

# Fine Drawers Without Dovetails

Pinned rabbets are attractive, durable, and much easier to make

BY HENDRIK VARJU

Beautiful and strong, hand-cut dovetails are the favorite drawer joint of many woodworkers. And because of the skill needed to cut them well, they are considered a hallmark of craftsmanship. But they take a lot of time to make and even more to master. If you're not a slave to tradition, there are other joints nearly as strong and beautiful that can be made in a fraction of the time.

In my experience, the best alternative is a drawer with pinned rabbets at the front, and dados to hold the back in place. All of the joinery is cut quickly and easily at the tablesaw. My customers—

who aren't biased toward dovetails the way woodworkers are—have never complained. In fact, they find the clean, crisp lines attractive and comment that the drawer doesn't look mass-produced.

I'll show you how to make the drawer with a  $\frac{3}{4}$ -in.-thick front,  $\frac{1}{2}$ -in.-thick sides and back, and  $\frac{1}{4}$ -in.-thick bottom, but the same techniques can be used to make smaller or larger drawers.

## Making parts in the right order ensures tight joints

To make these joints strong and gap-free, cut the rabbets and dados first, and then mill the parts to fit them. If possible, make

the parts from quartersawn lumber, which is more stable than flatsawn. The joints will be stronger and the drawer will fit better through the seasons because the parts will move less.

Plane the front to thickness and cut it to length, but keep it  $\frac{1}{16}$  in. over the final width (height). Cut the sides to final length and width, leaving them a bit thicker than needed; they will be trimmed to final thickness after the drawer has been glued together. You'll fit the back to the drawer as you make it, so leave it oversize for now.

## Use a sacrificial fence to cut rabbets

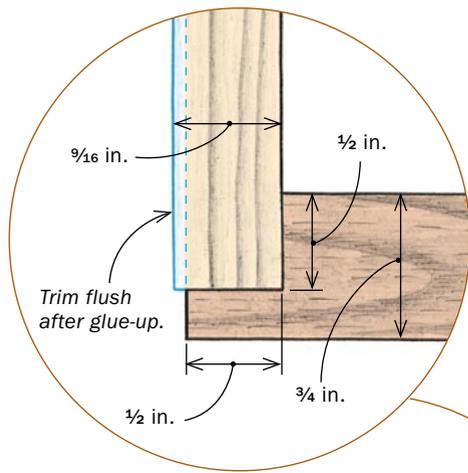
I cut the rabbets on the drawer front with a dado set stacked wider than the rabbet, burying the extra width in a sacrificial fence. Dado cutters are designed so that the outer blade cuts slightly deeper than the chippers to help pre-

**Pins add pop.** This joint looks best in contrasting woods. The pins match the drawer front but stand out against the light-colored sides.



## Simple anatomy

The front joint is a rabbet, the back is a dado, and the bottom rides in a groove. The pins go in after the drawer has been glued up.



