

Book holder

Materials:

- 2' piece of $\frac{3}{4}$ " oak stair riser
- 8' of $\frac{3}{4}$ " oak panel molding
- 2 - 2 $\frac{1}{2}$ " to 3" Shaker pegs
- 2 - 2" x $\frac{5}{8}$ " brass hinges with screws
- Fine sandpaper
- Very fine steel wool
- Glue
- Tape
- Oil-based wood fillers in various colors

Cut List:

- 1 - 7 $\frac{1}{2}$ " x 20" x $\frac{3}{4}$ " oak base
- 1 - 7 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ " oak book-support
- 7 - Oak panel molding pieces to fit along edges of base and book-support

Tools

- Precision hand miter saw (preferable) or
- Miter box and backsaw
- Belt sander with coarse, medium and fine sanding belts (or just sand the piece by hand)
- Palm sander
- Drill
- Drill bits (brad point recommended)
- Latex gloves
- Eye protection
- Ear protection
- Dust mask
- Non-skid mat

Steps:

Cut the base to measure 7 ½" x 20". Cut a second piece, which will be the book-support, to 3 ½" x 7 ½".



Hold the panel molding in place and mark for cutting



Transfer the mark to the top edge of the board



Line up the mark with the saw blade



Make the miter cut on the line



Check the cut against the base for accuracy

Next, take the panel molding and cut a 45-degree angle on one end. Then place the molding along one side of the 20" oak base and mark the uncut end with a very sharp pencil. Transfer the mark to the top edge. Place it in the mitre-box and cut the second miter angle. Put it in place and check that the length is accurate. Adjust the length as necessary. (If you cut it too short, this means starting over!)

Repeat the panel molding cuts for all four sides of the 20" oak base and three sides of the 3 ½" book-support.



Dry fit the pieces to be certain they will all fit



Apply glue



Use your finger to spread the glue evenly to the ends



Clamp the pieces in place to dry



The long side of the book-support does not require trim

Dry fit all the trim pieces on the 20" base to be certain they fit. Re-cut as necessary for a near-perfect fit. Apply carpenters glue to all the touching surfaces and put them in place. Make any final adjustments before the glue starts to dry.

Clamp the pieces in place and leave overnight to dry.

Repeat the procedure on three sides of the 3 ½" book-support, leaving one long side free.



Smooth the surface with a belt sander



Finish up by hand sanding



Remove the dust with a tack cloth



Apply a clear water based finish with a sponge brush

After the glue is dry, sand the surface of the base and book-support using a belt sander fitted with a coarse-grit belt. Be sure to follow the manufacturer's directions if using a belt sander. (You can also do the sanding by hand if you don't have a belt sander.) Always work along the grain. Take down the surface until you've reached the bottom of the deepest dents or blemishes in the wood surface. Continue sanding, using successively finer belts until the surface blemishes are no longer visible.

Do a final hand-sanding with a fine piece of sandpaper, still working in line with the grain. Clean up the trimmed corners as necessary to remove any sharp edges or wayward fibers. Then remove all surface dust with a tack cloth.

Apply a water based Varathane clear coat with a sponge brush on all surfaces. Let it dry. It will raise the grain of the wood, so once it's dry you'll need to use very fine steel wool to smooth the surface.



Mark for the peg holes



Mark the depth on the drill with some tape



Drill down to the edge of the tape

Measure for the Shaker pegs. Find the proper size drill bit by sliding the end of the peg into the holes in the drill bit case until you find one that it easily slides into. Then hold the drill bit up to the end of the peg and mark the correct drilling depth on the bit with a piece of masking tape.

Mark two rows of holes to be drilled at 5 ½", 7 ½", 12 ½" and 14 ½" from the end of the 20" board (measured from inside the trim). The holes should be centered on the board. The first row is set back 2" from the front of the base. The second row is set back 4" from the front. This will give you eight adjustment holes for the Shaker pegs.



Use oil-based wood filler to fill any voids



Oil-based filler comes in many colors and can be mixed together to achieve the correct shade



Wipe off any excess

Use oil-based wood filler to fill any remaining open areas along the trim or gaps at the corners. Mix the colors together until you get a shade that is close to the wood color. Rub the filler into the open joints. Gently wipe off with a clean dry rag. Usually, a color that is just lighter than the wood makes the imperfections disappear more readily.

Apply at least one more clear coat. Two or three more coats are even better. Be sure to follow the manufacturers recommendations and let dry thoroughly. Use fine steel wool between coats to be sure you get the smoothest finish possible.



Attach the hinges



Finished book holder folded down



Finished book holder with a project book

Attach the 3 ½" book-support to the base using brass hinges. The pivot point of the hinges should be 1 ¾" in from the back edge of the 20" base. The hinges should be centered and mounted on the side furthest from the Shaker peg holes.

Mark and pre-drill holes for the hinge screws. Attach hinges to the 3 ½" book-support and then to the 20" base. Be careful driving the brass screws in because the metal is very soft and likely to strip out if driven imprecisely into the hardwood.

Now set yourself up in your kitchen or workshop with your new book-holder, and know that the crucial instructions for whatever you make next will rise slightly above the chaos.