



MEK Woodworks

Posted on Jul 18th, 2024

Everyone needs an end table next to the couch or their favorite reading chair. This one, made from walnut, has a large top with plenty of room for a drink and a book. The drawer provides storage for remotes, coasters, and other small items, while the cubby below is a good place to store books. The dovetails that join the parts are beautiful and strong, and the table's clean lines and understated design fit alongside just about any furniture style.

A final note before we begin: the table's joinery, drawer, and overall design are best suited for woodworkers with some experience making furniture.

MATERIAL LIST

Purchasing lumber to make a piece of furniture is a skill and art unto itself. Personally, I always focus on the grain, color, and quality of the wood. As I am sorting through a stack, I identify where a specific part will come from in a board, and keep looking until I have found what I need for every part of the piece I am making. I always take a parts or materials list with me, so I've provided one for you. Keep in mind that the dimensions below are final dimensions, and you'll need more wood than what those dimensions add up to in board feet.

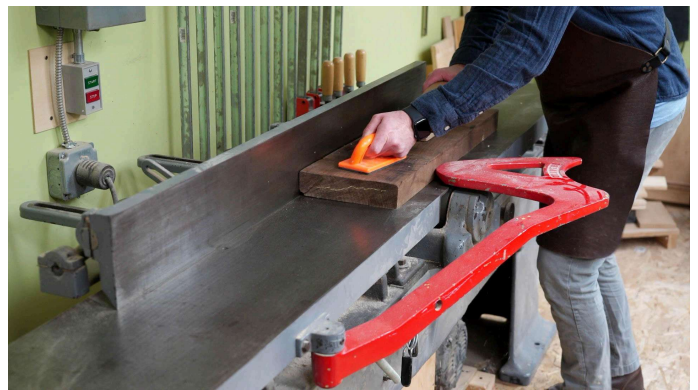
PART	QUANTITY	DIMENSIONS (T X W X L)	MATERIAL
Lower Case Side	2	11/16 x 16 x 17	Walnut

PART Lower Case Top	QUANTITY 1	DIMENSIONS (T X W X L) 11/16 x 16 x 18	MATERIAL Walnut
PART Lower Case Shelf	QUANTITY 1	DIMENSIONS (T X W X L) 11/16 x 16 x 17 5/16	MATERIAL Walnut
PART Upper Case Side	QUANTITY 2	DIMENSIONS (T X W X L) 11/16 x 16 x 6	MATERIAL Walnut
PART Upper Case Top/Bottom	QUANTITY 2	DIMENSIONS (T X W X L) 11/16 x 16 x 18	MATERIAL Walnut
PART Liner Side	QUANTITY 2	DIMENSIONS (T X W X L) 3/8 x 15 3/8 x 10 7/8	MATERIAL Basswood
PART Liner Top/Bottom	QUANTITY 2	DIMENSIONS (T X W X L) 3/8 x 15 3/8 x 16 5/8	MATERIAL Basswood
PART Drawer Side	QUANTITY 2	DIMENSIONS (T X W X L) 1/2 x 4 1/2 x 14 1/2	MATERIAL Basswood
PART Drawer Back	QUANTITY 1	DIMENSIONS (T X W X L) 1/2 x 4 x 16 5/8	MATERIAL Basswood
PART Drawer Front	QUANTITY 1	DIMENSIONS (T X W X L) 1/2 x 4 5/8 x 16 5/8	MATERIAL Walnut
PART Drawer Veneer	QUANTITY 1	DIMENSIONS (T X W X L) 3/16 x 4 5/8 x 16 5/8	MATERIAL Walnut
PART Drawer Bottom	QUANTITY 1	DIMENSIONS (T X W X L) 1/4 x 14 1/4 x 16 1/8	MATERIAL Basswood
PART Drawer Pull	QUANTITY 1	DIMENSIONS (T X W X L) 3/8 x 7/8 x 4	MATERIAL Cocobolo
PART Spacers	QUANTITY 3	DIMENSIONS (T X W X L) 11/16 x 11 x 15	MATERIAL Basswood

PART Drawer Stop	QUANTITY 2	DIMENSIONS (T X W X L) 3/8 x 3/8 x 5	MATERIAL Basswood
PART Side Strips in Upper Case	QUANTITY 2	DIMENSIONS (T X W X L) 5/8 x 5/8 x 3 5/8	MATERIAL Basswood
PART Top/Bottom Strips in Upper Case	QUANTITY 2	DIMENSIONS (T X W X L) 5/8 x 5/8 x 16 5/8	MATERIAL Basswood
PART Lower Case Back Slats	QUANTITY 5	DIMENSIONS (T X W X L) 3/8 x 2, 3 @ 2 1/2, 3 x 16 5/8	MATERIAL Basswood
PART Upper Case Back Slats	QUANTITY 2	DIMENSIONS (T X W X L) 3/8 x 1 11/16, 3 1/4 x 16 5/8	MATERIAL Basswood

STEP 1: MAKE THE CASE PARTS

Because the side table is 16 in. deep, you need to glue boards together to make the panels that wide. I chose to buy 2 in. thick Walnut, resaw it to create two boards, and then glue them together to make book matched panels for the case parts. You could also buy 1 in. thick boards and glue them together to make the 16 in. wide panels. I made a large crosscut sled, so that I could cut the parts to length, but it's an ideal job for the SawStop Sliding Crosscut Table if you have one.



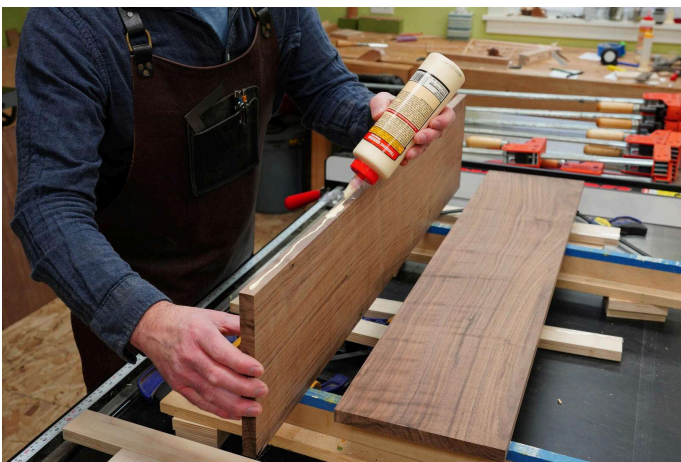
Mill the boards. Joint a face and then run the board through the planer to make the second face parallel to the first. Joint an edge, and then rip the board to width (just over 8 in. wide).



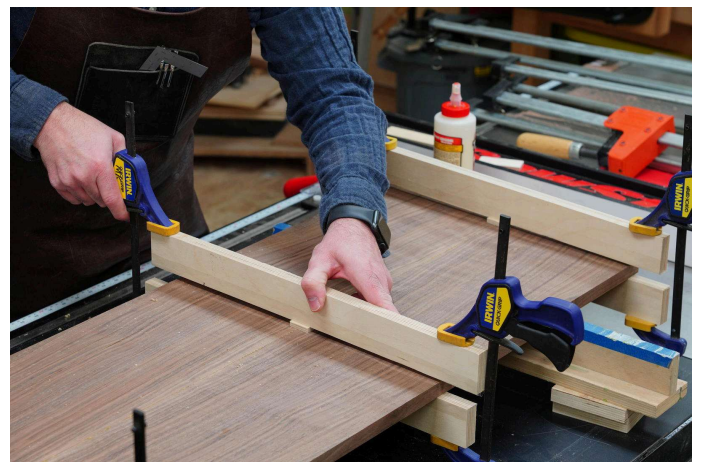
Make two boards from one. At the bandsaw, cut the board down the middle of its thickness. At this point, both of the new boards should be at least 1/8 in. thicker than their final thickness (11/16 in.).



Resaw to create a bookmatch. Open the two boards up, using one of the edges as the “spine” of a book. The grain of the two boards mirrors one another along the “spine.” These two faces become the outside face of the case parts.



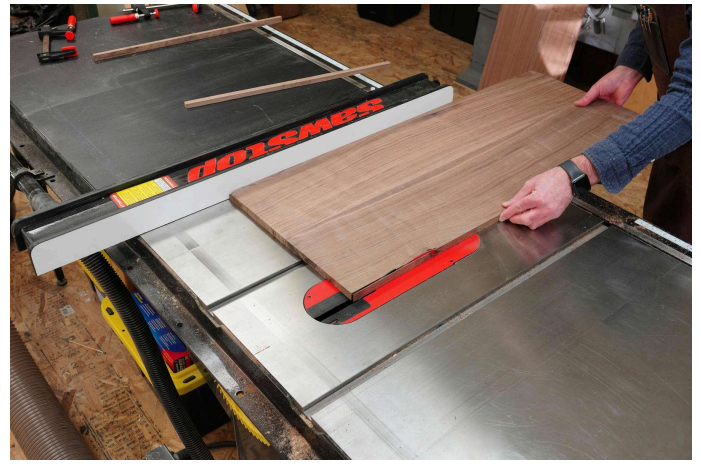
Glue the edges. After planing the boards to final thickness, glue them together to create the wide panels needed for the side table’s casework. Standard woodworking glue is more than strong enough for these joints but be sure to use plenty and not starve the joint.



