

Modern Walnut and Leather Stool

In this project, I'll show you how to build a modern Walnut and leather stool. This was a fairly simple build, but I absolutely love the way it turned out. . Let's get started!

Step 1: Gather Your Tools and Materials

If you're using 1x2s from your local home center for this project, the only power tools you'll need are a miter saw with depth stop functionality, a drill, and a sander. I used rough lumber, so I used a few more tools to mill my lumber.

Materials Used On Modern Walnut and Leather Stool:

- 2 8 foot long 1x2s, hardwood required (no Pine)
- 1 3 foot long 2 inch hardwood dowel
- 9 oz Vegetable Tanned Leather Hide, at least 36" by 18"
- 3/16" (5mm) x 1/2" (12mm) Aluminum pop rivets
- 3/16" (5mm) Aluminum pop rivet washers
- 2" long, 1/4-20 Brass Bolt, 4
- 1/4-20 Threaded Inserts, 4

Tools Used On Modern Walnut and Leather Stool:

- RH200S Pop Rivet Gun
- SawStop PCS 1.75-HP Professional Cabinet Saw
- Festool Kapex Miter Saw
- Powermatic PJ-882HH 8-Inch Jointer
- Powermatic 15HH 15-Inch Planer
- Mirka Deros Sander :
- Craftool Round Drive Punch, Size 6
- Craftool Keen Edge Beveler, Size 4
- Multi-Size Wood Slicker



Step 2: Break Down Your Materials & Cut Parts to Length

This project can be built with 1x2s or 1x3s from your local home center (Home Depot or Lowe's if you're here in the United States). I'd definitely recommend purchasing one of the hardwood options, such as Oak or Walnut, instead of Pine, as Pine probably doesn't have the strength required for this build.

To cut your parts to length, I'd recommend using a miter saw or circular saw. Make sure to cut your parts nice and square and keep the parts the exact same length. Below are the dimensions for the pieces:

- 4 pieces of 1x2 at 24 ½" long
- 2 pieces at 1x2 18 " long

The leg pieces have a 45 degree miter cut on one end of the piece (see the picture).



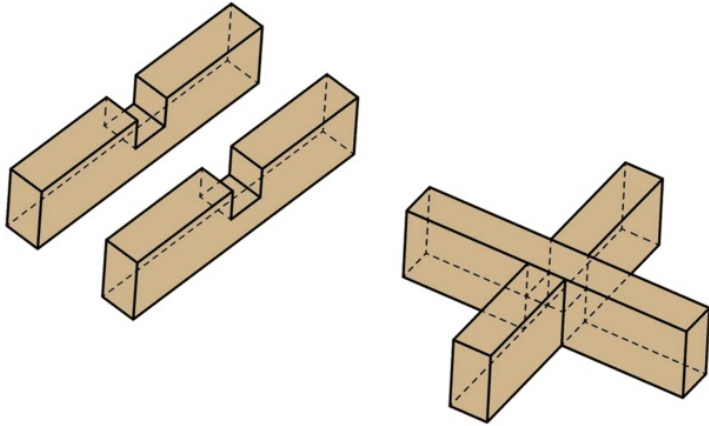
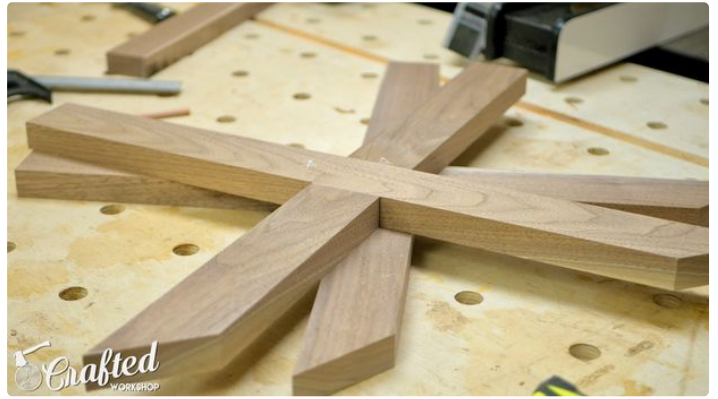
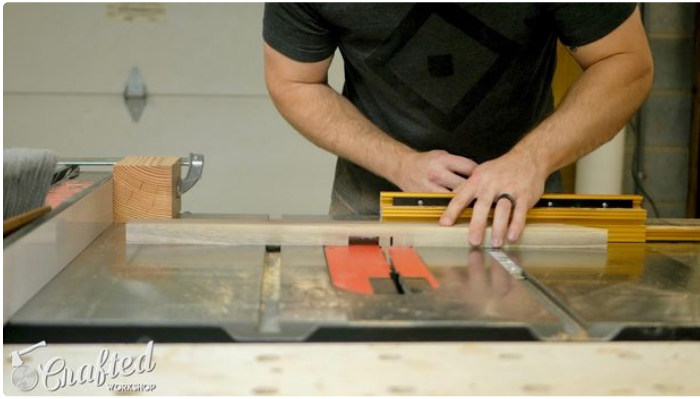
Step 3: Layout Half Lap Joinery & Cut Using Method of Your Choice

