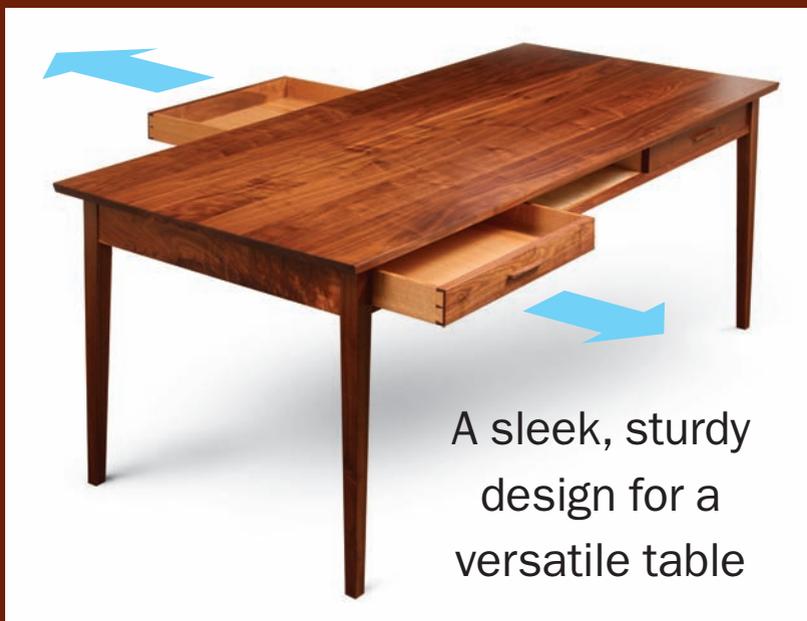


Dining Table with Two-Way Drawers



A sleek, sturdy design for a versatile table

BY STEPHEN HAMMER

Many of my favorite designs began with a challenging request from a client, and that was definitely the case with this table. The client wanted a dining table that would double as a worktable with a lot of storage, so I added double-fronted drawers accessible from either side. That required a drawer with half-blind dovetails at both ends, and a support system that could handle the extra stress of deep drawers when fully loaded. So I designed a table with upper and lower drawer stretchers that have the vertical dividers mortised in solidly. In addition, I wanted a clean design that would emphasize the beauty of the wood, and in this case tie into the eclectic setting that would be its home. I chose walnut because the table would be paired with a set of walnut Nakashima benches.

