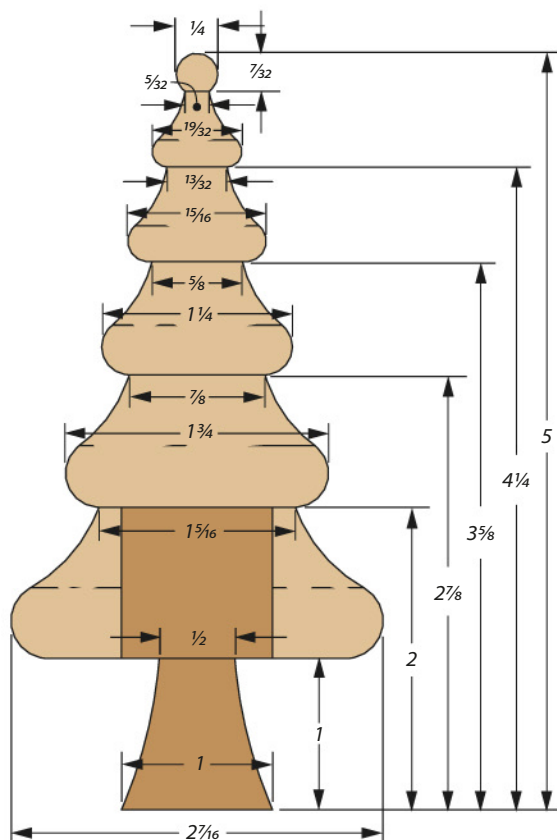
contrasting material — walnut.

To add the trunk, chuck the tree blank into the lathe and use a Forstner bit in a Jacob's chuck installed in the tail stock to drill out a recess in the base. Then glue an extra-long piece of walnut dowel, as shown in the drawings below.

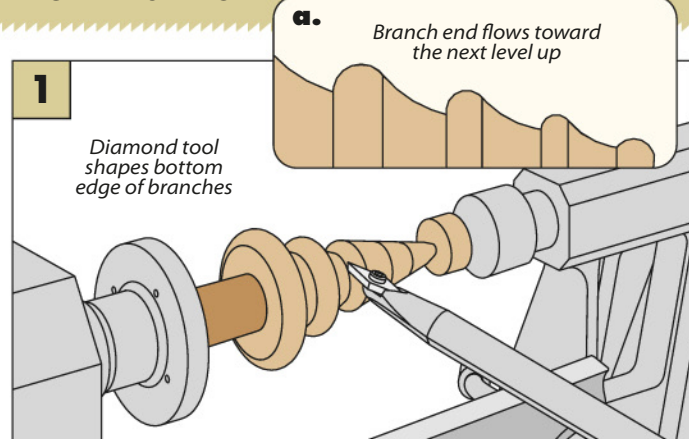
▲ Curved layers and a contrasting trunk make this tree unique.



NOTE: Tree blank is made from 2½"-thick hardwood. Trunk is 1"-dia. hardwood dowel



TIGHT TURNS

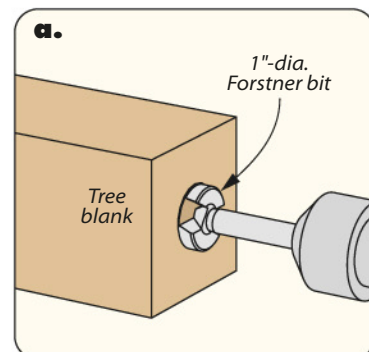


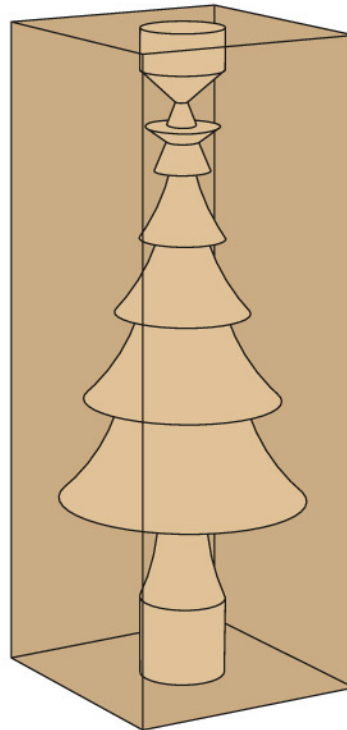
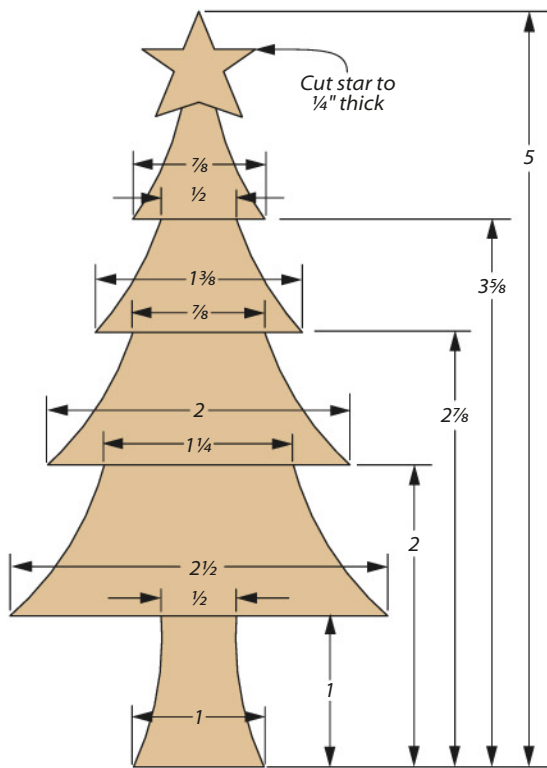
Defining Details. The sharp-pointed diamond carbide tool is ideal for creating crisp, small details on the trees.

FLIP & TURN. After the glue dries, install the trunk into the chuck on the drive end. The top of the tree is supported by the live center in the tail stock.

From here the process follows a similar path as the previous trees. Round the blank and mark the locations of the major and minor diameters. The difference lies in shaping the branches. Instead of sharp flares, you're making soft curves.

In order to form well-defined curves instead of bubbles, I used a diamond tool to make a clean transition, as in Figure 1 above. The curves are shaped by smooth pivoting motions using the square cutting tool. I started with the larger, easier curves at the bottom working toward the smaller, tighter curves at the top.

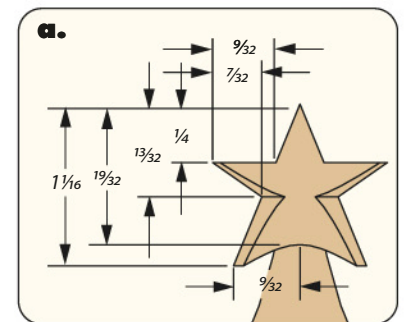




NOTE: Turning blank is 2½"-square hardwood, 7" long



◀ The star is formed on the lathe and completed with a hand saw.



And a **STAR ON TOP**

The final lesson in our series of Christmas tree ornaments focuses its new skill at the very top of the tree — the star. It may appear as though the star is a separate piece. In fact, it's an integral part of the blank.

COMBINED SKILLS. The star tree links up everything you've been working on to this point. The tree is made from a single solid blank. This is shown in the upper right drawing. I chose cherry. The tree will darken with time and only get better looking. More importantly, cherry has a fine grain structure that takes detail well.

If you've been following along in order, the steps for making the trunk and tree are well ingrained by now. Get the shaping of the tree taken care of before you tackle the star.

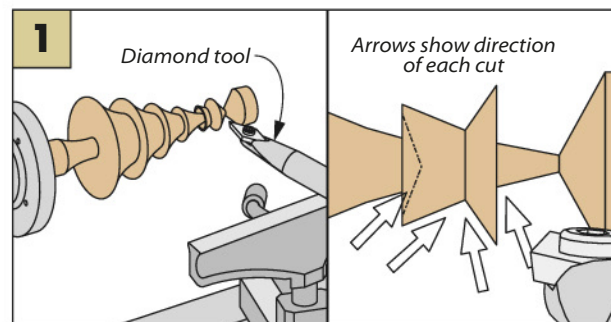
TARGETED APPROACH. With the star portion just a cylinder at this point, lay out some lines to define the major points of

the star. These dimensions are shown in detail 'a' above.

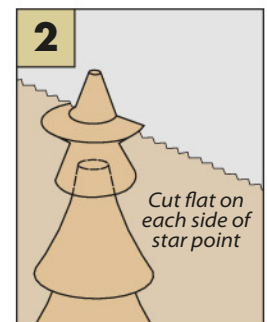
Figure 1 below shows how to approach the star using a diamond tool. The hardest part is undercutting the bottom of the star. Take your time. None of these cuts are particularly challenging.

The turned star looks more like a hat at this point. To unveil the star, you need to use a fine-toothed saw to make cuts on either side of the point, as shown in Figure 2. Take care not to scar the top of the tree. The star comes to life and the tree — like this turning clinic — is complete. **W**

REVEALING THE STAR



Wizard Hat. At the lathe, you'll use a diamond tool to form the angles of the star. The result looks somewhat like a wide-brimmed wizard's hat.



Hand Saw. Reveal the star profile by making a cut down each side.



▲ There's ample storage in the case of buffet. The wide center stile allows the indulgence of hand-forged iron gate latches to hold the doors closed.

Monterey

Buffet

If ever there was a list of furniture styles for cowboys, the Monterey style you see here would be close to the top.

It all started around 1929 when Frank Mason and his son George, the owners of *Mason Manufacturing Company*, were approached by *Barker Brothers* furniture store to create a new line of furniture under the name “Monterey,” that would harmonize with all the ranch houses being built in the Valley. The inspiration provided to the Masons from the furniture company was a poster for the movie *Old Arizona*, and a reference to a settee that appeared in the movie.

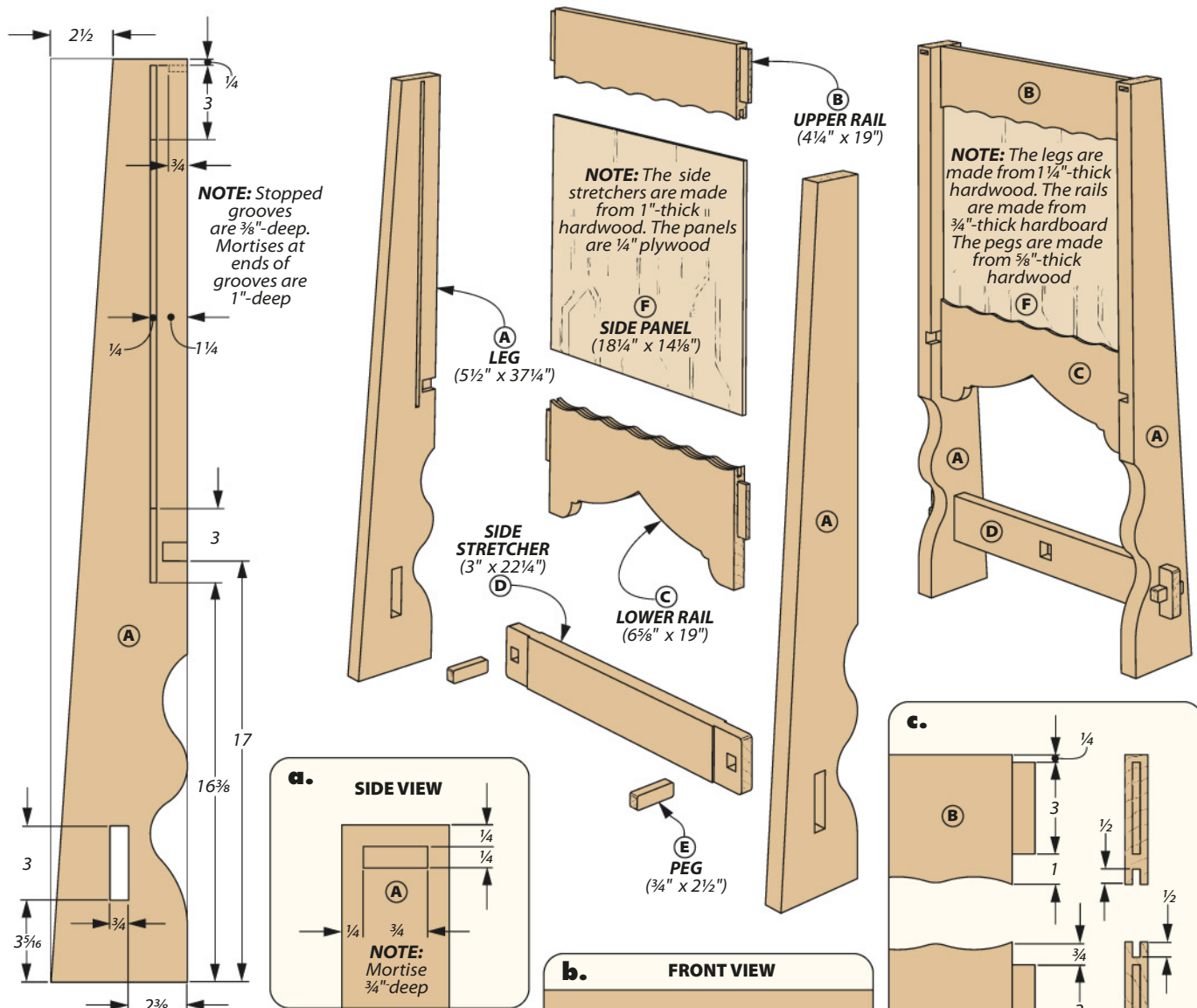
So for the Masons the years between the crash of Wall Street and the start of World War II were not depressing at all. They stayed busy in a large building located in old Los Angeles creating this line of furniture and the hardware that adorned it. Times were good for the Masons until Frank passed away at 68 and George was drafted into the navy in 1943. In 1945 the company was sold, and the Monterey line of furniture faded.

