Simple Bookcase

By Brad Becker

This fun to build, functional bookcase will organize books or anything you choose and can be painted to match your decor.

A basic bookcase is not only one of the most functional pieces of furniture you can make but also a mini seminar in several woodworking skills and techniques, wrapped in a single project. Dado, rabbet and pocket-hole joints are highly adaptable to just about any more advanced project, and you can never get enough practice with basic shop tasks like cutting parts to size, sanding and finishing. This project will improve your shop skills, and I'll bet it kick-starts your creative juices, too.

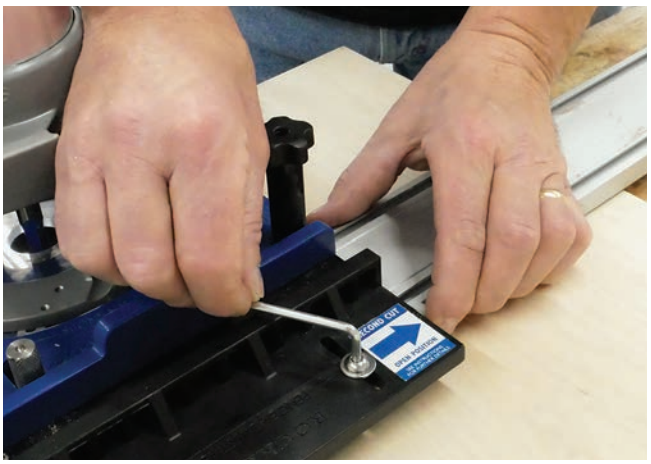
Material Choices Add Interest

This bookcase was built from three different thickness of Baltic birch plywood. I chose to use different thicknesses for the frame and shelves to make the design more interesting. You could also make the frame and shelves out of solid lumber such as pine or choose a hardwood instead for added durability.

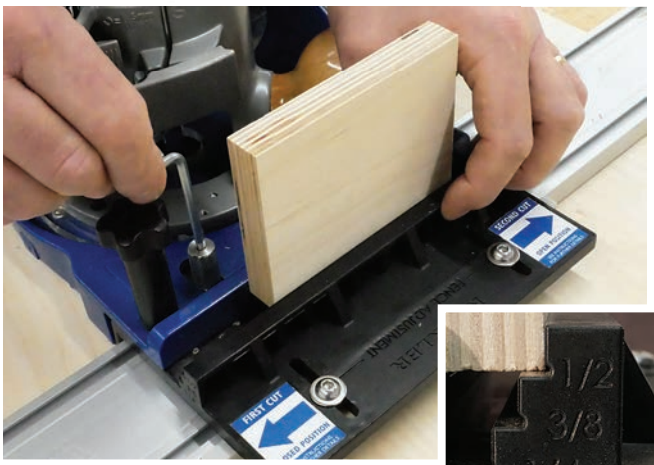
Cut all the parts to size with a table saw or circular saw using the *Material List* on page 47 as your guide, with the exception of the side panels. To make the dado plowing process easier, cut a blank of plywood large enough to make both sides from the same piece: 3/4" x 18⅝" x 29⅜". The 18⅝" dimension is the width of two sides, plus the thickness of a saw kerf. Examine your stock and decide which faces and edges will be the "presentation" sides. That means you'll want the nicest-looking surfaces facing outward on the sides and upward on the shelves, bottom and top. Even if you are painting the project, it's a good idea to keep minor blemishes or odd grain on

The Perfect Fit Dado Jig

This new Rockler jig (item 59385; $49.99) takes the guesswork out of sizing a dado to the exact thickness of a piece of stock. The two-step cutting process allows for tight fits every time.

