

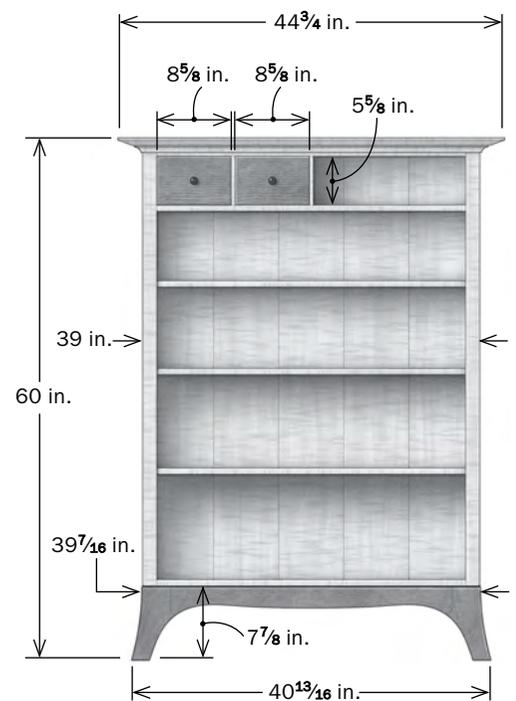
Elegant Bookcase Top to Bottom



A profiled top
and splayed
base add style

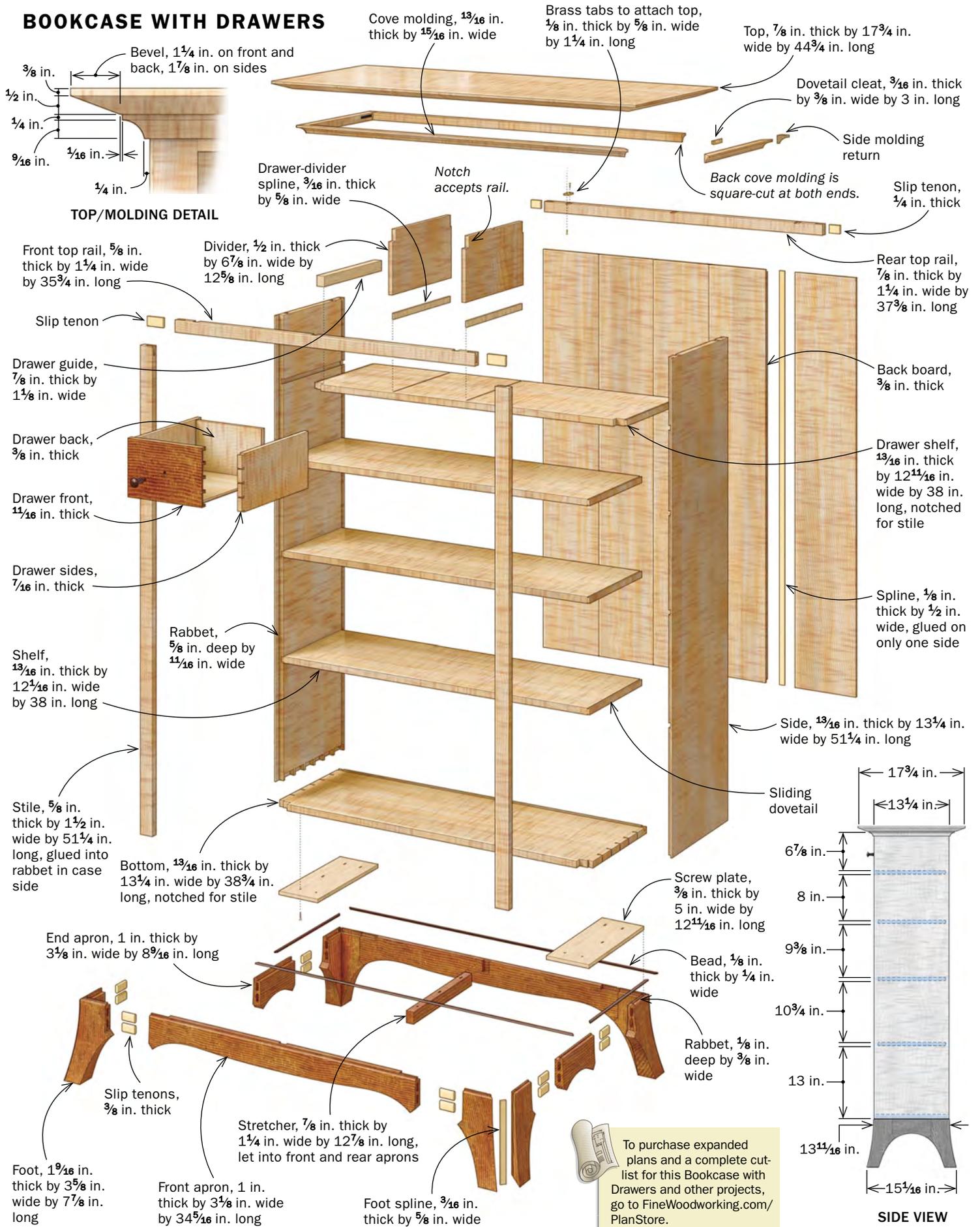
BY MIKE KORSAK

If you read and appreciate books, as I do, then you probably appreciate the functional aspects of a bookcase. If you enjoy beautiful materials and elegant, understated design, as I do, then I hope the design of this piece will appeal to you as well. I built it with a matched set of curly maple boards, which I purchased from Irion Lumber. I paired the maple with sexy, straight-grained bubinga for the base. And I used East Indian rosewood as an accent.



