

How To Build A Book Case

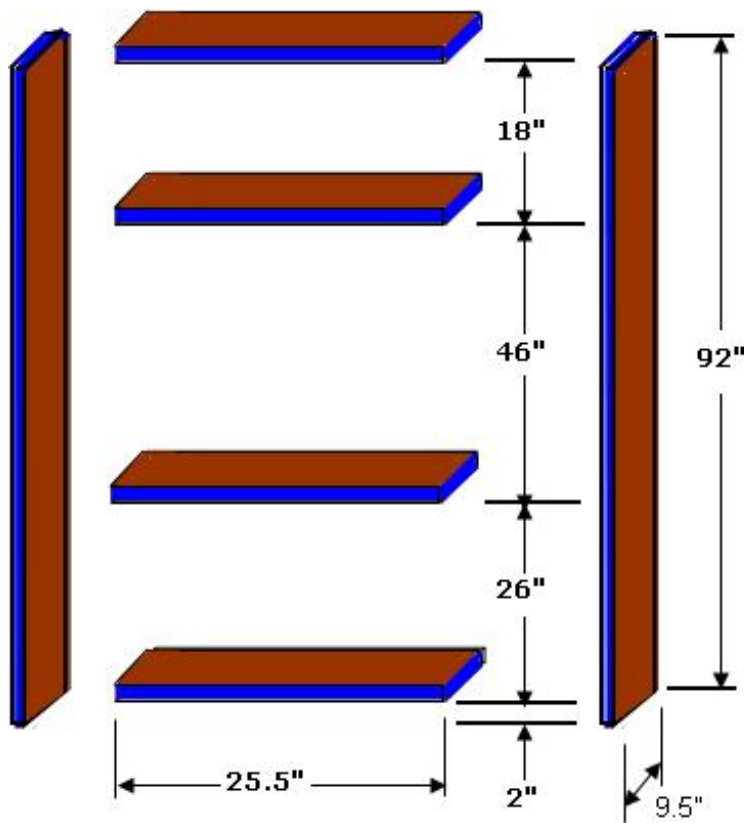
With the right plans, materials, and equipment, you can construct a Built-in Wall Bookshelf as shown here.



Materials

- 3/4" Oak (or hardwood) Plywood @ 4' x 8': Three Pieces
- 1/4" Oak (or other hardwood) Plywood @ 4' x 8': Two Pieces, for the Back Panels and Door Panels
- Oak (or other hardwood); 3/4" x 1 1/4": 60 Feet, for the Front Facing Frames and Shelf Facing
- Oak (or other hardwood); 3/4" x 6": 20', for the Top Arches and Top Molding
- 3/4" Oak, Cove Molding: 16', for the Side Molding

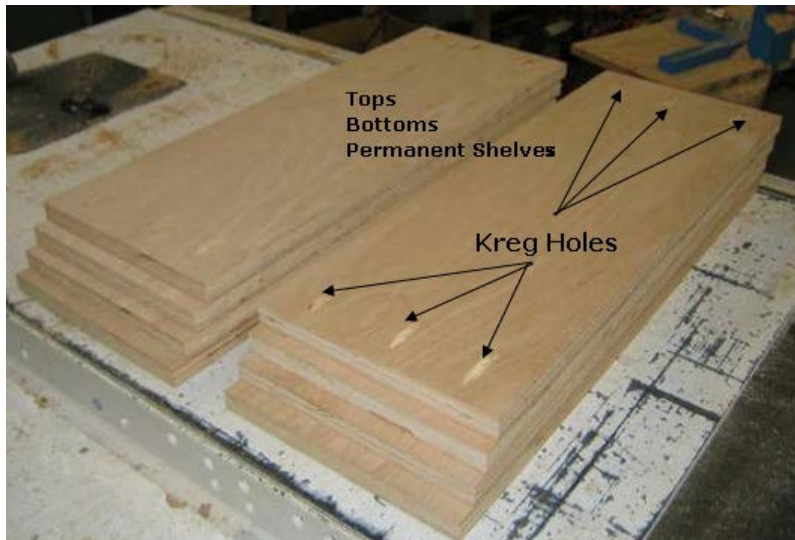
- 1 1/2" Decorative, Oak (hardwood) Molding: 24', for finishing the Middle Panel
- Eight, Wrap Around Hinges
- 1" Brads to tack the back panels: 1/4 Pound
- 1 5/8" Kreg Screws: 1/2 Pound
- 2" and 3" Wood Screws: 1/4 Pound
- 2' x 3' piece of Peg Board to be used as a shelf hole jig
- 32, 1/4" shelf brackets/pins
- Sandpaper
- Wood Filler
- Satin Finish Polyurethane