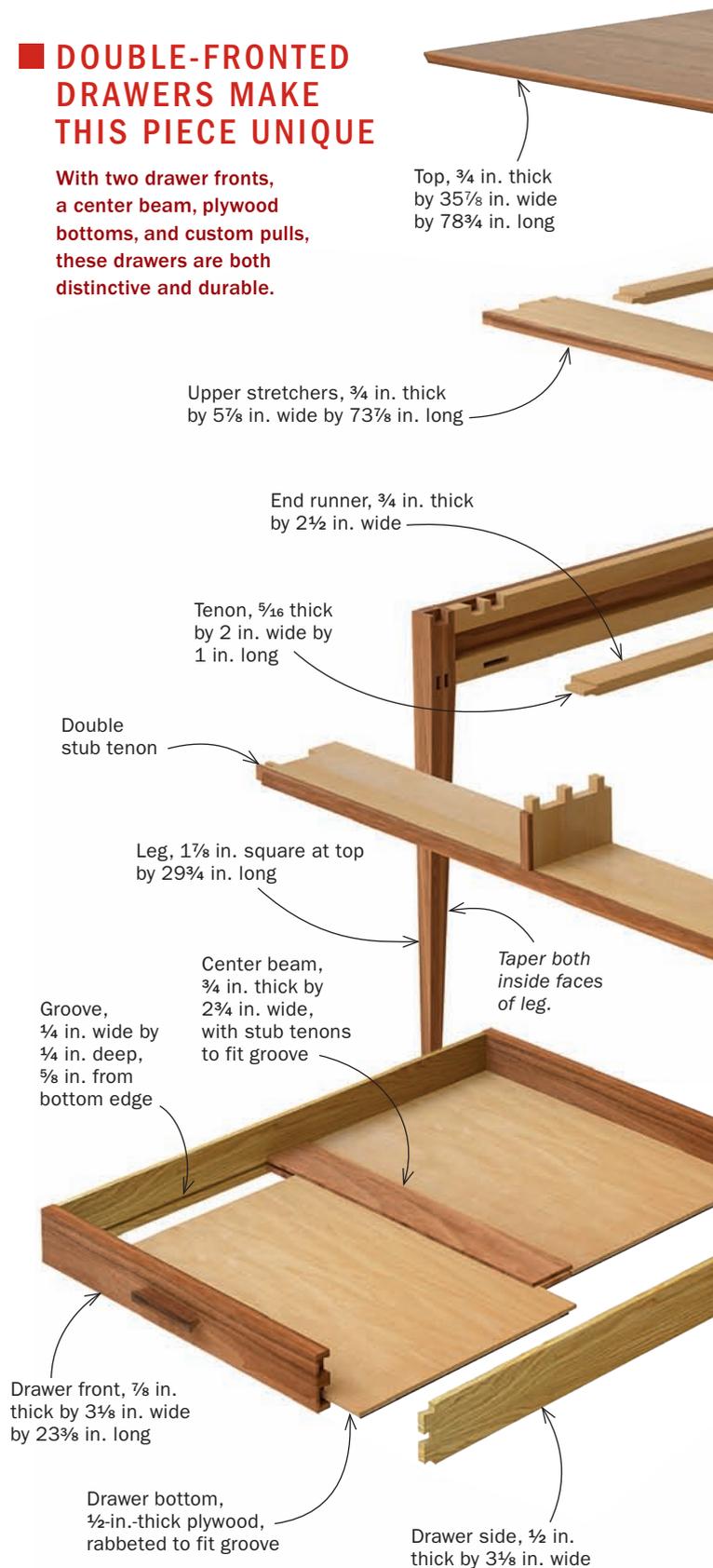
The table has the usual parts: legs, stretchers, dividers, runners and kickers, aprons, and drawers. But because it is built like a torsion box and the drawers have double fronts, the how-to is more like a cross between a chest of drawers and a basic table. Keep track of the joinery and work in the right order and you'll have no trouble reproducing this versatile dining table.

