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# DROP-FRONT STORAGE CENTER



# DROP-FRONT STORAGE CENTER

*With storage above, below, and inside, this simple project allows you to organize all the items you never seem to have a place for.*



▲ *The false-drawer front of the storage center drops down to reveal lots of storage space for small items, while the double hooks underneath provide a good place to hang coats, scarves, and hats.*

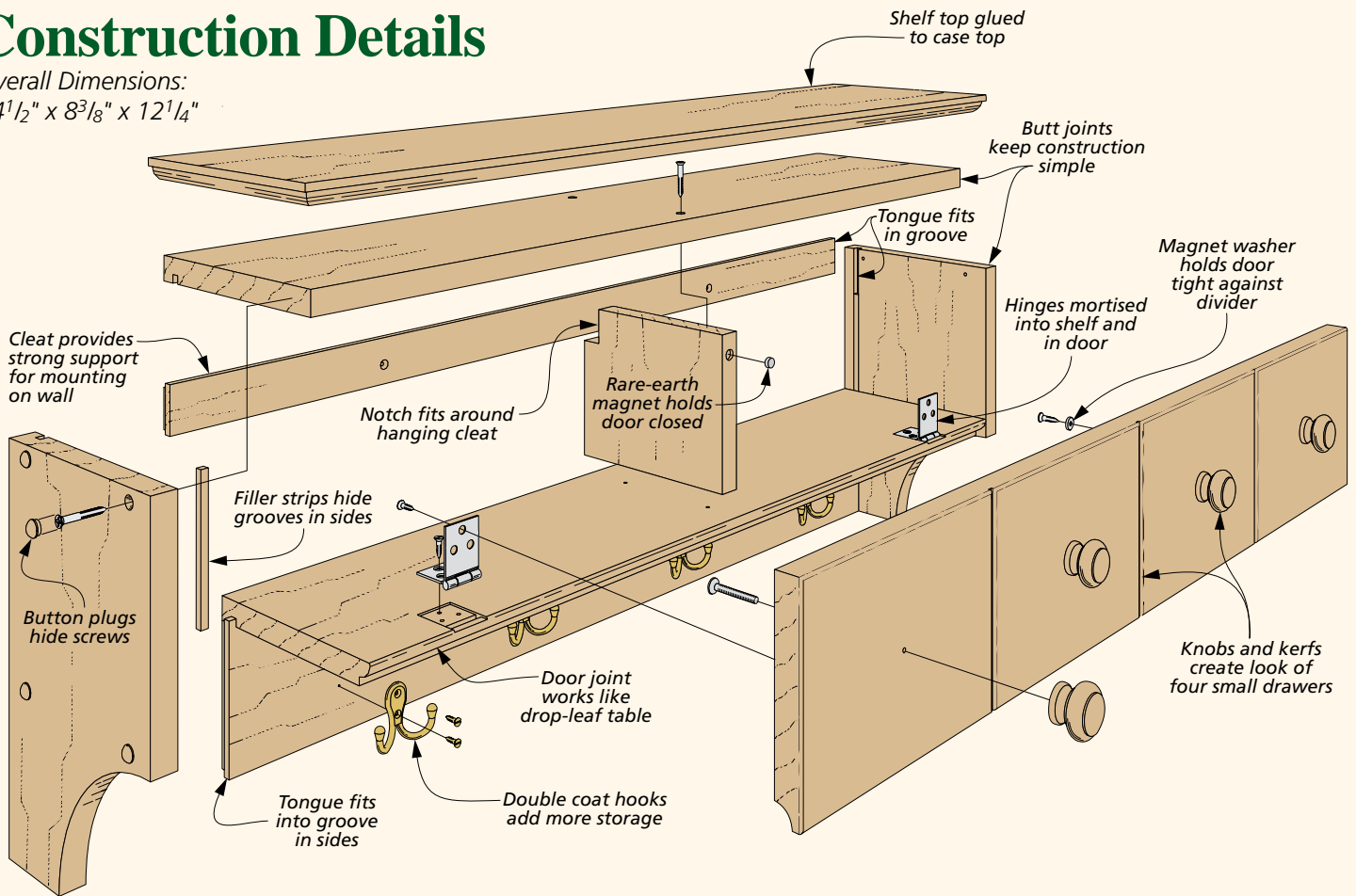
At first glance, this storage center appears to have four small drawers to go with its four coat hooks. But a closer look reveals that these “drawers” aren’t really drawers at all. As the photo on the left shows, they disguise a drop-front door that hides plenty of storage space for hats, sunglasses, gloves, or other items.

The construction is fairly straightforward. You only need a few boards and some hardware to get the job done. The joinery is simple to make, including a clever way to allow the front to drop down. All the joinery can be cut with your table saw and router.