Step 1: Make the two cases - Determine the size of your built-in bookcases; For the book shelf shown above, select two, 3/4 inch, 4' x 8' hardwood plywood sheets

- Rip eight pieces @ 9.5" for the sides, permanent shelves, and the Bridge connecting the two cases
- Select four of the 9.5" x 4' x 8' boards; crosscut them to 92" for the sides (**Note:** Allow a minimum of Two inches of ceiling clearance for tipping the bookcases into place)
- Select three of the 9.5" x 4' x 8' boards; crosscut eight pieces to 25.5" for the tops, bottoms, and permanent shelves
- Select the side panels and the permanent shelves; using the "Kreg System," drill the Kreg holes as shown below





- Select the Top, Bottom, and Permanent Shelves; using the Kreg Pocket Hole System , drill three Kreg holes on each side that will connect to the side panels; drill three Kreg holes on the front edge to connect to the Front Face Frame; drill the holes so they will not be seen. On the bottom panel and shelf, drill the holes on the bottom surface. On the top panel and shelf, drill the holes on the top surface



- Select the long side panels; using the "Kreg System," drill a Kreg hole on the front edges every 12" to accept the Front Face Frames (drill the holes on the sides that will not be seen); sand all surfaces except the side edges that will connect to the Face Frame

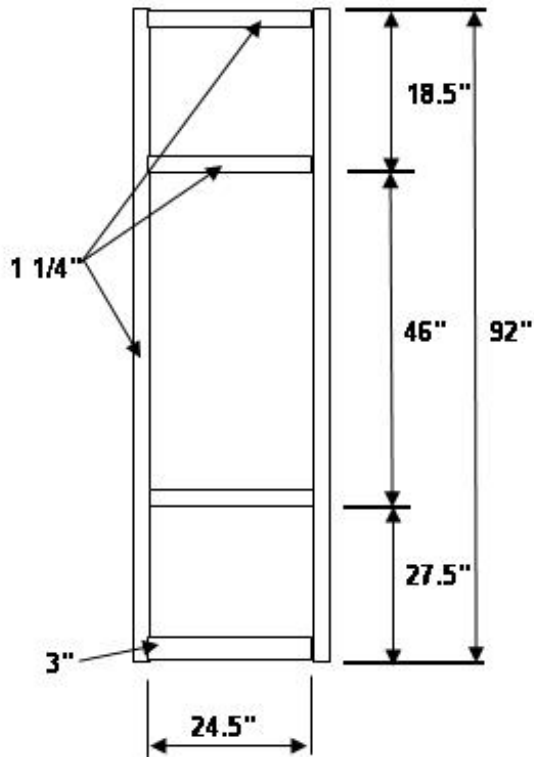


- Select the long side panels and a piece of peg board; determine the position of desired shelf holes for each pair of side panels; using the peg board as a hole template, drill holes for each pair to accept the shelf brackets (holes on each side must mirror each other), drill 1/4" holes to the depth of the shelf pins (to be safe, use a drill depth stop) on the front and back edges (1 1/2" from each edge) of each pair; sand all surfaces



- Select the long side panels, tops, bottoms and permanent shelves (two per unit) and Kreg them together (**Note:** The Bottom Panel is placed 2" up from the bottom edge; a bottom brace will be attached after the cases are assembled and after the Face Frame has been attached)

Front Face Frame



- Select the 3/4" x 6" material; crosscut one piece to 24.5; rip it in half; use the two, 3" x 24.5" pieces as the bottom rail of each Front Face Frame
- Select the 3/4" x 1 1/4" oak; cut the required pieces as shown above and Kreg them together to form the Front Face Frame

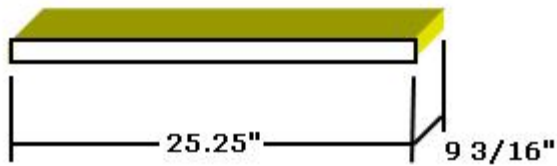


- Select the assembled Face Frame and Kreg it to the Case
- Select the 3/4" x 6"; cut a piece to 2" x 25.5" for each case and Kreg it to the bottom of the Bottom Panel as the Bottom Support Brace
- Select a "Round Over" router bit and router all the edges; final sand all surfaces