FRONT VIEW

BOOKCASE WITH DRAWERS

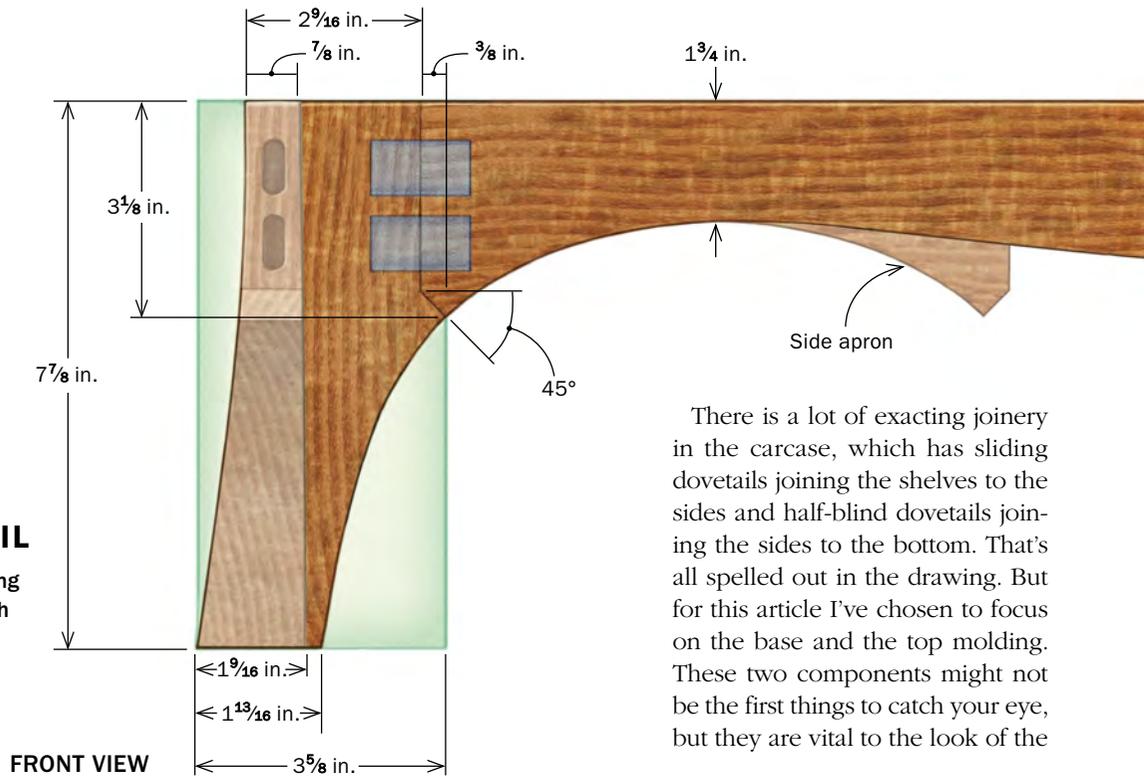


Base joinery and shaping



BASE DETAIL

The innocent-looking base is packed with joinery.



There is a lot of exacting joinery in the carcass, which has sliding dovetails joining the shelves to the sides and half-blind dovetails joining the sides to the bottom. That's all spelled out in the drawing. But for this article I've chosen to focus on the base and the top molding. These two components might not be the first things to catch your eye, but they are vital to the look of the

MAKE THE FEET



Canted kerf. The base joinery begins with a kerf cut in the foot blank at 45° for the gunstock miter.



Sliding jig for slip tenons. Korsak made a router jig that has a channel on the back that captures the router fence, steadying the cut.



Bandsaw the sweep. The face of the foot is bandsawn to a curve.



The feet meet in a miter. Korsak miters the feet at the tablesaw, cutting in several passes to reduce pressure on the short workpiece.

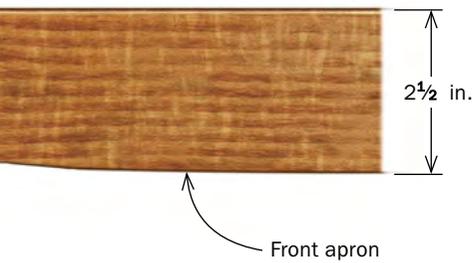


Slot for a spline. With the feet mitered and the fence moved to the other side of the blade, cut a groove for the spline.



Finish the gunstock. Korsak roughs out the shoulder on the bandsaw. He'll follow up with multiple crosscuts on the tablesaw.

MAKE THE APRONS



piece, and they are both a bit more challenging than they might seem.

Feet first