Alder was the wood used most on the original pieces and we stuck with it here. It’s a wood that’s fun to work with and easy to mill. As you see in the photos, we went lighter on the ornamental painting than the original pieces often sported. We did however, choose a crackle paint process as a fun diversion from making sawdust.

The serpentine shapes of the legs, sides, and the door stiles and rails means you’ll get to spend some time away from squares and rectangles of everyday woodworking. But getting thrown such curves is a refreshing thing.



▲ To keep the wide doors operating smoothly in their openings we commissioned the spade strap hinges you see here. This handmade hardware might require a little fussing to install — but it’s worth it.

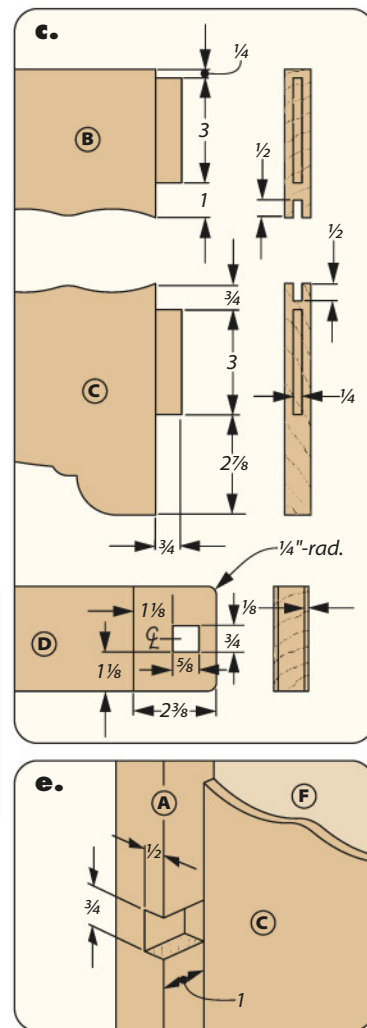


Shape a pair of HANDSOME SIDES

The legs of the buffet both ground and lift the look of the project — in the same manner cornerstones do for a building. And while they do have a decorative flair to them, they're also integral to the solid construction of the buffet.

MORTISES FIRST. To start, trim and square the legs to their final size. Then at the router table cut the long groove for the rail tenons and panels on the inside faces of the legs (elevation view, above). Note that the grooves are

stepped deeper for the tenons of the rails. Next, cut the mortises at the top for the stretchers (detail 'a'). Follow this up with the notches for the bottom panel



For more on making templates for the side assemblies, go to:

Woodsmith.com/270

(detail 'e'). Now you have some through mortises to make. Lay out and drill the holes for the side stretchers. Square them up with chisels and rasps.

MAKE A TEMPLATE. It's time to make the first of several templates you'll need for this project. The first is a hardboard template for the decorative profile on display on the inside edge of the legs. Trace the profile onto the legs and rough them out with a jig saw. Use a flush-trim bit along with the template to make the final shape smooth.

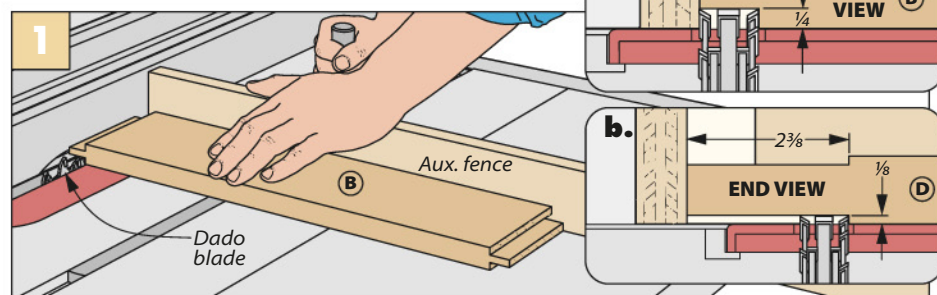
Next you'll shape the outer edge of the leg — it's simply tapered from bottom to top. A taper jig is the ideal tool to make this happen. Do that now.

RAILS NEXT. Profile-wise the rails that bring the legs together are slightly different, but they both start out with grooves and tenons. Cut the rails to their final size, then cut the centered groove in each piece. Follow up with the tenons on the ends of the rails (Figure 1). The tenon on the lower rails need a little more attention, Figures 2 and 3 walk you through the task.

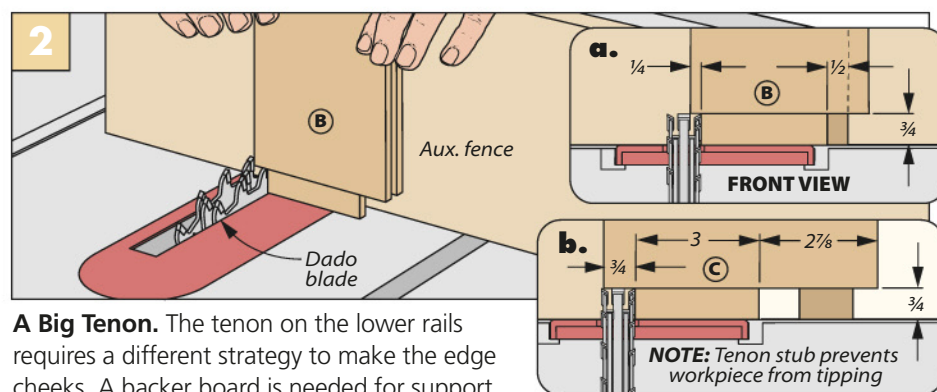
TEMPLATES 2 & 3. You'll need a template for the scalloped profile on the edge of the rails. (Keep that template around, later, you'll use it on the door rails.) Also there's a template for the bottom edge of the lower rails (Figure 4). This pattern is the most visually active pattern of the bunch and it adds interest to the sides of the buffet. The patterns for these are available at Woodsmith.com/270.

SIDE STRETCHERS. Figure 1b shows cutting the tenons on the 1"-thick side stretcher that's located near the bottom of the legs. Next you'll need to drill the blind mortise in the center of the stretcher with a Forstner bit (detail 'b'). The corners will need to be squared with a chisel. You've already cut the tenons on

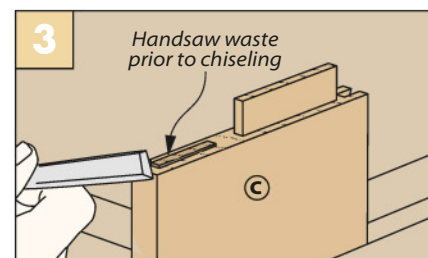
RAIL DETAILS



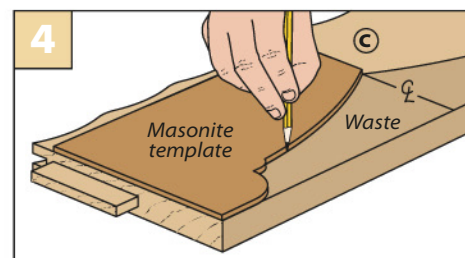
Two Different Tenons. The tenons on the rails (detail 'a') are thinner than the tenons on the side stretchers (detail 'b'). Regardless, both of them are cut at the table saw using the rip fence as a stop to establish the shoulders.



A Big Tenon. The tenon on the lower rails requires a different strategy to make the edge cheeks. A backer board is needed for support.



Remove the Waste. A sharp chisel makes quick work of removing the unwanted parts of the tenon.



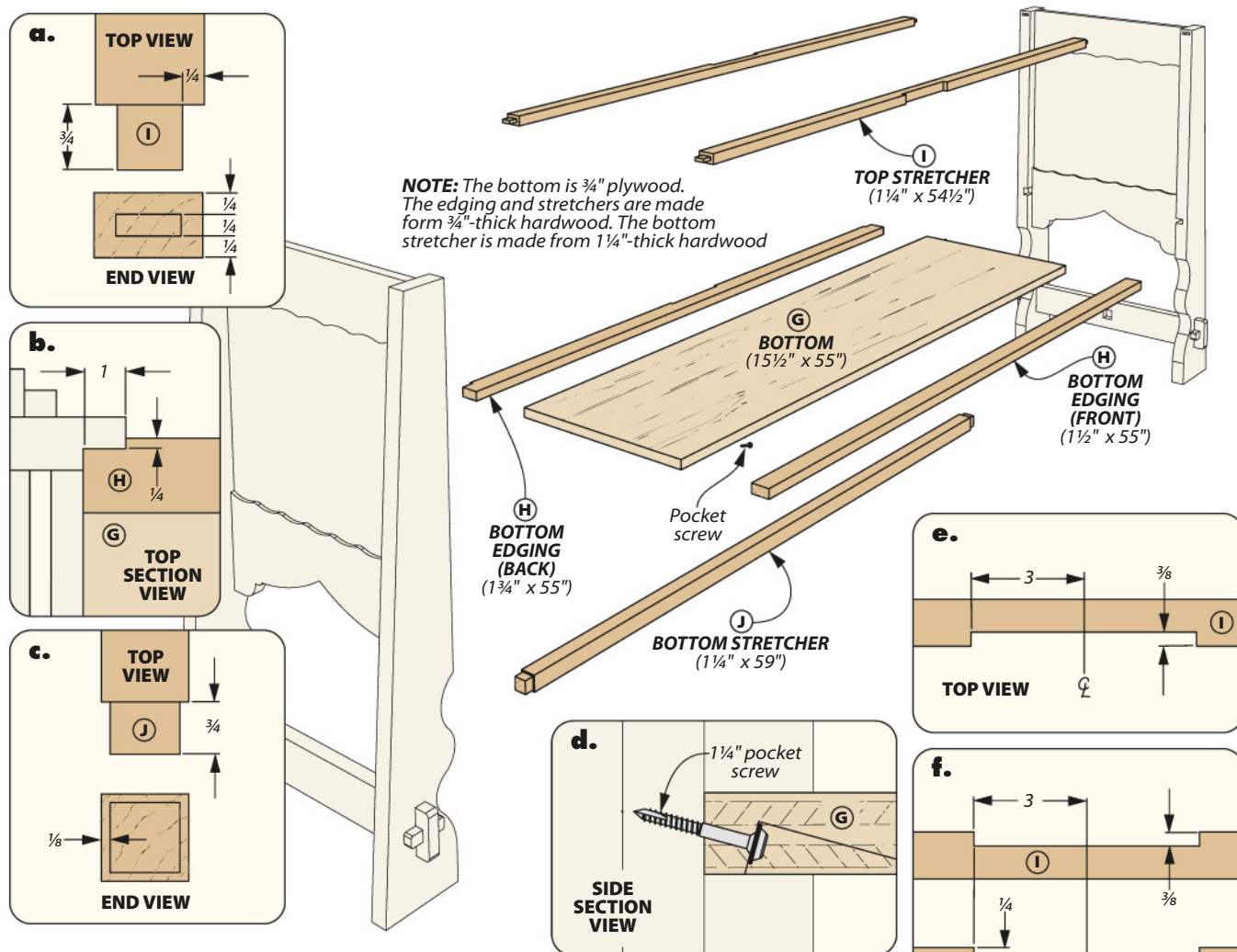
A Fancy Profile. The decorative profile along the bottom edge of the lower rail is created with a template.

the ends of the stretcher — now you need to drill the through hole for the peg (detail 'c'). To complete the side stretchers, round over the corners that will be exposed. There's not an exact measurement needed here. I used a sanding block to round the corners.

PEGS. The last bits of wood you need to shape are the pegs that tie into the hole you just made in the tenons of the side stretcher.

