888-680-4466 • ShopBotTools.com

Edge Clamp Joinery Jig Install and Usage

Table of Contents

Introduction

This document will explain the setup and usage of the Edge Clamp Joinery Jig accessory. It is compatible with the DT3 edition Desktop and the Desktop MAX.

Installing

Run the squaring and XY homing routines before installing the Edge Clamp Joinery Jig

Tools Required and Parts List

Edge Clamp Joinery Jig accessory (005697)

Hex key 4mm (003884)

Start by removing the spoil board on the Desktop or Desktop MAX using a 4mm hex key.

Use a 4mm hex key to remove the first 3 pieces of aluminum decking.

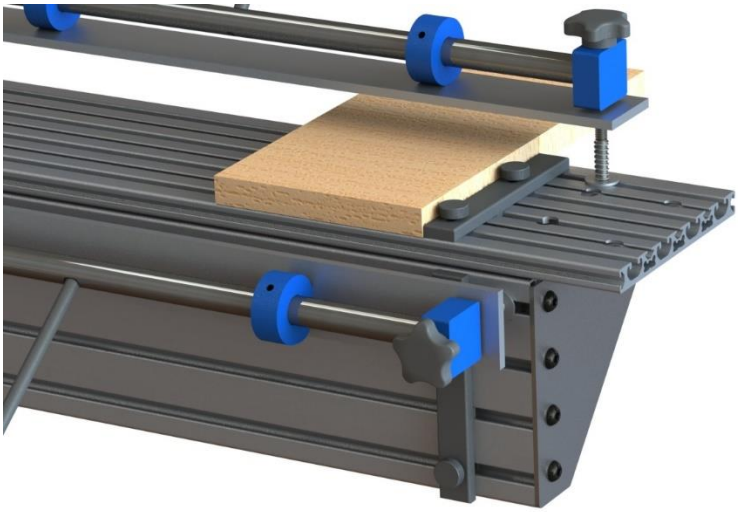
Place the jig assembly into the Desktop where the decking was just removed. Secure it to the frame using 4 of the M6-1.0x10mm button head cap screws that held the aluminum deck pieces in place. Push the clamp up against the remaining deck to make sure it is square. Then tighten down the screws, two on each side.

Alternate Installation Method

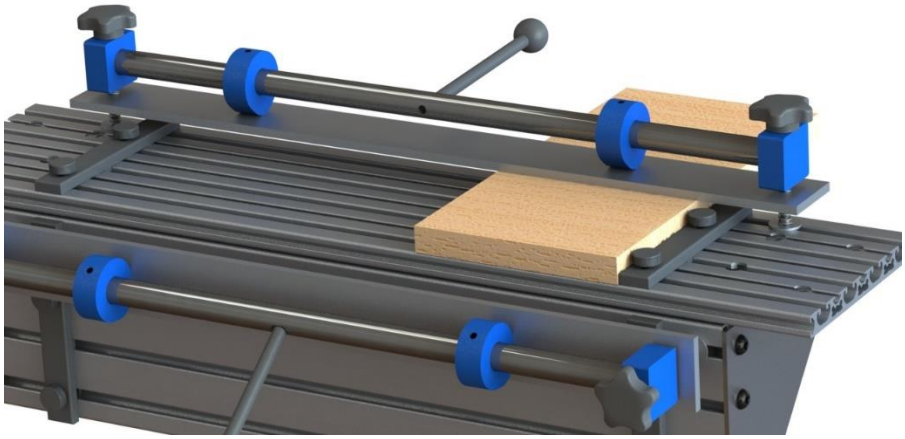
By installing the clamp so that it faces inward, the router has more space to move and runs less of a risk of colliding with the clamping mechanism. Keep in mind that it may be harder to clamp and adjust material with this configuration. Line it up with the outermost set of screw holes and square it by pressing against the forward wall. Tighten with two screws on each side.

Clamping Material

1. Adjust the fence to the preferred position and tighten by twisting the two knobs. Place the horizontal board on first, lined up with the fence and the outer edge of the clamp.