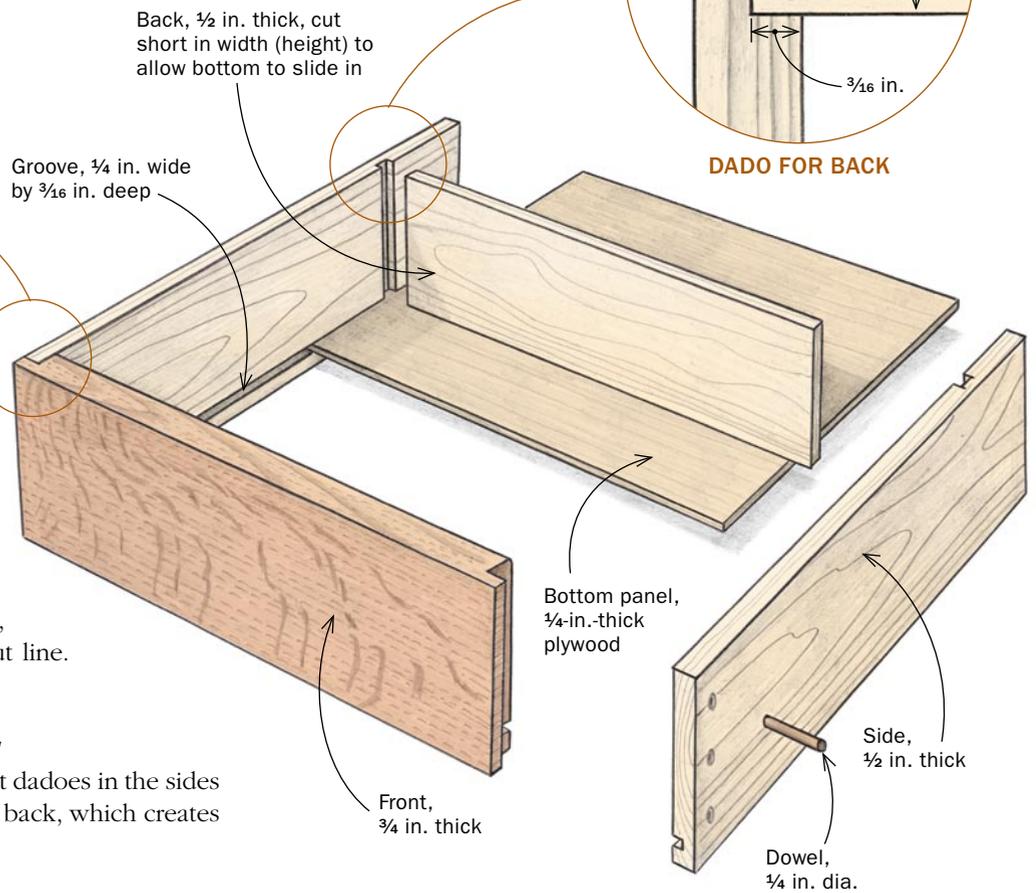
**RABBET FOR SIDES**

vent tearout. It's barely noticeable on the inside of the rabbet but it creates a gap on the outside of the rabbet after the joint is glued. Burying the cutter in a sacrificial fence eliminates the gap.

Mark the rabbet on one end of the front. Set the blade low, make a test cut, and raise the blade a bit. Make a second cut, and repeat until the cutter reaches the layout line. Then cut the rabbet on the opposite end.

### Extralong sides let drawer open all the way

After the rabbets have been cut, it's time to cut dados in the sides to hold the back. I locate them 2 in. from the back, which creates



## FAST TABLESAW JOINERY

A tablesaw makes quick work of the rabbets, dadoses, and grooves. And the saw's accuracy translates into tight-fitting joints.



**Rabbet the front.** For clean results, bury the dado set in a sacrificial fence, and put another sacrificial fence on the miter gauge to back up the cut.



**Cut the dado for the back.** Restack the dado set to 1/2 in. wide and sneak up on the full depth. Clamp the workpiece to the miter gauge to keep it from drifting.



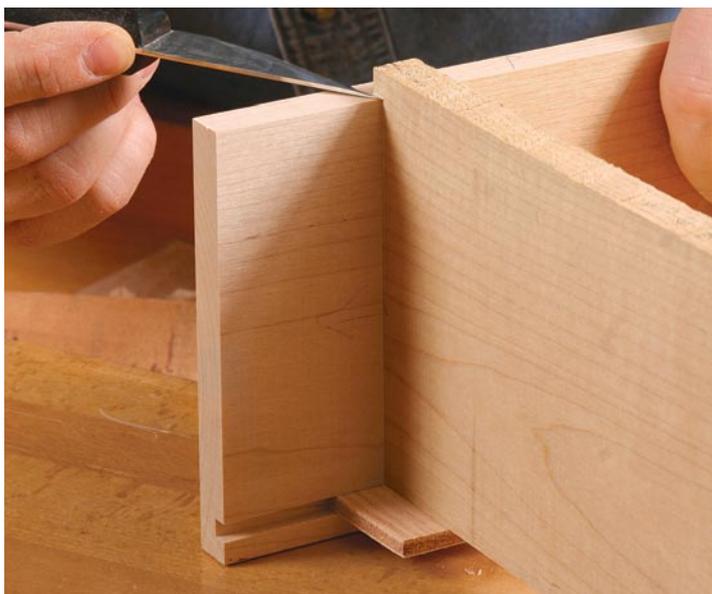
**Use a standard blade for the groove.** Stacking a dado cutter to match the thickness of the plywood bottom is a fussy task; two passes over a combination blade cuts the groove quickly.



## DADOED BACK ADDS STRENGTH

Mill the back and cut it to size after the dadoes and grooves have been cut. The snug fit strengthens the drawer and helps keep it square.

**Don't trust your ruler.** The best way to know when the back is the right thickness is to test its fit in the dado after each pass through the planer.



**Find the height.** Place the back in its dadoes, supporting it with offcuts from the bottom. Now you can mark its height accurately.

an extension that lets you open the drawer completely without it falling out of the pocket. Before you cut the dadoes, orient the grain in the sides so you can plane the outside cleanly from front to back. This way, when you're bringing the sides down to their finished thickness, you won't blow out the end grain on the drawer front and you'll get no tearout on the sides.

Stack the cutter for a 1/2-in.-wide dado. I adjust the depth as I make test cuts, just like I did with the rabbets, until I reach 3/16 in. To reduce tearout, I use a miter gauge with a backer fence. To locate the dadoes accurately in each side, you can use the rip fence as a stop because you aren't cutting completely through the sides and leaving a cutoff trapped between fence and blade.