Mortises, and lots of them, are the key to this construction

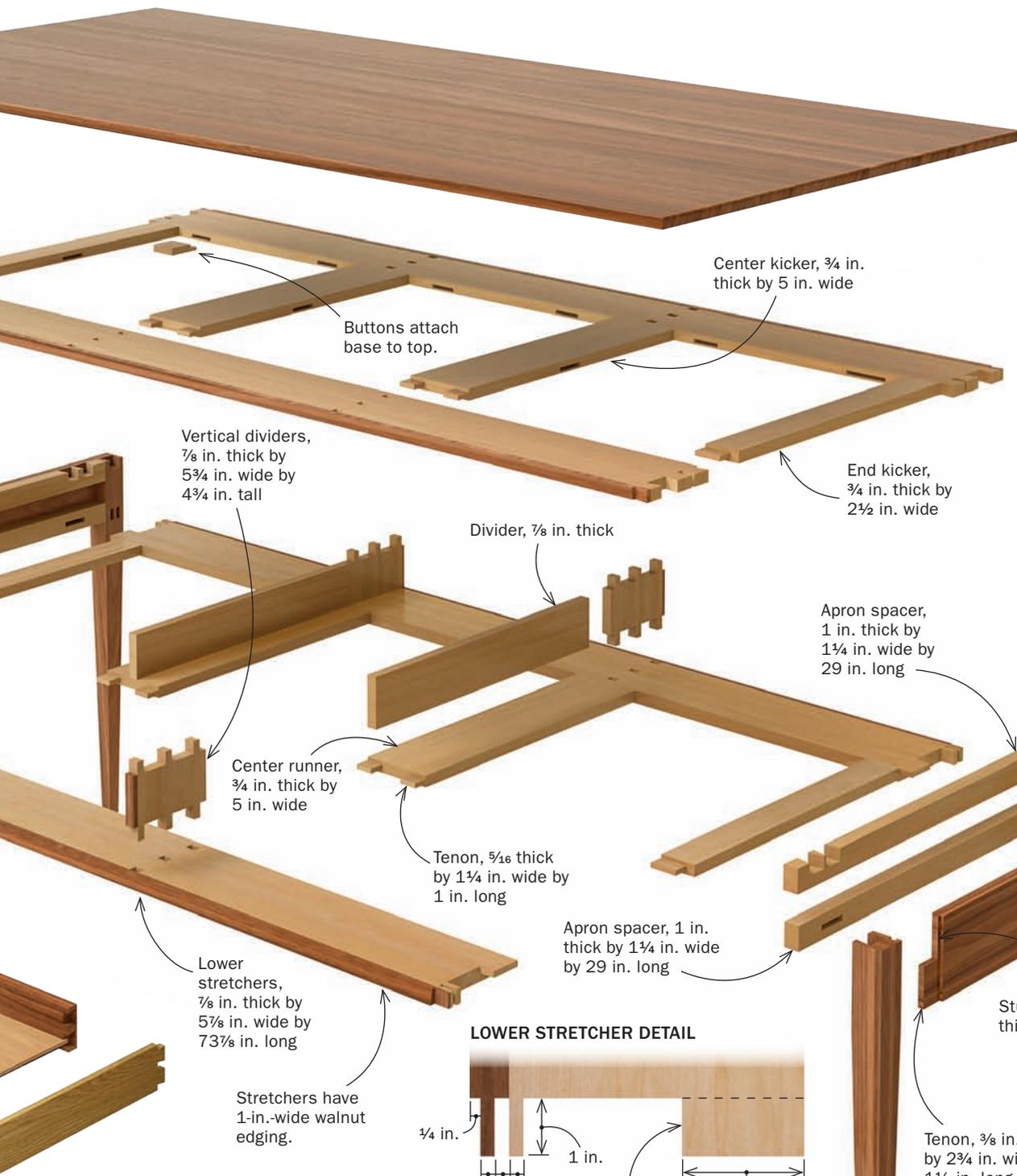
To begin, I go to my hollow-chisel mortiser and mortise the legs and stretchers, about 52 mortises in all. The upper and lower

DOUBLE-FRONTED DRAWERS MAKE THIS PIECE UNIQUE

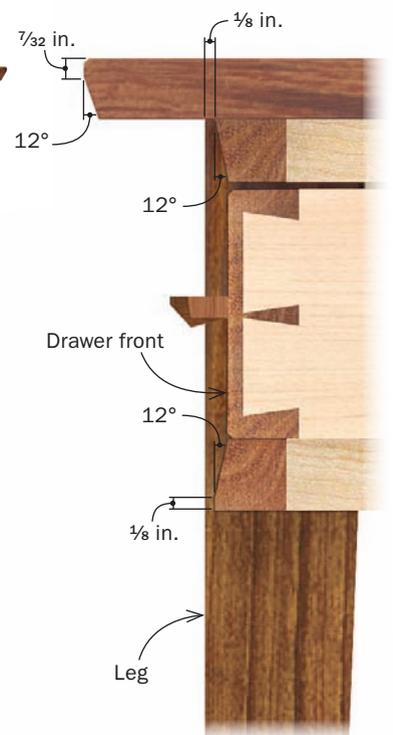
With two drawer fronts, a center beam, plywood bottoms, and custom pulls, these drawers are both distinctive and durable.