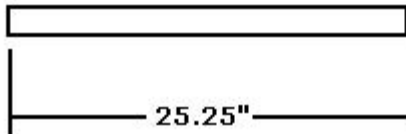


- Select the 3/4" x 1 1/4" oak material; cut a piece @ 25.5" as a Support Cleat for each bookcase; Kreg it to the back side of the Top Shelf; this will be used to secure the bookcase to a wall stud
- Select the two, 1/4" x 4' x 8' Oak Plywood panels; cut them to size for the back panels and attach them to the back edges of the cases with brads

Movable Shelf
3/4" Plywood

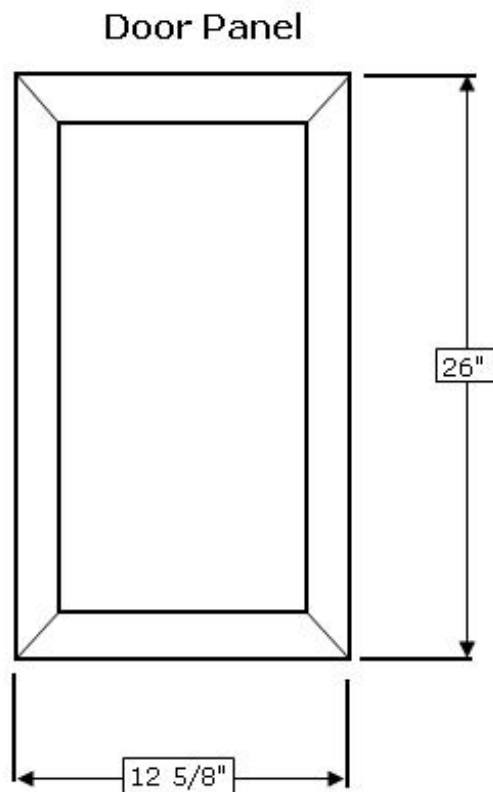


Movable Shelf Front
1" Wide x 3/16" Thick



Step 2: Make the Eight + Movable Shelves - Select the 3/4" Plywood, and select the 3/4" x 1 1/4" Oak material

- Rip the plywood @ 9 3/16"
- Crosscut the eight pieces @ 25 1/4"
- Cut the 3/4" x 1 1/4" Oak material to: Eight strips @ 3/16" x 1" (or 3/4") x 25 1/4" for the Shelf Facing
- Glue the Shelf Facing to the front edge of the Movable Shelves (Brads can be used at the extreme edges as they will be hidden by the Bookcase Frame)
- Sand all edges of the first shelf; test fit the first shelf with pins to ensure the shelf fits properly; after successful test, continue with the remaining shelves





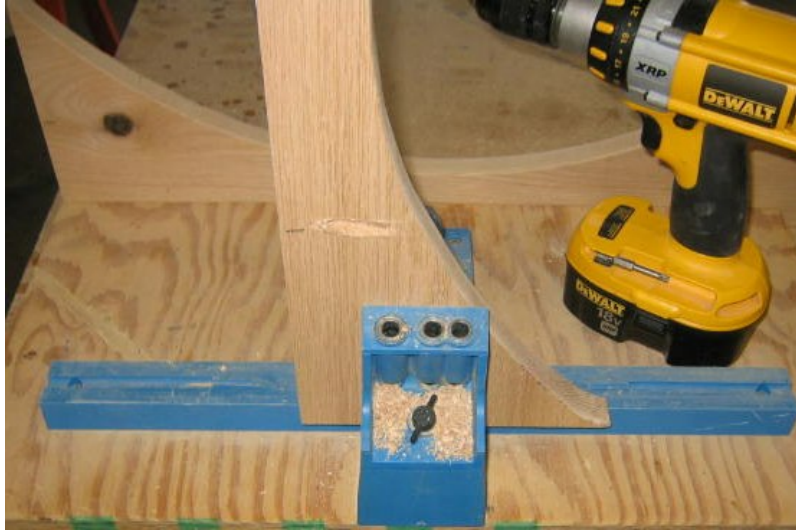


Step 3: Make the Doors - Select the 3/4" x 1 1/4" oak material; and select the 1/4" oak plywood for the door panels