Pinpoint pressure. Because the boards are already at final thickness, you cannot mill them after gluing them together, so it’s critical that they are properly aligned at the joint. A small piece of plywood (packing tape prevents the glue from sticking to it) placed over the joint, under a plywood caul, ensures that the two boards are flush during the glue up.



Clamp the panel. Because these panels are so wide, the pressure applied by the clamps spread over a large area by the time it reaches the joint, so you don't need to use many clamps. For me, four clamps applied enough pressure at the joint to squeeze glue out along the joint's entire length.



Rip to width. To ensure that the glue joint remains centered in the boards, remove equal amounts from both edges, but this level of fussiness isn't necessary. So, if you want, just cut one edge. However, if you do that, be sure to rip the same edge of every board, so that the grain lines up as it runs up one side of the table, over the top, and back down the other side.



Cut the lower case side to length. Square the bottom end of the board (the one that will become the feet), and then use a stop to ensure that both sides are the same length.



Add a spacer. It's 11 in. long, which is the difference between the length of the lower- and upper-case sides.



Crosscut the upper-case side. It's much wider than it is long. Take care to keep the long grain edge tight against the fence, so that the end grain is square to the edge.

STEP 2: CUT THE CASE DOVETAILS

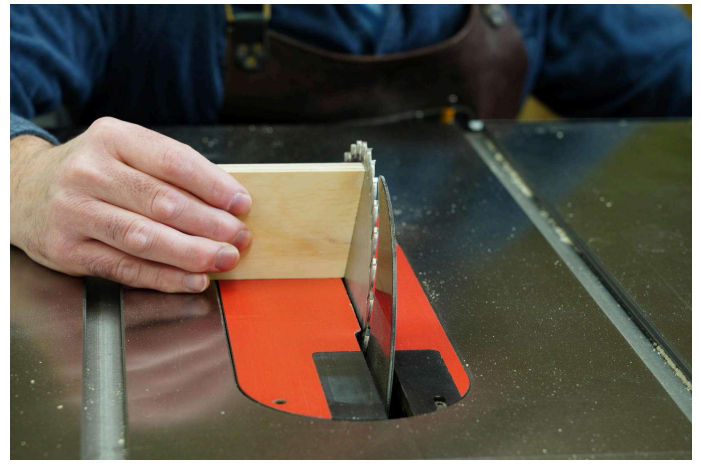
Dovetails are strong and attractive, making them the perfect case joinery for this side table. There are many ways to cut the tails and pins. I am using a specially ground table saw blade to cut the tails, and then a set of box joint blades to remove waste between the pins. You also can use a regular crosscut blade, but will need to clean out the corners with a chisel. Regardless of how you cut your dovetails, it's important to transfer the tails accurately and then fit the pins to the tail board carefully. Those two steps are the most important when making a dovetail joint.



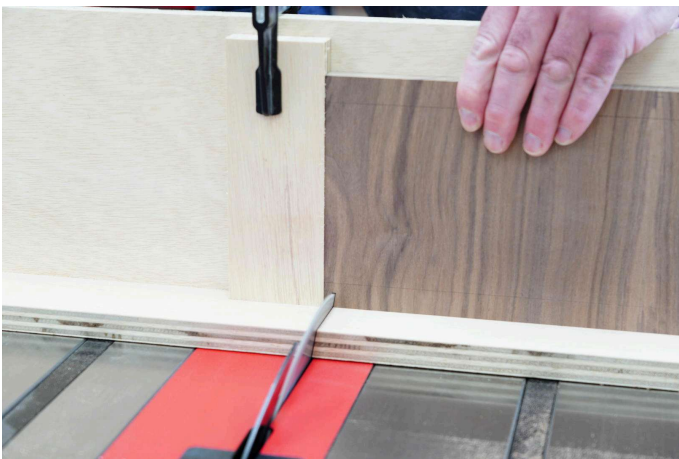
Scribe the shoulder. The best tool for the job is a cutting gauge, because the knife, if sharp, cleanly cuts across the grain. A wheel gauge works great too, if the cutter is sharp. Set the gauge to the thickness of the case sides.



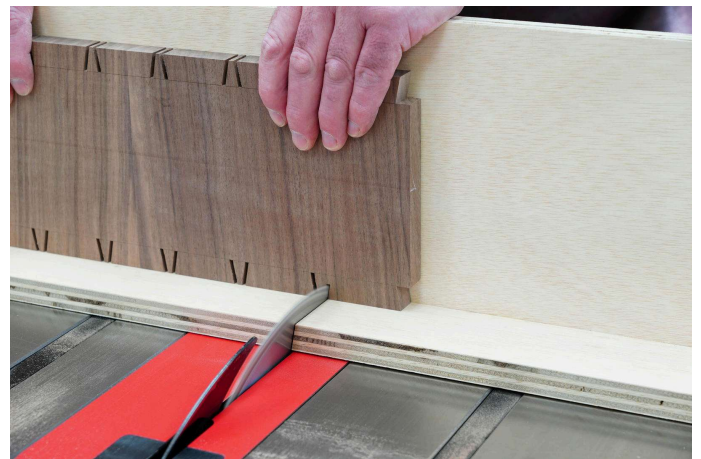
Lay out the tails. I prefer to have a single narrow tail in the middle, and then wider tails on either side of it, but the exact layout isn't important, so feel free to use a layout you find attractive.



Use a table saw blade designed for dovetails. All the teeth on this blade are ground at 10° in the same direction across the top. When tilted to 10°, the blade cuts a perfect corner where the tail meets the shoulder. You can use a standard crosscut saw blade instead of a dovetail blade. You will just need to clean up the corner of the cut with a sharp chisel.

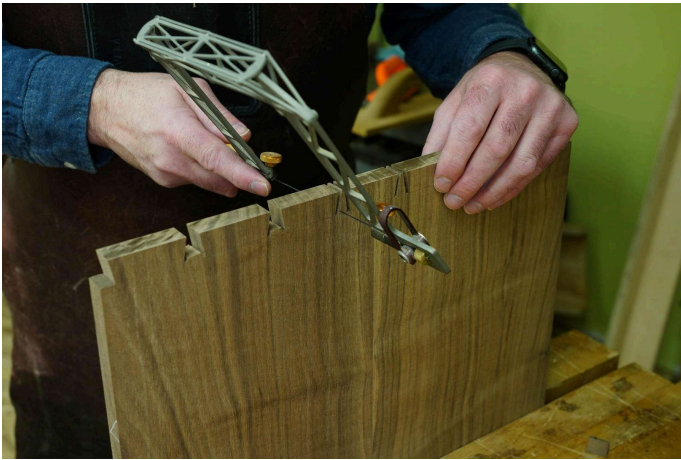


Start at the edge. Clamp a stop to the sled's fence to cut just to the waste side of the layout line. You'll need to make three cuts on the edge to remove all the waste.



Work across the case side. Move the stop as you go and make four cuts with each stop position. After the first cut, flip to board so that the other edge is against the stop and make a second cut. Then, flip the board end for end and repeat the process.

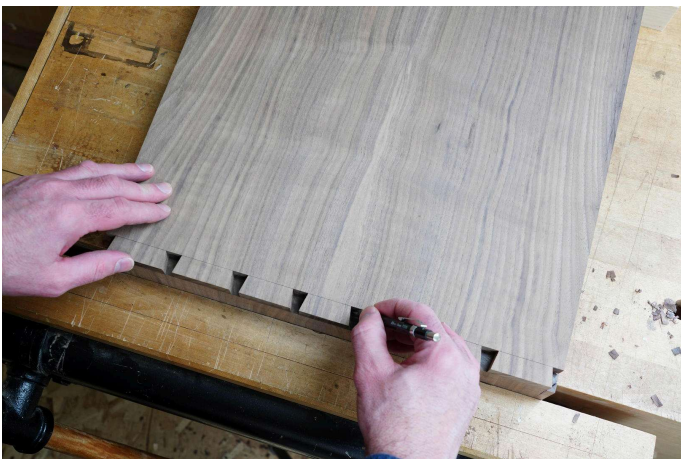
As you work across, you'll begin to cut the second side of all the tails.



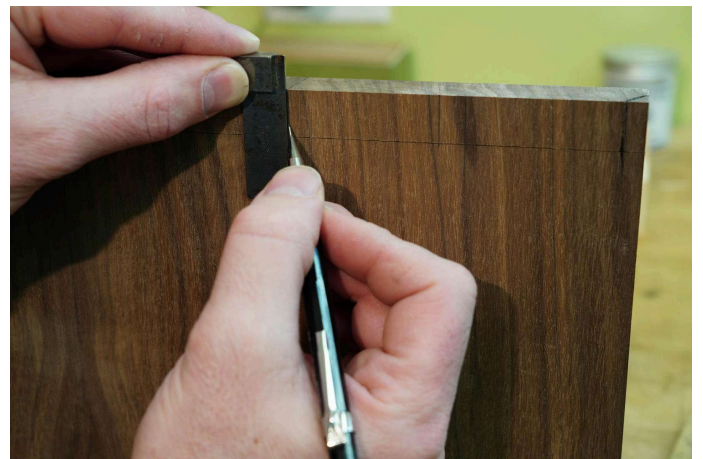
Cut out the waste. Use a coping saw and get as close to the shoulder as you can.