### Fit the back to the drawer

After cutting the dadoes, plane the back to thickness, testing its fit as you go. Had you planed it before, it might have ended up too thin, resulting in a sloppy fit. Before cutting the back to its final width (height), cut the grooves for the bottom. The back sits on the drawer bottom, and the groove shows where that will be.

I make drawer bottoms from 1/4-in.-thick plywood and use a standard-kerf blade to cut a 3/16-in.-deep groove 1/4 in. from the bottom of the sides and front. Set the rip fence to make the first cut, and groove the front, sides, and a test piece. Adjust the fence for the second cut. Run the test piece through and check to see if the drawer bottom will fit into it. The plywood should move in the groove, but without slop. Adjust the fence if needed, and finish grooving the front and sides.

For the drawer to end up square, the back must be precisely the right length. To get an accurate measurement, clamp the

front—with the top edge of the sides in the rabbets—between the sides just in front of the dadoes. This ensures that the sides are the correct distance apart. Measure from the bottom of one dado to the bottom of the other. Cut the back to length. Then slide the back into its dadoes until it reaches the top of the groove; put some offcuts from the bottom into the groove to make this easier. Mark the back and cut it to its final height.

The front was left 1/16 in. oversize in height so that the drawer bottom groove could be cut in it and the sides at the same time. Trim that 1/16 in. off the bottom so that there's a consistent gap all the way around the front. Then drill holes for pulls or knobs. Sand the inside faces of the front and sides, and both faces of the back. The edges will be cleaned up after assembly.

### Jointer trick perfects the rabbet joint

I glue the back into its dadoes first, because the joint will hold itself together as I work on the rabbets at the front. Spread glue on the rabbets, avoiding the groove for the bottom. Then slide the drawer front onto the sides. This forces any glue squeeze-out

TIP

USE FRONT TO FIND LENGTH OF BACK

Clamp the front between the sides to ensure that they're spaced accurately. Then measure for the back.

## ● GLUE UP, THEN TRIM DOWN

Varju lays out everything he needs, from clamps to cauls, before he begins. And his jointer trick makes it easy to fit the drawer to the cabinet.

TIP

USE OFFCUTS FOR ALIGNMENT

Before applying glue, place offcuts from the drawer bottom into the corners of the grooves to align the front with the sides.



**Four clamps for the rabbet.** Two go side to side and two go front to back. Varju uses small cauls to get pressure on the joints without the clamp heads interfering with one another.

toward the outside of the drawer, which makes for easier cleanup. Insert offcuts from the drawer bottom into the groove and align the front with the sides. Clamp the joint from side to side, then front to back. Pull out the offcuts and let the glue dry overnight.

The next day, take the drawer to the jointer and carefully plane the sides until they're just a few thousandths of an inch too thick. Take that last bit off with a handplane.

### Pin rabbets for strength and a custom look

The pins are what make this simple drawer strong and stylish enough for fine furniture. With the sides planed flush, lay out the pins, making sure to locate the bottom pin above the drawer bottom. It looks best if the top and bottom pins are an equal distance from the edge and you use an odd number of pins. Also, I match the pins to the drawer front. As for the diameter of the pins,  $\frac{1}{4}$  in. looks right if the drawer front is  $\frac{3}{4}$  in. thick or thinner.

Bore the holes at the drill press. Go through the sides and  $\frac{3}{4}$  in. into the front. Cut the pins  $1\frac{1}{2}$  in. long. Squeeze glue into the holes and spread it around the walls. Pound the pins into the



**Jointer trims sides quickly.** After the glue has dried, it's safe to run the sides over the jointer, leaving just a thousandth or two of an inch for a handplane to remove—creating a perfect fit every time.

## PINS ADD STRENGTH AND BEAUTY

**Hang the drawer on the drill-press table.** Set it over a corner and rotate the table to get the drawer under the bit. This is more stable than lowering the table and standing the drawer on it.



