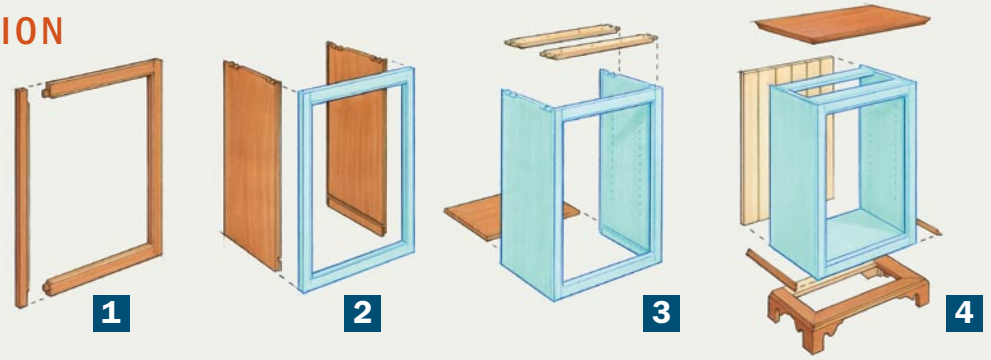
Do an About-Face on Cabinets

For better case pieces, start with the face frame, not the box

BY STEVE LATTA

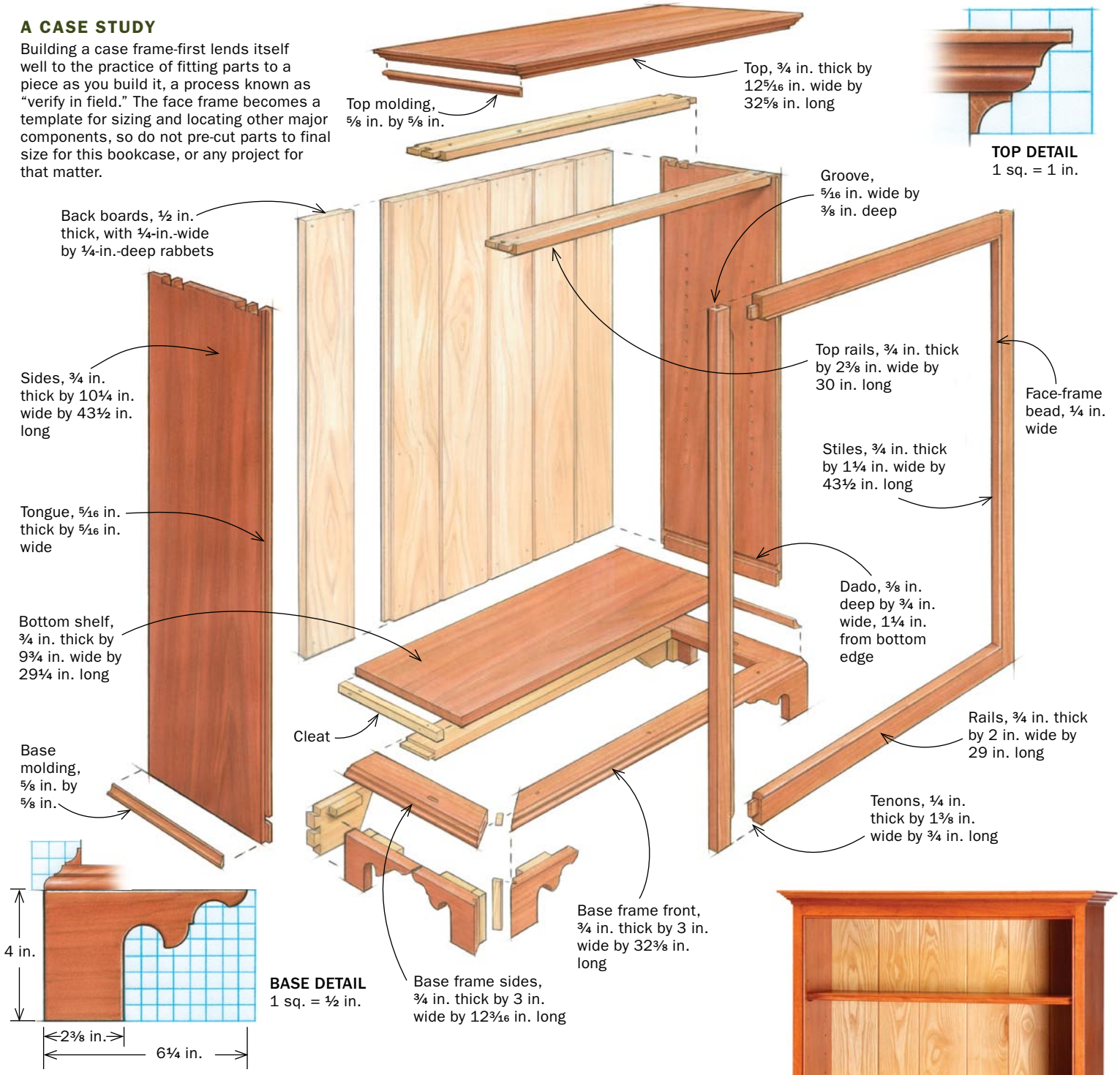
FRAME IS THE FOUNDATION

Latta builds the case by first assembling the face frame (1). Next, he rabbets the sides into grooves in the back of the frame (2). With the frame dry-fitted to the sides, Latta marks out and fits the bottom shelf and top rails (3). After gluing up the case and attaching the frame, he can size and attach the top and base (4).



A CASE STUDY

Building a case frame-first lends itself well to the practice of fitting parts to a piece as you build it, a process known as "verify in field." The face frame becomes a template for sizing and locating other major components, so do not pre-cut parts to final size for this bookcase, or any project for that matter.



This small but classic bookcase is one of my favorite projects. The finished piece is practical and attractive, and for the fledgling woodworker it presents a great introduction to face-frame case construction.

A face frame on a case piece serves a couple of different roles. It improves how the piece looks, letting you hide through-dadoes and change proportions to make the front of the piece appear more substantial and formal. And, if you're adding doors, it can help keep the opening square and allows a good mounting surface for the hinges.