- Using a miter saw with a stop block clamped into place for consistent measuring, cut the 45 degree door frame pieces for the four doors to the dimensions as shown above
- Using your table saw, make the 1/4" wide (two passes with a standard blade) x 5/16" deep dado cut to receive the door panels
- Select the 1/4" plywood and cut four pieces to: 10 3/4" x 24 1/8"
- Sand all pieces and assemble all door panels using the [Corner Jigs](#); glue the corners and use a brad or screw in each corner

- Select the [Hinges](#) and door panels and attach them to the bookcase, as shown above

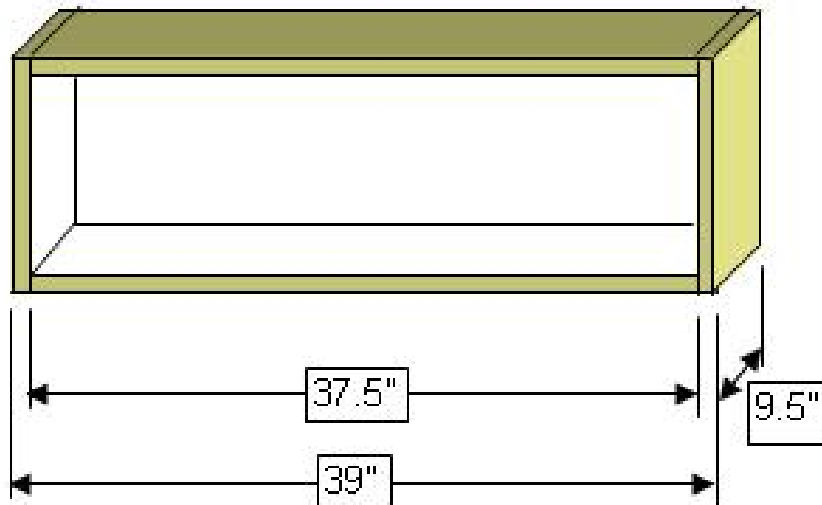




Step 4: Make the Arches - Select the 3/4" x 6" Oak material

- Crosscut two pieces @ 24.5", as shown above
- With a pencil, draw an arch from side to side allowing 2" at the top
- Using a jig saw, cut out the arches and drill the Kreg holes on the interior sides of the arches so they will be hidden from view
- Sand all edges and surfaces (especially the interior) of the Arches with the exception of the box joints - **DO NOT SAND THE BOX JOINTS**
- Attach the arches to the Face Frames with the Kreg screws (**Option:** Replace the top rail of the Face Frame with the arched panel)

Bridge



Step 5: Make the Bridge - Select the 3/4" x 9.5" oak plywood boards and the 1 1/4" Oak material for the Bridge and Bridge Face Frame

- Select the plywood and using a Miter saw, crosscut two pieces @ 38.5" and two pieces @ 12", as shown above
- Drill the Kreg holes on the exterior sides so they will not be seen
- Drill the Kreg holes on the Top and Bottom panels to receive the Face Frame
- Sand all edges and surfaces (especially the interior) of the Bridge with the exception of the box joints - **DO NOT SAND THE BOX JOINTS**
- Assemble the Bridge plywood panels with the Kreg screws
- Select the 1 1/4" Oak material and cut two pieces @ 36 1/4"; and cut two pieces @ 12"; Kreg the Face Frame together
- Attach the Face Frame to the Bridge box with the Kreg screws
- Dry fit the cases into place with the bridge connected with clamps; attach the Bridge to the Cases through the Face Frame

with 2" screws; Attach the cases to the wall with 3" wood screws through the Nailing Cleat into wall studs



Step 6: Make the Middle Panel and apply the trim - Select the 3/4" x 4' x 8' oak plywood board

- Cut the panel to: 82" x 38"
- Attach the panel to the wall with 2" screws at the edges into wall studs
- Select all the corner molding pieces and glue and tack them into place
- Measure, cut, and attach all edge molding pieces: The 1.5" Molding around the Center Panel; the 6" Molding along the top edge connecting the two cases; the 3/4" Cove Molding along the left and right edges of the cases, and any desired ornamentation
- Attach accessories to the Middle Panel, i.e. Shelf and Mirror
- Complete all final sanding and apply a minimum of three coats of polyurethane