What I like about this storage center is that it’s a small project that you can build in a weekend. Yet, it provides a lot of storage and organization for any entryway. And if the country pine look is not for you, we’ve also included a couple of different design options in the *Designer’s Notebook* on page 6.

# Construction Details

Overall Dimensions:  
34 1/2" x 8 3/8" x 12 1/4"

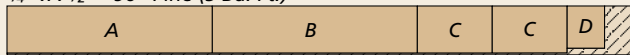


## MATERIALS & CUTTING DIAGRAM

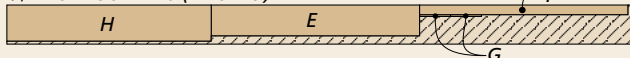
<b>A</b> Case Top (1)	3/4 x 7 1/4 - 31 1/2
<b>B</b> Case Bottom (1)	3/4 x 7 1/4 - 31 1/2
<b>C</b> Case Sides (2)	3/4 x 7 1/4 - 11 1/2
<b>D</b> Divider (1)	3/4 x 6 3/4 - 5 1/2
<b>E</b> Back (1)	3/4 x 4 3/4 - 32
<b>F</b> Hanging Cleat (1)	3/4 x 1 1/2 - 32
<b>G</b> Filler Strips (2)	1/4 x 1/4 - 4 3/4
<b>H</b> Door (1)	3/4 x 5 9/16 - 31 3/8
<b>I</b> Top (1)	3/4 x 8 - 34 1/2

- (12) No. 8 x 1 1/4" Fh woodscrews
- (1) 1 1/4 x 1 1/2" Drop-leaf hinges w/screws
- (4) 1 1/4"-dia. wood knobs w/screws
- (10) 3/8"-dia. button plugs
- (1) 3/8"-dia. rare-earth magnet
- (1) 3/8"-dia. magnet washer
- (1) No. 6 x 5/8" Fh woodscrews
- (4) Brass double coat hooks w/screws

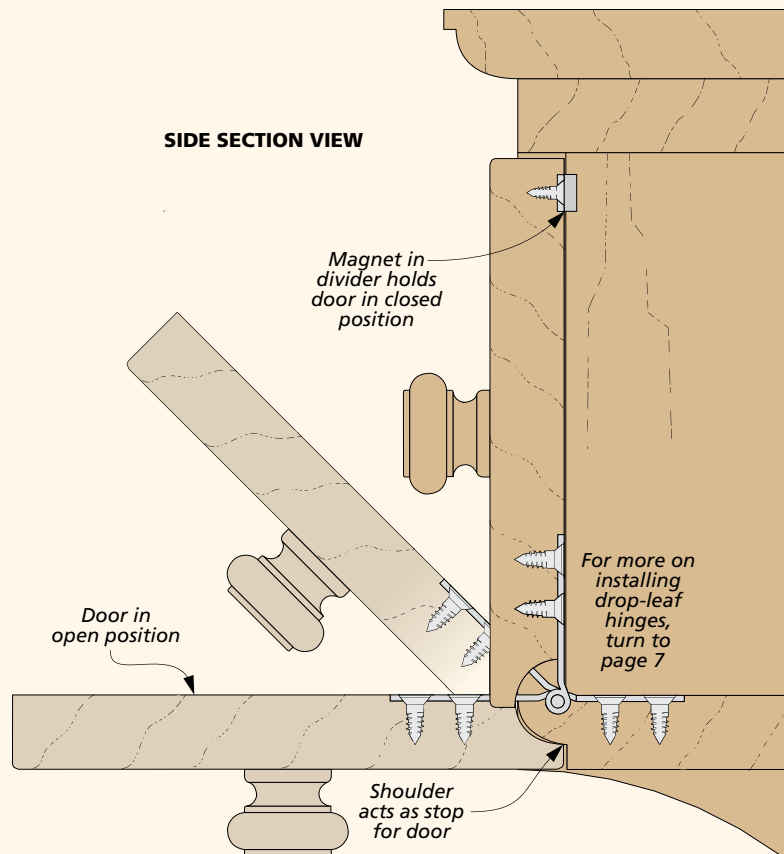
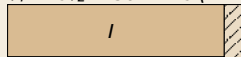
3/4" x 7 1/2" - 96" Pine (5 Bd. Ft.)