Like anything else in woodworking, though, there's more than one way to get the job done. Many furniture makers build the case first and then assemble and attach the face frame (see "Build in the Right Order," *FWW* #215). I take a different approach. My early woodshop training was in commercial cabinetry, where the practice was to build the frame first. I do it that

Drawings: Bob La Pointe

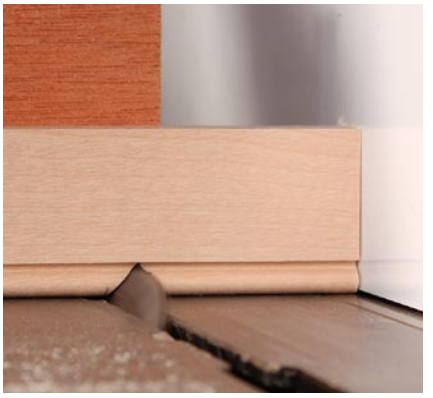
FOCUS ON THE frame

By building the frame first, you can ensure there are no flaws in the most prominent part of the bookcase.

TIP

MILLING TRICK

After cutting the bead on the rails and stiles, run the pieces on edge through the planer to guarantee consistent widths.



Cut clean joinery. *Because the case is not yet constructed, any problems with the corner joints can be corrected by recutting them and making the frame slightly smaller.*

Glue up the frame. *Check that the frame is square and flat. The joints should come together cleanly with no gaps.*

way for fine furniture, too, because it offers several advantages.

First, building the frame at the outset gives me the freedom to alter its dimensions slightly to fix any tearout or minor mistakes in its construction. For instance, this frame is decorated with a bead around its inner edge with miters in the corners that can be easy to miscut. I'd lose the flexibility to make an easy fix if I were building the frame to fit an already glued-up case.