It's just a matter of cutting the pegs to size and rounding over the corners. (Adhesive backed sandpaper on the table saw does the trick.) The last thing to do before gluing up the sides is cutting the panels.

GLUE UP THE SIDES. Use slow-set glue to allow for fiddle-time when gluing up the sides. A dab of glue on the pegs hold them in place. Next we'll make the parts that bring the legs together.



Bring the sides **TOGETHER**

Bringing the sides together involves making the bottom panel, the top stretchers (front and back), and a bottom stretcher that's embedded in the side stretchers. Let's start with the bottom panel.

As you see in the drawing above, at the core of the bottom panel is a piece of $\frac{3}{4}$ " plywood that's banded front and back with hardwood edging. The back piece of edging has three notches. The center notch (detail 'f') is for the back stile, the notches on the ends (detail 'b') join with the notches in the legs.

When the milling is done on the back edge piece, glue the edging to the plywood. Then you can drill the pocket screw

holes on the ends of the panels (detail 'd'). Then it's on to the stretchers that run across the top.

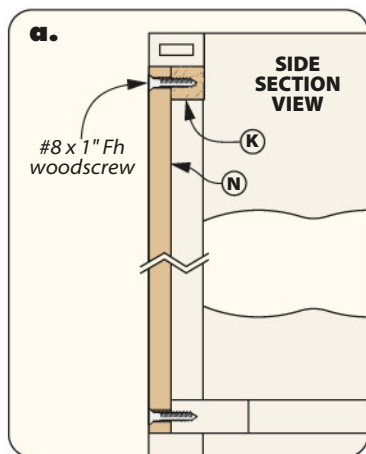
TOP STRETCHERS. The top stretchers have tenons on their ends (detail 'a') that fit into the mortises in the top of the legs. When you're done cutting them, cut the notch in the center where the stretchers and stiles meet (detail 'f').

If you take a gander at detail 'a' on the next page you'll see the cleat that gets glued to the underside of the rear top stretcher. This cleat is what the back slats get screwed to. You can make that while you're working with these long strips and glue it in place now, or later. The cleat gets a notch like the stretchers did (detail 'e'). There's one more

item to make before gluing up the case — the bottom stretcher.

BOTTOM STRETCHER. The main drawing above and detail 'c' show you what you're up against when making this last stretcher. Since it's floating alone across the bottom of the buffet it's thicker than the other stretchers. Also notice in detail 'c' that the tenons on the ends are thicker as well. These thicker attributes add rigidity and looks to the lower portion of the buffet. Test fit this tenon in the mortise in the side to ensure it's not bottoming out.

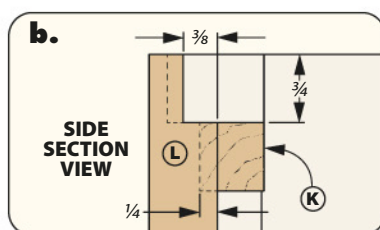
GLUE UP. It's a good idea to call upon a friend to help you bring



the sides, bottom, and stretchers together. Once you've screwed the bottom to the sides and clamped across the stretchers, you can take a break or start working on the stiles and slats.

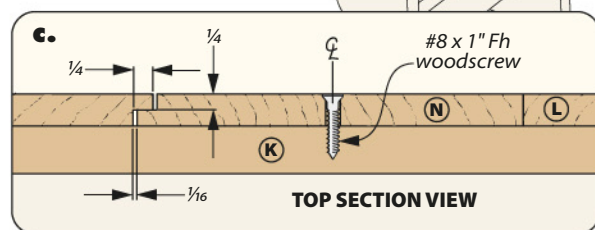
BACK TO FRONT

At the center of the back and front of the buffet are wide stiles. Both have a rabbet across the top edge to join with the top stretchers. You can see these rabbets in detail 'b' above, and detail 'a' below. The back is glued in place. The front is glued at the top and pocket-screwed at the bottom (detail 'b'). The front stile will need some dressing up along the bottom using a template as a guide. This might seem like an odd shape to be floating alone on the front of the buffet, but later,



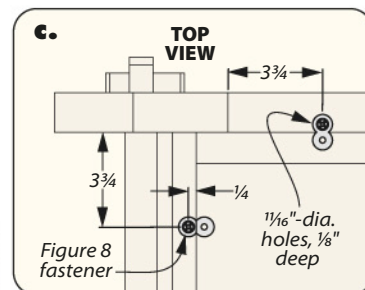
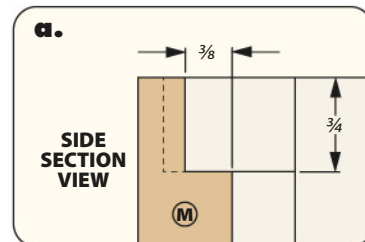
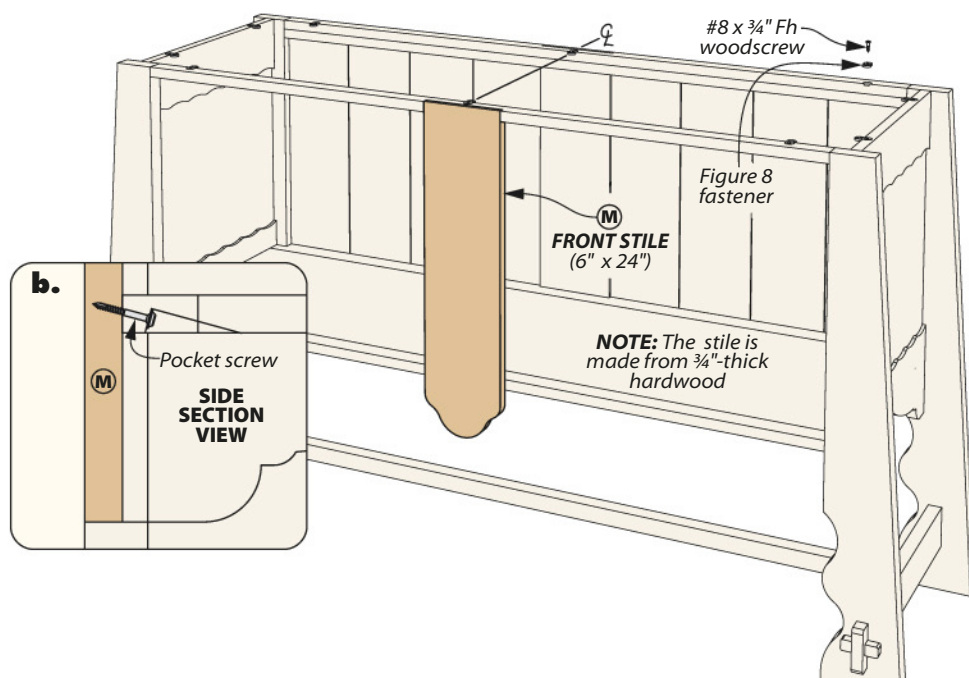
when you make the doors, you'll see the creative design efforts come together. In comparison, the back stile is sort of plain, but it serves its purpose, adding a little rigidity to the back that the thinner slats can't provide. When both stiles are in place, you can focus on the slats.

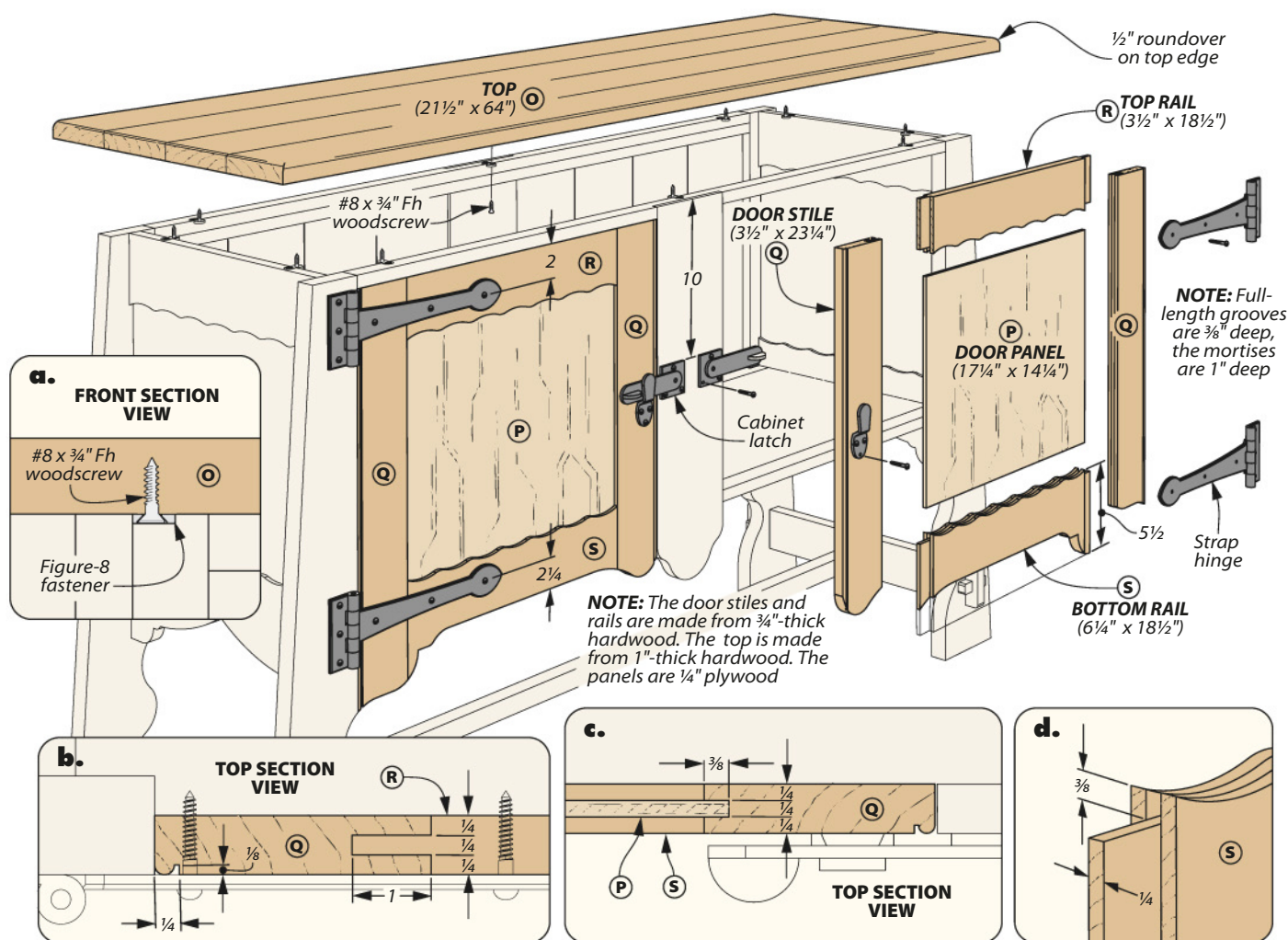
BACK SLATS. Cut the eight slats that makeup the back to size. Four end slats (rabbeted on one edge) and four middle slats



(rabbeted on both edges on alternating faces). Cut the rabbets at the table saw. Drill the centered holes and screw the slats in place (detail 'c').

The last thing to do is drill the shallow holes on the stretchers and rails that hold the figure-8 hardware (detail 'c'). Next you'll add the top and the doors.





Closing up the **BUFFET**

With the case of the buffet complete, all that's left is to add the top and the doors. The top is straightforward so we'll get that out of the way first, then we can tackle the doors.

A THICK TOP. In the big scheme of things you wouldn't think a 1/4" would mean very much — but jumping from 3/4" to 1"-thick material for the top adds some heft and scale to the overall look of the buffet. I suggest gluing up the panel a little oversized, then trimming the top to final dimensions when the clamps are stowed away. As you see in the main drawing above, you'll need to soften the top edge with a 1/2" roundover bit chucked in your router.

It's time to attach the top to the figure 8 fasteners on the rails and stretchers of the buffet. It's best to drill pilot holes to prevent any splitting. Center the top on the buffet and use an awl to mark centerpoints on the fasteners for drilling the holes (detail 'a').

PRETTY PANELS. One of the hallmarks of the Monterey furniture style is the accented, painted surfaces. Some are embellished with western flora and fauna. We aren't going that far with this project but we are hinting at it by applying a crackle paint to the door panels.