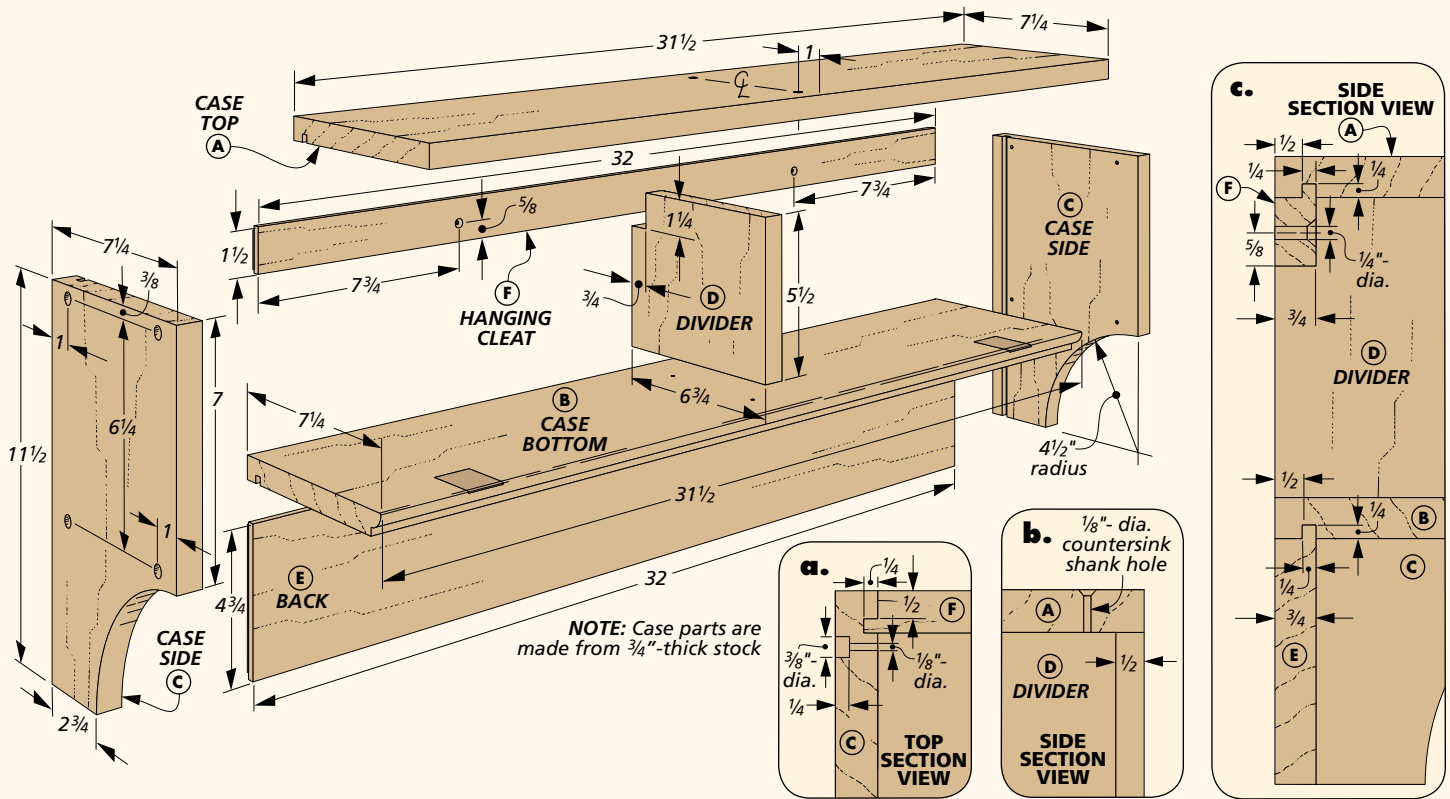


3/4" x 6" - 96" Pine (4 Bd. Ft.)



3/4" x 8 1/2" - 36" Pine (2.2 Bd. Ft.)





## Building the Case

If you take a close look at the drawing above, you'll see how the case goes together. It's made up of seven parts: a top and bottom, two sides, a center divider, a cleat to attach the shelf on a wall, and a back for some hooks.

To keep the project simple, the two side pieces are just screwed to the case top and bottom. But on

the inside, there's some tongue and groove joinery to add stability. Since the sides, top, and bottom of the case have the grooves cut in them, that's where I started.

**TONGUE AND GROOVE.** The first step is to cut out the top, bottom, and sides. After that, it's over to the table saw to cut the grooves. I start with the

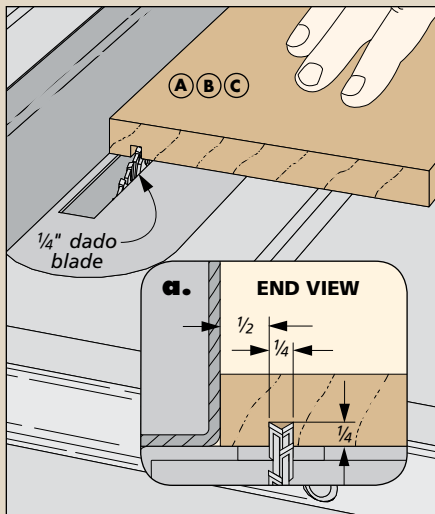
grooves because it's easier for me to cut the tongues to fit the grooves than the other way around. The left drawing in the box below shows how I cut them. These shallow grooves will hold the tongues in the hanging cleat and the back, as you can see details 'a' and 'c' above.