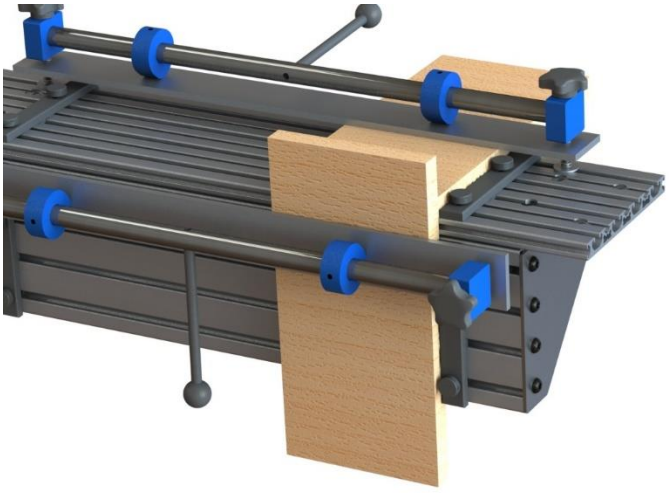


2. Push the lever down so that the sides of the cams with set screws are pointing up (the position with the most pressure). Tighten the two knobs on the edge of the assembly until the material is secure. If you need to readjust the material, simply pull the lever back up to release the pressure.

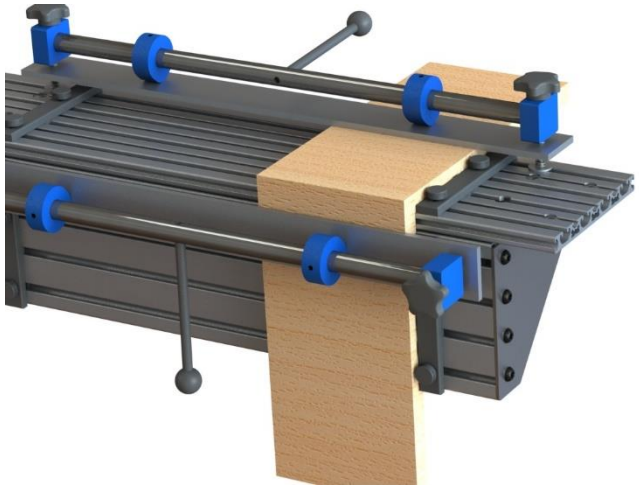


3. Slide the vertical board roughly into place and repeat the same process to tighten the clamp.

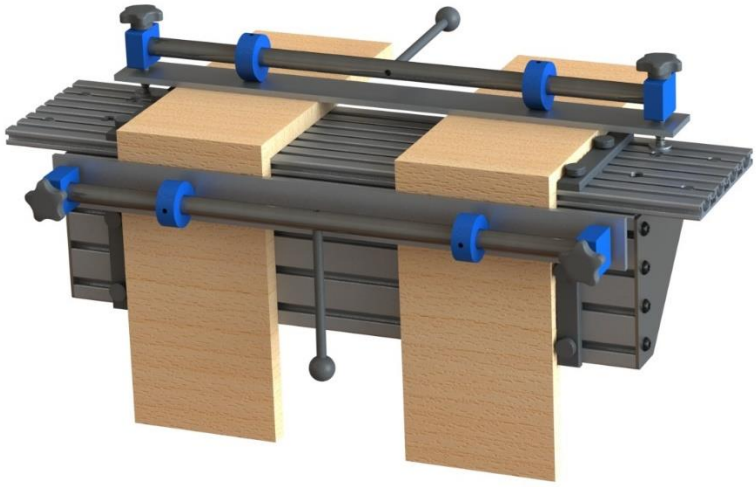
4. Position the vertical material so that both of its sides line up with the horizontal board's sides. Release the clamp to move it as needed. Once in position, slide the vertical fence up to the material and tighten it.



5. Finally, move the vertical board so that its top face is flush with the horizontal board. Make sure that both clamping mechanisms are tight before performing a cut.



6. This process can be repeated on the other side if multiple joints are being cut simultaneously.



Before Cutting

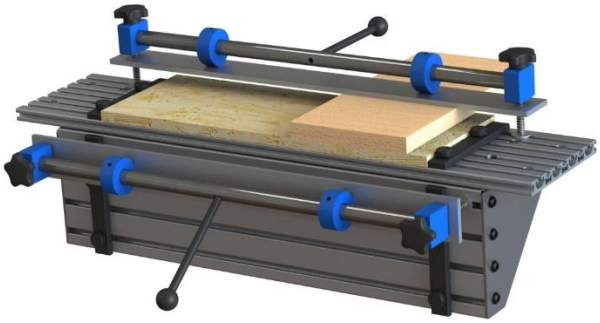
Zero the X and Y axis to the outermost edge of the material (bottom right if you have installed the clamp facing outward and are facing the machine head-on). Use the Z-plate to zero the Z-axis. You are now ready to run a cutting file.

Adding an Optional Spoilboard

These are instructions for adding your own spoilboard to prevent the risk of cutting into the deck.

1. Begin by cutting out a piece of material roughly 17” x 6” with a thickness anywhere between ½” and ¾”. Place it onto the edge clamp, making sure to keep it flush with the outer face of the clamp.