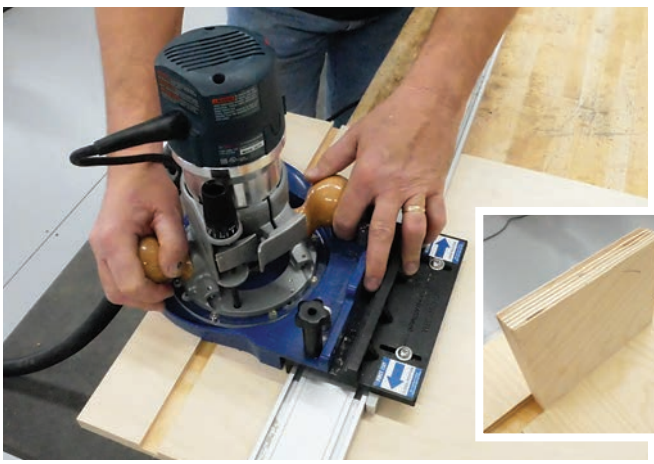


Setting up the Perfect Fit Dado Jig first involves adjusting it to fit the clamp guide on which it slides back and forth. Do this with the router already mounted on the jig. It should slide easily on the clamp but without play.



An offcut from the material that will be housed in the dado sets the jig's "open" position. Choose the step for the correct router bit diameter (inset).

Align the cut, clamp the guide in place and set the dado's depth. Make the first pass by pushing the jig away from you in the "open" position, entering and exiting the cut completely. Turn the router off and let it spin down.



Change the jig setting to the "closed" position and then complete the dado by turning the router on and pulling the jig and router toward you. When the second pass is completed, test the fit of the material (inset).

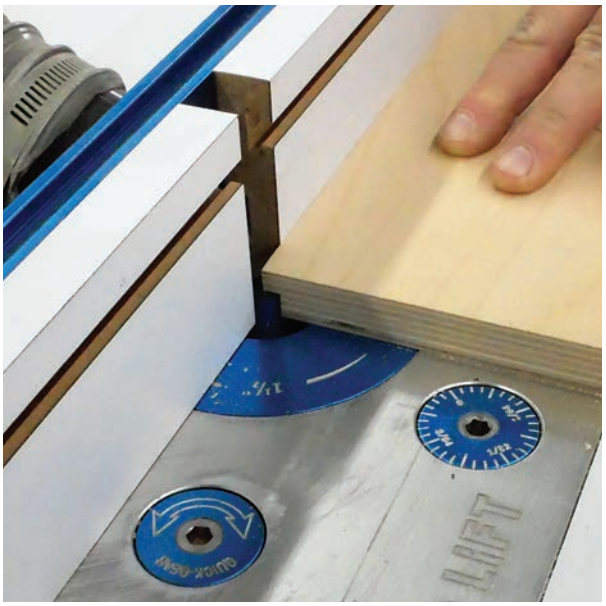
the inner and downward faces. Label the components to ensure that you'll keep these nicer faces oriented in the presentation direction as you continue. For clarity, I like to use painter's tape and a dark marker rather than a pencil.

Starting with Cabinet Joinery

This bookcase's joinery is fairly straightforward and can be done quickly, especially if you use a dadoing jig. The 1/2"-thick shelves and 3/4"-thick bottom fit into 3/8"-deep dadoes in the bookcase sides (see the *Drawings*). A 1/4"-wide x 3/8"-deep rabbet cut into the back edges of the side panels accommodates the cabinet back. We'll cut the dadoes first.

Mark the dado location for the bottom panel and each shelf on the blank for the side panels you cut earlier. (These locations are provided in the *Drawings*, but you can easily adjust these measurements to suit whatever shelf spacing you prefer.) Using the height of the kick plate as your starting point, mark the first 3/4"-wide dado for the bottom panel at 2½". Then mark 1/2"-wide dadoes for the shelves at 11¼" and 19¾" up from the bottom edge of the sides blank.