To join the two leg pieces in the X-shape, I used a joinery method called a "half lap". Essentially, you remove an equal amount of material from each board and they fit together in the negative space. See the illustration below to better understand how half laps work.

You have a bunch of options for cutting half laps: a

table saw, a miter saw with a depth stop, or a circular saw. Pick your favorite method and cut the half laps halfway up the leg, starting about 11 ½" from the bottom and ending about 13" from the bottom, if you're using 1x2s. The half laps should be half the thickness of your material, so if you're using a 1x2 with a thickness of ¾", your half lap would be ⅜" deep.





Step 4: Layout Dado Joinery & Cut Using Method of Your Choice

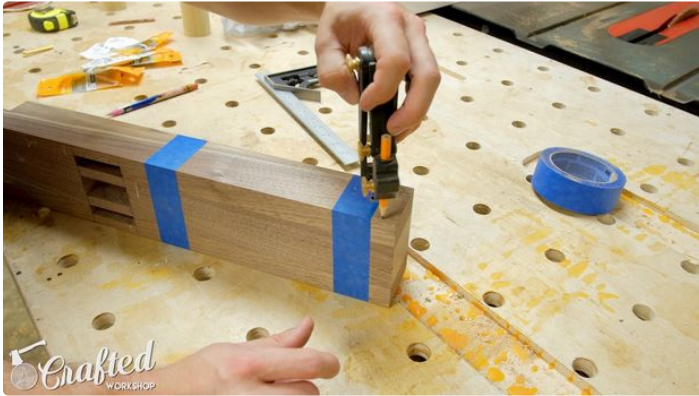
Next, you need to cut the dados for the stretchers that connect the legs. Again, I did this on my table saw but the same method you used for the half laps would work. The dado should be the same size as your stretcher. If you're using 1x2s, it will be $\frac{3}{4}$ " deep by $1\frac{1}{2}$ " wide. It makes life easier if you tape your legs together and cut all of the dados at once.



Step 5: Drill Holes for Dowel Bolts & Shape Legs

With the legs still taped together, drill a hole through all of the legs centered at the top end of the legs. If using 1x2s, this measurement will be $\frac{3}{4}$ " from the top and $\frac{3}{4}$ " from the edge.

Next, cut two pieces from your 2" dowels to 18" long



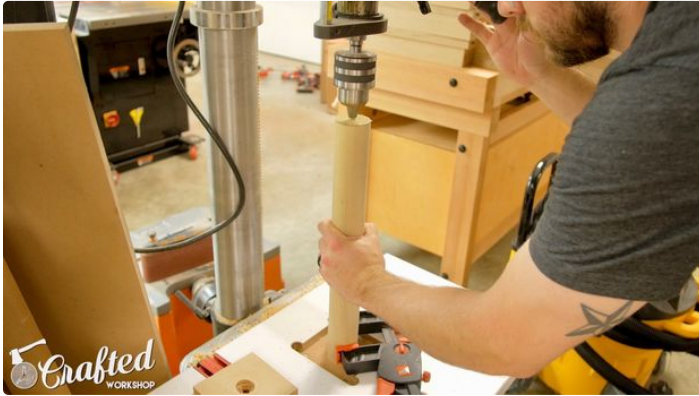
Step 6: Sand Parts & Assemble Stool Base

Before assembling the base, I sanded all of the pieces with 120 grit sandpaper. For assembly, I applied glue to each part of the joints and clamped them together, wiping away any excess glue squeeze-out.