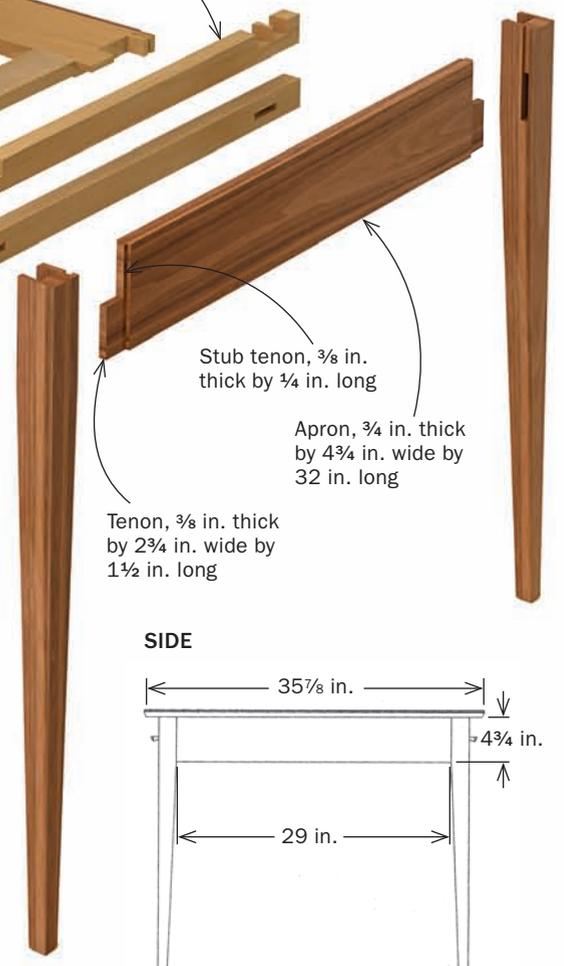
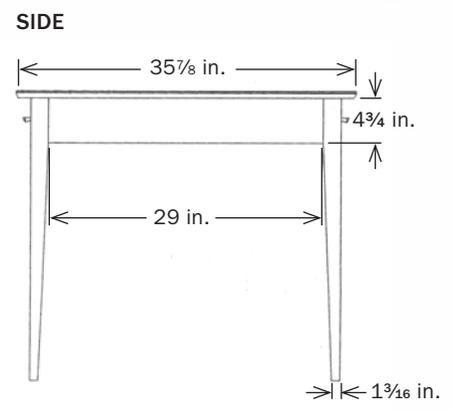
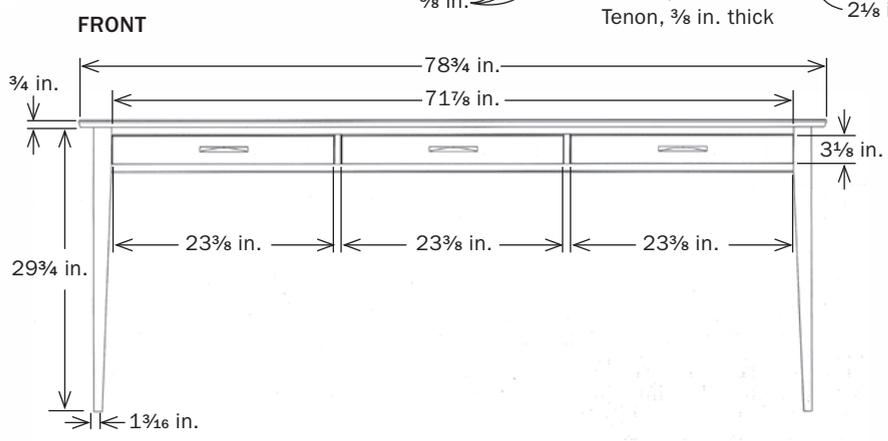
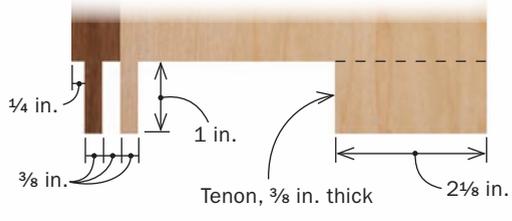
To purchase digital plans and a complete cutlist for this table and other projects, go to FineWoodworking.com/PlanStore.



