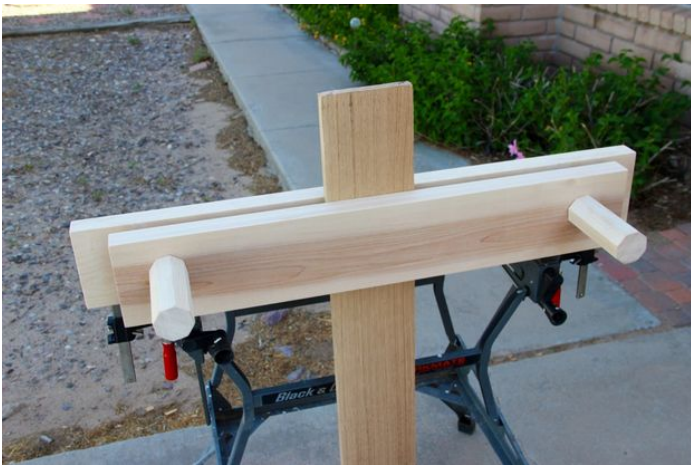


Make a Bench Vise for Woodworking

Intro: Make a Bench Vise for Woodworking

This bench vise – sometimes called Moxon's Vise – is inexpensive to make, portable, and works very well for holding your work pieces while sawing, chiseling, or planing.



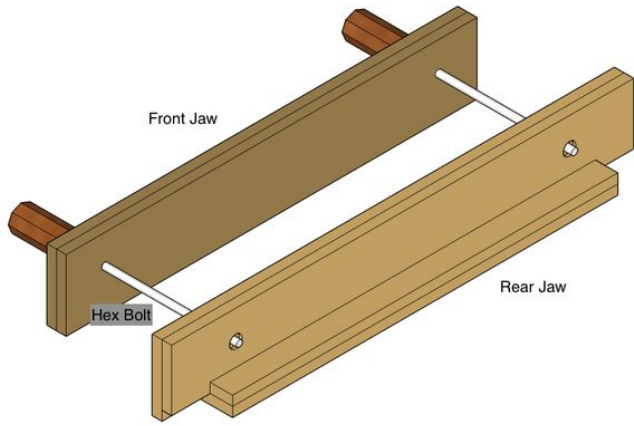
Step 1: What You Need

Supplies:

1. About 16 linear feet of one by six hardwood (actual measurements $\frac{3}{4}$ " x $5\frac{1}{2}$ "). I used birch, which looks nice and is hard/strong enough for the vise.
2. Two hex bolts $\frac{1}{2}$ " by 8" to 10" long and two $\frac{1}{2}$ " flange nuts
3. Wood glue, epoxy

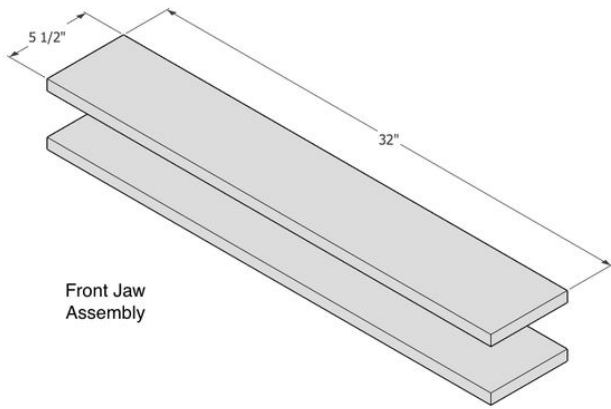
Tools:

Table Saw, Drill Press, $\frac{1}{2}$ " , $\frac{3}{4}$ ", and 1" Forstner Bits, Sander, Clamps



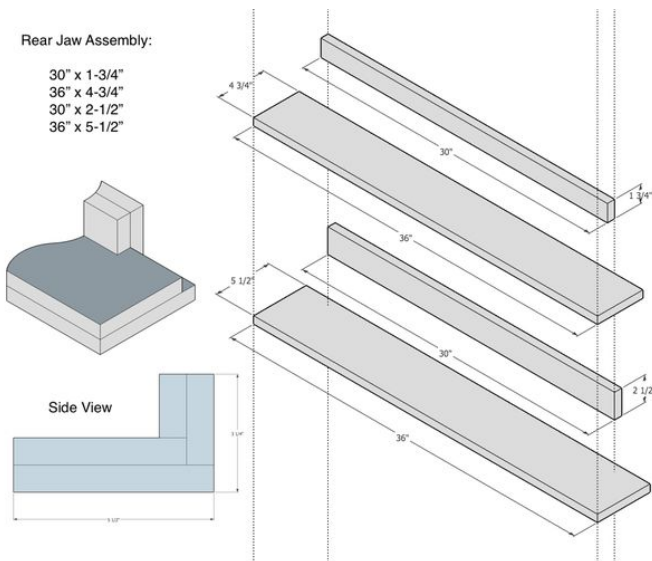
Step 2: Front Jaw

Cut two 32" long pieces from the one by six board. Glue the two faces of the 32" boards together to make the front jaw of the vise. The jaw will be 32" by 5 1/2" by 1 1/2" thick.