The feet on this base pack a lot of curves and unusual joinery into a small space. I begin making them by cutting the angled kerf for the gunstock miters. These little miters add a bit of refinement to the design, and also eliminate short grain that might be prone to breaking off. I cut them with a miter gauge on the tablesaw. I cut the mating miters on the aprons now as well.

With those cut, I mortise the feet and aprons to accept slip tenons. I do this with a plunge router and a 3/8-in. upcutting end mill bit. I built a jig for the router that makes the mortising go quite smoothly.

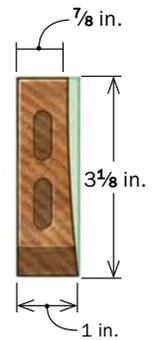
The feet flare outward, making the feet and aprons slightly concave on their outer faces. To create that flare, I make a curved template and trace it onto the feet. Then I use the bandsaw to cut the profile. I'll remove some of the bandsaw marks at this point with hand tools, but I wait until the base is fully assembled to finish the cleanup.

Next I cut the miters where the two halves of each foot are joined. I rip these miters on the tablesaw, with the blade set at 45°. Then, without changing the sawblade angle, I move the fence to the opposite side of the blade and cut spline grooves in the mitered faces.

Finish the joinery by bandsawing away the material above the gunstock miters. These cuts can be cleaned up using a crosscut sled at the tablesaw by nibbling across, taking multiple passes. Do final fitting with a block plane and chisel.

