Build this frame and panel bookcase with two drawers — in just two days. Sound impossible? We’ll show you the secrets to simple, solid construction.

Designing a project that can be built quickly is easy enough. But it often means leaving out a lot of the details. And for woodworkers, it’s these details that make a project interesting to build.

Details don’t always have to be difficult. And the beadfront bookcase is a great example of this. For instance, the two small drawers are joined with simple locking rabbets, and all the bead profiles are created with a single bit on the router table. Also, the frame and panel construction of the sides is straightforward too.

Another benefit to building the bookcase is its size — it’s not very big. I wanted the case to have a small “footprint” so it would fit in just about any nook around the house, as you can see in the photos throughout. This means you won’t be wrestling with a large assembly. And since the shelves and top are plywood, there aren’t any wide panels to glue up.

You’ll be able to complete the bookcase in just a couple of days, but the end result will look like it took lots of time and hard work.

Need extra storage space? This case only takes up two square feet and will look great in any room.
Construction Details

Overall Dimensions:
48 1/2" H x 24" W x 13" D

The shelves allow plenty of space for tall books or other items you'd like to show off.

Top and Frame. The beaded edging on the top panel conceals the plywood edges and the joint with the frame.

Quick Joinery Assembly. Building frame and panel assemblies using stub tenon and groove joints is fast and strong.
Building a bookcase can be a big project, but a small case and simple joinery make it more manageable.

**SIDE FRAMES.** I started with the side assemblies (drawing above). When all the stiles and rails have been cut to size, you can start on the stub tenon and groove joinery. You’ll find the dimensions in detail ‘b.’ The grooves are sized to hold a piece of ¼” plywood.

**PLUGS & PANELS.** After cutting the joinery, I made a few plugs and glued them into the grooves at the bottom of the stiles (detail ‘a’). Then, just cut the plywood panels to size. At this point, the side frames can be glued up.

**SHELF SUPPORT HOLES.** Before starting on the rest of the case, I took care of a few other details. The first is to drill holes in the side frame stiles for the adjustable shelf that will be added later.

**DADOES & RABBETS.** The other details to work on are the dadoes and rabbets that are used to assemble the case. The box below shows you how to do this with a dado blade on the table saw.

Finally, cut the dividers and case back to size and assemble the case. You’ll want to glue and nail the back to both the case sides and the divider.

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**How To: Case Joinery**

**Frame Dadoes.** To cut the dadoes, use a dado blade that matches the thickness of the plywood. The rip fence ensures the dadoes line up flush.

**Rabbet the Back Edge.** Use the dado blade along with an auxiliary rip fence to cut the rabbets that hold the plywood back panel.
How To: Finish the Case

Completing the Case
With the dividers, side frames, and back assembled, you can begin working on the front of the bookcase. The front of the case simply consists of a pair of stiles and a set of edging for both the shelf and the dividers.

FACE STILES. I would first suggest cutting stiles for the front of the case. All you need to do for these pieces is to rout a ¼"-dia. bead along each edge (as shown in detail 'a' above). When gluing the stiles to the case, you’ll want to be careful as there’s no top rail on the case (this will be added later) and the edges of the case can flex a little. So, just make sure the edges of the face stiles and the case sides are flush when you glue them in place.

SHELF. While the glue was drying, I cut the adjustable shelf to fit in the case. (I allowed a ¼" gap on each edge, as you can see illustrated in detail 'b'.)

BEADED EDGING. The next step is to hide the plywood edges on the dividers and shelf. My edging was cut 1" wide and with ¼" bead profiles routed on their edges, as you can see in detail 'c'.

With the case assembled and the back on, you’re not going to be able to clamp the edging from front to back. So, I didn’t use clamps at all. Instead, I simply taped the edging in place, making sure the top edge was flush with the plywood. Packing tape with its “ribbed” strands, work the best.

FRONT RAIL & BACK STIFFENER. There are just two more pieces to add to the case — both at the top. The box below show the details. First, add a back stiffener. It’s cut to fit tight between the sides and then glued to the back panel.

Now, to complete the front of the case, you can add a top rail, which is cut to fit between the sides of the case. Here the bead is simply routed only on the bottom edge of the rail.