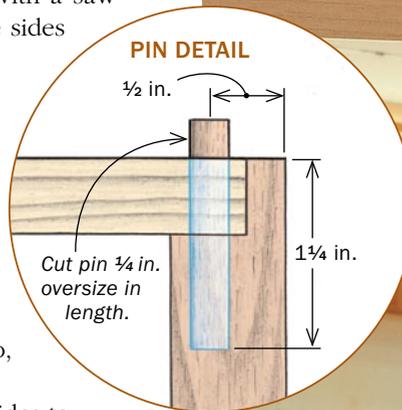
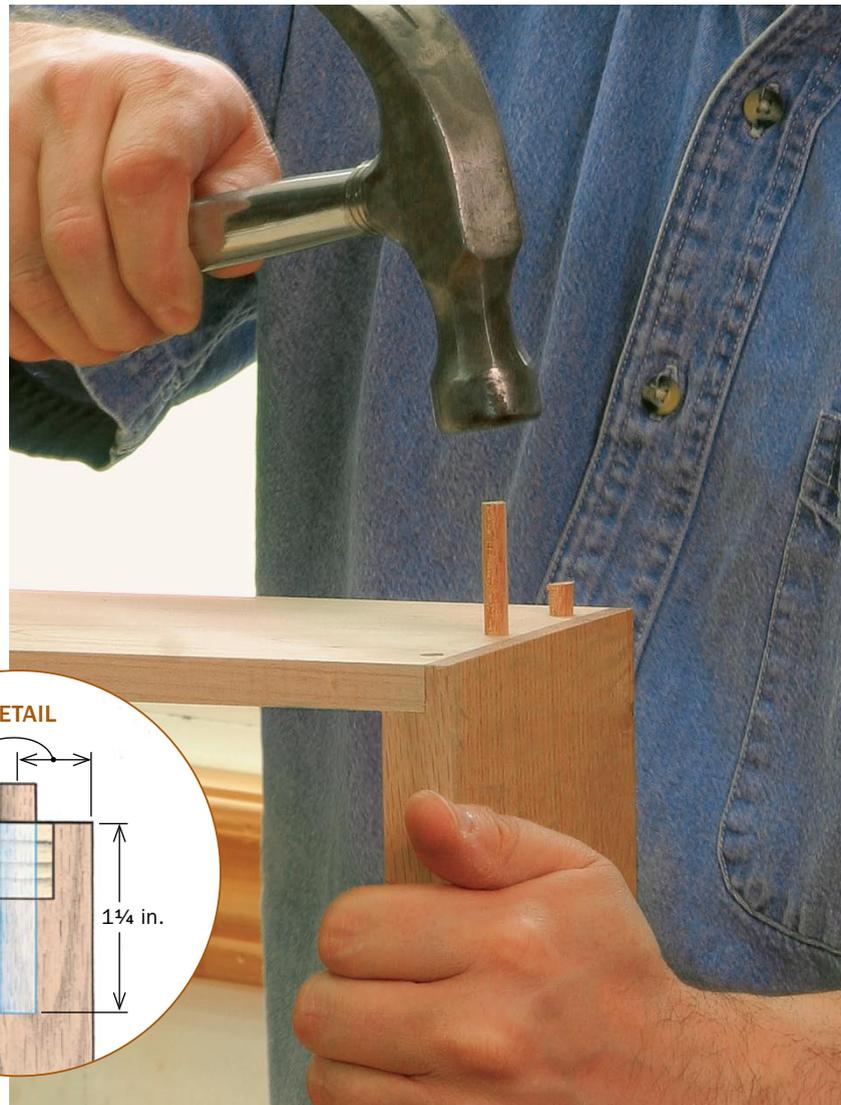
holes. After the glue has dried, cut them close with a saw and trim them flush with a block plane. Sand the sides and the front.

### Cut the bottom and fit the drawer

Next, cut the drawer bottom to size and slide it in from the back. About  $\frac{1}{32}$  in. of clearance per side ensures it won't get wedged in. Two or three small screws hold the panel to the underside of the drawer back. For a solid-wood bottom, the clearance is the same at the sides, but align the grain so that wood movement occurs front to back. Also, elongate the screw holes at the back.

Finally, plane the top and bottom edges of the sides to fit the drawer into its pocket, but don't take too much off the bottom or the gap around the front will become uneven. □

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**Leave pins proud, then trim them flush.** Cut them about  $\frac{1}{4}$  in. longer than they need to be. This reduces the chance you'll strike the drawer sides with the hammer. A good flush-trimming saw will do the job without marring the drawer. Or you can saw the pins a bit proud, and bring them flush with a block plane.

## Resize store-bought dowels for the best fit

Store-bought dowels are rarely the stated diameter or actually round. On these drawers, where the pins are inserted near the end of the sides, a dowel that's slightly oversize could split the end grain. One that isn't round would leave gaps. At the store, I use calipers to find dowels that are just a bit oversize. Back at the shop, I size them to the right diameter using a dowel plate made from an inexpensive angle bracket. I redrill the holes to ensure they're the right diameter, and each hole remains sharp enough to treat about 30 ft. of dowel.

**Easy to find.** Hardwood dowels in common species can be bought from most woodworking retailers.



**Quick-to-make dowel plate.** Use a twist drill to resize the holes in an angle bracket (above). Then use a handheld drill to spin the dowel through the holes (right).