2. When you clamp a piece of material with the spoilboard, you may need to manually hold up the clamping surface to fit the material in, as the springs that hold it up may not be long enough.



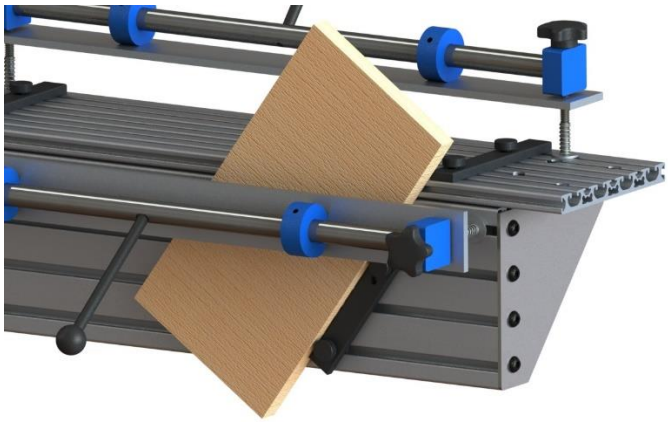
Using Angled Fences

The Edge Clamp includes two optional fences that allow for material to be clamped at an angle. Follow these instructions to swap out the preinstalled fences with the angled ones.

1. Begin by removing the two screws from the fence you wish to swap out.

2. Attach the angled fence with the slot on top and the hole on the bottom. Put the bottom screw in first, then the top one. Don’t tighten them all the way yet.

3. Reference the material you want to cut to figure out what angle to set the fence at. Slide the top knob from side to side to adjust and tighten both to set the position. Clamp the material.