Then, to attach this rail to the case, there are ½"-deep rabbets that will need to be cut on the front of the rail. But you’ll want to sneak up on the width of these rabbets so the rail fits tight between the face stiles.

How To: Finish the Case

Gluing the Back Stiffener. The next step is to add the back stiffener and the front rail to the case sides and back panels. The stiffener is simply cut to fit and glued in place.

Adding the Front Rail. After cutting the front rail to length, rout a bead on the lower edge. Then sneak up on the width of the rabbets so it fits tight.
Making the Top

Before you can begin work on the drawers, a top needs to be added to complete the case. The case top will actually be two layers. First, there’s a frame that runs around the top of the case. Then you’ll also add a plywood top with beaded edging.

**TOP FRAME.** In the drawing above, you can see the frame which consists of three mitered pieces. It also provides an easy way to attach the plywood top.

The front and two frame sides are cut from 3/4”-thick stock. The front corners are mitered so there won’t be any end grain showing. With a U-shaped assembly like this, I started with the front piece. Miter both ends, sneaking up on the length until the piece aligns with the case corners. Then on each side piece, miter the front end and trim the back end to length so it’s flush with the back of the cabinet.

Next, two sets of countersunk pilot holes can be drilled in these pieces, as shown in details ‘a’ and ‘b.’ One set is for attaching the frame to the case and the other set will be used to attach the top panel to the frame later on.

**FILLER.** After attaching the frame to the case, I filled the opening at the back of the frame with a hardwood frame filler, as shown in the drawing above and detail ‘c.’

**TOP PANEL.** Now you can begin working on the top panel of the case. The box below shows what’s needed. The front and sides of a plywood panel are wrapped with 1”-wide trim. The edging overlaps the frame, so I used it as a guide to cut the panel.

At the back, I glued on a 1/2”-thick hardwood trim piece. This piece is glued to the top before cutting it to final size.

**TOP EDGING.** The edging applied to the front and sides of the top panel is identical to the divider edging. They’re 1/2”-thick pieces cut 1” wide with a bead profile routed on both edges.

Again, start with the front piece when mitering the edging. And when it’s time to glue this edging in place, you can use clamps.

Add the Top

*Sizing the Panel. The 3/8” plywood panel should be the same size as the outside edges of the frame. You can see how the top edge overhangs the frame.*

*Edging the Top Panel. Once the top panel is cut to size and screwed in place, you can add the edging. Simply miter it to fit and glue it on one piece at a time.*
At this point the case is complete, so the last thing to do is build the two small drawers. Whenever I need to build, strong drawers in a short amount of time, I use a locking rabbet joint for the front corners (see the drawing above and detail 'a'). Here a tongue on the front piece “locks” into a dado on the side. (The back corners are connected with a tongue and dado, as you will find shown in detail ‘b’ above.) Best of all, a locking rabbet can be cut on the table saw in just a few steps, as you’ll find illustrated in the box below.

**DRAWER FRONTS.** Since the front overlaps the sides, it needs to be cut from thicker stock. So the drawer fronts are 3⁄4” thick, while the sides and backs are only 1⁄2” thick. I sized the drawer pieces so they’d fit in the case openings with 1⁄16” gaps on the sides, top, and bottom. (The gap at the bottom will be created by some nylon glide tape the drawers will ride on.) Note that in the front the drawers are set back 1⁄4” from the edging on the dividers, as you can see in detail ‘a.’ At the back of the case, the drawers stop against the back panel, as in detail ‘b.’

When the joinery is cut on all the pieces, you can cut the grooves for the 1⁄4” plywood bottoms. Then the drawers can be glued together.

**DRAWER GUIDES.** In order for the drawers to open and close smoothly, you still need to add two items to the case. First, to keep the drawers opening and closing straight, I added hardwood drawer guides. These fit inside the case and are cut so they stand 1⁄16” proud of the face.

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**Simple Drawers**

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**How To: Locking Rabbets**

For the drawers on this bookcase, I used a locking rabbet joint at the front corners. And, all it really takes to cut the rabbets, is three quick setups on your table saw.

The first step is to cut a 3⁄8”-wide slot on the ends of the drawer fronts (left drawing). The important thing is the depth of the slot — it should match the thickness of the drawer sides.