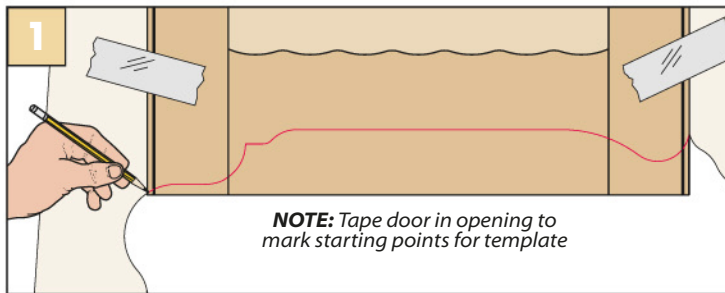
Cut the panels to size and prep them for painting with sandpaper. There's an in-depth article on page 16 that walks you through the steps. While the panels are drying we can make the door frames.

STILES & RAILS. As you see above the doors have a generous amount of decoration to the stiles and rails. But underneath the accents you've got the same solid joinery to make — starting with the centered grooves in the stiles and rails as you see in details 'b,' 'c,' and 'd.'

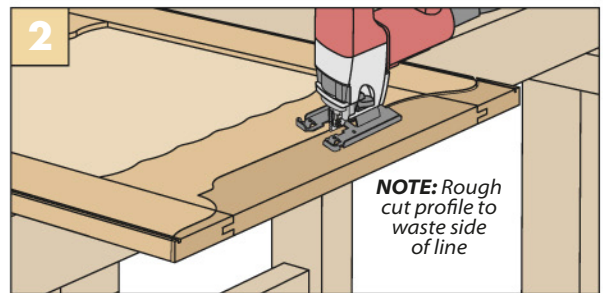
These grooves are similar to the grooves you made in the legs in that they're stepped deeper for the tenons of the rails. Detail 'b' shows the depth of the groove for the tenons, while detail 'c' shows the depth for the panels.

After the grooves and mortises are done, cut the tenons on the rails. It's time to bring back a template. It's the same template you used on the side rails. Make the scallops on the door rails. When the scallops are done and the panels are dry you're almost

ADDING THE FINAL DETAILS



Locate the Profile. The decorative profile along the bottom of the door aligns with the profiles on the leg and front stile.



Rough Cuts First. Then use templates and a flush-trim bit to shape the bottom of the door.

ready to glue the doors. First, pre-stain the inside edges of the stiles and rails that touch the cracked panels.

GLUE UP. Now you can glue up the doors. After the clamps come off, you'll need to fit each door to its opening with a $\frac{1}{16}$ " gap (you might have a little planing to do). When you like

the fit, add the bead detail to the stiles like you see in detail 'c' and the drawings above.

DOOR PROFILE. To locate the decorative profile on the bottom of the doors, hold the door in place and mark the location where the outer stiles intersect with the curve on the leg (Figure 1). Use the two door templates to

shape the bottom of the doors from these reference points after they're roughed out (Figure 2).

After staining and finishing the doors (and case), hang the doors in their openings. When you move this buffet in place you'll have to keep an eye out for any dusty rustler that would lasso this beauty. **W**

Materials, Supplies & Cutting Diagram

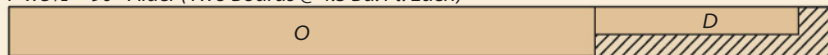
A Legs (4)	$1\frac{1}{4} \times 5\frac{1}{2}$ - 37 $\frac{1}{4}$	H Bottom Edging Front (1)	$\frac{3}{4} \times 1\frac{1}{2}$ - 55	P Door Panels (2)	$\frac{1}{4}$ ply. - 17 $\frac{1}{4} \times 14\frac{1}{4}$
B Upper Rails (2)	$\frac{3}{4} \times 4\frac{1}{4}$ - 19	I Top Stretchers (2)	$\frac{3}{4} \times 1\frac{1}{4}$ - 54 $\frac{1}{2}$	Q Door Stiles (4)	$\frac{3}{4} \times 3\frac{1}{2}$ - 23 $\frac{1}{4}$
C Lower Rails (2)	$\frac{3}{4} \times 6\frac{5}{8}$ - 19	J Bottom Stretcher (1)	$1\frac{1}{4} \times 1\frac{1}{4}$ - 59	R Top Rails (2)	$\frac{3}{4} \times 3\frac{1}{2}$ - 18 $\frac{1}{2}$
D Side Stretchers (2)	1×3 - 22 $\frac{1}{4}$	K Cleat (1)	$\frac{3}{4} \times \frac{3}{4}$ - 53	S Bottom Rails (2)	$\frac{3}{4} \times 6\frac{1}{4}$ - 18 $\frac{1}{2}$
E Pegs (4)	$\frac{5}{8} \times \frac{3}{4}$ - 2 $\frac{1}{2}$	L Back Stile (1)	$\frac{3}{4} \times 6$ - 20 $\frac{1}{4}$		
F Side Panels (2)	$\frac{1}{4}$ ply. - 18 $\frac{1}{4} \times 14\frac{1}{8}$	M Front Stile (1)	$\frac{3}{4} \times 6$ - 24		
G Bottom (1)	$\frac{3}{4}$ ply. - 15 $\frac{1}{2} \times 55$	N Back Slats (8)	$\frac{1}{2} \times 6\frac{1}{16}$ - 19 $\frac{1}{2}$		
H Bottom Edging Back (1)	$\frac{3}{4} \times 1\frac{3}{4}$ - 55	O Top (1)	$1 \times 21\frac{1}{2}$ - 64		

- (5) #8 x $1\frac{1}{4}$ " Pocket Screws
- (16) #8 x 1" Fh Woodscrews
- (20) #8 x $\frac{3}{4}$ " Fh Woodscrews
- (10) Figure-8 Fasteners
- (4) Strap Hinges
- (2) Cabinet Latches

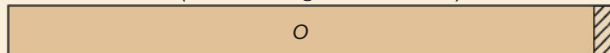
$1\frac{1}{4} \times 8$ " - 78" Alder (Two Boards @ 6.5 Bd. Ft. Each)



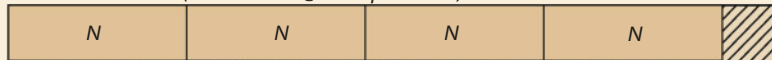
$1 \times 5\frac{1}{2}$ " - 90" Alder (Two Boards @ 4.3 Bd. Ft. Each)



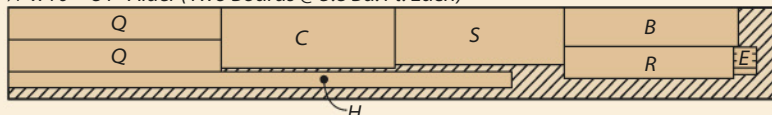
$1 \times 5\frac{1}{2}$ " - 66" Alder (Two Boards @ 3.2 Bd. Ft. Each)



$\frac{1}{2} \times 5\frac{1}{2}$ " - 84" Alder (Two Boards @ 3.2 Sq. Ft. Each)

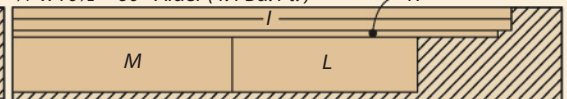


$\frac{3}{4} \times 10$ " - 84" Alder (Two Boards @ 5.8 Bd. Ft. Each)



ALSO NEEDED: One 48"x 48" Sheet of $\frac{1}{4}$ " Oak Plywood,
One 24"x 96" Sheet of $\frac{3}{4}$ " Oak Plywood

$\frac{3}{4} \times 10\frac{1}{2}$ " - 60" Alder (4.4 Bd. Ft.)





Drill Press Table



▲ Behind the fence there's a recessed area that's handy to store drill bits and other small items that otherwise would roll off and end up under the drill press base.



▲ The long slots in the surface of the table provides you with multiple ways to safely secure workpieces while drilling operations are going on.

There's no doubt that a drill press is an indispensable tool in the shop. Let's kick it up a notch with this versatile add-on.

I don't think there's a more sparse definition of "default settings" than what you get when you unpack the box containing your new drill press. Once assembled, the chunky cast iron table stares blankly at you as if to say: "What — I'm a drill press, what did you expect?"

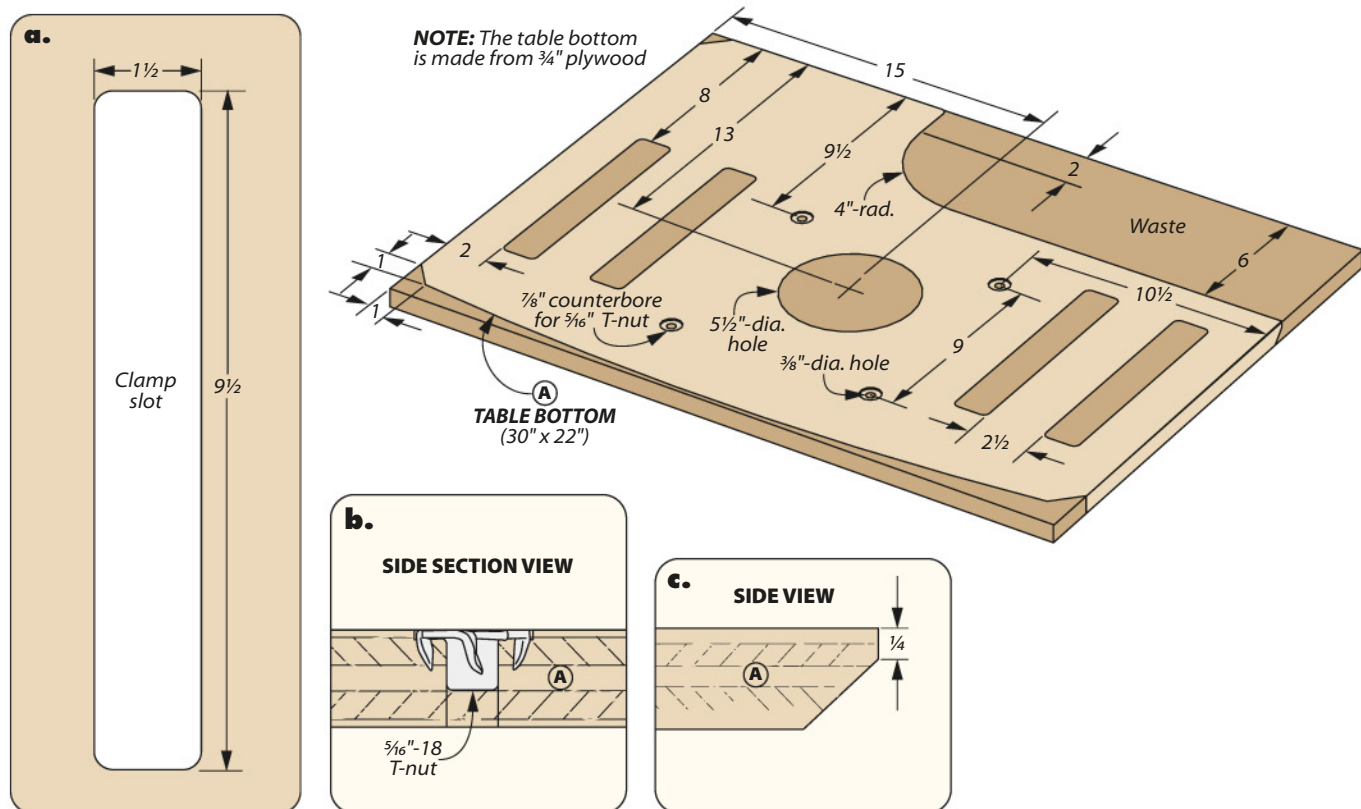
And once it's up and running, don't let the purring of a drill press fool you. Unless you clamp the workpiece — or hold it firmly against a fence — you can get hurt quickly by the bit grabbing the material. Most cast iron tables have slots to hold workpieces to the table while drilling,

but it won't be long before you start daydreaming about a table that makes it a joy to drill holes. Well, you can wake up now. As you see here, we've done all the design work for you.

BUILDING IN LAYERS

The drawings here show the first of three layers of Baltic birch plywood that make up the table. The bottom two layers are $\frac{3}{4}$ " thick, and the top layer is $\frac{1}{4}$ " thick. This method of construction gives you a flat, stable surface to work on.

To keep the three layers uniform I started by shaping the



bottom, then used it as a pattern for the middle layer. Next, the combined lower layers are used as a pattern for the top layer.

BOTTOM LAYER. Get the ball rolling by cutting the bottom piece of plywood to its final size. Its overall size is shown in the main drawing above.

Start by laying out the interior dimensions first. Then slots for clamping (detail 'a') and the large hole for the insert. Follow up with the centerpoints for the counterbored holes — holes for the table-mounting T-nuts. (Note: the pattern shown is for the *Rikon* drill press that's in the main photo.)

Next, work on the outer profile. Lay out the back edge starting in the upper left corner. Then draw the arc that accommodates the shaft of the drill press. Moving to the front of the table, lay out the location of the chamfered corners. Lastly, I used a couple of clamps and a thin board to strike the wide arc across the front edge of the table.

