

Inlaid Picture Frame or Mirror

3/10/24

Tools:

Table Saw/ Chop Saw /Band Saw
C-Clamps, Rubber Band or Band Clamp
Planer
Belt & Orbital Hand sanders

Overview:

For this project, you will take some thin scrap pieces and glue them together, similar to making a simple cutting board, Next you will cut your frame stock to desired width, cut a slot in the top of the stock w/ the table saw using a single or dado blade. Next, we will tilt the blade on the table saw to 6-8* and cut the inlay board at 90* into wedges that we will glue into the slot. Once dry, we will use the table saw to cut off the bulk of the excess then run the frame stock through the planer or sander. Once smooth, we will cut the frame stock to accept the picture/glass as well as a slot to hold the pic/mat/glass in place. Finally we will cut the stock at 45* and glue into a frame.

Now for a little detail!

Inlay Board

I normally save my thin strips from edges of boards, the scrap bin, etc until I have enough to glue them together into a simple flat "cutting board" that is 10-12" wide. This does not have to be any thicker than 1/2". It is a good idea to cut all of your long thin pieces to about the same thickness. I try to use as many different colored pieces of wood as possible to make an interesting design or have color contrast. Or you could also just alternate dark and light pieces of wood, what ever you want. Once these are glued together, plane the board down so that it is basically flat.

Prepping the Frame Stock

The width of your frame stock will depend on your design and the size of your frame and what it is holding. If you are just making small table top frames they can be as narrow as 1 1/2" wide or as wide as you want. If you are making a large frame that will hold a large print or a big 20" x 24" mirror you will want to use 2.5-3" stock to be able to support the weight of the glass or mirror. (note, Lowes carries stock 20"x 24" beveled edge mirrors for about \$15)

Once you have selected the stock and cut it to size, you need to design the width of the inlay. On small stock I normally either do a single, centered 1/2" inlay, or two equally spaced thinner inlays. For the thinner inlay's, I normally just use a double stacked table saw blade, make one cut then flip the piece and cut again, this evenly spaces the inlay strips. Before making the inlay cut slots, drop the table saw blade so only 1/4 - 3/8" of the blade is above the table top. Once the slots are cut, you are ready to move to the inlay process.

Cutting and Installing the Inlay Pieces

Using the miter saw, cut one end of the inlay board so it is flush and square. Then go to the table saw and using a single table saw blade cut the inlay wedges that will fit into the slots. First, tilt the table saw blade to 6-8°. Using scrap wood, cut some sample wedges, flipping the board each time so you get a wedge, not simply an angled piece. Be sure to use the push stick, this will keep the thin cut piece from kicking back at you. Adjust the fence cutting scrap wedges until the wedge fits tight in the slot. Once you get a good fit, use the inlay board (Note that the first cut will only have one angled edge and will be waste) Check to see that the inlay wedges fit into the prepared slots before cutting numerous strips. Adjust the fence as necessary. Once you have enough strips cut, you can move to the glue up process.

Gluing In the Inlay Wedges

I normally glue the wedges in using C-Clamps w/ strips of scrap wood above the inlay to prevent them from breaking when pressure is applied w/ the C-clamp. Remove the inlay from the slot, then put a small bead of glue in the slot. Using an acid brush, spread the glue throughout the slot. Then place a very fine bead of glue on each edge of the inlay piece and insert it into the slot. Once all of the inlay pieces are inserted, place a piece of scrap wood over the inlay and use C-clamps to force the wedges into place. Let this dry overnight. When the glue is dry, you can take the strips to the table or band saw and cut off the bulk of the excess inlay. Then remove the rest of the excess inlay using the planer or sander until the face is flush.

Making the Frame

Take the frame stock with the finished inlay to the table saw. Decide which side of the frame will be in inside and which will be the outside. Put the frame stock on edge w/ the inlay showing away from the fence. Raise the blade $\frac{1}{4}$ " and move the fence so that there is still at least $\frac{3}{16}$ " of wood outside the far edge of the blade. This first cut will make the lip that holds the glass in the frame. Then raise the table saw blade to $\frac{3}{4}$ ". Flip the stock so that the inlay faces the fence and run the stock through again. Now you should have a shallow and a deep slot in the edge of the frame stock. Now lay down the stock, inlay up w/ the cuts toward the fence and adjust the fence and the blade height so that the blade will cut right up to the edge of the shallow slot. Start this cut only going in an inch or so, so you can make blade and fence adjustments before running the whole board through the saw. When you are done you should have a lip to hold the glass and a thin slot which you can use to insert hardboard fasteners to hold the glass and picture in place. Now measure & mark the stock with a 45° square to the dimensions of the frame you are making. Note : if you are making a frame w/ specific dimensions use the inside edge to fit a specific picture or mirror. Using the 45° sled cut your pieces to size. Then inspect your mating pieces - right w/ left and top w/ bottom to ensure that they are exactly the same length, if not, make adjustments until they are exactly the same length, When they are all the same length glue the pieces together using a band or other clamp. Note: when making large frames w/ a large piece of glass or mirror it is a good idea to also use biscuits in the corners to strengthen the joints.

Finishing

Once the glue is dry, remove the clamps and go to the down draft table. Using an orbital sander sand off all excess glue from all surfaces using 60-80 grit paper, then do the same process with 120-150 grit, then with 220 grit. Note: do not skip steps on the sanding process or you will not get a good finish. After the 220 sanding, wet the frame down with water and let it dry. This will raise the grain and eventually give you a much smoother finish. When dry, sand again with 220 followed by 400 grit sand paper.

Apply whatever finish you desire. I normally use 4-5 coats of oil based polyurethane.

You can use scrap 1/8" hard board cut into triangles then fitted into the deep slot to keep the glass and picture secure.

If you have questions or need assistance please feel free to call me & I will help you to whatever extent I can.

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