Next, bury the dado blade in an auxiliary fence, lay the front piece flat. Trim it along the inside edge to create a 1⁄4”-long tongue. Finally, cut a dado on the drawer side so it fits over the tongue (right).
stiles (see detail ‘a,’ previous page). When you’re sure the drawers will open and close without binding, simply glue these guides to the inside of the case.

The other item that really helps the drawers to operate smoothly is nylon glide tape. (This will also lift the drawer, creating the \( \frac{1}{16} \)" gap at the bottom.) You can simply place the tape on the drawer dividers next to the guides.

**FINISH.** Now that the drawers are complete, you can add additional wood knobs and apply a finish to the entire project. I actually mixed up my own oil-based stain. (This included a quart of boiled linseed oil as well as tube of artist’s oil, both are available in art supply stores.) Then for the finishing touch, I applied several coats of a wipe-on finish.

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**MATERIALS & SUPPLIES**

| A | Front Stiles (2) | 3/4 x 1 1/4 - 47 |
| B | Back Stiles (2) | 3/4 x 2 - 47 |
| C | Side Rails (6) | 3/4 x 2 - 8 1/2 |
| D | Lower Panels (2) | 1/4 ply. - 8 1/2 x 13 1/2 |
| E | Upper Panels (2) | 1/4 ply. - 8 1/2 x 24 |
| F | Dwr. Dividers (3) | 3/4 ply. - 11 x 20 3/4 |
| G | Back Panel (1) | 1/4 ply. - 21 1/2 x 42 1/4 |
| H | Face Stiles (2) | 3/4 x 2 - 47 |
| I | Adj. Shelf (1) | 3/4 ply. - 10 1/8 x 20 3/8 |
| J | Edging (4) | 1/2 x 1 - 18 |
| K | Back Stiffener (1) | 3/4 x 1 1/2 - 20 1/2 |
| L | Front Rail (1) | 3/4 x 1 - 20 1/2 |
| M | Frame Front (1) | 3/4 x 2 1/2 - 23 |
| N | Frame Side (2) | 3/4 x 2 1/2 - 12 1/2 |
| O | Frame Filler (1) | 3/4 x 1 - 18 |
| P | Top Panel (1) | 3/4 ply. - 12 x 23 |
| Q | Top Trim (1) | 1/2 x 3/4 - 23 |
| R | Front Edging (1) | 1/2 x 1 - 24 |
| S | Side Edging (2) | 1/2 x 1 - 13 |
| T | Dwr. Fronts (2) | 3/4 x 6 7/8 - 17 7/8 |
| U | Dwr. Sides (4) | 1/2 x 6 7/8 - 11 |
| V | Dwr. Backs (2) | 1/2 x 6 7/8 - 17 7/8 |
| W | Dwr. Btms. (2) | 1/4 ply. - 10 1/2 x 17 7/8 |
| X | Dwr. Guides (4) | 3/4 x 1 3/8 - 11 |

- (4) 1 1/2" Wood Knobs w/Screws
- (4) Spoon-Style Shelf Supports
- (7) #8 x 1 1/4" Fh Woodscrews
- (7) #8 x 1 1/2" Fh Woodscrews
- (1) Nylon Glide Tape (4 Feet)
- (52) 18-Gauge Nails (3/4" Long)

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**CUTTING DIAGRAM**

A warm-colored stain and several coats of wipe-on finish give the completed bookcase a beautiful glow.

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**ALSO NEEDED:** One 24" x 24" piece of 3/4" oak plywood
One 48" x 48" piece of 3/4" oak plywood
One 48" x 48" piece of 3/4" oak plywood
Project Sources

For the stain on the oak bookcase, we used a mix of $1\frac{1}{2}$ tablespoons *Burnt Umber* artist oil in 1 pint of boiled linseed oil. We finished the bookcase with three coats of *Old Master's* interior oil-based gel polyurethane.

Manufacturers and retailers will periodically redesign or discontinue some of their items. So you’ll want to gather all the hardware, supplies, and tools you need before you get started. It’s easy to adjust dimensions or drill different-sized holes to suit your hardware.