With that you can pack away your layout tools and start shaping the outer profile with the tools of your choice. When the dust settles, you'll focus on the five inner openings — four clamping slots and the insert.

CLAMPING SLOTS. Since there are four slots to shape, I made a hardboard template using the dimensions shown in detail 'a.' Rough out the waste of each slot. Then use the template in combination with a flush-trim bit installed in your router table to smooth out the slots.

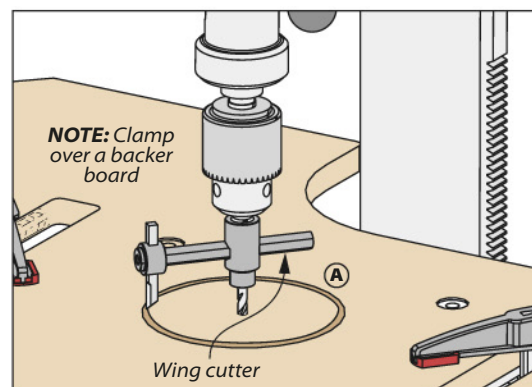
INSERT OPENING. Maybe you're building this table to replace an outdated or worn-out table. Maybe it's for a brand new drill press — regardless, for this next step you'll need to find a way to clamp the bottom in place while you use a wing cutter to make the large hole where the replaceable insert resides. The drawing in the box to the right shows you a safe way to do this.

Next up you'll need to drill the shallow counterbores for

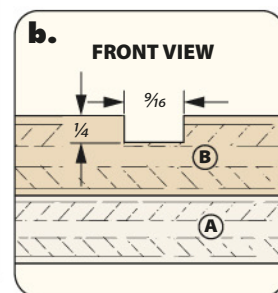
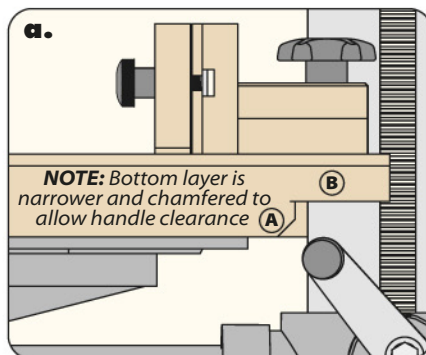
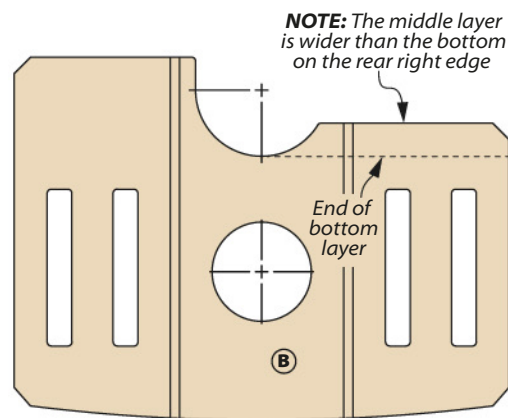
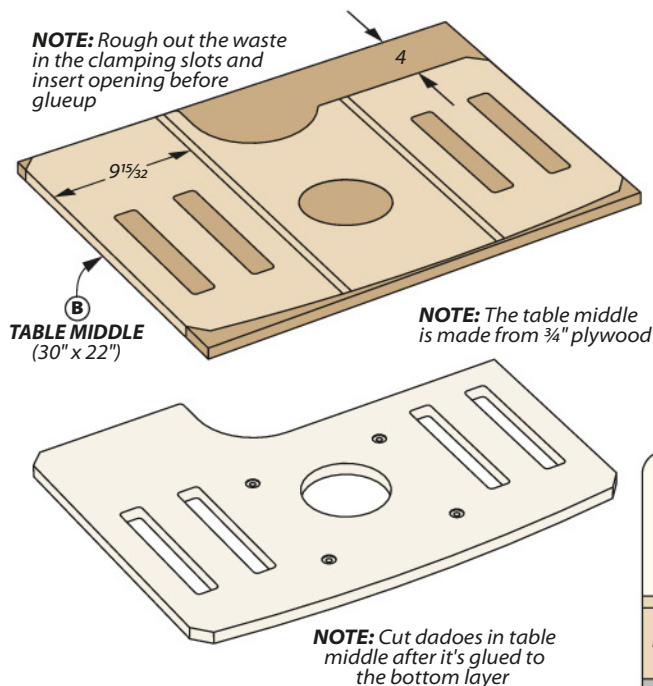
the heads of the T-nuts that will allow you to mount the table to your drill press. Then drill the shank holes (detail 'b').

Complete the bottom by routing the chamfer that's on the underside of the back edge (detail 'c'). Now you can move on to the middle layer.

MAKING THE INSERT HOLE



Insert Opening. Always take your time when working with a wing cutter. Clamping the workpiece in place is a must, along with a sharp cutting blade.



Making a multi-layered **TABLE**

As you can see in the main drawing above, the middle layer of the drill press table is slightly different than the bottom. Notice that the back edge on the right side is wider. Also, there are two dados on either side of the

insert opening that form the base of the slot for the fence's flange bolts to ride in.

COPY CAT. Start with a plywood blank that is cut to the same overall size as the bottom table. You're going to use the

completed bottom layer as a template. Align the two pieces flush and trace the locations of clamping slots, the insert opening, and the front edge.

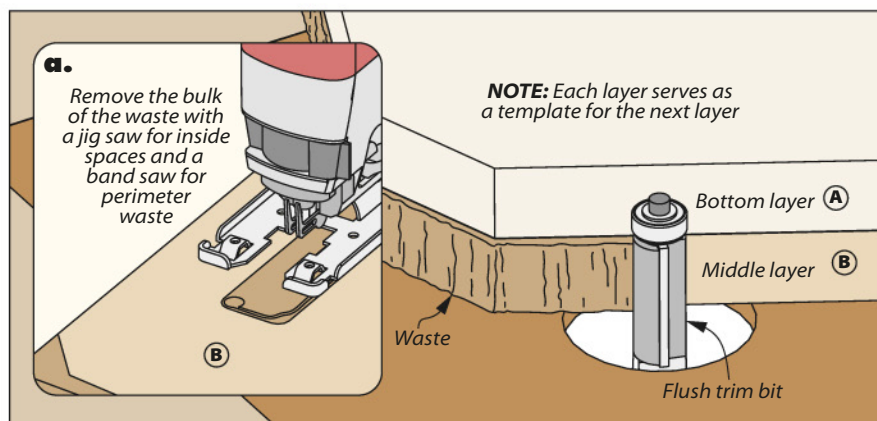
First we'll address that back edge on the right that's wider than the bottom layer (detail 'a'). After drawing in this tab-like feature, head to the table saw and make that cut first. Then you can rough out the waste areas of the middle layer.

GLUE UP. Now it's time to glue the middle layer to the bottom layer. Align the layers flush on the back and the sides before clamping them up.

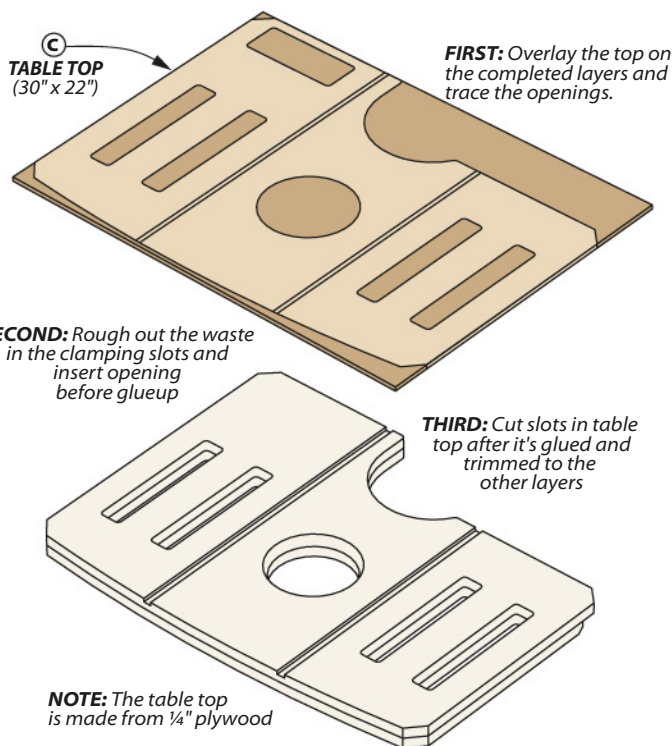
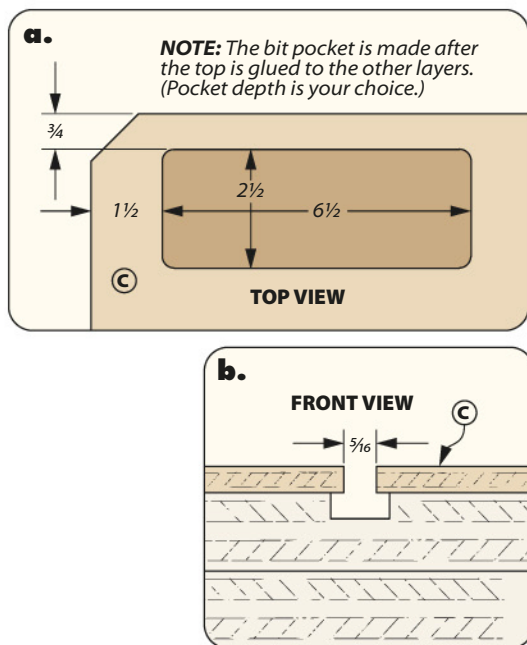
When the clamps come off and any excess glue is scraped away, head to the router table. As you see in the box to the left, I used a flush-trim bit riding against the bottom layer as a pattern to shape the middle layer.

To complete the work on the middle layer, install a dado blade in your table saw and cut the dados for the fence (detail 'b').

SHAPING THE LAYERS



Smooth Operation. After roughing out the waste on the inside openings of the middle layer, glue it to the finished bottom layer. Then install a flush-trim bit in your router table and use the bottom layer as a pattern to shape the middle layer.



TOP LAYER

Now you're ready to tackle the last layer. The top layer is $\frac{1}{4}$ " plywood that will be glued to the middle layer. Like the layers before, the top layer is slightly different. First, notice the pocket on the left side at the back — this is a place to store bits and other things that you want close at hand while working on the drill press. Second, the slot that is centered on the dado you cut in the middle layer is narrower. The two of them create a T-shaped slot in the table for the bolt.

ROUGH OUT FIRST. As with the layers before, the first thing to do is trace the finished profiles on to the top layer. Then rough cut the openings and glue the top layer in place. After routing the top to match the table profile at the router table, you have a few more things to do to call the table ready for finish.

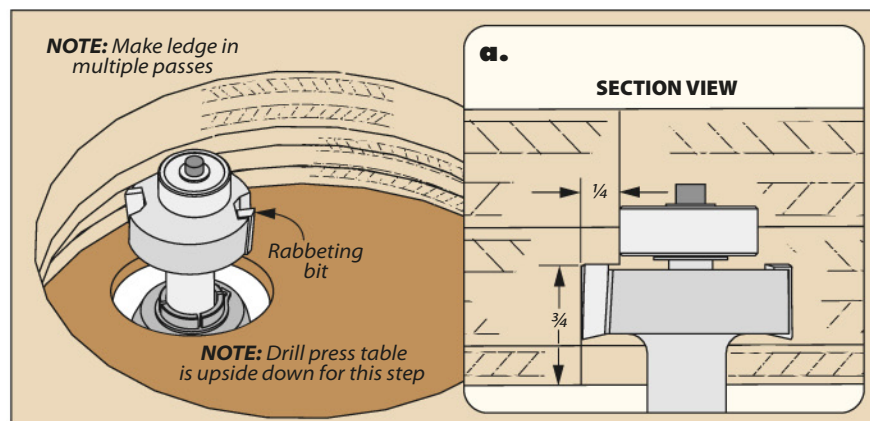
Start over at the table saw by cutting the narrow slot that are centered on the dados in the middle layer (detail 'b'). Then you can focus on the bit pocket

that's in the rear of the table (detail 'a'). Making that opening is just a matter of taping guide strips around the perimeter and using a dado clean-out bit to create the recess.