Now, you can set the sides, top, and bottom aside to start working on making the hanging cleat and the back. As I said earlier, you'll need to cut tongues on these parts to fit into the grooves you just made.

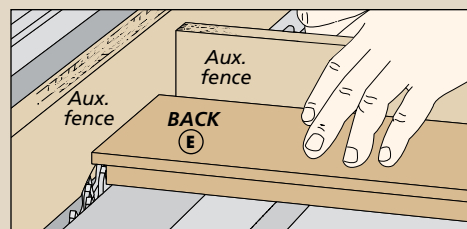
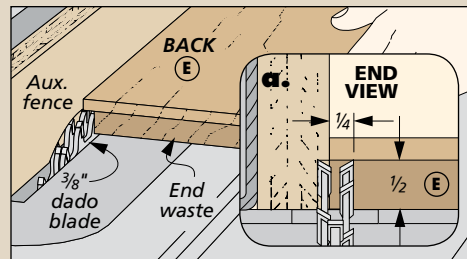
The two right drawings in the box show how to cut the tongues. But a trick I've learned is to "sneak up" on the fit. Since the grooves are already made, you'll want to purposely cut the tongues a little thick to start. Check the fit in the grooves, then raise the blade a bit and trim a little more material off the tongue. Repeat this process until the tongues fit snugly in the grooves.

**CURVED PROFILE.** With the tongues and grooves cut, you can go ahead and work on the curved profile on the bottom of each case side. Laying out the curve isn't difficult — just draw a 4 1/2"-radius arc on one side. Then, to make sure the curve will match exactly on both side parts,

## HOW-TO: TONGUE & GROOVE



**The Groove.** Once you have the fence and dado blade set up, you can cut the grooves in the sides, top, and bottom.



**The Tongue.** I used a dado blade buried in an auxiliary rip fence to cut the tongues on three sides of the cleat and the back.

you can tape the sides together before making the cut.

Once the curve is laid out, you can cut it out with a band saw (see Shop Tip at right). When making these types of cuts, I like to stay on the waste side of the layout and then sand up to the line with a drum sander. This way, I end up with smooth curves that are the same on both side pieces.

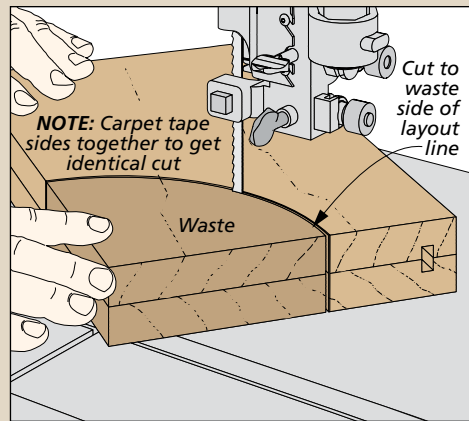
**SCREW HOLES.** After the curves are sanded smooth, you can drill the holes for the screws that will hold the case together (detail 'a' on page 3). You can also do the same with the case top and bottom that will hold the center divider you'll make later (detail 'b'). After the holes are drilled and counter-bored, it's a good time to start working on the rule joint for the door.

**RULE JOINT.** One of the features I like about this project is how the door works. It's similar to a drop-leaf table, only upside down.

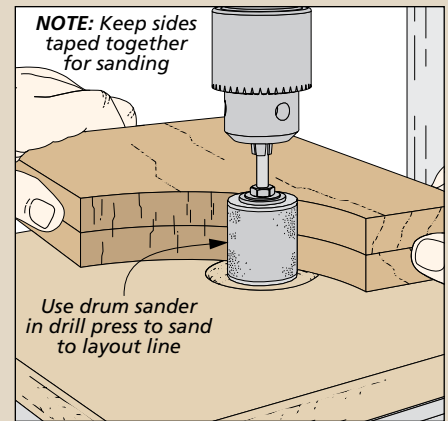
But this is done for more than just looks. A rule joint allows the weight of the door to be distributed evenly along the edge of the case bottom, not just on the hinges. (The Side View on page 2 illustrates this.)

The joint combines two matching profiles: a roundover on the case

## SHOP TIP: CURVED PROFILE



**Curve on the Band Saw.** Stay on the waste side of the layout line to cut the curve in the sides of the storage center.