Second, I like joining the face frame to the case with strong and positive tongue-and-groove joinery as opposed to just gluing the frame in place. Assembling the face frame before building the case makes it easier to locate that joinery. I like that positive connection because the assembled frame helps align the whole assembly during glue-up of the case, simplifying the process and helping to ensure that it goes together squarely.

If you've never tried the face-frame-first method, read on. This handsome bookcase project will illustrate all of the advantages.

Put your best face forward

The face frame on this cabinet is decorated with a ¼-in. bead that runs around the inside edge and is mitered at the corners. I cut this bead at the router table while the stock is still wide and long, so that any bead marred by tearout, snipe, or other mistakes can be cut away and redone.

Afterward, rip the frame members extra-wide and run them through the planer on edge to a finished width that is 1/32 in. greater than called for in the drawing. Later, after the case and frame are glued

Photos: Steve Scott

up, you'll plane away this extra material to bring the frame flush with the case sides.

As I mentioned, mitering the beaded corners on the frame can be challenging because it's possible to miscut by a fraction and wind up with a gappy miter. If that happens, simply cut the miter again and recut the corresponding parts to match. You'll end up with a slightly shorter or narrower frame, but that won't be an issue since my process ensures that the case will fit the frame.

If, instead, I messed up a miter while trying to fit the frame to an already assembled case, I wouldn't have room for that sort of adjustment. My only choice would be to waste time and stock milling up new frame parts.

Once the miters are cut, you can cut the joinery for the face frame and then glue up the frame. When gluing up, be sure to

CONNECT THE sides

1. RABBET THE CASE SIDE

Rabbet the front of the case sides to create a tongue for the face frame, but leave the sides wide so you can trim away any mistakes. Putting the cutter above the work ensures consistent thickness for the tongue, as long as there is a hold-down pushing down on the workpiece.

2. GROOVE THE FACE FRAME

Cut test grooves in a piece of scrap (above left) to locate the groove accurately. When this is done, the frame should overlap the rabbeted side by 1/32 in. (above right). Now cut the grooves in the frame (below). Clamp a piece of long stock to a sawhorse or table to help support the workpiece.

