

## Instructions for the Contemplating Bench

- 1) This bench will look great made of any hardwood. I chose Ash for my bench. White Oak would be a great choice for an outdoor bench. Here is a list of what you will need sized 2" wider and longer than the part final size:

*Back Slats (7) 20" x 4" x 1"*

*Seat (1) 48" x 19" x 1 1/2"*

*Legs (4) 20" x 6 1/2" x 1 1/4"*

*Crest Rail (1) 48" x 8 3/4" x 1"*

- 2) Let's start by making the seat. The seat requires cutting from the top to create the mortises for the back slats and from the bottom to make the leg mortises. I chose to start with the mortises for the back slats. These mortises are angled so the seat will need to be blocked up at the back edge. A riser cut 1 1/4" tall will position the seat at an angle close to 94 degrees. Feel free to increase the angle for a more reclined feel to your bench. A 1/4" upcut bit was used on all of the seat cuts.
- 3) Since we are going to be flipping the seat over to cut the leg mortises it is important to create some registration points to keep the seat blank at the same relative center point, so I added some stop blocks against the front and sides of the blank on my machines table.
- 4) When cutting the back slat mortises set the Z zero position on the back edge of the mortice and cut the mortises 1 1/4" deep.
- 5) With the back slat mortises complete, flip the seat blank over end for end, re- Z zero your machine and cut the leg mortises.
- 6) Next, cut the legs out. This is straightforward work with a 1/4" upcut bit but do remember to dog bone the base of the tenons so that they will seat fully.
- 7) The base slats require two separate cuts. The first cut is to use a pocket cut to create the lap joint that the crest rail will rest in. I planned on using a 1/8" round over on all of the bench parts; to get a tight fit between the crest rail and the lap on the back slats there needs to be a 1/8" radius at the base of the lap so use a 1/4" ball nose upcut bit.
- 8) The profile of each slat is cut using a 1/4" straight upcut bit.
- 9) The last of the bench parts is the crest rail and is a simple easy profile cut with no bit change required.
- 10) The next step is to use a 1/8" round over bit in a palm router to soften all of the exposed edges. We also need to round over the edges of the tenons on the legs and the back slats so that they can fit into the CNC cut mortises.
- 11) As always, take the time to dry assemble a project before glue-up unless you thrive on panic. I went ahead and predrilled the holes for the screws that help hold the crest rail in place at this time.
- 12) Glue up time! Choose your favorite glue and carefully assemble the bench. I used hide glue for my indoor bench so that I could have a little more time before things set.
- 13) Last, final sanding, finishing and taking the time to sit, relax and enjoy your new bench.