**Finish with Drum Sander.** With the sides still taped together, smooth both sides to the layout lines.

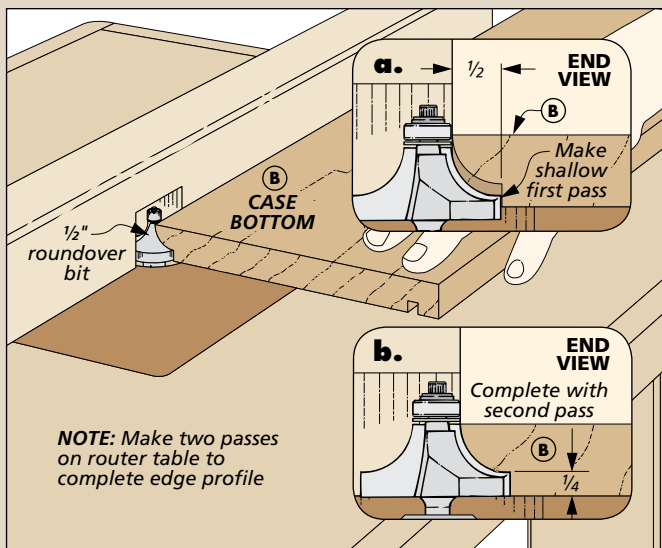
bottom and a cove on the door. When the door is lowered, the cove wraps around the roundover and rests on the shoulder. The box below shows how to rout the roundover. I'll talk about routing the cove on the door later.

**THE DIVIDER.** With the case parts complete, you can move on to the divider. After cutting it to size, all you have to do is cut a notch that allows it to fit around the hanging cleat (see main drawing on page 3).

**WRAPPING UP.** Although the case parts are complete and ready for assembly, I held off putting it together for now. For one thing, it will be easier to test and adjust the rule joint while everything is apart. And you'll need to align the drop-leaf hinges between the door and the case bottom, as illustrated in the photo below and in the article on page 7.

So just set these parts aside for now to start working on the door.