Now you're ready to plow these dadoes, but be aware that plywood is often not exactly the thickness that it's labeled. A piece of 3/4"-thick plywood, for instance, may actually be 11/16" or 23/32" thick. So using a 3/4"-diameter bit to cut the shelf and bottom-panel dadoes will make them too wide. When routing dadoes for plywood, it's better to make multiple passes with a router bit that's smaller than the thickness of the plywood, in order to "sneak up" on a perfect fit. You can make a jig to do this, but I used Rockler's clever new Perfect Fit Dado Jig instead. It features



Here the author forms a rabbet to accept the 1/4"-thick plywood back panel. It is plowed into the same face of the side blank as the dadoes. The rabbet is 3/8" deep and 1/4" wide.

Once the rabbets are milled, cut the two side panels from the double-wide blank. Notice how the shelf and bottom dadoes will match perfectly on both side panels this way, thanks to routing the joinery first and at the same time.

a mechanism that sets up the jig to perfectly match the width of the dado to the workpiece. The jig travels along a clamped straightedge.

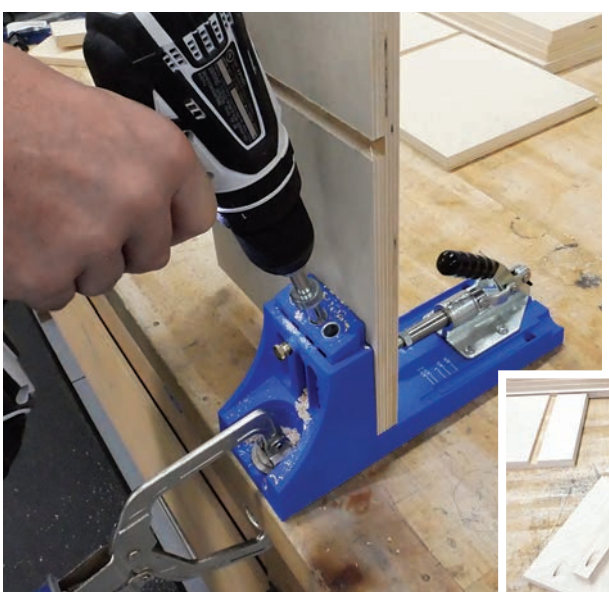
If you do the same, set up the jig to match the thickness of the bottom panel, as shown in the photos at the top of page 45. For the bottom, use a 1/2"-diameter straight or spiral bit to form the 3/4"-wide dadoes. Repeat the same process to rout the two 1/2"-wide shelf dadoes, but instead of a 1/2"-diameter bit, you need to switch to a 3/8"-diameter bit for the narrower dado cuts.

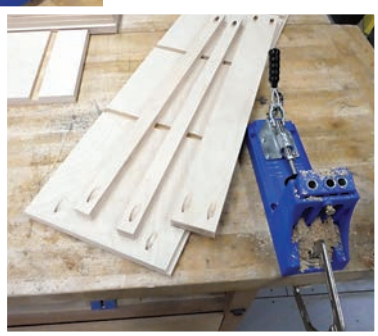
The bookcase's back panel fits into rabbets on the rear edges of the two sides. Head to your router table and set it up to form a 3/8"-deep by 1/4"-wide rabbet cut, as shown in the photos above. By milling these rabbets last, you'll remove any tearout from the back edges of the side panels that was created by the previous dado cuts. Then split this workpiece into two 9¼"-wide side panels at the table saw.

At this point, all your workpieces are prepped and nearly ready for assembly. But before moving on, sand them smooth — it's much easier to do this now.

Boring Pocket Holes

We'll use pocket holes and screws to secure the bookcase's top, kick plate and rails. Set up your pocket-hole jig and bore two screw pockets in the top end of the sides. In the same manner, drill a pair of evenly spaced pockets on the inside ends of the kick plate. For the narrow two upper rails, a single pocket hole on each end is all you need.





Pocket-hole joinery is a sturdy and easy system that's useful in a variety of assembly circumstances. Here pocket screws will be used to attach the kick plate, rails and top to the sides of the bookcase.