TAPERED EDGES DETAIL

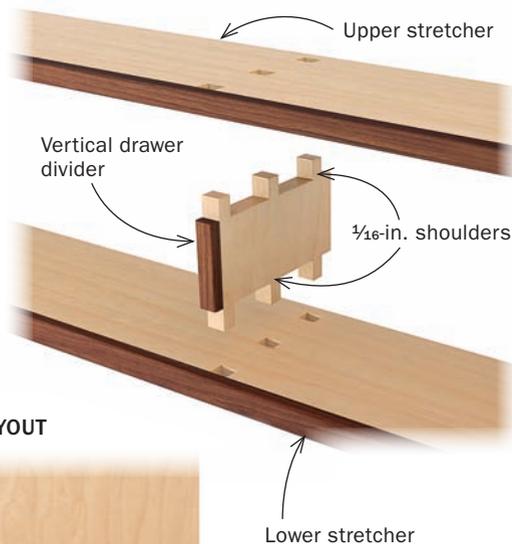


LOWER STRETCHER DETAIL

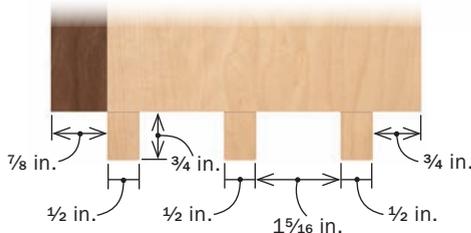


MAKE SHORT WORK OF MULTI-TENON JOINTS

The bulk of the joinery is mortise-and-tenon joints. The most challenging ones are the multiple tenons on each vertical drawer divider. Here's how to tackle them successfully.



VERTICAL DRAWER DIVIDER TENON LAYOUT



Mortises first. Mark the upper and lower stretchers for the location of the vertical drawer dividers, and then cut these through-mortises with a hollow-chisel mortiser, using a backer board to prevent blowout.



Graze the tenon cheeks. Before cutting the tenons, skim $\frac{1}{16}$ in. of material from the tenon cheeks with a dado set. This gives a clean edge where the tenons end.



Mortises locate tenons. Use the mortises on the stretchers to locate and mark the tenons on the vertical dividers.



A simple sled. Hammer uses a very basic sled to hold the vertical dividers as he removes the waste between tenons. He works carefully to his layout lines without using a stop, test-fitting as he goes.

stretchers are mortised through their faces for the vertical dividers that separate the drawers. Take extra care that all these mortises line up top to bottom, because their alignment is critical or the vertical dividers will be crooked. To do this, I clamp all four pieces together and, using my square as a guide, score a line across the inside edge of the stretchers. Then I transfer those lines across the faces of the stretchers to lay out the exact mortise locations.

Keep in mind that the legs are designed with a very simple double-sided taper that begins at the base of the apron. I cut the joinery before tapering the leg, so I can work on it while it is still flat and square. I cut the mortises for the lower stretcher and the haunched mortises for the side aprons. The upper stretchers connect to the legs with lap dovetails. The socket for the dovetail is cut later.

Now that the mortises are cut, it's time to move on to the tenons on the aprons, the drawer runners and kickers, the lower stretchers, and the vertical dividers.

The side aprons have haunched tenons. These tenons are cut with several passes on the tablesaw with a $\frac{1}{2}$ -in. dado set. I lay the boards flat on the table and crosscut them, using the fence to set the tenon length. The tenons on the runners and kickers are cut using the same method. To keep from interfering with the vertical drawer divider joinery, the center runners and kickers have two tenons. I remove the waste between the tenons on the tablesaw with the same sled and method I use for the vertical dividers, below. This isn't necessary on the end runners and kickers.

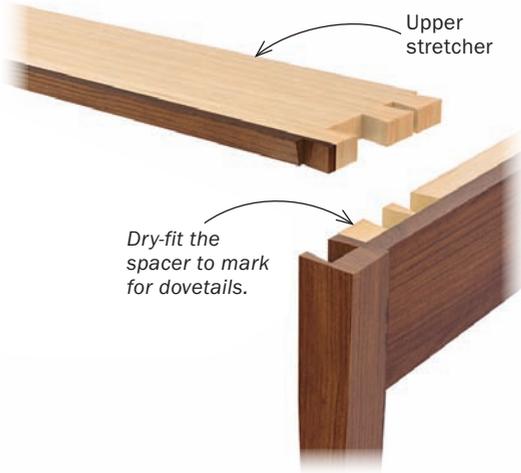
The tenons on the lower stretchers aren't as straightforward. They are joined with a double stub tenon into the leg and a single tenon into the lower apron spacer. I cut the stub tenons on the bandsaw and use the router table and a straight bit to create the tenon that lands in the spacer. I measure for the mortise in the lower apron spacer and cut it. Later, when the legs are glued to the apron, I dry-fit the lower stretcher system to the legs and apron, setting the apron spacer in place. It automatically registers itself, which allows me to mark its location and glue it in place.