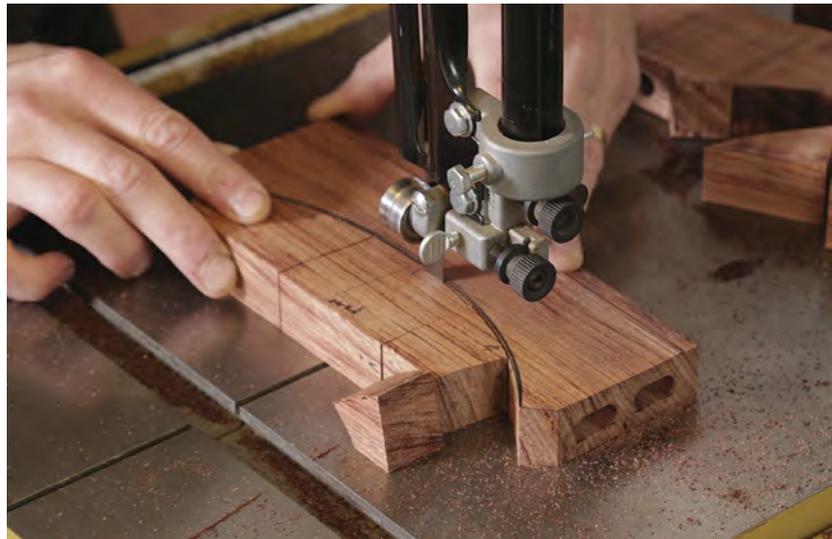


Nibble to a curve. Korsak creates the slight concavity on the outer face of the apron with multiple passes at the tablesaw, adjusting the fence and the blade height with each pass.



Complete the sweep. Having left some wood at the edge of the apron to support it as he cut the sweep, Korsak flips the board on edge to cut that wood away.

FINAL SHAPING



Cut the edge of the apron. Using relief cuts and entering from both ends in turn, Korsak carefully cuts out the curved edge of the apron.

Finish shaping the foot. With the sweep and the miter cut, bandsaw the foot's curved edge. It will get cleaned up after assembly.



Assemble the base



One foot at a time. Using a mitered cutoff as a caul to protect its vulnerable mitered edge, Korsak glues the foot to the apron.

Interrupt the assembly. After gluing feet to both ends of each apron, cut the rabbet where the decorative bead will be seated.



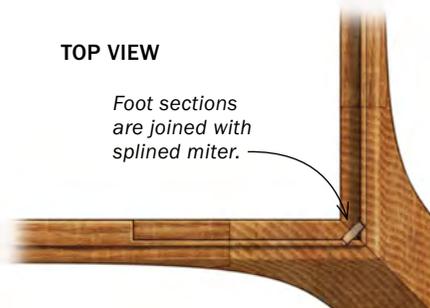
Excellent caul. Using cutoffs from shaping the foot, Korsak makes clamping cauls that fit its face and edge curves and enable him to exert pressure perpendicular to the miter joint.



Careful at the corners. Korsak glues up one corner of the base at a time for maximum control. For the last corner he separates the feet just enough to apply glue to the miter and spline.

TOP VIEW

Foot sections are joined with splined miter.



At this point I rough out the concave face of the aprons. First I dry-assemble each foot-to-apron joint and trace the curve of the foot onto the end grain of the apron. Then, at the tablesaw, I make multiple rip-cuts to waste the bulk of the wood. Afterward, to fair the curve, I use a spokeshave with a convex sole.

Before moving on to assembly, I bandsaw the curved cutout along the edges of the feet and aprons. I leave a little extra material at the gunstock miter, where the transition from foot to apron occurs. I'll clean this up after assembly.

Assembling the base

Base assembly begins with gluing the foot-to-apron joints one at a time. After the subassemblies are glued up, I use a handplane to flush the tops of the feet to the tops of the aprons, and to ensure that the tops of the subassemblies are flat. I also mill a rabbet on the top to accept the decorative rosewood bead that punctuates the transition from base to case.

I take the time now to fine-tune the fit of the foot miters, using a block plane and dry-fitting each joint. With each joint dialed in, I pre-glue a spline into one of the

feet at each corner joint. This saves valuable time during the glue-up, and ensures that the spline won't shift and prevent the joint from pulling together properly.