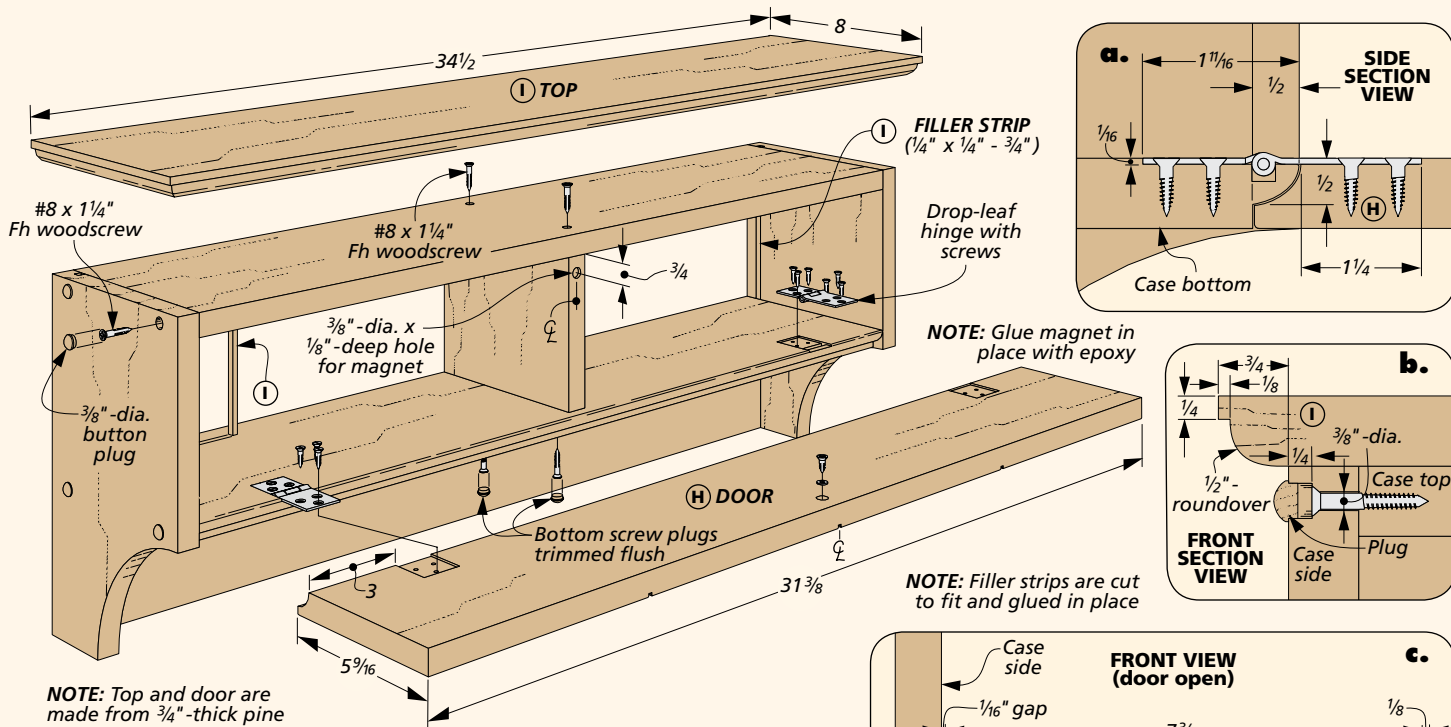
## HOW-TO: BOTTOM EDGE PROFILE



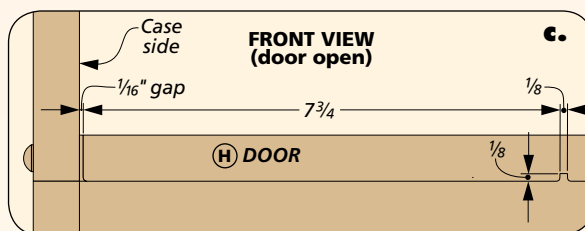
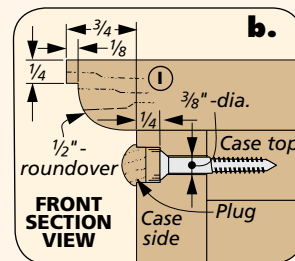
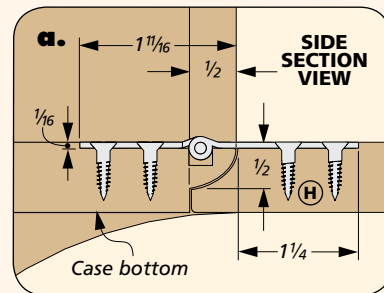
**Rule Joint Profile.** To prevent tearout and burning while routing the roundover on the case bottom, make a shallow first pass, then raise the bit to complete the profile.



▲ Refer to page 7 for more information on installing the drop-leaf hinges for the door of the storage center.



NOTE: Top and door are made from 3/4"-thick pine



### Completing the Shelf

With the case parts done, it's time to add the final touches. There's a fair amount of work to be done to the door, like completing the rule joint, routing the hinge mortises, and making the "drawer faces." So that's a good place to start.

**DROP-FRONT DOOR.** After cutting the door to size, the first step is to rout a cove on the bottom edge of the door (see left drawing below). The cove will mate with the roundover routed on the front edge of the case bottom to create the rule joint.

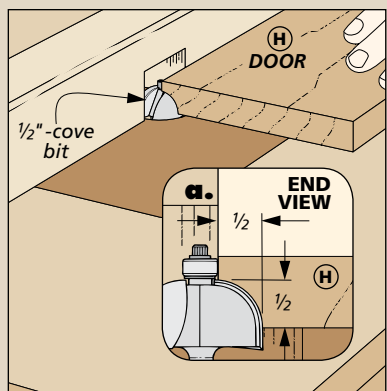
**HINGE MORTISES.** The next thing to do is rout the mortises for the hinges. To make sure the mortises in the door and bottom were aligned, I laid the door in front of the bottom and marked where they should go (see main drawing and detail 'a' above). The article on page 7 shows how to mark the locations of the hinges and install them.

**MAKE THE "DRAWERS."** Once the mortises were cut, I started work on the false drawers. The idea here is to cut equally spaced kerfs in the door so the storage center looks like it holds four drawers (see detail 'c' above and the right drawing in the box below).

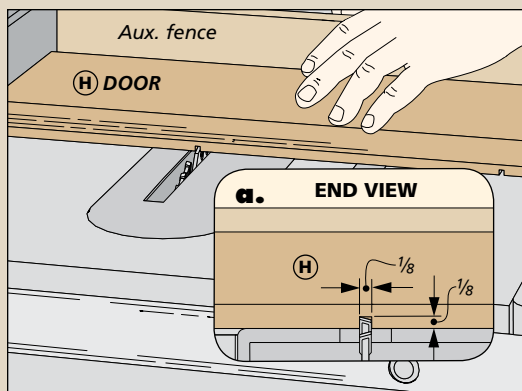
Before assembling the case, there are a couple more things left to do. First, drill holes for the knobs (see drawing on page 6). And second, install a magnetic catch (detail 'a' on page 6). Once these things are completed, you can glue and screw the case together.