Upper stretchers get dovetails

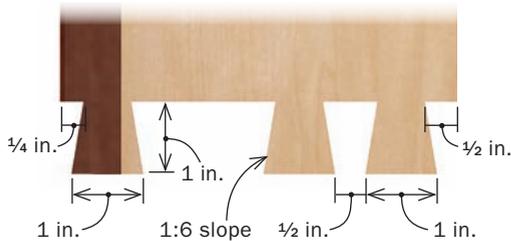
While the lower stretchers have mortises and tenons, the upper stretchers are connected to the leg and apron spacer with dovetails. This makes assembly much easier. I use a simple jig to establish the sides of the tails on the bandsaw, and then I cope out the

WAIT TO DO THE UPPER STRETCHERS

Unlike the lower stretchers, the upper stretchers get dovetailed into the legs and apron spacers. The quirk in the process is this: Because the dovetail sockets go partially into the apron spacers, they can't be laid out and cut until after the legs are glued to the aprons.



UPPER STRETCHER DOVETAIL LAYOUT

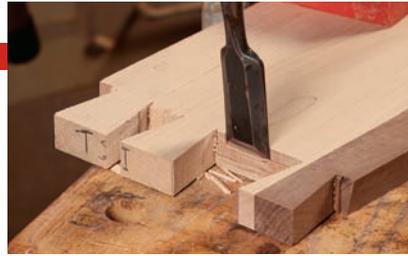


waste and clean up with a chisel. These structural dovetails are never seen, so appearance is not critical (see “Half-Blind Dovetails in Half the Time,” pp. 36-41).

With all the leg joinery completed, I now feel comfortable cutting the tapers in the legs. With only four legs to do, I mark the taper on the legs, cut it freehand on the bandsaw, and then clean it up on the jointer, making sure to register one side against the fence to keep the taper square. Later, after the legs are glued to the aprons, I'll mark and cut the dovetail socket in the top of the leg post, using a plunge router freehand. Then I clean it up with chisels.

How to simplify a complex glue-up

Because there are so many parts in the drawer system, this glue-up is more complicated than the average table glue-up. But you can break it into manageable stages: the leg/apron assembly, and then the stretcher assembly. Before glue-up, do a final sanding and finishing of the table parts. I use a finely set smoothing plane to remove mill marks, followed by a random-orbit sander up to P320-grit sandpaper. Then I apply Tried & True Original Wood Finish to all the parts. I can always sand more after assembly,



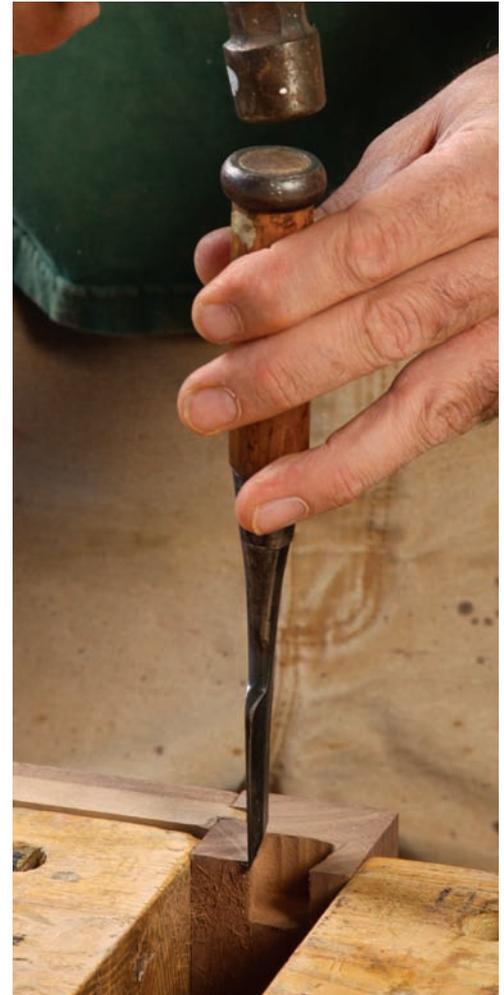
Dovetail the stretcher and lay out the sockets. Saw and chop the dovetails and clean to the line with a chisel (above). Dry-fit the apron spacers into the apron/leg assembly and mark the dovetail locations in the leg and spacer (right).