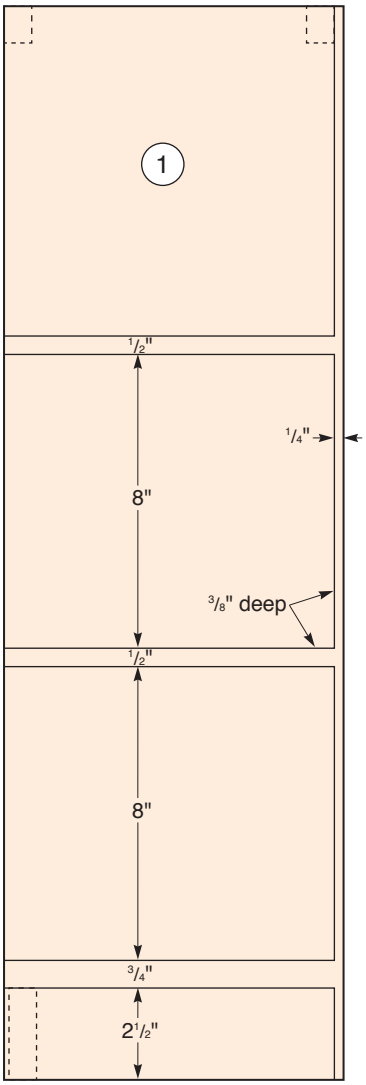
Paint First, Then Put It Together

I chose to paint the faces of all the parts but leave their edges and the shelves bare as a decorative accent. A small foam paint roller is an excellent applicator for this job; it lays down a smooth, even coat that dries quickly. The contrast between the painted panels and the plywood edges creates a clean, modern look, and the void-less construction of Baltic birch plywood makes exposed edges like this possible. Leave the bare edges unfinished so glue will create a stronger bond.

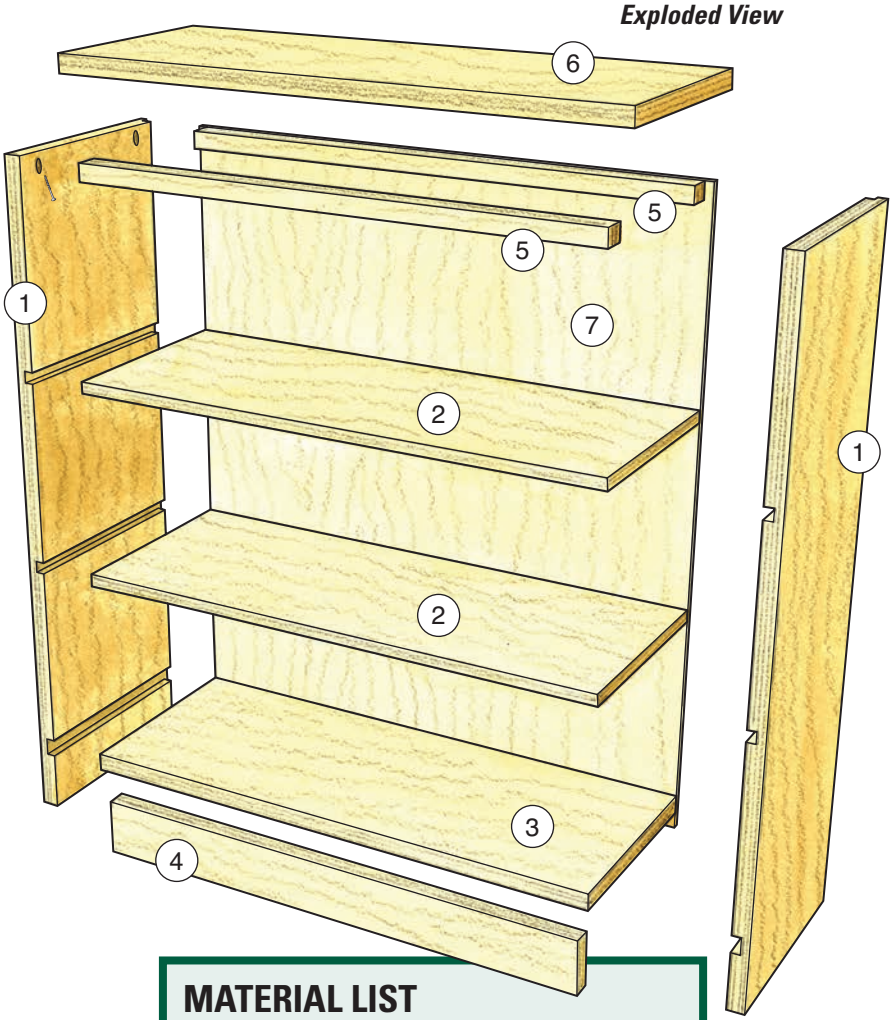
Once the paint dries, you're ready to put this bookcase together. As with any woodworking project, dry fitting the parts with clamps is a must. This process verifies that all the pieces go together properly and gives you an opportunity to test your assembly process before you reach a point of no return. After all, glue is permanent!