Clean up the shoulder. Pare in from both faces to avoid tearing out the grain. The shoulder can be straight across or slightly undercut but should not be higher in the middle than the shoulder.

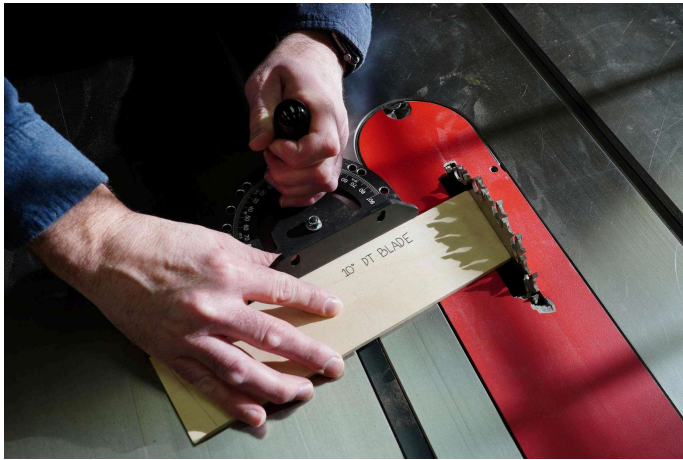


Transfer the tails. This is the most important step when dovetailing. Align the two boards along the front edge, and make sure that the tail board's shoulder meets the inside face of the pin board. Don't let the tail board shift while transferring. I use a pencil and the entire

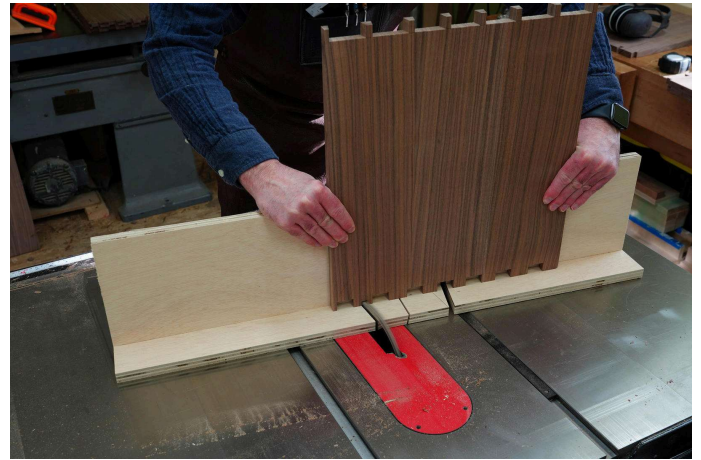


Carry the marks down the face. You'll need these lines to cut the pins accurately on the table saw.

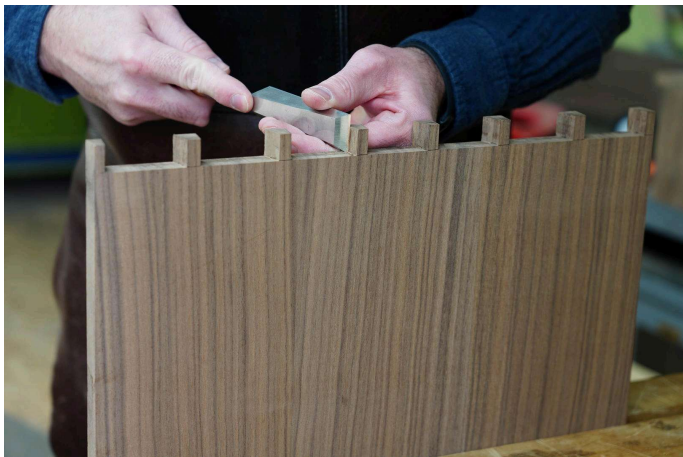
pencil line is on the pin, so none of it is cut away.



Angle the miter gauge. Which way you angle doesn't matter, but the angle is critical. It matches the 10° slope of the tails. One side of the pin is cut with this setup, and the other side is cut by angling the gauge 10° in the opposite direction.



Clear out the waste. Cut to the line, but do not cut the line. Take two or three passes, but do not get too close to the next pin in line, because you might cut away part of it. After cutting the first side of all the pins, angle the gauge in the opposite direction, cut the second side, and whatever waste remains in the tail socket.



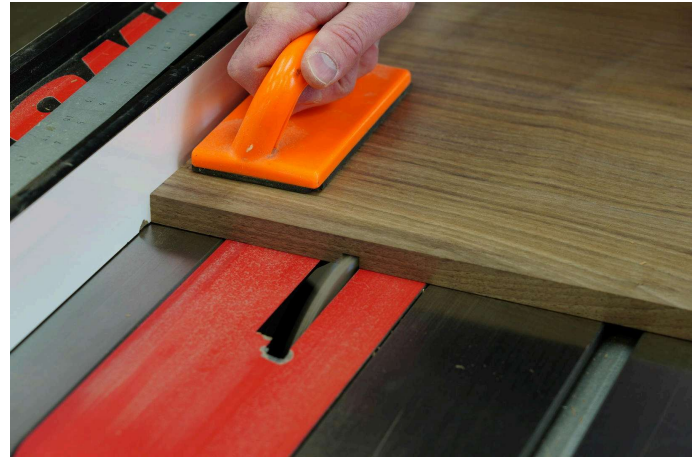
Pair the pins. Leave the pencil line. The safest way to pair a pin cheek is across the grain. If you come straight down the pin, you can get under the grain and split the pin.



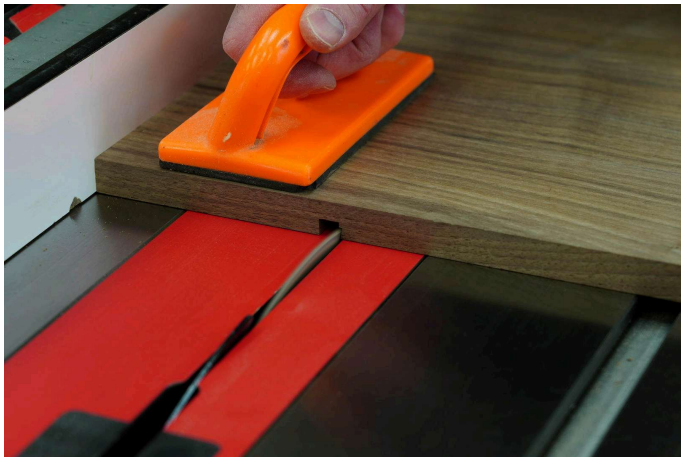
Fit the joint. Ideally, you can bring the joint together with just hand pressure. A joint that requires a mallet is too tight.

STEP 3: SHELF SLIDES INTO THE CASE

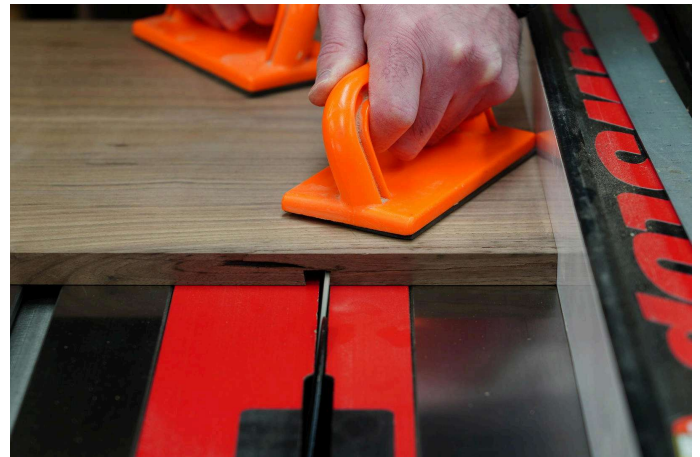
Although more challenging to cut than a dado and tongue, a sliding dovetail is the best joint for the case bottom or shelf because the dovetail's shape grabs the case's sides and prevents them from spreading out over time. If you don't have a table saw blade ground for dovetails, cut the housing in the case sides and the elongated dovetail in the shelf with a dovetail router bit.



Start with a dado. I use a 3/8 in. wide box joint set because it cuts a flat bottom but a standard dado set works just as well.



Angle the first side. I use the same blade I used to cut the tails for the case joinery. The case side is wide enough to run the end grain against the rip fence and not use a miter gauge to guide the board through the blade.



Move the fence for the second side. Put the rip fence on the opposite side of the blade, rotate the case side 180°, and angle the other side of the housing.