**SHELF TOP.** The next step in the construction is to add the top to the case.

### HOW-TO: DOOR SHAPING



**The Cove.** The profile routed on the bottom of the door should mate with the edge of case bottom.



**Cutting Drawers.** Three evenly spaced kerfs cut in the front of the door create the illusion that the storage center contains four drawers.



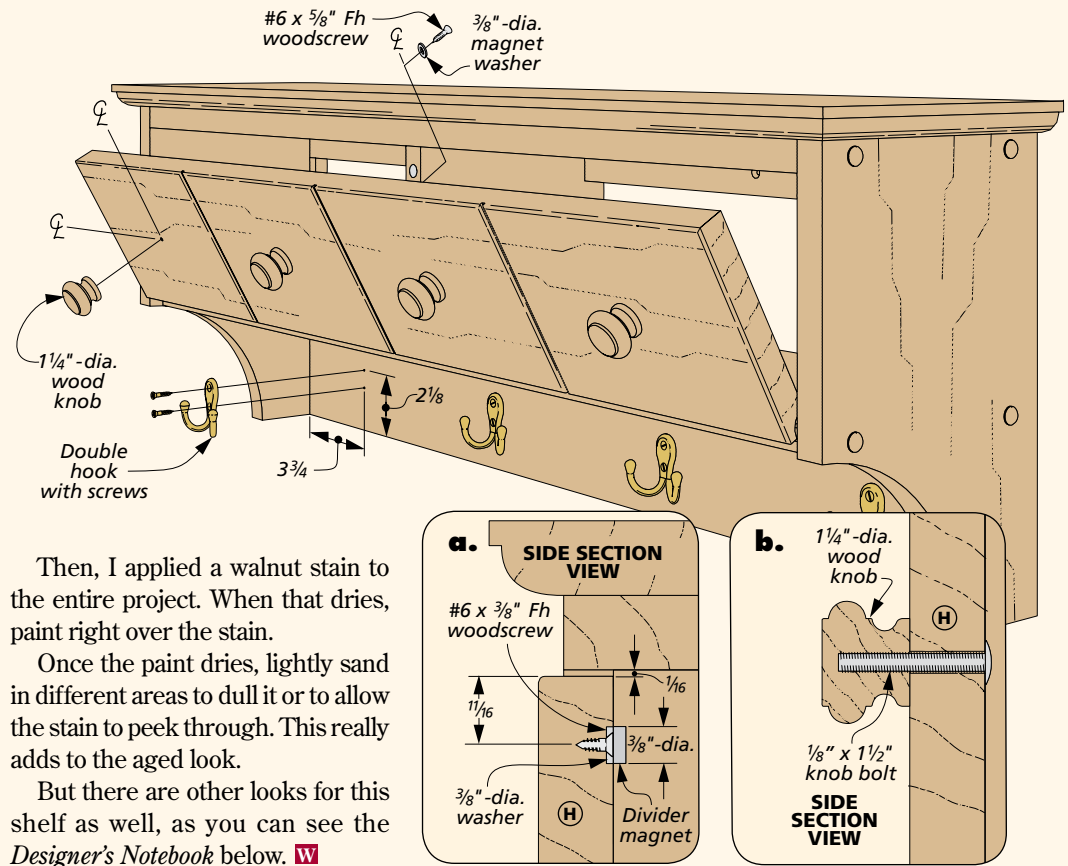
▲ Distressing the finish gives the storage center a comfortable, time-worn appearance.

I routed a 1/2" roundover with a shoulder along the front edge and the sides (detail 'a'). Then, you can simply glue the top to the case.

**FILLER STRIPS.** There's one final detail before moving on to the finish. Some of the grooves you cut earlier are visible on the inside of the case. Although it's not a big deal, I decided to glue in filler strips to give it a more finished look. Now, you're ready to move on to the finishing stage.

### FINISHING

To give the shelf an antique look, I decided to "distress" it. To do that, you can take a couple of tools or a ring full of keys and drop them randomly on the storage center. But don't get carried away — you want it to look old, but not beat up. I also softened some of the edges to add to the worn appearance (take a look at the photo on page 5).



Then, I applied a walnut stain to the entire project. When that dries, paint right over the stain.

Once the paint dries, lightly sand in different areas to dull it or to allow the stain to peek through. This really adds to the aged look.