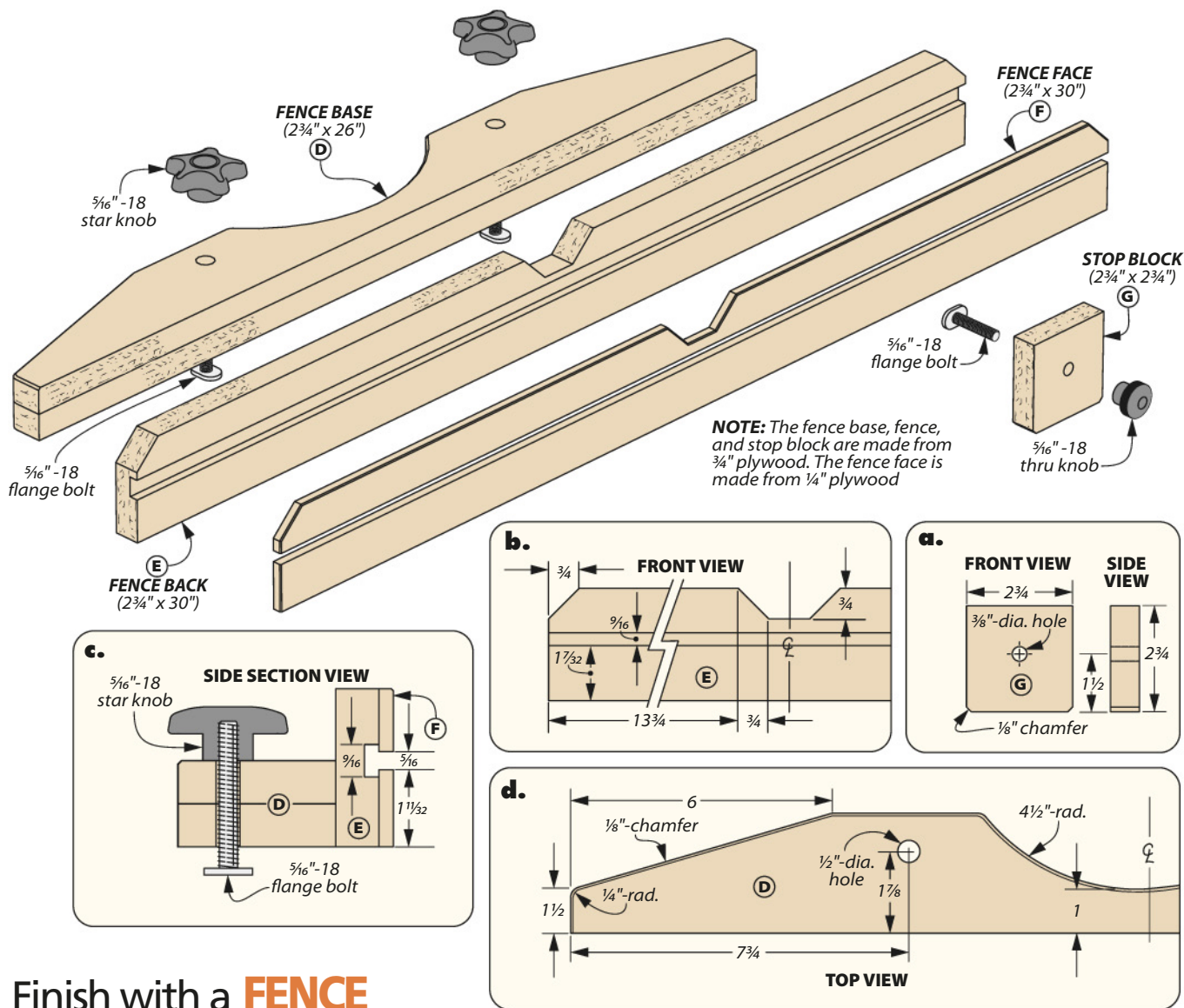
ADD A RABBIT. The last thing to do on the table is to rout the rabbet in the insert opening. The box

below gives you the details. You might have to change out the bearing on your rabbeting bit to size the ledge properly (detail 'a,' in the box below). The ledge supports a replaceable insert that you can rotate in the opening for a fresh drilling surface. Next — the fence and inserts.

A LEDGE FOR THE INSERT



Make a Ledge. A rabbeting bit chucked into your router table is the easiest way to make the ledge that supports the insert. You'll have to make the ledge in multiple passes. You'll want the insert to set flush with the surface of the table.



Finish with a **FENCE**

No drill press table is complete until it has a fence to back up its abilities. The fence you see above runs the length of the table, and has a slot in the fence for a stop block. Let's start by making the parts for the base.

FENCE BASE PARTS. Rip to width the parts for the fence base and fence back — they're all the same width. The base of the fence is made of two layers of plywood to provide rigidity.

After laying out the dimensions on the top layer of the base, (detail 'd') glue the two pieces together. When the glue has dried, cut away the waste at the band saw. Once the profile is done, ease the exposed edges

using your chamfer bit. To complete the base, drill the holes for the flange bolts. Now it's on to the fence back.

THE FENCE BACK. Making the fence back involves a similar process to the one you used to make the table. Start by cutting the fence back to its final length and trim the corners (detail 'b').

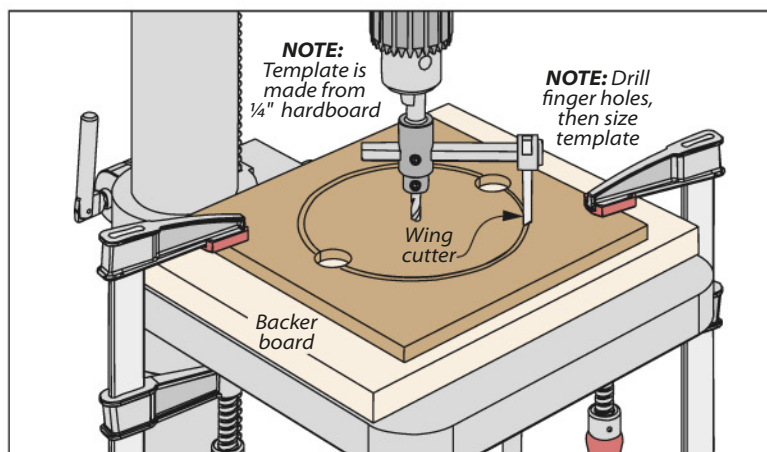
A dado blade makes the bottom of the notch in the center of the fence back (for chuck clearance). It's just a matter of standing the fence upside down on edge, and nibbling away the recessed area (detail 'b'). Then with the same blade, bring in your rip fence and cut the groove in the front.

The last bit of work to do on the fence back is to cut the angled sides of the center recess. After that you can clean up any left over waste with a file.

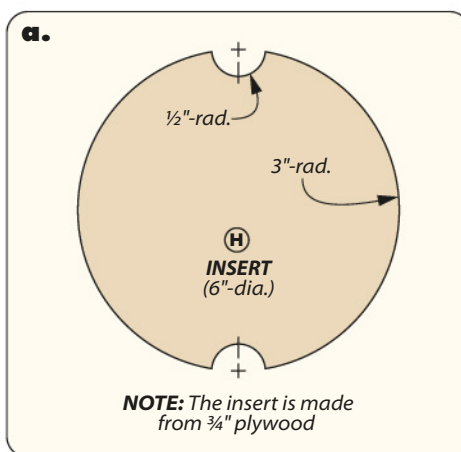
FENCE FACE. Adding the fence face is the next step. Glue a slightly oversized piece of 1/4" plywood to the fence. Then trim it flush to the fence in the same manner you did on the table — with a flush-trim bit installed in your router table. Lastly, cut the centered slot in the fence face (detail 'c'). Then you can glue the two parts of the fence assembly together.

Detail 'a' above gives you all the information you need to make the stop block. Don't skip

MAKING INSERTS FROM A TEMPLATE



Three Circles. The first thing to do after laying out the profile of the insert template is drill the finger holes with a Forstner bit. Then you can cut the clamped template to size with a wing cutter.



Simple Details. The template matches the opening in the table and has finger holes that let you rotate or remove the insert.

on the little detail of chamfering the corners — this provides a little clearance against dust build up against the stop block.

To complete the work on the fence (and the table), paint the surface of both parts. When the paint is dry, spray all the pieces with two coats of lacquer.

MAKE THE INSERT

The insert for this table is centered in the table, but offset from the center of the chuck. This detail allows you to extend the life of the insert by rotating it when you need a fresh surface to support drilling.

Still, inserts will wear out over time. With that in mind, I made a template that allows me to quickly make extra inserts. The box at the top of the page shows you the details.



▲ After the template is taped to the insert blank, drill the finger holes. Then shape the profile with a flush trim bit.

Like back at the beginning of this project, a wing cutter is employed to make the template. After laying out the template on a piece of hardboard (detail 'a,' above) you'll first drill the finger holes. Then clamp the workpiece to the drill press and cut out the shape with the wing cutter.



▲ The insert drops in the opening in the table and can be rotated for a fresh drilling surface. When worn out, replace the insert.

To make an insert, tape the template to a blank, drill the finger holes first, then shape the insert at the router table (photo above left). For the sake of convenience, I made multiple copies of the inserts. With that, you've made a major upgrade to your drill press. **W**

Materials & Supplies

A Table Bottom (1)	3/4 ply.- 30 x 22	E Fence Back (1)	3/4 ply.- 2 3/4 x 30	• (4) 5/16" T-nuts
B Table Middle (1)	3/4 ply.- 30 x 22	F Fence Face (1)	1/4 ply.- 2 3/4 x 30	• (2) 5/16"-18 x 2 1/2" Flange Bolts
C Table Top (1)	1/4 ply.- 30 x 22	G Stop Block (1)	3/4 ply.- 2 3/4 x 2 3/4	• (2) 5/16"-18 Star Knobs
D Fence Base (2)	3/4 ply.- 2 3/4 x 26	H Insert (1)	3/4 ply.- 6 x 6	• (1) 5/16"-18 Thru Knob

ALSO NEEDED: One 48"x 48" Sheet of 1/4" Baltic Birch plywood, One 48"x 48" Sheet of 3/4" Baltic Birch Plywood



▲ Removable leaves turn the game table into a dining table, while a set of cleats provides clearance to leave a game set up for later.

Gaming Table

Whether playing for high-stakes or eating a home-cooked meal, this table makes the perfect place to spend time with friends and family alike.

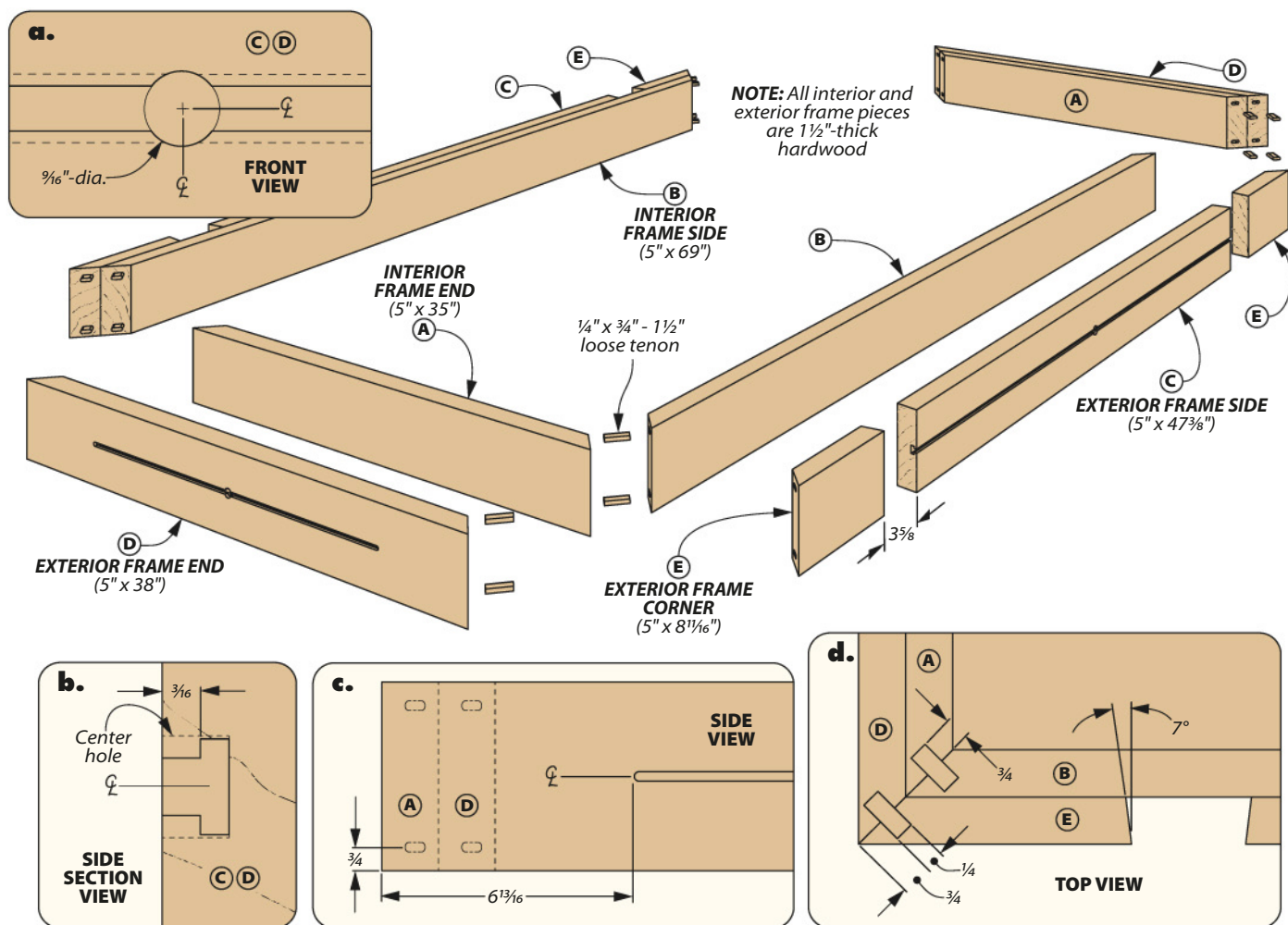
Nothing brings people together quite like a good game. It's a wonderful way to spend an afternoon — and an evening too, depending on the game in question. However, where to host the game is always an issue. Should we clear off the dining table, or all crowd around the coffee table in the living room? A break-down poker table is always an option, but often an unsatisfying one, with its wobbly legs and layers of dust after being hauled out of a closet or garage. And what if the game isn't finished by the end of the night? Should we leave the game sitting out, or begrudgingly declare a draw?