Remove the spacers to notch them. Using the tablesaw sled again, this time with an angled fence, Hammer makes the cuts to form the sides of the dovetail sockets. Then he runs the spacers through the same dado setup but on a 90° sled to remove any waste in the center.



Create the sockets in the legs. Hammer clamps the leg-and-apron assembly into his end vise with the top of the leg flush with the top of the bench (above). With the router base sitting on the bench, he routs close to the layout line, then cleans to the line with a chisel (right).



MANAGE THE GLUE-UP IN STAGES

This is a little trickier than your average table glue-up, so it's best to take it in steps. The legs are already glued to the aprons, so you'll need to glue in the apron spacers, make two frames of the stretchers, runners and kickers, and then piece it all together.



Glue in the spacers. Clamp the apron spacers into the leg-to-apron assembly.



Create two frames. The two lower stretchers are connected by the drawer runners. The two upper stretchers are connected by the kickers.

but this step saves time, gives a nicer finish, and helps a lot with glue cleanup.

Attach the aprons to the legs—Gluing the apron to the front and back legs is straightforward, and the mortises dictate the alignment of the parts. The side aprons have upper and lower spacers glued to them that allow the drawers to clear the legs, which are thicker than the aprons. However, I do not attach and cut the joinery in these spacers until the legs are glued to the aprons. It is easier to cut the joinery when they are separated from the apron, but I need the leg/apron assembly together to mark the exact location of the joinery on the spacers. With the joinery done, the spacers can be glued in place.

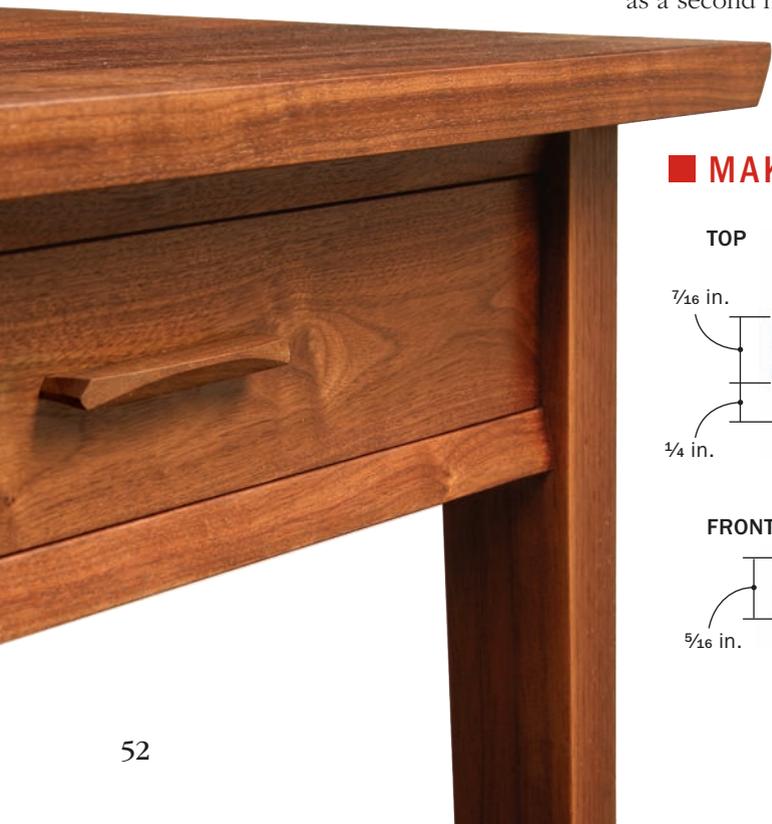
Two sets of stretcher frames, upper and lower—This is where things get a little complicated (but just a little). I glue up the front and back lower stretchers with the drawer runners as one frame, then the front and back upper stretchers with the drawer kickers as a second frame.