Step 7: Drill Holes for Threaded Inserts & Install Into Dowels

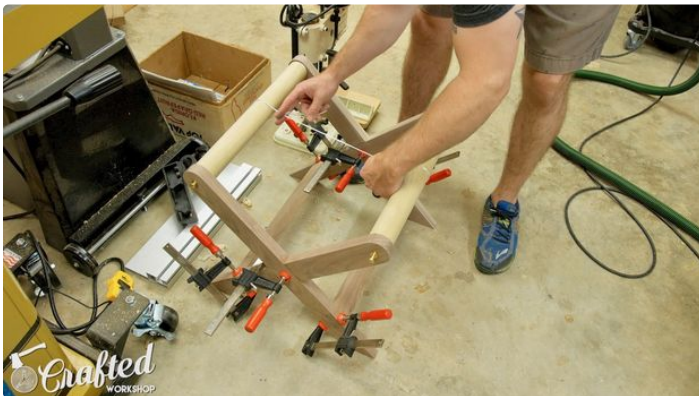
The dowels are attached to the base using bolts through the legs that thread into threaded inserts in the ends of the dowels. To install the threaded inserts, drill a hole in the center of the dowel and then thread in one of the inserts. A little Super Glue will help keep the inserts in place.



Step 8: Measure for Leather Seat & Cut Leather to Size

Now that the dowels are installed, you can measure the size of the piece of leather needed for the seat. Make sure to account for the length that will be glued together. My piece of leather ended up at 32" by 16 1/2".

I bought the leather from Tandy Leather, a popular leather supply store, and cut the piece to size using a utility knife and straight edge. I cut the corners round using the same utility knife, just to give it a cleaner look.





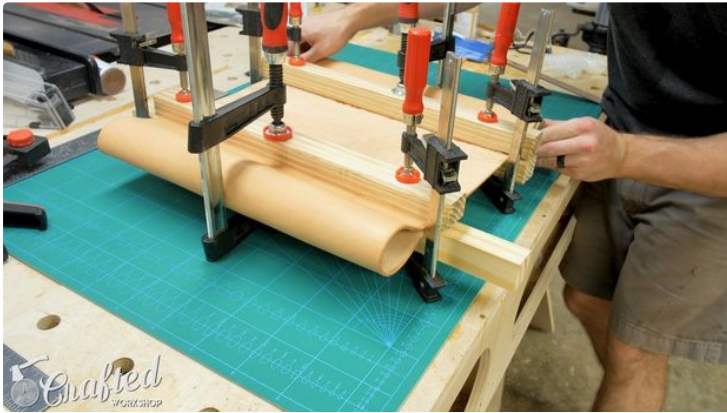
Step 9: Bevel & Slick Leather Edges

To give the edges of the leather a more finished look, I used an edge beveler and wood slicker to round over the edges. These are common, inexpensive leather working tools that give you piece a more professional look. This step is optional but highly recommended.



Step 10: Glue Leather to Form Loops

To glue the leather together to form the loops which will go around the dowels, I used barge cement, a glue that's designed to work with leather. I applied the barge cement and followed the directions outlined on the package, allowing the barge cement to setup for 15 minutes before clamping the pieces together.



Step 11: Apply Neatsfoot Oil to Leather

To finish the leather, I applied a few coats of Neatsfoot Oil, a natural leather conditioner. I just wiped it on with my hands and let it dry overnight, reapplying a second coat on the second day. It goes on very dark but lightens significantly after 24 hours.



Step 12: Install Rivets in Leather Seat

I used a round drive punch to create the holes for the rivets, using a No. 4 punch which matched the size of the rivets I used.

The Arrow rivets I used were 3/16" (5mm) x 1/2" (12mm) Aluminum pop rivets, model # RLA3/16IP. I also used 3/16" (5mm) Aluminum pop rivet washers, model # WA3/16. To install the rivets, I used the Arrow Fastener RH200S Heavy Duty Rivet Tool.

Rivets are extremely simple to install with a rivet tool.

Put the thin section of the rivet in the end of the rivet tool then put the thick portion of the rivet through the hole in the seat. Add a washer on the back side of the seat and then squeeze the rivet tool a few times until it clicks.

This click signifies that the rivet is set, and you'll need to squeeze the tool one more time to remove the excess rivet material. It's as simple as that!



Step 13: Apply Finish to Stool Base

With the leather seat done, the last part of the build was applying finish to the wooden base. I applied three coats of a satin wipe-on polyurethane finish, sanding between coats with 400 grit sandpaper.



Step 14: Assemble Stool & Enjoy!

Finally, assemble the stool by attaching 2" bolts through the outside of the legs into the threaded inserts in the dowels. Make sure to use washers beneath the bolt heads. Once the seat is installed, the stool is done!

Thanks for checking out this project!