Step 3: Rear Jaw

The rear jaw is L-shaped. The short 'lip' is used to clamp the rear jaw to your workbench. Edge-glue the 30" by 2 1/2" board to the 36" by 5 1/2" board as shown in the drawing, lining up the centers. I used biscuits in this joint, but you don't need to do that if you don't have a biscuit joiner. After the glue dries, glue on the 36" by 4 3/4" board and the other 30" board to complete the rear jaw.



Step 4: Drill Holes for the Hex Bolts

Drill two $\frac{1}{2}$ " holes through the front jaw 3" from the short edge and 2 $\frac{1}{4}$ " from the top edge. Use a drill press, as the holes need to be straight through.

Line up the front and rear jaw along the top edge (match up the centers), then use the $\frac{1}{2}$ " Forstner bit in the front jaw holes to mark the location for the holes in the rear jaw. Be as precise as you can to avoid any binding of the screws in the finished vise. Then drill the holes through the rear jaw on your drill press.

On the backside of the rear jaw, drill shallow 1" diameter recesses around the two holes to receive the flange nuts.

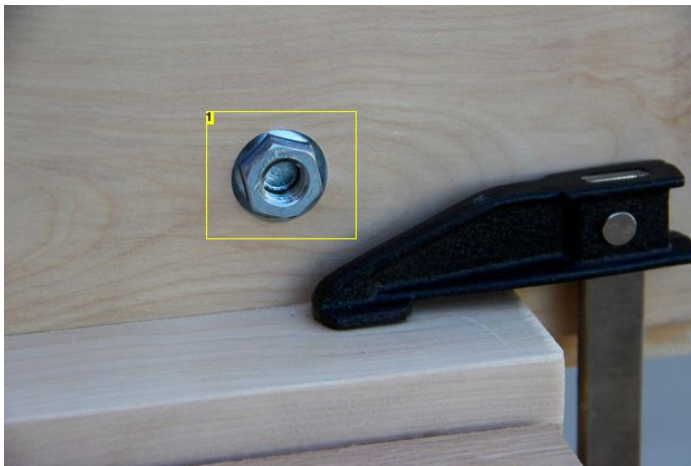
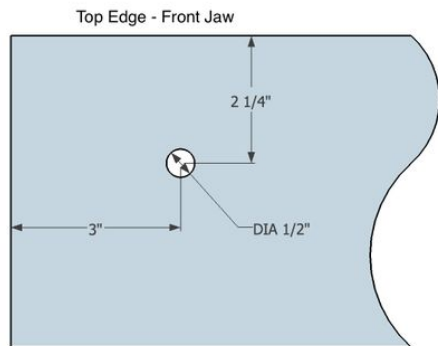


Image Notes

1. Flange nut recessed into rear jaw

Step 5: Make Handles

You could stop right here and use $\frac{1}{2}$ " hex bolts and washers to complete the vise and open/close it with a wrench.

I decided to make wooden handles for the hex bolt as shown in the picture. Glue together three boards with dimensions of $\frac{3}{4}$ " by 2 $\frac{1}{4}$ " by 11". You'll end up with a wooden stick 2 $\frac{1}{4}$ " square. Trim this stick into an octagon.

Cut the octagonal stick into two 5 $\frac{1}{2}$ " pieces making sure the cuts are square. Then drill $\frac{3}{4}$ " holes down the center axis 2" to 3" deep; whatever your drill press can handle. Be sure the holes are straight down the middle.

Insert the hex bolt head first into this hole, make sure the bolt is straight with the octagonal handle, fill the hole with epoxy around the bolt, and let cure. Your handles are done!

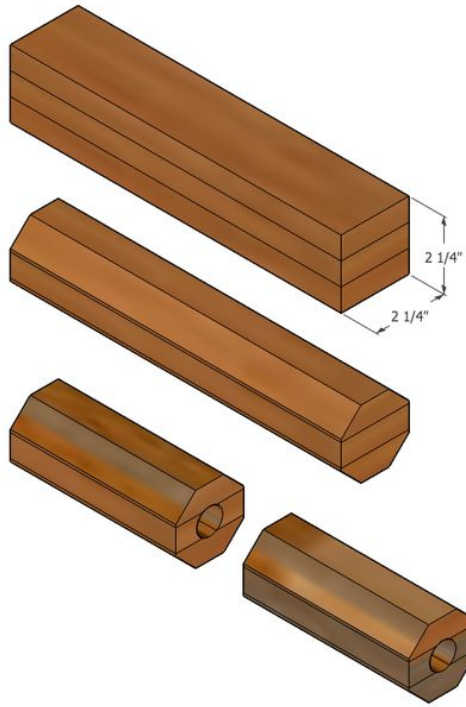


Image Notes
1. Epoxy



Step 6: Use Your Bench Vise

I did not use any finish on the bench vise or handles. I plan to sand it down if it needs cleaning.

Use some beeswax on the bolt threads and in the thru-holes to make turning the hand screws easier.

To use the bench vise clamp the rear jaw to the edge of your workbench, insert the work piece, and tighten the jaws.