As an avid game player, whether of the card, board, or dice variety, I was naturally intrigued by this table when our design editor, Dillon Baker, drew up the plans. The first thing that grabbed me was the construction: thick, black walnut with legs that dovetail into a mighty frame. Of course, I'm not so avid that I need a game table constantly at the ready, which is where the leaves come in. As you can see at left, four leaves drop in over the playing surface (with clearance for any ongoing games) to transform this into a beautiful dining table.

Additionally, Dillon designed a few accessories that fit into the slots in the sides of the table. These can be added and removed as needed, and adjusted for the current player's preference. All in all, this table is sure to be the centerpiece of any room it's in.



▲ Custom veneered and edged panels create a stable and flat dining surface that matches the beauty of the black walnut base.



A Laminated **FRAME**

The work on this table begins with the frame. This frame is laminated together from two layers of walnut and later joined to the legs with dovetails. To make sure these joints fit snugly, we split the outer frame assembly into a number of smaller pieces,

as you can see in the main illustration above.

INTERIOR LAMINATIONS. I began by making the interior pieces of the frame. These are large pieces, but they're quite simple. After planing them down and cutting them to width, I mitered them to length. Because of their size, a miter saw worked best. (If you need to tune your miter saw for

accurate cuts, look to page 18.)

With the pieces sized and shaped, there's one more order of business before moving to the exterior frame. For additional strength (and an easier assembly) I used a pair of loose tenons in each miter (details 'c' and 'd'). A plunge router and edge guide made these easy, as shown in Figure 1 and its details on the next page.

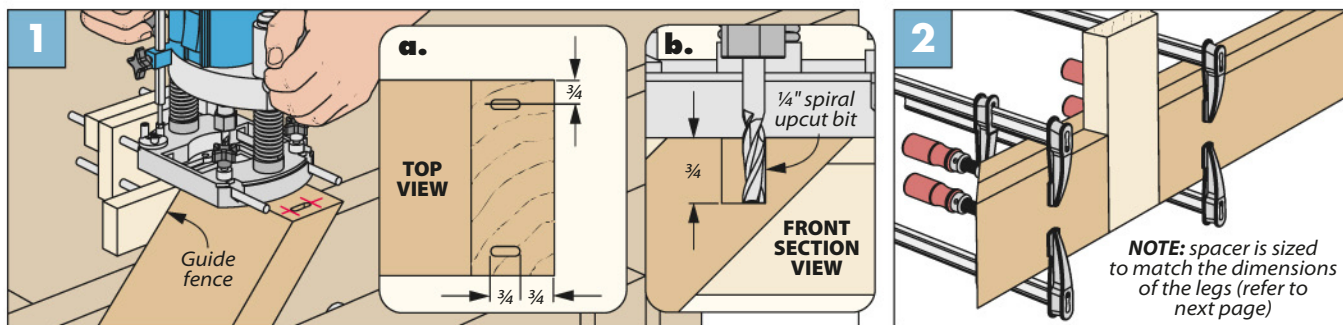


▲ These three accessories attach to the slots in the frame sides, holding cards, dice, and drinks as you play. Visit Woodsmith.com/270 to see how to build these, as well as the leaf removal tool.

FRAME EXTERIOR

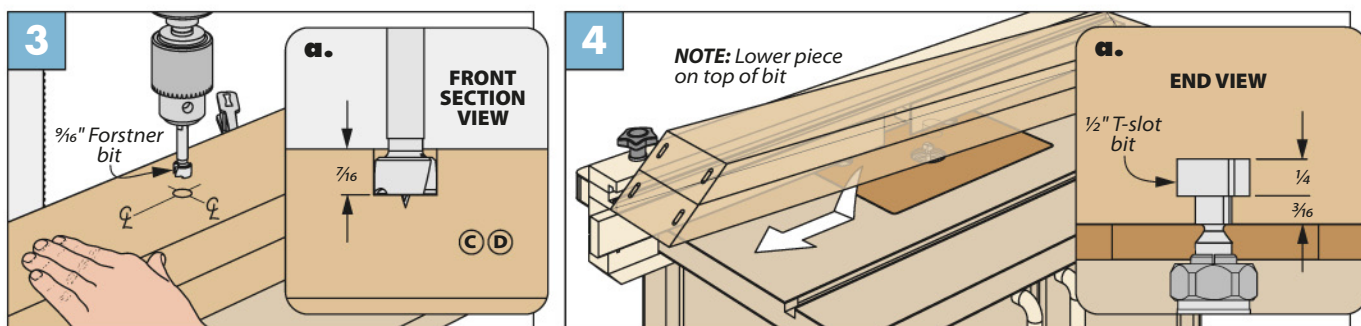
The outside of the frame will be a repeat in some ways of what you just did, but with a few additional steps along the way. The exterior consists of eight pieces. They will be cut to width and mitered as you did with the interior, but a few pieces will also need to be cut to length at a different angle.

FRAMING UP THE TABLE



Routed Mortises. The mortises in the mitered corners of the frame hold loose tenons to help align the pieces during assembly and add strength to the joint. Make these using a plunge router, a spiral upcut bit, and an edge guide.

Side Glueup. When gluing together the frame pieces, apply wax to keep the spacers being glued to the assembly.



Starting the Slots. Use a Forstner bit to drill a centered hole in the exterior ends and sides. This provides space to insert the T-slot bit.

T-Slots. To create the T-slots, first set the fence so the bit is centered on the workpieces. Lower the workpiece over the bit, then rout one side of the slot. Flip the piece to rout the other side, avoiding backrouting.

When sizing these, I recommend making a spacer that matches the angle of the legs (detail 'd') and their width (dimensions on the next page). This way you can sneak up on the final fit to ensure a gap-free joint between the frame and the leg assemblies. I began with the frame ends, then made the corner pieces they miter against. To find the exact size for the exterior sides, I dry fit the spacers in place and slowly worked to get the sides fitting snugly between.

FACE GLUEUP. Once the exterior pieces have been cut, the frame can be assembled. Refer to Figure 1 to cut the mortises in the mitered ends, then glue the exteriors to their matching interiors. Use the leg spacers to assist when gluing up the sides (Figure 2).

ACCESSORY SLOTS. The photo at the bottom of the previous page shows a selection of accessories for the game table. These attach using T-bolts which slide into slots in the sides and ends of the frame (details 'a' and 'b,' previous page). To kick these off, use a Forstner bit to drill a centered hole (Figure 3). This will provide a starting point for routing the slot, and an entry point for the T-bolts in the accessories.

To create the slots, I used a T-slot bit at the router table (as in Figure 4). I set the fence so the bit was centered on the workpiece, then marked the bit's location on the fence along with the locations of the centered holes on the workpieces. This way, the hole can be lowered over the bit for the stopped slots.

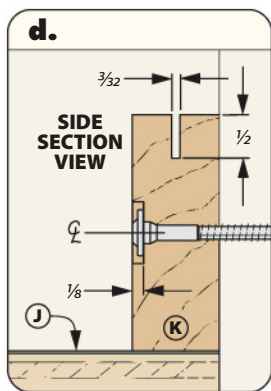
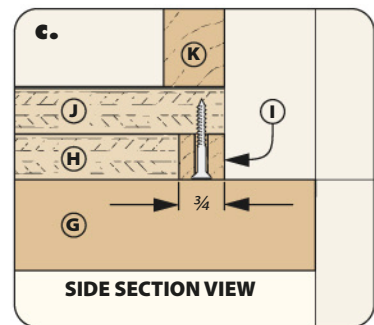
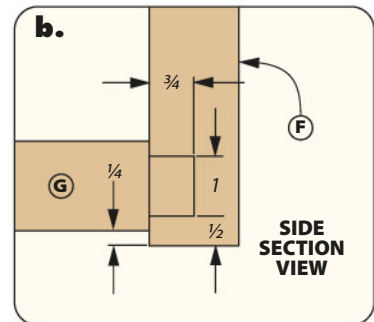
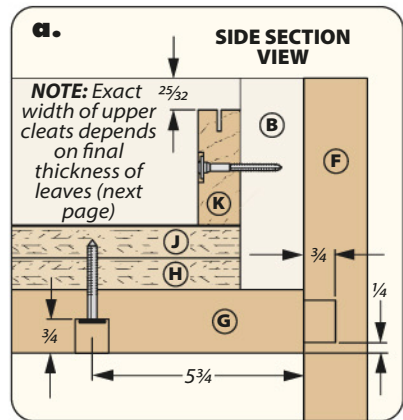
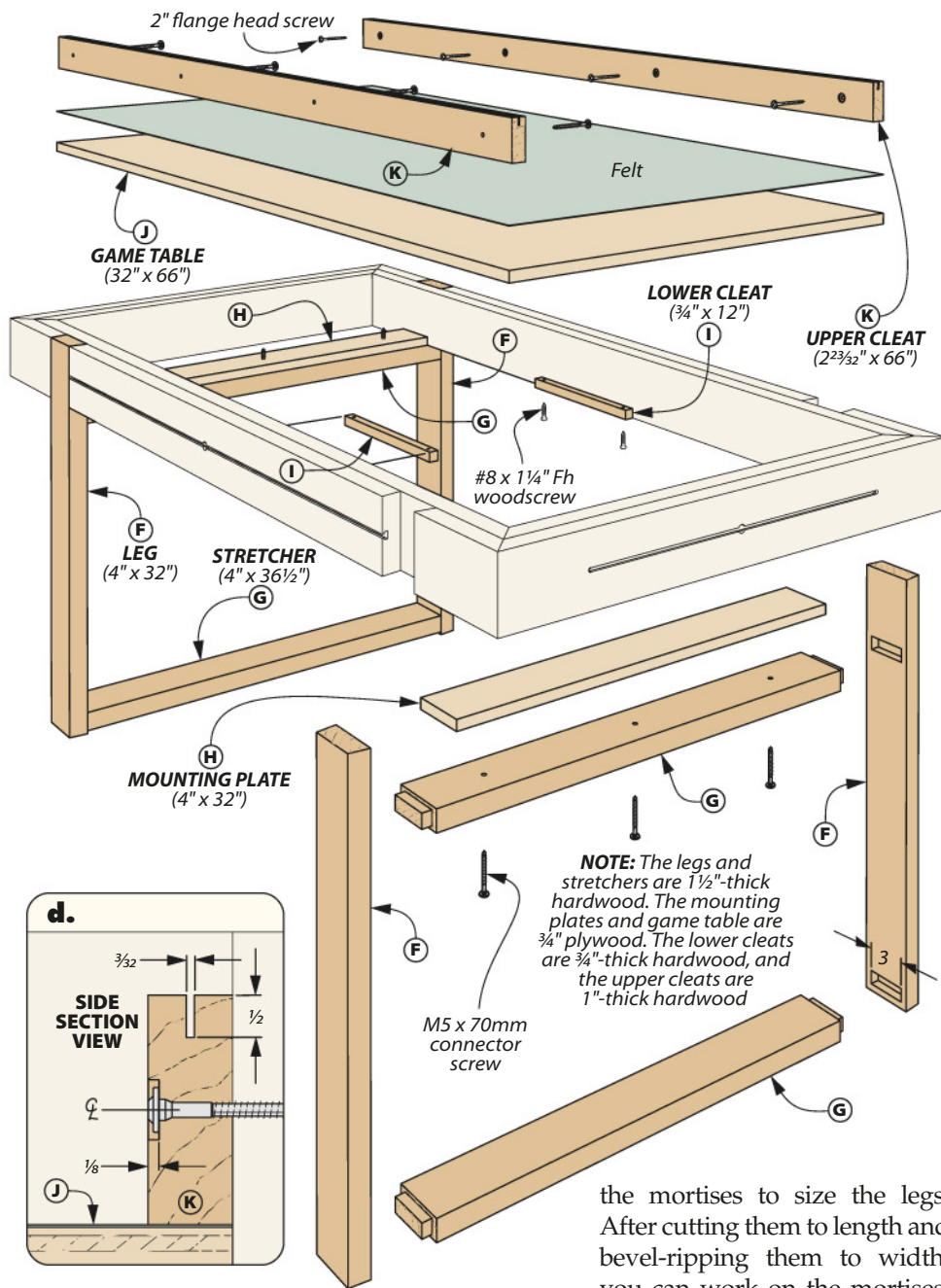
I started with the side pieces. These were through slots, so I began at one end and made a full pass through. The end pieces however are stopped slots. Here I marked out the stopping point for the slots on the workpieces. I then lowered the piece onto the bit (Figure 4), and routed through to the stopping point. Once I reached it, I turned off the router, removed the piece, flipped the board, and finished the slot.