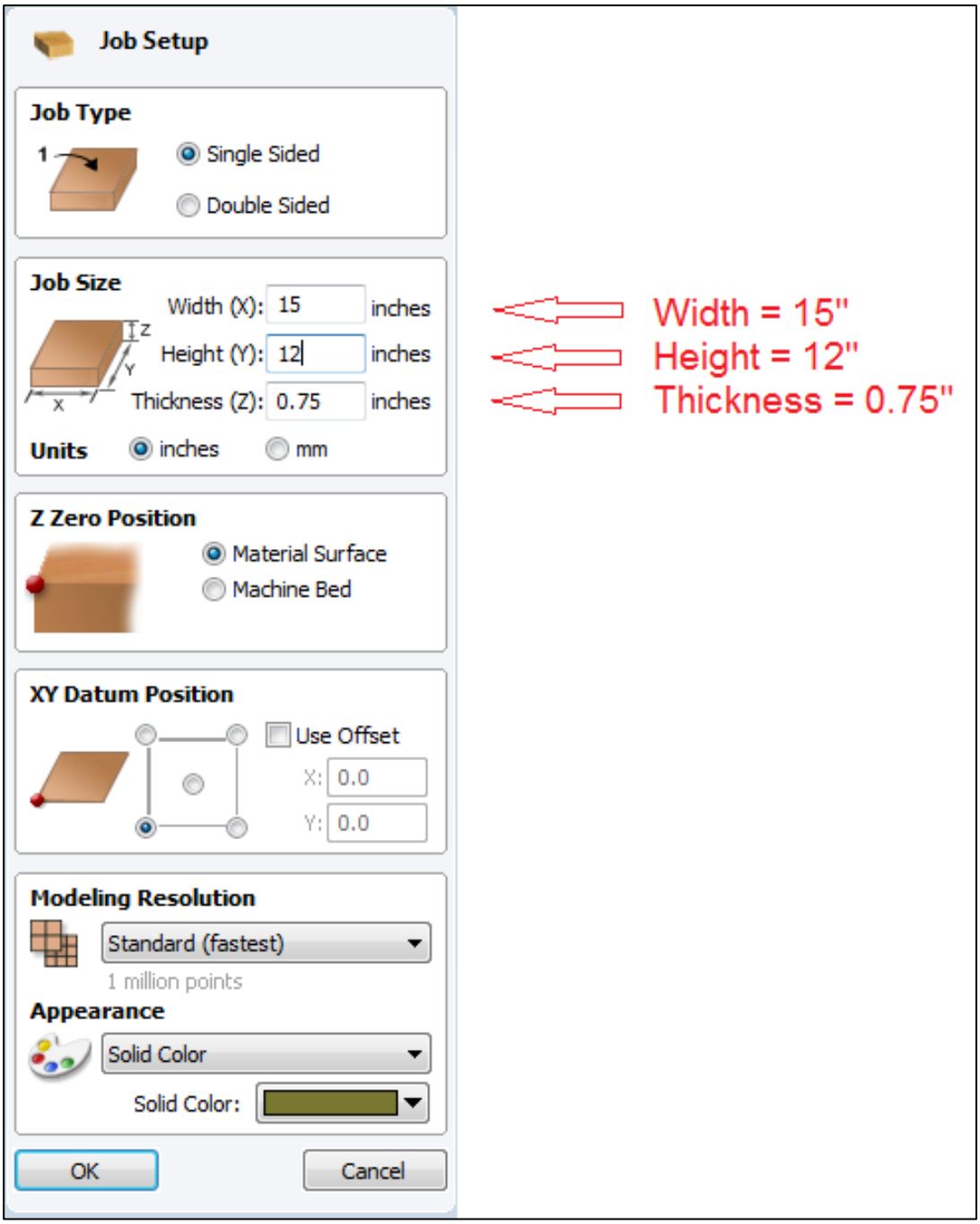


Creating a Tenon (Desktop)

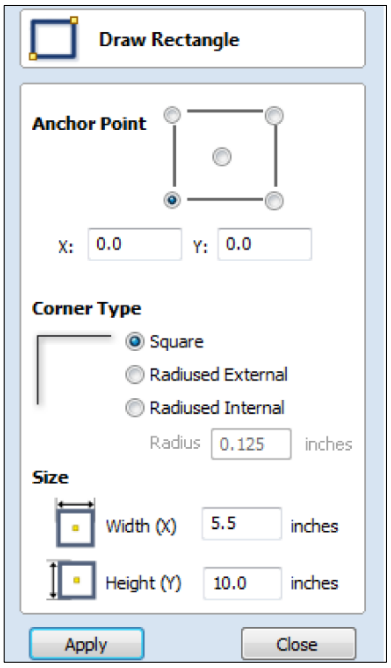
Layout the Blanks

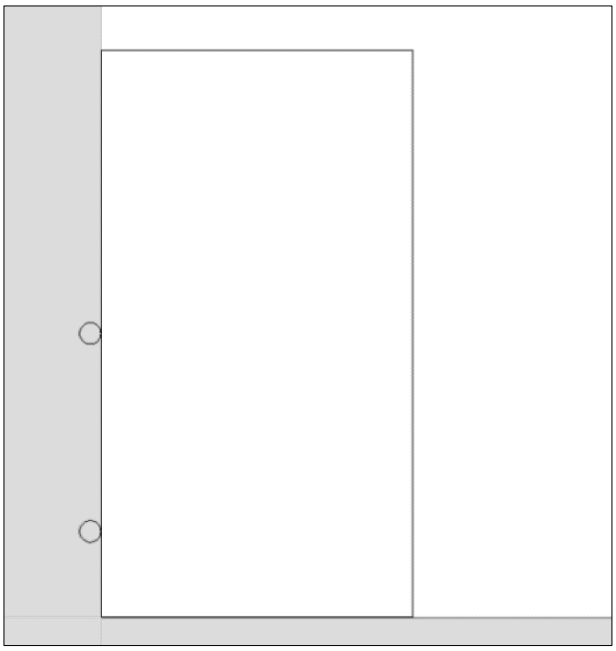
This example is written as if using a Desktop. NOTE: for a Desktop MAX orient the tenon along the Y-Axis instead of the X.