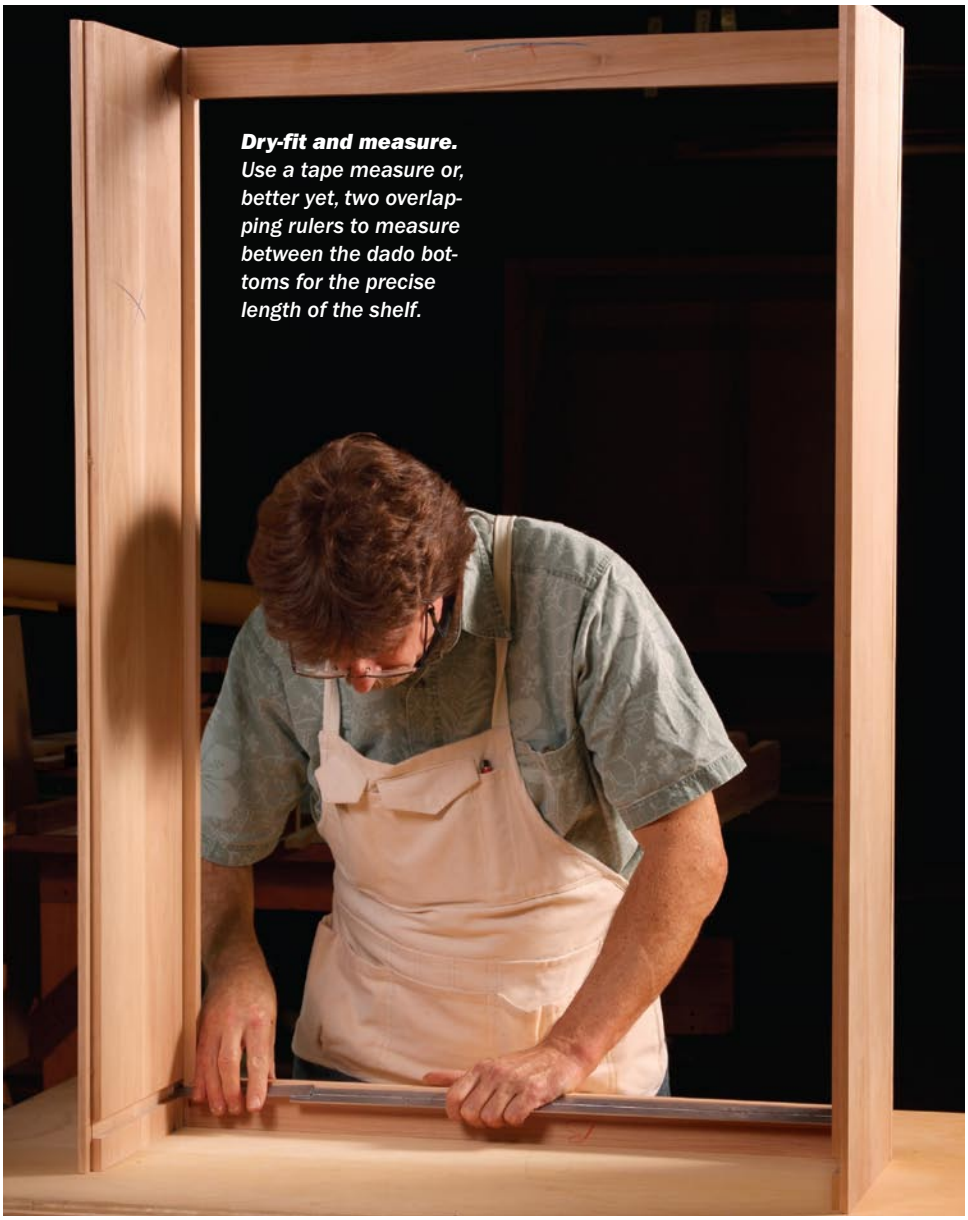
Dry-fit PARTS AS YOU BUILD

A PERFECT BOTTOM SHELF

Locate the dadoes in the case sides. *To ensure that the bottom shelf ends up level with the bottom rail of the face frame, use a combination square to pick up the width of the rail.*

Transfer the dimension. *Put the square against the outside of the dado set to position the rip fence. You can trust that it's right.*

Dado with no doubts. *Verify the cut's location in a test piece, then cut the dado. Use a wide push paddle with a cleat in the rear to guide the workpiece.*



Dry-fit and measure. *Use a tape measure or, better yet, two overlapping rulers to measure between the dado bottoms for the precise length of the shelf.*

clamp carefully to avoid twist, and check diagonal measurements to ensure that the frame stays square.

It's impossible to go wrong on the case

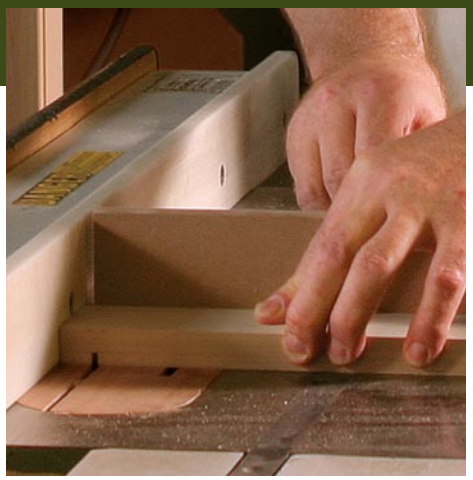
Here's a great feature of this approach. Notice how the process ensures a perfectly sized case. Because the case isn't built yet, and the parts are still oversize, I can now rabbet the front edge of the case sides, cut grooves in the rear of the frame stiles, and then dry-fit the two to find the exact length of all the case's crosspieces.

Also, this case-to-frame joinery is easier to execute than locating biscuits on a face frame, and it's much stronger and more manageable to glue up than a simple butt joint between the case and frame.