But there are other looks for this shelf as well, as you can see in the *Designer's Notebook* below. **W**

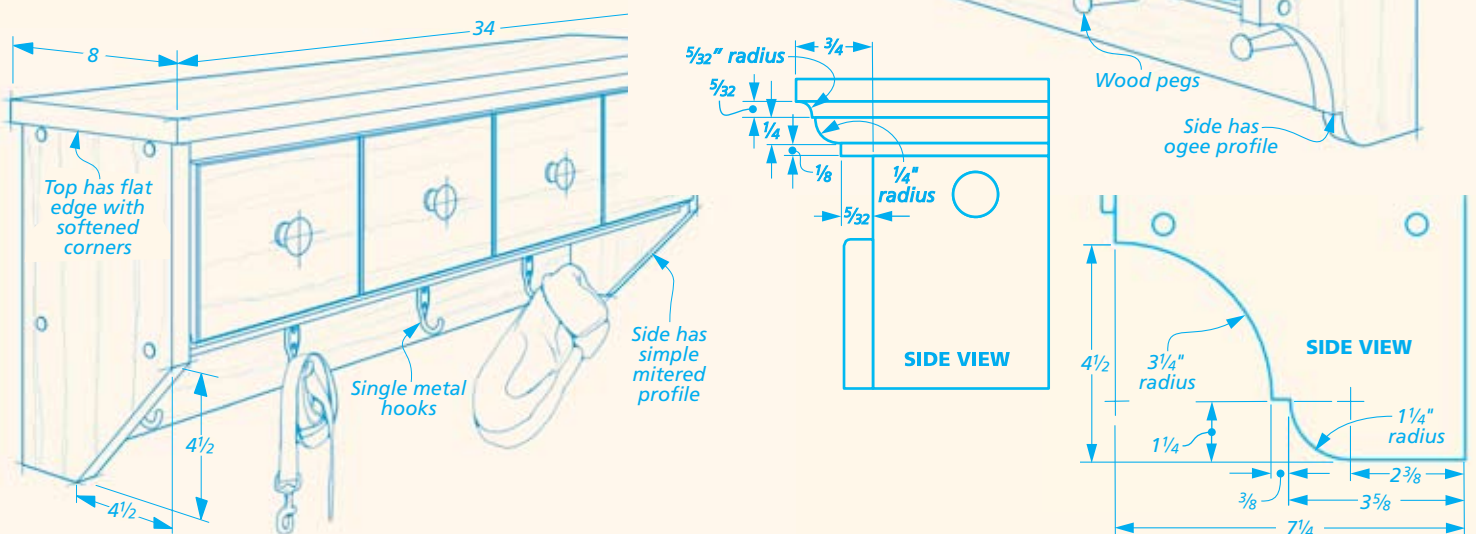
## DESIGNER'S NOTEBOOK

### Two Optional Designs

While working on this project, I couldn't help but think of all the different design options that could easily change the look of the storage center. A couple of ideas are shown in the drawings here.

For a more traditional look, you can change the edge profile of the top, add wood pegs, and cut an ogee profile in the sides. The detail drawings can help you with that.

Or, go with the straight lines shown in the drawing below for a clean, contemporary look.





# ADDING HINGES TO A RULE JOINT

The door of the drop-front storage center project is hinged with a rule joint (also called a drop-leaf joint). This allows the hinges to be completely hidden inside the case and the door to rest flat without any extra support when opened.

**TWO MORTISES.** To make the rule joint work smoothly without binding, the special drop-leaf hinges (margin photo) have to be installed properly.

As you can see in the photo at right, the hinge barrel isn't centered over the joint line. It sits back from the edge of the case bottom and is mortised in along with the short hinge leaf. The long hinge leaf extends across the joint line. What this means is that you'll need to cut shallow mortises for the hinge leaves and then a deeper mortise (or pocket) for the barrel.

**CAREFUL LAYOUT.** First, lay out the mortises for the hinge leaves, as in Figure 1. Start by marking the side-to-side position of the hinges on the case bottom. Then measure back  $\frac{3}{8}$ " from the edge and mark a line locating the center of the hinge barrel.



▲ The hinges used on a rule joint have a short leaf and a long leaf. This allows the hinge to bridge the joint.



Next, slide the case bottom and door together with a couple of playing cards between them as spacers. Lay the hinge in position (barrel up) on the layout marks and use it to mark the outline of the mortises in the case bottom and door. Just make sure the barrel of the hinge is centered over the layout line.

**THE LEAF MORTISES.** With the layout complete, I got out my router and installed a straight bit. This allows you to quickly rout away the bulk of the waste from the shallow mortises. You'll get a consistent depth and a flat bottom. Finish the mortises

by using a chisel to clean up around the edges (Figure 2).

**THE BARREL MORTISE.** Now, you need to cut a pocket for the hinge barrel (Figure 3). This won't show, so a perfect fit isn't necessary. You can get the job done quickly with a pair of chisels. Again, just make sure the pocket is positioned accurately, as shown in Figure 3a.

**ASSEMBLE THE JOINT.** Once the pockets are cut, you can fit the hinges into the mortises and assemble the joint. A self-centering bit makes drilling the pilot holes easy (Figure 4). Then simply install the screws.