To help with the final glue-ups, I make custom clamping cauls using offcuts generated while making the feet. Each caul is made with two offcuts—one matching the concave face of the foot and one matching the curved edge. To those two pieces I add a block ripped at 45°, which lets me exert clamping pressure perpendicular to the miter joint. With so much attention on preparation, actually gluing the corner joints is fairly straightforward. I tackle them one at a time.



Beads by hand. With a shopmade scratch stock, Korsak cuts beads on both edges of a wide rosewood workpiece.



Slit into strips. Cut the beads free at the bandsaw, then smooth the bandsawn face of the bead with a handplane.

Beads make everything better

Before attaching the base to the carcass, make and install the rosewood bead. I shape the bead with a scratch stock, working on both edges of a wide blank. Then I rip them off the blank at the bandsaw and refine the bead with files and sandpaper. If I don't have stock long enough for the longest runs, I scarf shorter beads end-to-end.

I thoroughly enjoy installing the beads. Working with hand tools to cut and fit the miter and scarf joints is almost meditative, and the results are extremely rewarding. I



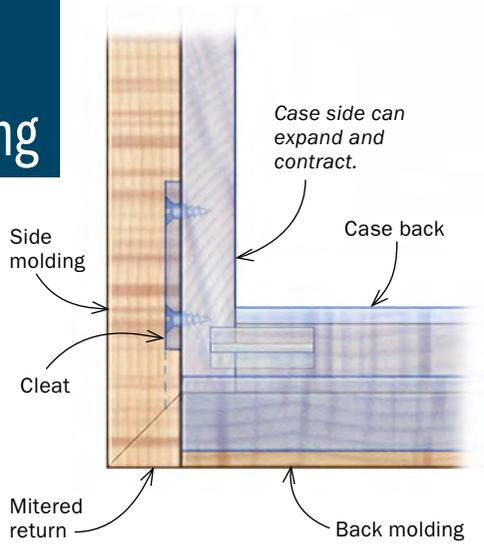
Glue the beads into the rabbet. Korsak uses painter's tape to keep the beads in place as he fixes them with glue and brads.

Screws keep the base in place. Elongated clearance holes permit the case to move with the seasons.

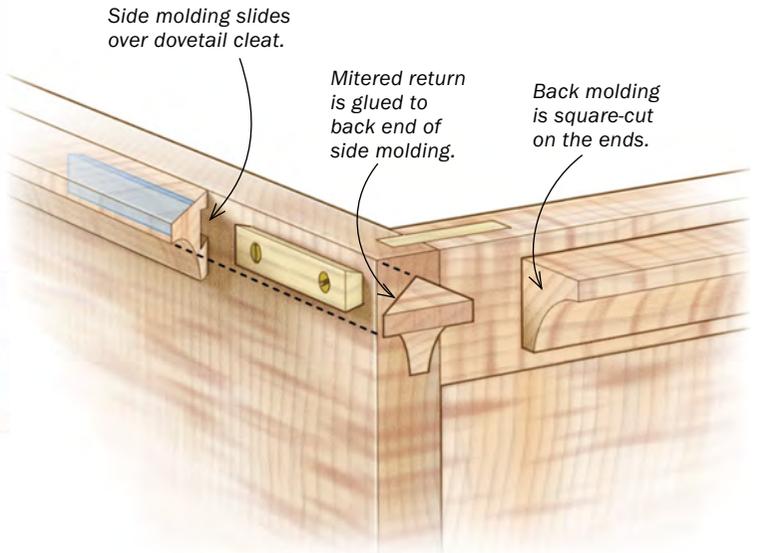


Mount the cove molding

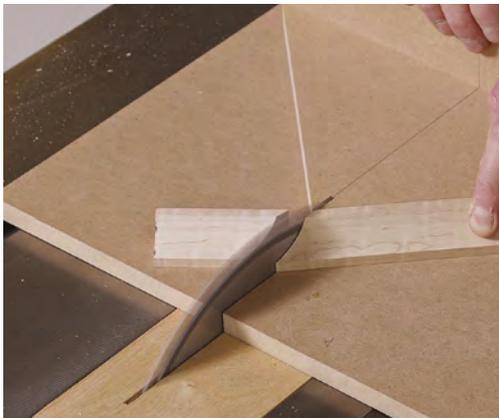
Side moldings are screwed and glued at the front end, but unglued at the back; the dovetail cleat holds them tight but lets the case side expand and contract with the seasons.