Apply glue into the dadoes on one bookcase side and, being careful to mind your directional labels, set the shelves and bottom into place so they're flush with the bookcase's front. Because these parts are 1/4" narrower than the

Sides
(Inside View)

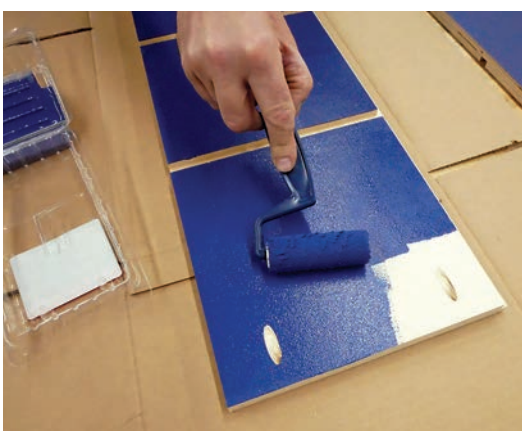


Exploded View



MATERIAL LIST

	T x W x L
1 Sides (2)	3/4" x 9¼" x 29¼"
2 Shelves (2)	1/2" x 9" x 23¼"
3 Bottom (1)	3/4" x 9" x 23¼"
4 Kick Plate (1)	3/4" x 2½" x 22½"
5 Rails (2)	3/4" x 1" x 22½"
6 Top (1)	3/4" x 9¼" x 24"
7 Back (1)	1/4" x 23¼" x 27½"

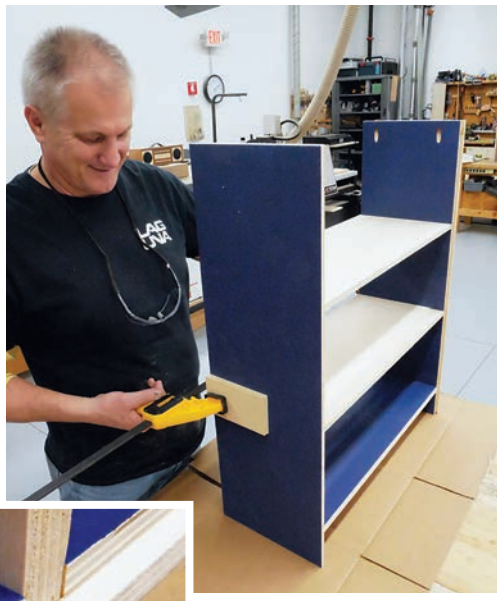


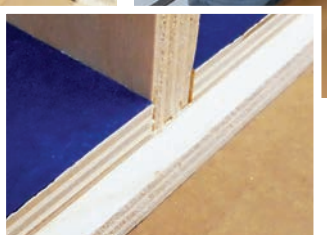
Paint the faces of the bookcase by rolling or brushing. Two coats of a latex paint with a quick sanding pass between coats is recommended. Keep the paint clear of the dadoes and rabbets so it doesn't interfere with the glue bond.