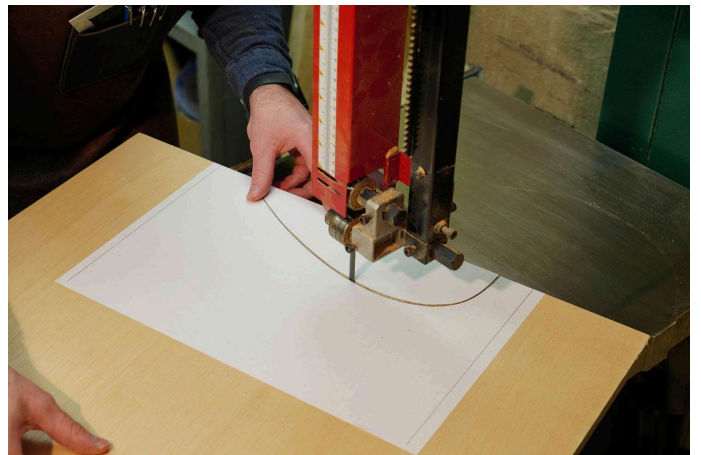
Stand up the shelf to cut the tail. I made a sled that rides on the rip fence to hold the shelf as it passes through the dovetail blade. Set the fence to cut a tail wider than needed. After cutting both sides of the tail at both ends of the shelf, move the fence slightly closer to blade and repeat the four cuts. Move the fence closer, repeat.



Sand to fit. There is a ton of friction when you push the shelf into the housings. I found it necessary to sand the tail, test the fit, sand some more, and repeat until it slid all the way into the housing. The edge of the sanding block is angled 10° to match the tail's slope and allow you to get all the way into the corner when sanding.

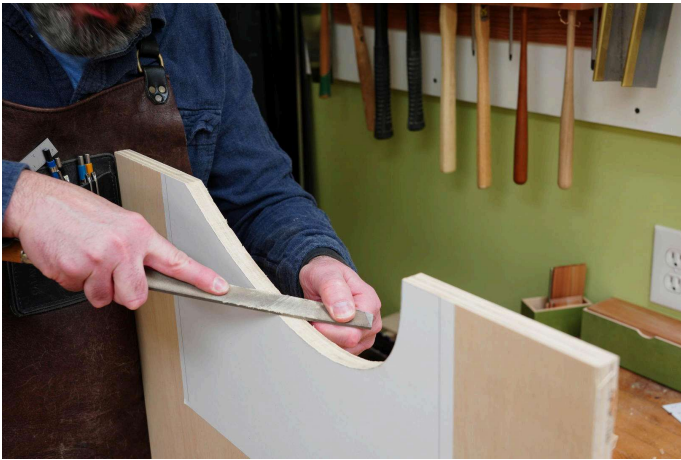
STEP 4: CUT THE ARC TO MAKE FEET

Rising quickly and sweeping back down more gently, the arc cut into the bottom of the case side creates two feet on each side, and the four feet together give the side table a stable foundation. If you don't have the means to make the template and rout the arc flush to it, you can cut each arc individually, clamp the two sides together, and fair them with rasps and files.



Rough out the template. I printed the arc at full size and glued it to a piece of plywood, and then used my bandsaw to

cut just inside the line and remove the waste.



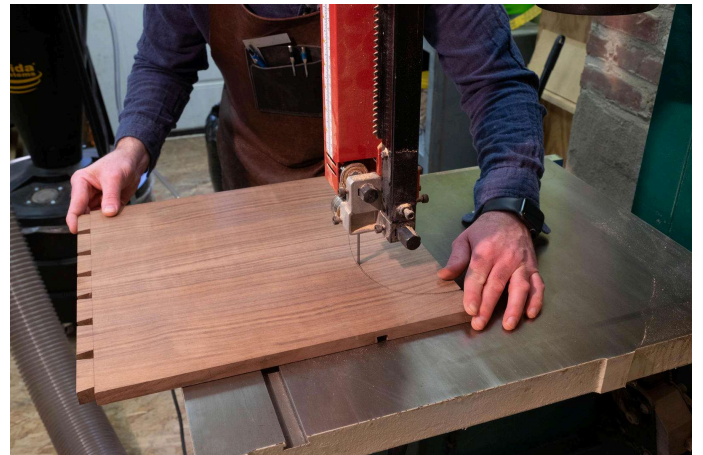
Smooth the arc with a file. Angle the file so that it is effectively longer, which allows it to better ride the high points (like a hand plane). Take long strokes, because short strokes are more likely to result in a curve that is not fair.



Add fences to the template base. Pressed tightly against the case side, they hold it securely when you rout the arc flush. I registered the template and case side against my saw's fence to ensure that they were properly aligned before gluing and nailing the three fences to the template.



Trace the arc to the cabinet side. The entire pencil line is on waste material.



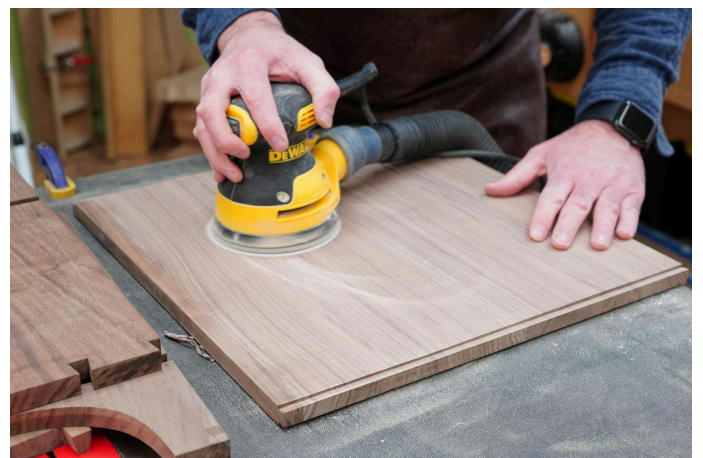
Remove the waste with the bandsaw. Cut just inside the pencil line, on the waste side. This leaves a small amount of material for the router bit.



Rout flush to the template. I am using a compression bit and have found that this type of bit is capable of routing both up and down a gentle curve without grabbing the grain and creating tear out. If you are using a bit with straight cutters, you should rout down both sides of the arc. You'll need to flip the template and side over to come down the back side of the arc. Do not make these routs with a handheld router. I am using my shop-router table, but any router table, like the SawStop In-line Router Table, will do.

STEP 5: ASSEMBLE THE TWO CASES

Dovetail joints this wide demand patience when gluing them together, but keep in mind that the glue will expand the pins a bit, and that means they will be a bit harder to fit between the pins than when they were dry fit. So, be patient and be calm, but work quickly.



Sand interior surfaces. Even though the lower cabinet has a liner, it's a good idea to sand the inside before assembly to ensure that there's a smooth surface to glue the liner to. Don't forget to sand the underside of the shelf now and sand the interior surfaces of the upper case, too.



Plane the front edges. A small block plane or smoothing plane is just the right size to balance on the narrow edge.



Put glue on the pins. The vertical cheeks are the most important place for the glue because they mate with the sides of the tails to create a long grain to long grain joint. Put glue on the end grain shoulder between the pins, too.



Add the sides to the top. After assembling the first corner joint, place the assembly



Clamp the joint. Because the shelf is not in the cabinet at this point, it is critical that

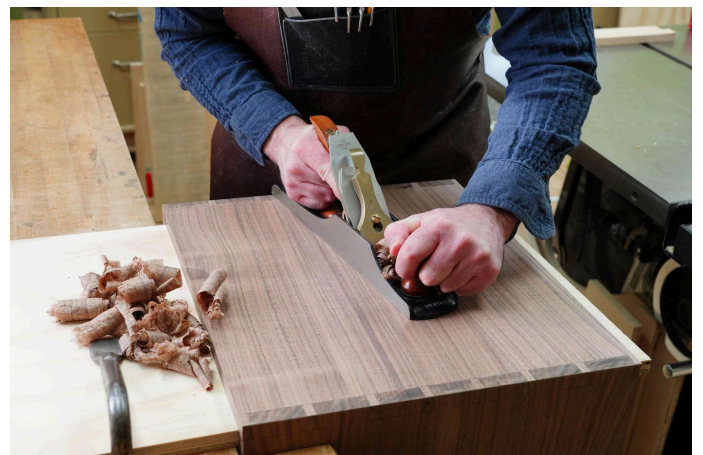
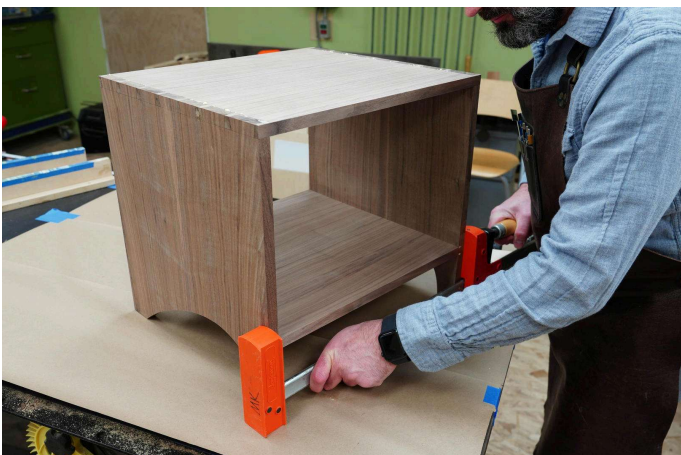
down on your bench or saw table, spread glue on the pins of the opposite joint, and put the second side on.

sides are square to the case top. After tightening the clamps and pulling the joints closed, check with a 12 in. combination square and adjust the sides as needed. When the case is square, you can take off the clamps as long as the joint doesn't open when you do.