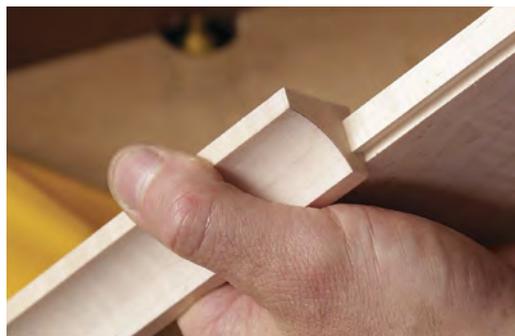
TOP VIEW



Mitered molding. Having routed and scraped the cove molding to shape, Korsak mitered it at the tablesaw. He keeps extra molding for setup later.



A socket in the back. Korsak routs a stopped socket in the back of the side molding to accept the dovetail cleat.



Cleat making. With the dovetail bit at the same height as for the socket, create cleat stock on an oversize blank. Korsak routs the cleat to a tight fit, then adjusts it with a plane. When the fit of the cleat is right, cut it off at the bandsaw.

drill pilot holes in the bead to prevent splitting, add a small amount of PVA glue, and fasten the bead with brads. I use glue sparingly, because squeeze-out around a bead can be difficult to remove.

Create the cove molding

Now it's on to the cove molding. I use blanks wide enough to yield two pieces of molding and shape the cove on the router table. To achieve a slightly elliptical cove with a round core box bit, I nibble to the layout line by adjusting the bit depth and fence location for each pass. This leaves a ribbed profile, which I clean up with a curved card scraper followed by sandpaper. Then I rip the moldings to width.

The carcass is designed so the sides can expand and contract with the seasons. The cove moldings on the case sides have to permit this movement, so I fix them



Invaluable scrap. A piece of scrap molding with a dovetail socket guides attachment of the cleat. Clamp the scrap flush to the top of the case, slide the cleat into the socket, and drill and screw it into place.



Slide on the side molding. Having already cut and fitted the front miters on the side molding, Korsak unscrews the front molding and slides the side molding onto the cleat to mark for the rear miters.



Fixed at the front. The side molding is screwed and glued at the front end, but not at the back, where it is held tight to the case by the cleat.



Tiny return. Because of the seasonal movement of the case sides, the side molding can't be joined to the back molding. For a clean seam, Korsak glues tiny mitered returns to the back end of the side molding.

at the front end with screws and glue, but attach them at the back with sliding-dovetail cleats.

With my molding stock made, I miter both ends of the front piece and screw it in place from inside the case. Then I cut and fit the mating miters on the front ends of the side molding pieces. I leave the back ends of the side moldings long for now. Next I mill a stopped dovetail socket in the back end of each side molding piece on the router table. I also mill a socket in a length of scrap molding.

To make the cleat stock, I reset the router fence and creep up on the size, using the scrap molding to check the fit. Then I rip the cleats off the blank, and cut them to

length (about 3 in.). To help install the cleats, I use the same piece of scrap molding. Cut to about 4 in. long, notched and drilled with two access holes, this scrap is now a jig for accurately locating, drilling out, and screwing in the cleats.

With the cleats installed, unscrew the front molding, slide the side moldings onto the cleats, and then reattach the front molding. Check the fit of the miters, then mark the back ends of the side moldings for length. After cutting the back miters and reinstalling the moldings, glue on a mitered return at the back end. This will mate with (but not be joined to) the back molding. Once the cove molding is complete, attach the top and start thinking about filling this case with books. □

Mike Korsak makes custom furniture in Pittsburgh, Pa.



Online Extra

To learn how to avoid tearout when planing tiger maple, go to FineWoodworking.com/264.