Simple Bookcase Hard-to-Find Hardware

3/4" Baltic Birch Plywood, 24"W x 30"L (2) #63453 ..... $16.99 ea.
1/2" Baltic Birch Plywood, 24"W x 30"L (1) #63446 ..... $12.99 ea.
1/4" Baltic Birch Plywood, 24"W x 30"L (1) #63420 ..... $8.49 ea.
General Finishes Milk Paint, Pint, China Blue (1) #73131 ..... $18.99 pt.
Perfect Fit Dado Jig (1) #59385 ..... $49.99 ea.
Wooster® Short Stuff Touch-Up Kit (1) #53197 ..... $9.99 ea.
EZ-Mark Line Cords (1) #32527 ..... $7.99 pk.

To purchase these and other products online, visit www.woodworkersjournal.com/hardware *or call 800-610-0883 (code WJ1577).*





Always dry fit your parts before moving on to gluing and clamping. When you are certain that everything will go together correctly, apply glue to the dadoes with the sides laying flat, as shown above. Set the shelves and bottom panel into their appropriate dadoes, then place the opposite side panel into position. The shelves and bottom panel should align flush with the back rabbets (inset).

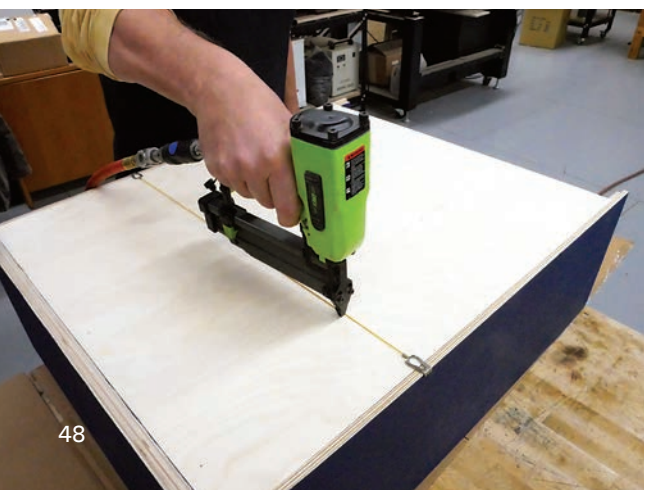
Clamp the pieces together securely, taking care to protect the painted surfaces as you do. Check for square and allow the glue to cure.

Once the glue cures, move on to attaching the kick plate, top panel and rails using pocket screws. Start with the kick plate (left photo), mounting it 1/4" back from the front edges of the bookcase. Then secure the top (center photo). As you can see, the author used a right-angle drill/driver to fit into the tight space between the shelves. Wrap up this step by attaching the rails with pocket screws (right photo), and the carcass is nearly done.

side panels, they should also be perfectly flush with the back-panel rabbet.

Go ahead and apply glue into the dadoes on the other side panel and fit it into position on the shelves and bottom panel. Clamp everything up as you had practiced, and check it for square.

When the subassembly dries, follow the photo sequence above to install the remaining pieces, except for the back panel. Use both glue and screws when you mount the kick plate, but pocket-hole screws are all you need for securing the rest of the parts.



Brads secure the back panel to the sides and shelves. A tight-fitting back panel provides stout lateral support to the structure. Here the author uses a string line to guide his nail placement.

The final step is to set the back panel into its rabbets and attach it with 3/4" brad nails. One big benefit to a tightly fitting and well-secured back panel is that it makes a structure like this more rigid and keeps it square under load.

Bookcases are often gateway projects to bigger and more sophisticated woodworking pursuits. But I think this little bookcase is a wonderful piece of furniture in its own right.

Brad Becker is a professional woodworker.