Don't overdo the glue. The sliding dovetail only needs glue at the front and back of the housing. Start at the edge and spread it about 3 in. into the housing. If you spread glue in the entire housing, it will swell, and you'll never be able to push in the shelf all the way.

Knock the shelf into place. You'll likely need the help of a hammer or mallet. A long piece of plywood both protects the shelf's edge and helps to spread the force of the hammer blow over a larger area, and that helps prevent the shelf from racking as you drive it home.



Add some clamps. It only takes two: One in the front and one in the back.

Clean up the outside. I cut a piece of plywood to fit inside the case, which hangs off the front of my bench.

STEP 6: MAKE THE SPACERS

Between the upper and lower cases are three strips of wood painted with green milk paint. I made mine from basswood, but any hardwood that paints well, like maple and poplar, can be used instead. Since they run perpendicular to the case's grain direction, you must account for wood movement when attaching them, so you cannot glue them to the case. Use screws instead.



Inset the front end. After squaring one end of the spacer blank, locate it 1/2 in. from the front. Not only does the offset create visual interest, but it also ensures that the spacer will never stick out past the front edge of the table, because upper and lower cases will never shrink that much across their width. Any type of adjustable square works here.



Mark the back end for length. Place a single pencil mark 1/2 in. from the back edge of the cabinet.

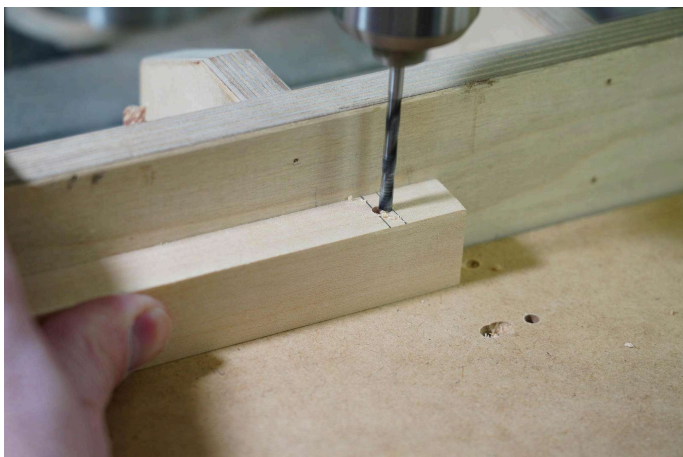


Rip out the spacers. Set the fence for a 5/8 in. wide rip and use a push block.

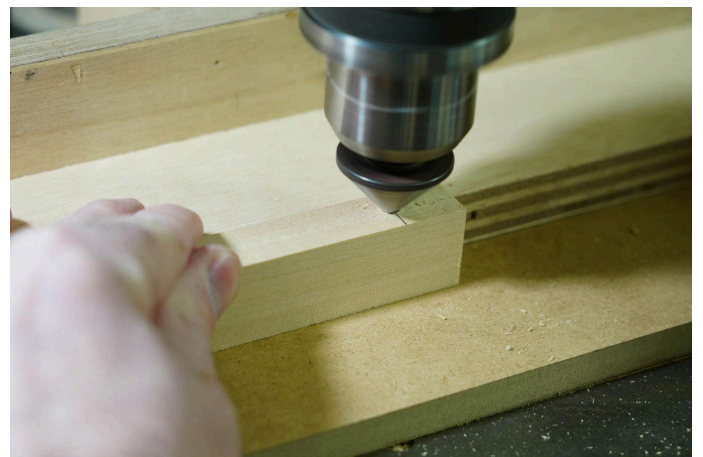
Crosscut to length. Use a stop block and press the front end against it. That prevents the spacer blank from slipping during the cut.



Drill clearance holes at the front. These holes should be big enough that the screws you are using to attach the spacers slide in and out. The threads should not engage.



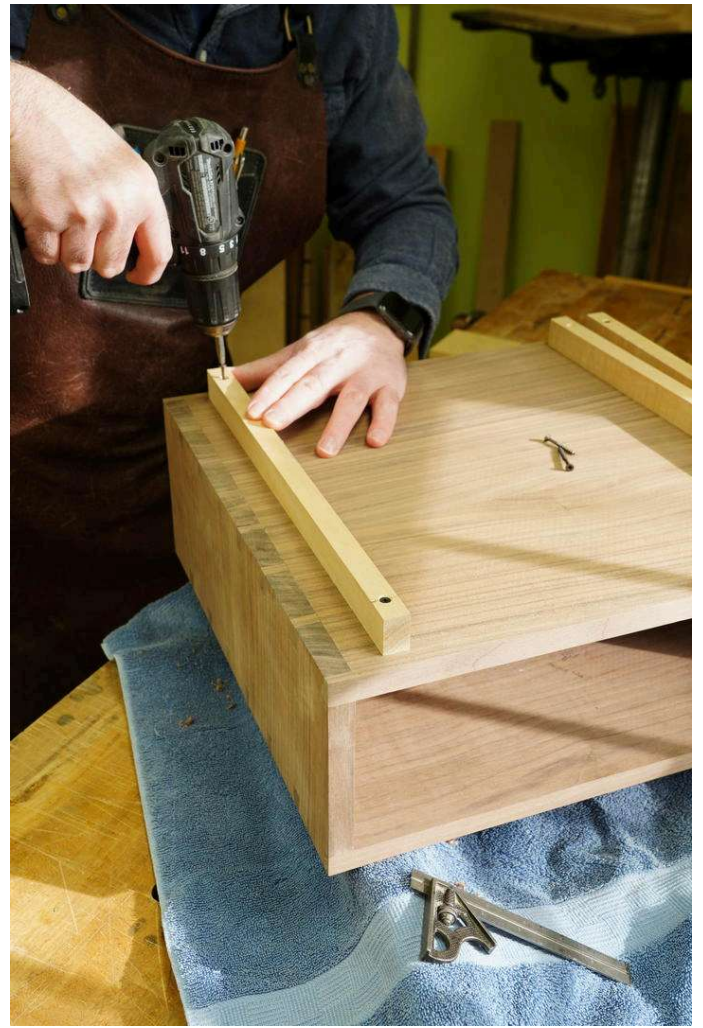
Make them wider at the back. Drill two holes next to each to create a slot. The slot allows the upper and lower cabinets to expand and contract. The screw will move with the cabinet.



Cut a countersink. To determine the depth, just drop a screw into the pilot hole. The screwhead should be just below the spacer's surface.



Locate the spacer on the upper cabinet. Use a combination or other adjustable square to inset it both from the side and the front.



Secure it with screws. Attach it at the front first, and then drive a screw into the slot at the rear so that it's centered on the slot's length.

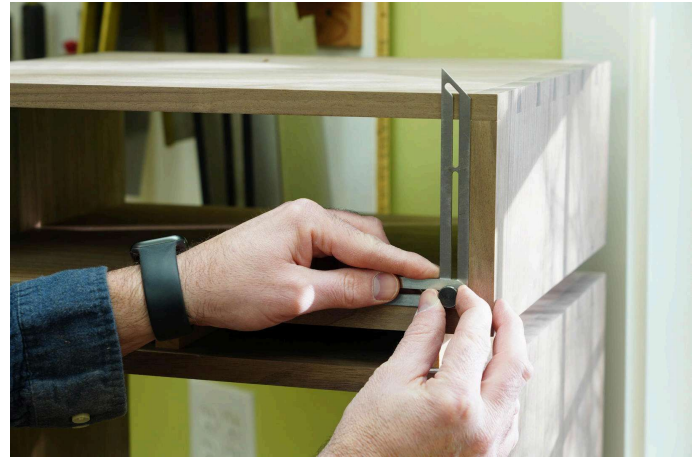


Attach the lower case from inside. The trick here is not to drive them into the

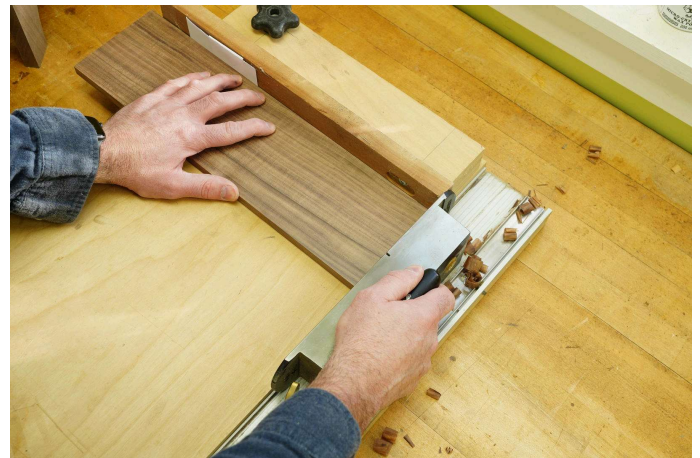
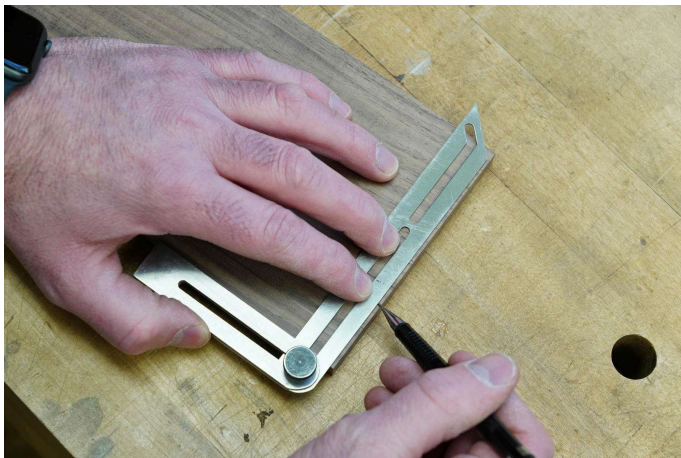
screws used to attach the spacer to the upper cabinet. Eventually, the liner covers these screws.