FRAME ASSEMBLY. Each of the four sides are now complete and ready to be joined. I made the loose tenons from hardwood, then gathered up my glue, clamps, and clamping squares. The tenons go a long way in keeping the miters aligned during the glueup, and clamping squares provide good pressure.



For more on making the attachments on the previous page, go to:

Woodsmith.com/270



Legs & GAME TABLE

The frame provides a central body to build the rest of the table around, and the first step is to get it standing. Two leg assemblies support the table. For a solid foundation, each assembly is made of two legs joined by two stretchers. These pieces are connected by mortise and tenon joints, as shown in detail 'b.'

LEGS. Since you've already made the frame, you can use

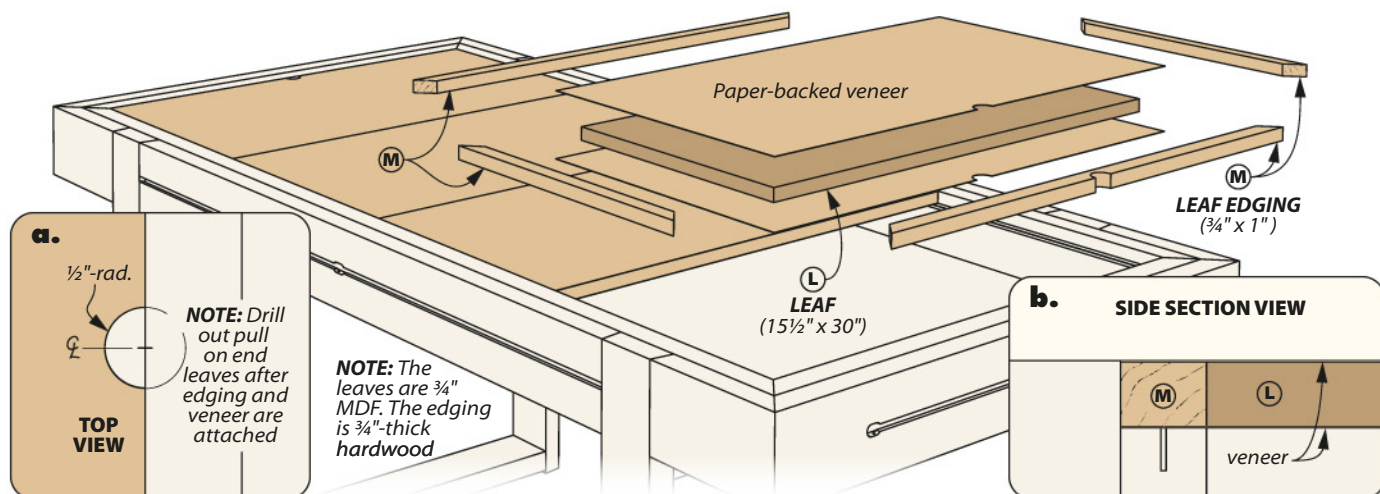
the mortises to size the legs. After cutting them to length and bevel-ripping them to width, you can work on the mortises. I used a Forstner bit to clear out most of the waste, then followed with a chisel to clean and square up the mortises.

STRETCHERS. The stretchers are another set of simple pieces. After sizing them, they'll need tenons on their ends to match the leg mortises. However, as you size these pieces and cut the tenons you'll want to dry fit the legs into the frame and sneak up on the stretchers' final size. This will ensure that the leg assemblies are aligned with the frame.

STANDING UP THE LEGS. Now it's time to put these together. Glue up the two leg assemblies. Once dry, they can be glued to the frame.

PLATES & CLEATS. The playing surface is the next big item on the docket, but first we'll need the pieces that support it: the mounting plates and lower cleats. For now, both of these pieces can be cut to size. Then, the cleats can be glued to the interior sides of the frame (detail 'c').

PLAYING SURFACE. The playing surface is a plywood panel. However, like any classic game table, this will be wrapped in felt to give it a nice texture. I used simple, green felt, and glued it down with fabric glue. Now the surface can be attached with screws



(details 'a' and 'c'). I first set it onto the cleats and mounting plates, then used large C-clamps to hold it in place. After drilling the pilot holes, I seated the panel with woodscrews.

UPPER CLEATS. A pair of upper cleats enclose the playing surface, support the leaves (which we'll be adding next), and have a narrow slot for setting your cards in as you play (detail 'd,' previous page). To make the slots, you'll need a thin-kerf table saw blade. Center the blade on the edge of the piece, then cut.

Finally, the cleats can be screwed in place. Prepare by drilling counterbored pilot holes (detail 'd'), then install the screws.

VENEERED DINING LEAVES

A set of veneered leaves finish up this table. These will sit on top of the upper cleats to transform the game table into a dining table.

EDGED & VENEERED. Each leaf is an MDF panel. Of course, while MDF is wonderfully stable, its look is less than appealing. In turn, I surrounded the panels with black walnut edging

and covered them with paper-backed black walnut veneer.

After cutting both the MDF and all the edging to size, glue the edging around the panel. Now it's time to veneer. I started with oversized veneer sheets so they could be trimmed flush to the edging. I applied contact cement to both the panels and the veneer sheets. With a bit of help, I laid the veneer onto the panel and rolled it down flat. Once dry, I trimmed the veneers flush. Finally, I drilled a pull to make them easy to remove with a tool (detail 'a'). [W](http://www.woodsmith.com/270)



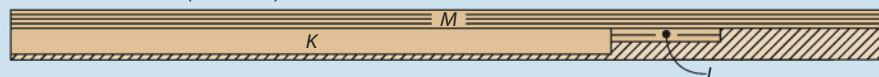
▲ MDF might be heavy, but this tool makes the leaves easy to remove. See Woodsmith.com/270 for more.

Materials, Supplies & Cutting Diagram

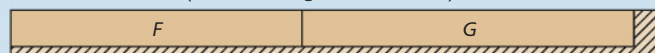
A	Interior Frame Ends (2)	1 1/2 x 5 - 35
B	Interior Frame Sides (2)	1 1/2 x 5 - 69
C	Exterior Frame Sides (2)	1 1/2 x 5 - 47 3/8
D	Exterior Frame Ends (2)	1 1/2 x 5 - 38
E	Exterior Frm. Corners (4)	1 1/2 x 5 - 8 1/16
F	Legs (4)	1 1/2 x 4 - 32
G	Stretchers (4)	1 1/2 x 4 - 36 1/2
H	Mounting Plates (2)	3/4 ply. - 4 x 32
I	Lower Cleats (2)	3/4 x 3/4 - 12
J	Game Table (1)	3/4 ply. - 32 x 66
K	Upper Cleats (2)	1 x 2 23/32 - 66
L	Leaves (4)	3/4 MDF - 15 1/2 x 30
M	Leaf Edging	3/4 x 1/2 - 388 rgh.

- (16) 1/4" x 3/4" - 1 1/2" Loose tenons
- (6) #8 x 1 1/4" Fh Woodscrews
- (6) M5 x 70mm Connector screws
- (8) 1 1/4" Pocket screws
- (1) 36" x 72" Felt sheet
- (8) 2" Flange head screws

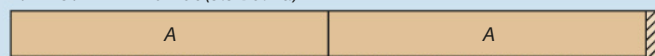
1" x 5 1/2" - 96" Walnut (4.6 Bd. Ft.)



1 1/2" x 5" - 72" Walnut (Four Boards @ 5.0 Bd. Ft. each)



1 1/2" x 5 1/2" - 72" Walnut (5.5 Bd. Ft.)



1 1/2" x 5 1/2" - 96" Walnut (Two Boards @ 7.3 Bd. Ft. each)



1 1/2" x 5 1/2" - 96" Walnut (Two Boards @ 7.3 Bd. Ft. each)



ALSO NEEDED: One 48" x 96" sheet of Baltic birch plywood, one 48" x 96" sheet of MDF, and two 48" x 96" sheets of paper-back walnut veneer

Sources

Most of the materials and supplies you'll need to build the projects are available at hardware stores or home centers. For specific products or hard-to-find items, take a look at the sources listed here. You'll find each part number listed by the company name. See the left margin for contact information.

MAIL ORDER SOURCES

Project supplies may be ordered from the following companies:

Woodsmith Store
800-444-7527
store.woodsmith.com

amazon.com

Beraht LLC
dustcollectorhero.com

Dick Blick
888-828-4548
dickblick.com

Fast Cap
888-443-3748
fastcap.com

General Finishes
800-783-6050
generalfinishes.com

Northern Tool
800-221-0516
northerntool.com

Titebond
800-877-4583
titebond.com

Woodcraft
800-225-1153
woodcraft.com

The Real Milk Paint Co.
800-339-9748
realmilkpaint.com

Van Dyke's Restorers
800-237-8833
vandykes.com

Varathane
Varathanemasters.com

GREAT GEAR (p.24)

- **FastCap**
Foam Sheets. Kaizen Foam
Cutting Tools. Kaizen Knife
Marker. Long Nosed Marker
- **Northern Tool**
 $\frac{1}{2}$ " RapidAir Kit 490500
 $\frac{3}{4}$ " Maxline Kit 20923

The Dust Collector Hero is a kit provided by Beraht LLC The chamber comes in three sizes: Basic, Large, and Extra Large. You can also purchase the DC Guard Dog that notifies you when the chamber is full.

HAPPY TREES (p.32)

To use the trees as ornaments, all you need is to drive small, brass screweyes into the top. We picked those up from a hobby store — their Christmas displays are up pretty early.

Small projects like these are ideal for spraying on a finish. Shellac is a great choice. It

provides a little color and just the right amount of protection. On the painted tree, we used a light green color called "Seedlings" by Chroma's Jo Sonja. This is an acrylic craft paint available at Dick Blick.

MONTEREY BUFFET (p.38)

- **Woodcraft**
Figure 8 Fasteners. 159303
- **Van Dyke's Restorers**
 $5\frac{3}{4}$ " Gate Latch 02917234
12" Spade Strap Hinge 02917168
- **The Real Milk Paint Co.**
Sunflower RMP11

The buffet is stained with Varathane "Dark Walnut" stain and sealed with two coats of lacquer. The crackle finish on the door panels starts with "Queenstown Gray" milk paint from General Finishes. Once that's dry the panels are coated with liquid hide glue from Titebond. When dry to the touch, the outside of

the panel is painted with "Sunflower" milk paint from The Real Milk Paint Company.

DRILL PRESS TABLE (p.46)

- **Amazon**
 $\frac{5}{16}$ " T-Nuts. B07NCXKY9V
 $\frac{5}{16}$ " T-Bolts B0756B35MQ
Star Knobs B0B11X8HHV
Thru Knob B0CC8NZTGM

The faces of the drill press table and the fence are painted black. When the paint was dry all the parts were finished with two coats of lacquer.

GAMING TABLE (p.52)

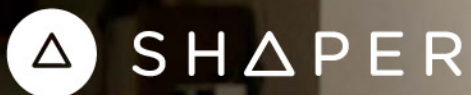
The hardware for the gaming table can be found at most hardware stores, and the felt can be purchased at a craft store or home center. We finished the table with a coat of oil and a few coats of spray lacquer.



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