Still, it's important to locate the grooves in the back of the frame carefully so the

Cut with confidence. *Because you used the face frame to position the sides, you know this shelf will fit perfectly.*

UPPER RAILS ARE STRAIGHTFORWARD, TOO



Leave them oversize. *With the rails 1/16 in. longer than the width of the case, Latta begins cutting the shoulders.*

frame ends up 1/32-in. proud of each side, for planing flush later. To ensure a snug fit and accurate placement of the groove, I cut test joints in scrap stock.

With the case-to-frame joinery cut, you can use the frame to find the exact sizes of all the case parts, and locate the dadoes in them. After squaring the bottom of each side, dry-fit them to the face frame, mark their height and width, and then cut them to size on the tablesaw.

The face frame also serves as a reference for sizing and locating the bottom shelf and the rails across the top. With the sides cut to size and once again dry-fit into the face frame, I locate the dadoes that will hold the bottom shelf, to ensure that it ends up perfectly level with the frame's lower rail. Once these dadoes are cut, I go ahead and rabbet the back edges of the case sides to accept the back. Then, I dry-fit the frame and sides again to measure for the bottom shelf's length. When the shelf is cut to length and dry-fitted, you can mark and then rip it so it ends at the rabbet.

The screw rails that support the case's top are joined to the sides with a pair of shouldered through-dovetails at each end. Working with the frame, sides, and bottom all dry-fit allows me to quickly fit the shoulders very accurately with no measuring or even marking.

I start with the rails about 1/16 in. longer than the outside width of the case. This will

Shoulders first. *Working again with the rest of the case dry-fitted, Latta can cut the shoulders accurately. He removes material in small increments from both ends until the shoulders drop snugly between the case sides.*

One part determines the next. *With the shouldered dovetails cut, Latta marks their mating sockets in the top of the case sides.*

Assemble THE CASE IN STAGES

Dry-fit the top to glue up the bottom. *With the top rails holding the sides in place, Latta brushes glue into the dadoes that will hold the bottom shelf. Cleats that allow for cross-grain movement will be added later to reinforce this joint.*

leave about a 1⁄32-in. overhang on each side that will be easily pared with a chisel.

Using a miter gauge and the saw's fence, make a shoulder cut on each end that you know is too short. At the bandsaw, remove just enough of both cheeks to let you butt against the shoulder for test-fitting. Now you can sneak up on the fit by moving the fence farther away from the blade in small increments and recutting the shoulders until the rail drops in place. For accuracy's sake, make sure you are fitting right behind the face frame. Once the shoulder cuts are established, cut the cheeks using a tenoning jig or a high fence. Now you can cut the tails and easily lay out the mortises in the tops of the sides.

As a last step before glue-up, drill the shelf-pin holes.

Let's get this straight: The frame simplifies glue-up, too

The case glue-up is another stage where having an assembled frame is a distinct advantage. Keeping the case parts together during glue-up can be a challenging exercise in positioning cauls and shifting clamps. But the tongue-and-groove connection to the frame helps to keep

Add the frame, too. *Dry-fitting the frame helps square the assembly and hold it rigid. With the frame in place, you can clamp the sides tight to the bottom.*

Now glue in the top rails. *Leave the dry-fitted frame in place.*

everything aligned and eliminates a lot of fussing. I start by dry-fitting the top screw rails in place and then gluing the bottom into the case sides. Then I immediately dry-fit the frame to the sides to help keep them parallel before putting the assembly in clamps. Then I glue in the screw rails at the top. When the glue is dry, I remove the face frame, apply glue, and reattach it to the case.

When the assembly comes out of clamps, I use a plane, scraper, and sanding block to bring the face-frame stiles flush with the case sides. Check often to make sure the corners stay square, especially at the bottom where the cove molding will be attached. When this work is done, you are ready to add the base and top. □

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Now glue on the frame and trim to fit. *When the bottom shelf and top rails are dry, remove the frame, apply glue (above), and clamp it in place. Later, use a block plane (left) or scraper to remove the excess frame stock that overhangs the sides of the case. Everything will be square and perfect now, and ready for the crown moldings and base.*