STEP 7: MAKE THE DRAWER

I don't believe in tricks and secrets when it comes to furniture making, but I do believe in technique, and I've not found a better one for making a drawer than the one I show here. Make and fit the drawer front carefully, then build the drawer. After the glue is dry it should take just a few minutes with a hand plane to get the drawer sliding open and closed smoothly. I don't like cutting half-blind dovetails, so I cut through dovetails at all four corners, and the cover the front with a thick veneer to create the look of half-blind dovetails. I'm using my table saw to cut the dovetails, but you can do them by hand or with a router jig, or whichever technique you are most comfortable with.



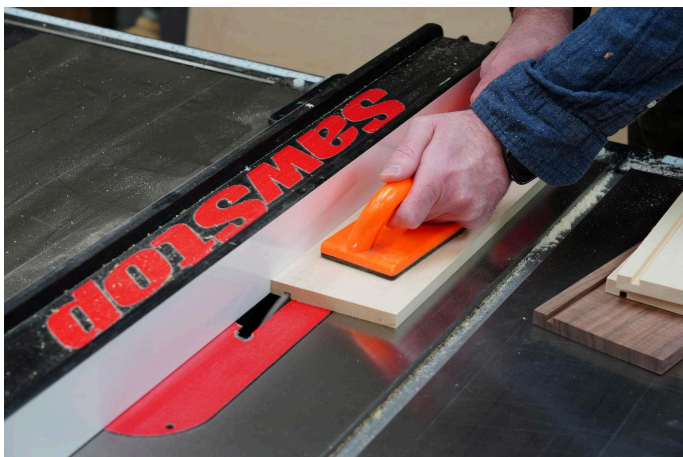
Determine the correct angle. It's more likely than not that the upper case is not square. Use a sliding bevel gauge to record that angle of the cabinet side relative the cabinet bottom.



Transfer to the front. Draw a pencil line across the full width of the drawer front.



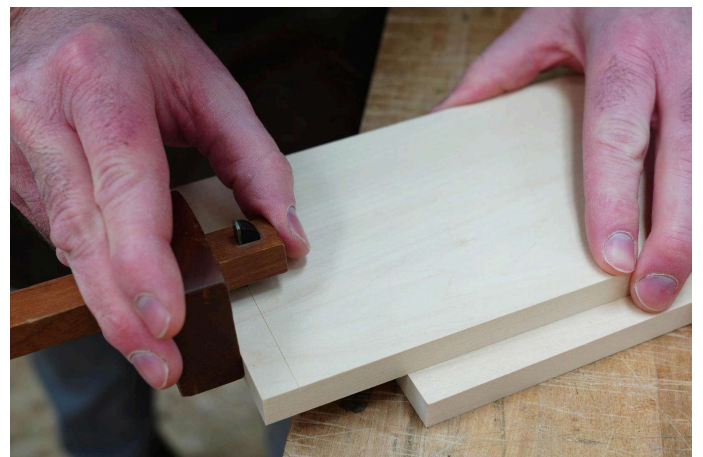
Check for parallel. Place the end of the drawer front into the pocket. Look for an even gap between the front and the cabinet side. Or, if you can, press the end against the cabinet side. There should be no gap. If needed, reshoot the end until it is parallel to the cabinet side. Then fit the other end the same way so that the front fits into the opening. It will be too tall, but the length should fit.



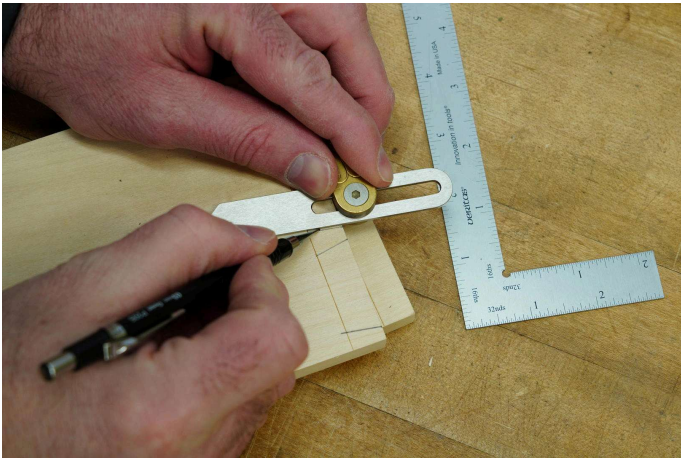
Shoot to match. Add a few business cards between the front and the shooting board's fence to push out the widest side of the front. Work down to the line.



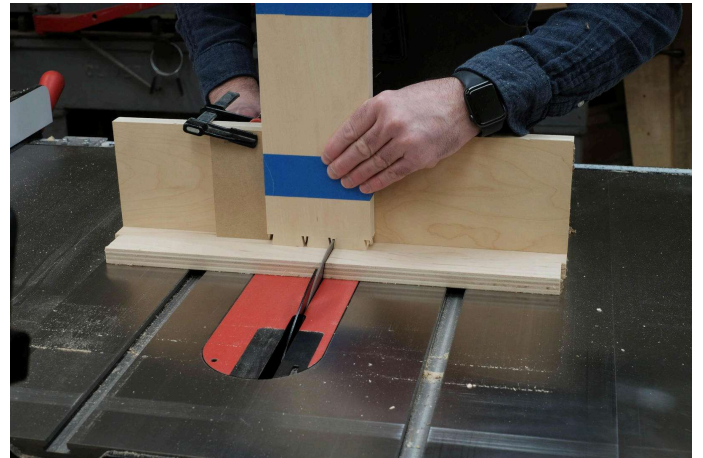
Rip to width. I aim for the front to fit snugly into the opening at this point. It should touch the cabinet sides at either end but can be a little short (no more than 3/32 in.).



Cut a groove for the bottom. Use a dado set to make the 1/4 in. wide groove in all of the parts, including the drawer back (the groove is cut off later, so that the bottom slides in after the drawer is glued together).



Cut a shoulder line. Set the gauge to the thickness of the drawer parts.



Lay out the tails. Use a layout that pleases you. I prefer wider tails on the edges and a single narrow one in the middle. As long as the joints fit properly, the layout is just an aesthetic choice.

Cut the tails. I used the same technique that I did for the case joinery, but you can use any method you are comfortable with. Transfer the tails, cut the pins, and then fit them.



Glue the drawer together. Glue goes on the pin boards. Measure the diagonals



Plane the sides to fit the drawer. After the glue dries, clean up with drawer sides, planing them flush to the ends of the front. At this point, the drawer should slide into

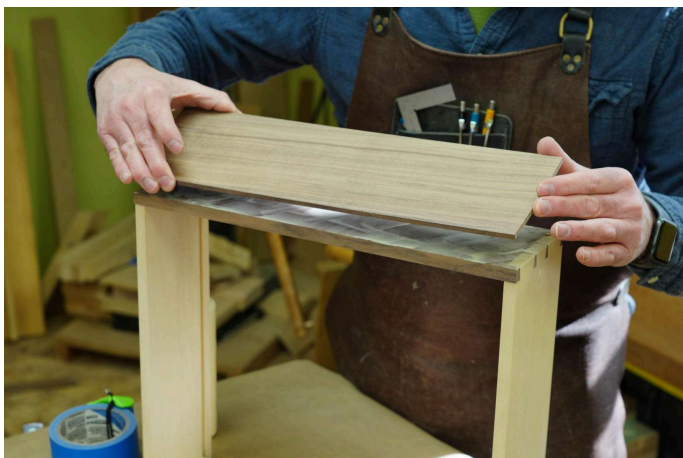
after assembly to check for square. They should be the same distance.

the opening. Take a few shavings from each side and test the drawer again. Repeat until it slides in and out smoothly. It is critical not to change the angle of the front's ends as you do this.