Put it all together—Next, glue the vertical drawer dividers into the lower stretcher frame. You have to make sure they stay straight as they are drying, so you can use a slow-dry glue such as Titebond Extend and work on gluing the upper stretcher assembly right away, or you can take the pressure off the glue-up and simply dry-fit the top in place until the dividers are dry.

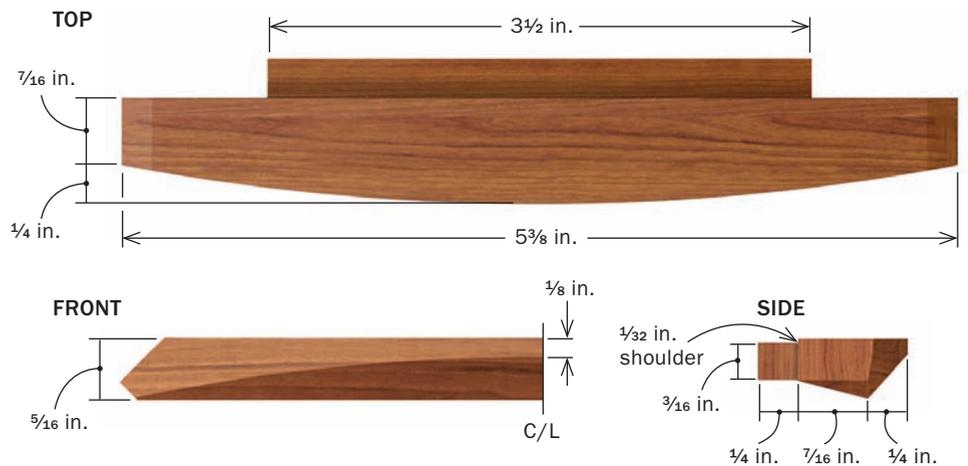
The final steps happen all at once. Glue the lower stretcher assembly into the leg/apron assemblies, and drop the top stretcher assembly into place over the dovetail sockets and drawer divider tenons. It is critical that you check all the parts for square. Measuring the diagonals works well for this. Here you also can just dry-fit the top in place while the bottom stretcher dries, and then add the top.

Quick and easy drawer construction, even with two fronts

With the base assembled, it is time to focus on the drawers. I combine power tools and handwork to create consistent dovetails efficiently while keeping a hand-cut appearance (see “Half-Blind



MAKE HANDSOME HANDLES





Add the lower frame to the legs. One long clamp on each side is enough to pull it all together.



Drop the vertical dividers in place and top it off. With the vertical dividers glued into the lower stretchers, you can dry-fit the top stretcher assembly until the vertical dividers are set, and then glue the top assembly in place. Or use glue with a longer open time and do it all at once.

Dovetails in Half the Time,” pp. 36-41). I use quartersawn white oak for the drawer sides. Its hardness lets the drawer slide easily and with little wear. It also contrasts with the walnut to show off the dovetails. Custom walnut handles are the finishing touch. By the way, I didn’t use a catch to register these drawers, but if you are interested in bullet catches, see p. 56.

Top it off

With the base complete, you can make the top. I made mine from a series of boards picked for grain appearance and glued up side

by side using biscuits for alignment. After cutting the top to final size, I shaped the edge with a 12° bevel that matches the bevel on the stretchers. Wooden buttons secure the top to the frame.

To finish the top, I use a finely set smoothing plane to take out all the milling marks, and then sand it up to P320 grit. I then apply several coats of Tried & True Original Wood Finish wiped on and rubbed off by hand. Even though all parts were pre-finished, I go over the entire piece again with a final few coats. □

Stephen Hammer designs and makes custom furniture in New Britain, Conn.



Rip tricks. The first two rip cuts form the tenon (left). Leaving the angled cheek cut for last lets the handle stock fall away from the blade (right).

A few cross-cuts. Multiple crosscut passes waste away material to create the tenons. Then raise and angle the blade to cut the handles to length.



Final shape. Using the tenons to secure the handles in a vise, do the shaping with a block plane.