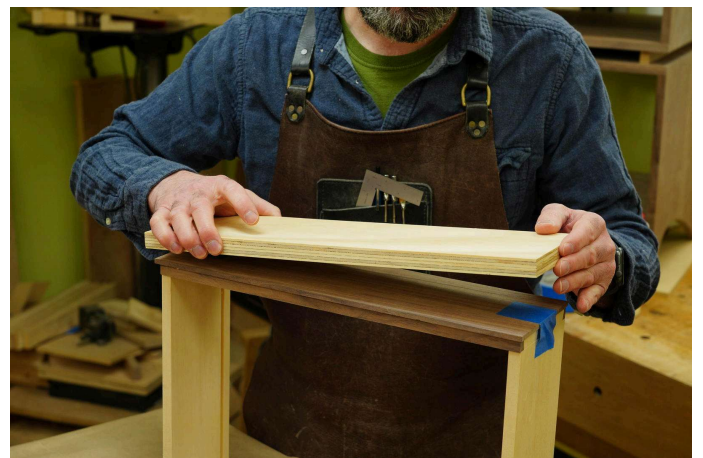


A smooth glide is important. A drawer should be loose enough to move in and out in a straight line. If it's too loose, it will twist and bind. If you make the drawer during a humid stretch, it can be a little tighter than if made during a dry spell, when the parts will be slightly thinner.

Spread glue on the front. Keep the layer thin, and make sure it covers all the way out to the edges.

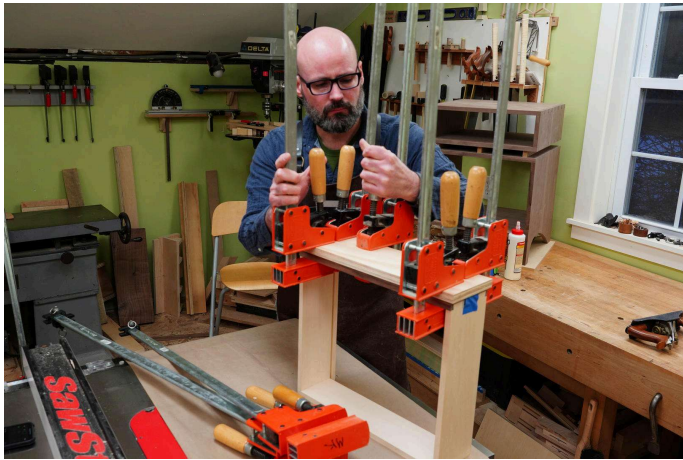


Put the veneer on. It is longer and wider than the front, but take care when placing it down, making sure that it overhangs on



Add a caul. A piece of 3/4 in. plywood is thick enough. Make it about 1/4 in. longer and wider than veneer.

all four sides. Tape it to the drawer at both ends.



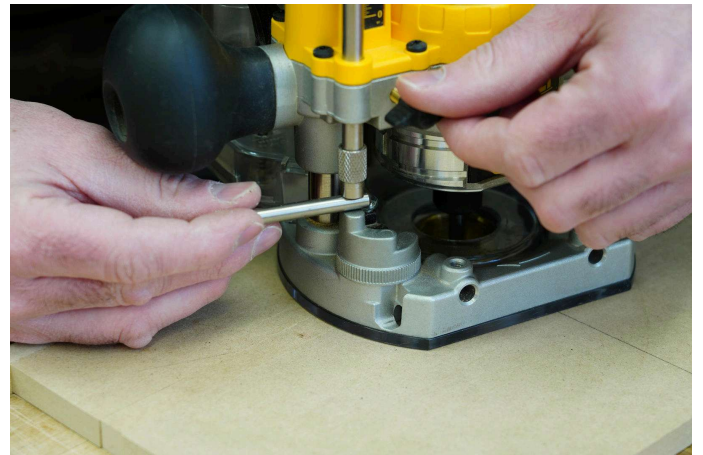
Clamps, clamps, clamps. Get as many clamps onto the caul as you can. Check that the veneer is tight against the drawer front around the edges. Clamp only to the back of the drawer front, and the pressure can break the drawer if you clamp to the drawer back.



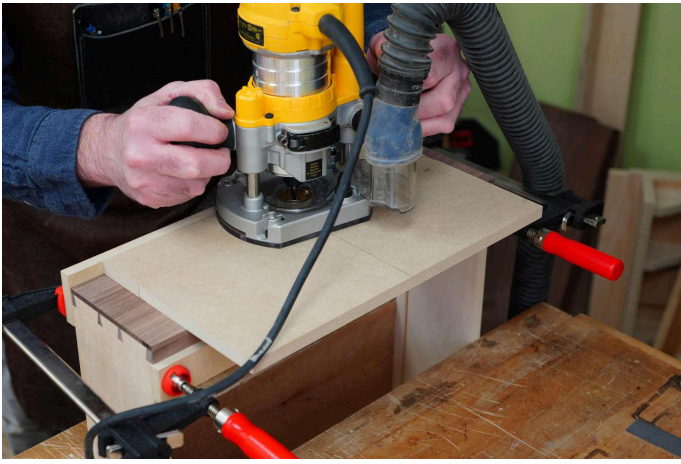
Rout the veneer flush. Do this after the glue has dried for several hours. Start at one end. Go across the end grain, along an edge, across the other end, and then down the second side.



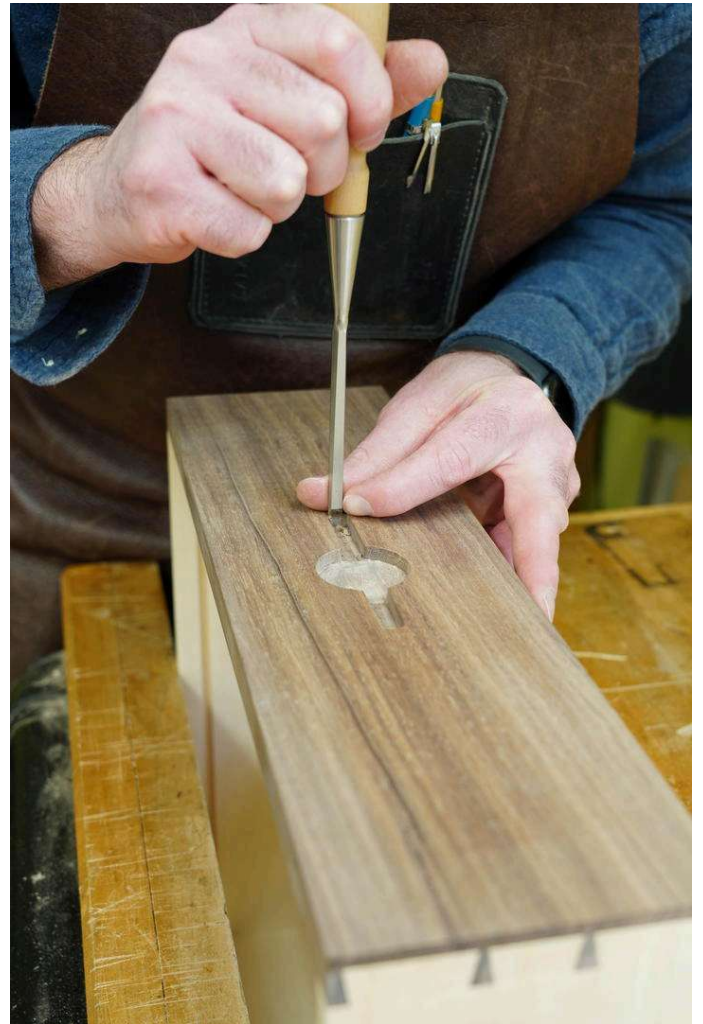
Use a template for the pull. After making the template, center it on the front's length, and clamp it in place.



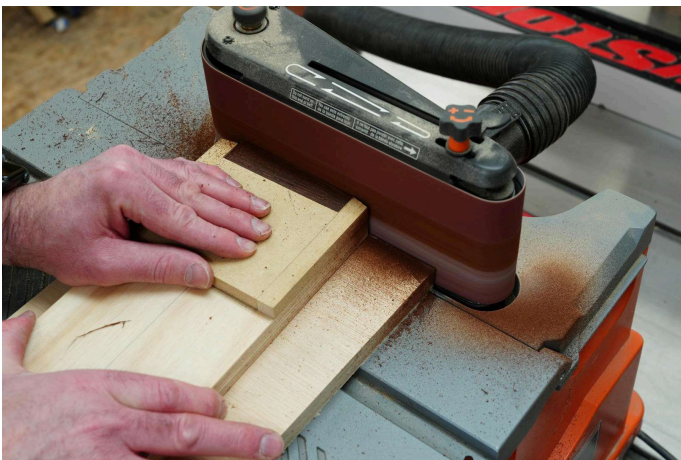
Set the depth of cut. After lowering the router bit in the router to the surface of your bench, put the shank of a 1/4 in. diameter router or drill bit between the depth stop and the turret. Lock stop at this height.



Cut the recess. A guide bushing in the router base follow's the template.



Square the ends. I use a chisel narrower than the slot's width.

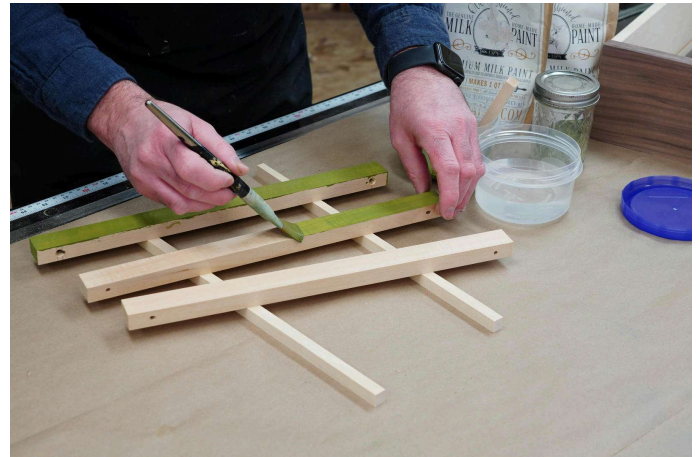


Make the pull. Mill the blank to final thickness and length. Rip it about 1/32 in. wider than its final width. Put it in the arc jig and slowly turn it into the sander.

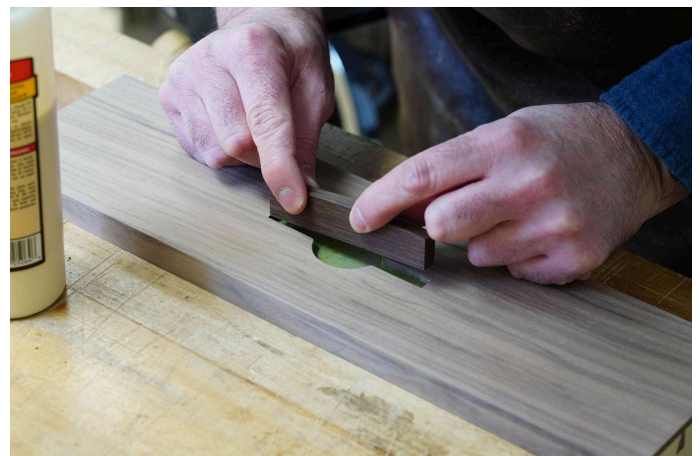
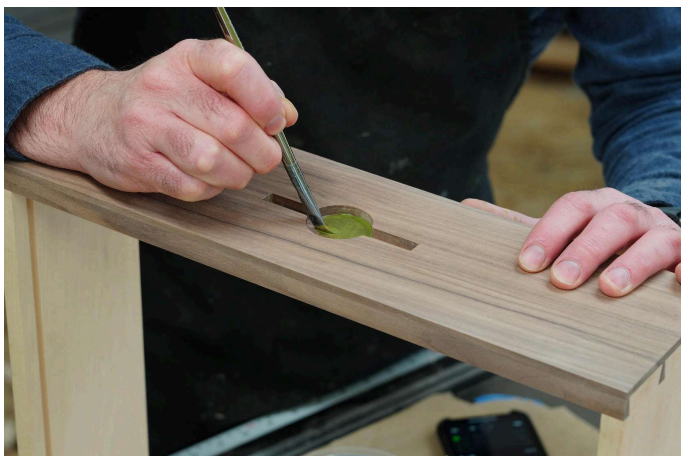
Sweep it through the arc until you've come out the other end. If you don't have a sander, you can create the arc with rasps and files.

STEP 8: PAINT AND FINISH BEFORE ASSEMBLY

The top of the lower case and the bottom of the upper case are inaccessible after the side table is assembled, so finish those surfaces now. Also, paint the spacers and drawer pull recess now. I use paint from the Old Fashioned Milk Paint Company, mixing Marigold yellow and Federal Blue in equal amounts to create the green I am using here. Of course, you can use any color you'd like.



Paint the spacers with milk paint. Apply two coats, then sand with P-320 sandpaper. Apply and third coat, sand. Repeat until the paint completely covers the wood. Depending on how thickly you mixed the paint, it will be three to five coats.



Don't forget the pull recess. Paint the bottom and the edges of the round finger relief.

Glue the pull into the drawer. Apply glue to the bottom of the recess and then press the pull in. Make sure that it seats on the bottom of the recess.



Finish the underside of the top case. Also finish the top of the lower case at this point. Neither is accessible after that side table is assembled.

STEP 9: ADD THE BACK AND COMPLETE THE FINISH

Since the side table might be located in your living room with its back exposed, use one that looks good, like this ship-lap back made from basswood to match the liner. Allow for expansion and contraction in the slats by spacing them with a few business cards when fitting and then installing them. The dark shadow line created by the space looks great from the front and breaks up what would otherwise



Glue in the liner. The top and bottom are first, and then the sides. Cauls ensure that

be a large field of buttery cream-colored basswood.

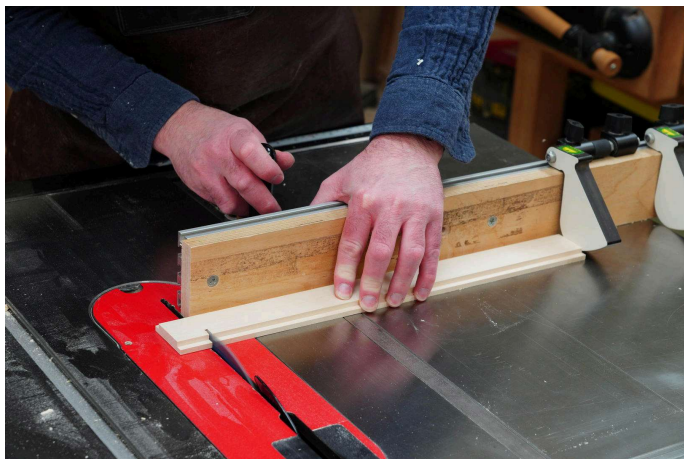


Cut rabbets in the back slats. Use a dado set buried in a sacrificial fence (or a rabbeting bit in a router table) to cut them. Start with the blades set to cut less than halfway through the slats.

the liner is glued tightly in the middle of the cabinet.



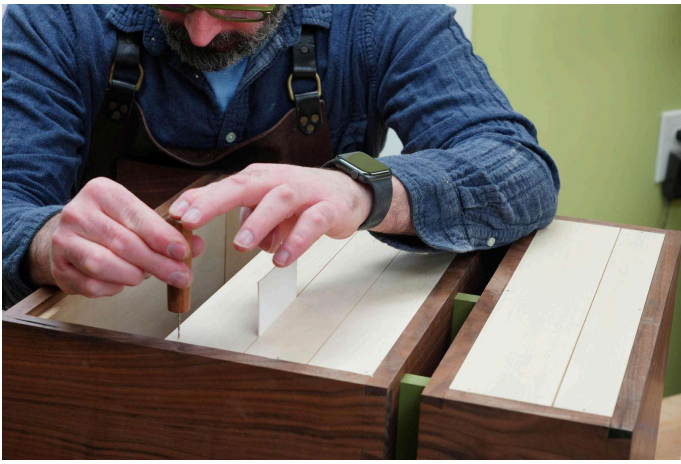
Check for a smooth transition. As you cut the rabbet and adjust the blades' height, test two slats after each pass through the blades. Your finger should slide across the joint and not feel any difference in height.



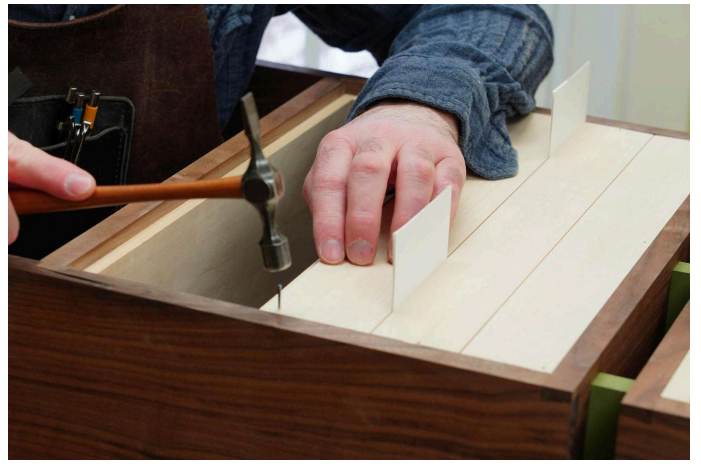
Cut to length. Because the opening on the cabinet back might not be perfectly square, I fit the slats individually for length.



Add nail strips to the top case. Made from basswood and glued into place, these create a surface to press the slats against and to drive then nails into.



Drill clearance holes for the nails. The hole should be slightly bigger than the nail's shank.



Drive in the nails. Use a hammer with a small head to avoid damaging the case. Drive it flush with a nail set.



Finish the rest of the end table. Use whichever finish you'd like. For walnut, I apply a coat of Waterlox to darken the walnut and help prevent it from fading over time, let it dry, and then apply shellac over it.