1. Create a new VCarve job.

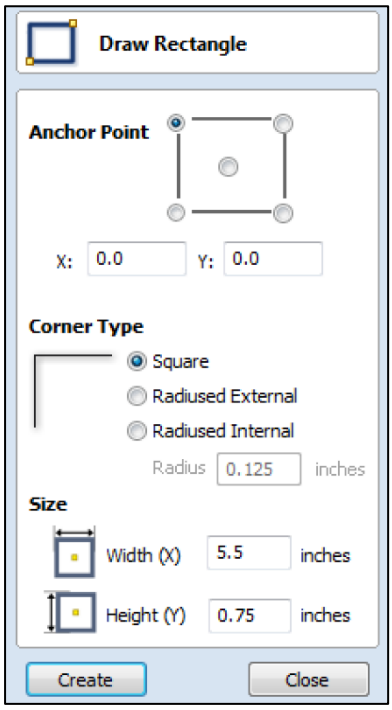


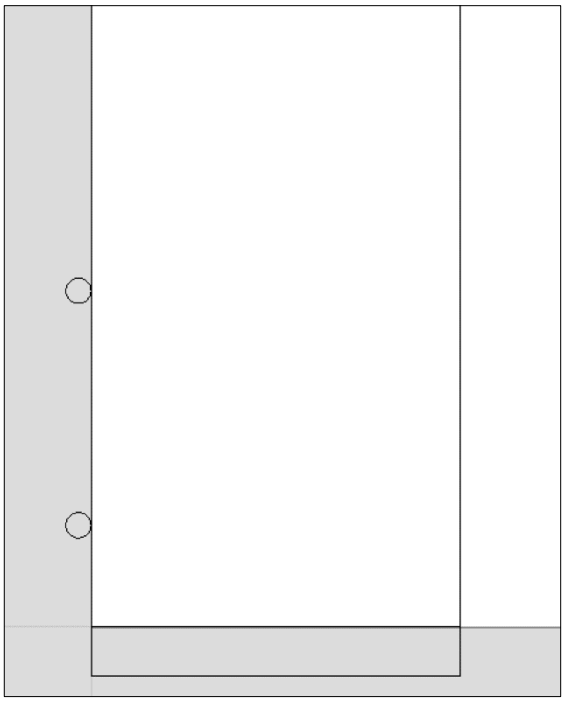
2. Draw a 5.5” x 10” rectangle at X, 0 and Y, 0:





3. Draw a 5.5” x 0.75” rectangle at X, 0 and Y, 0.
Note: Set anchor point to the upper left.

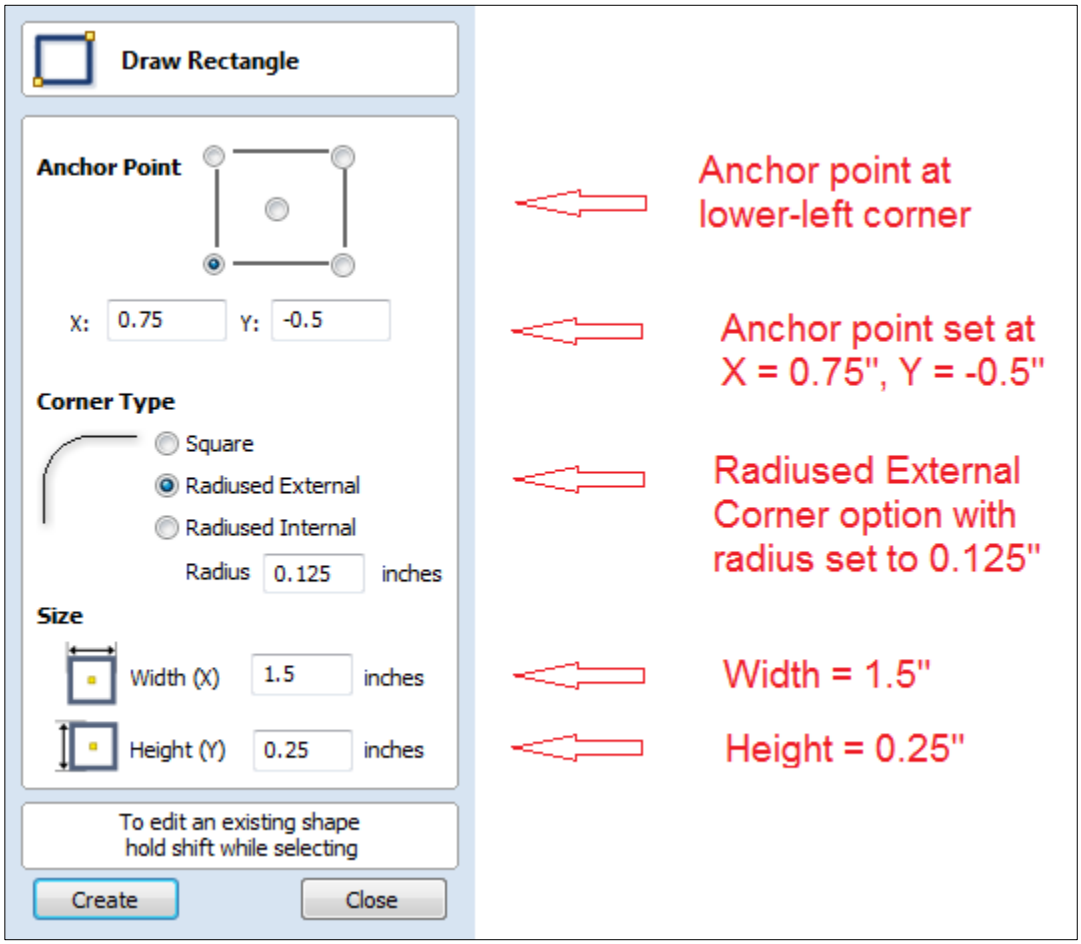




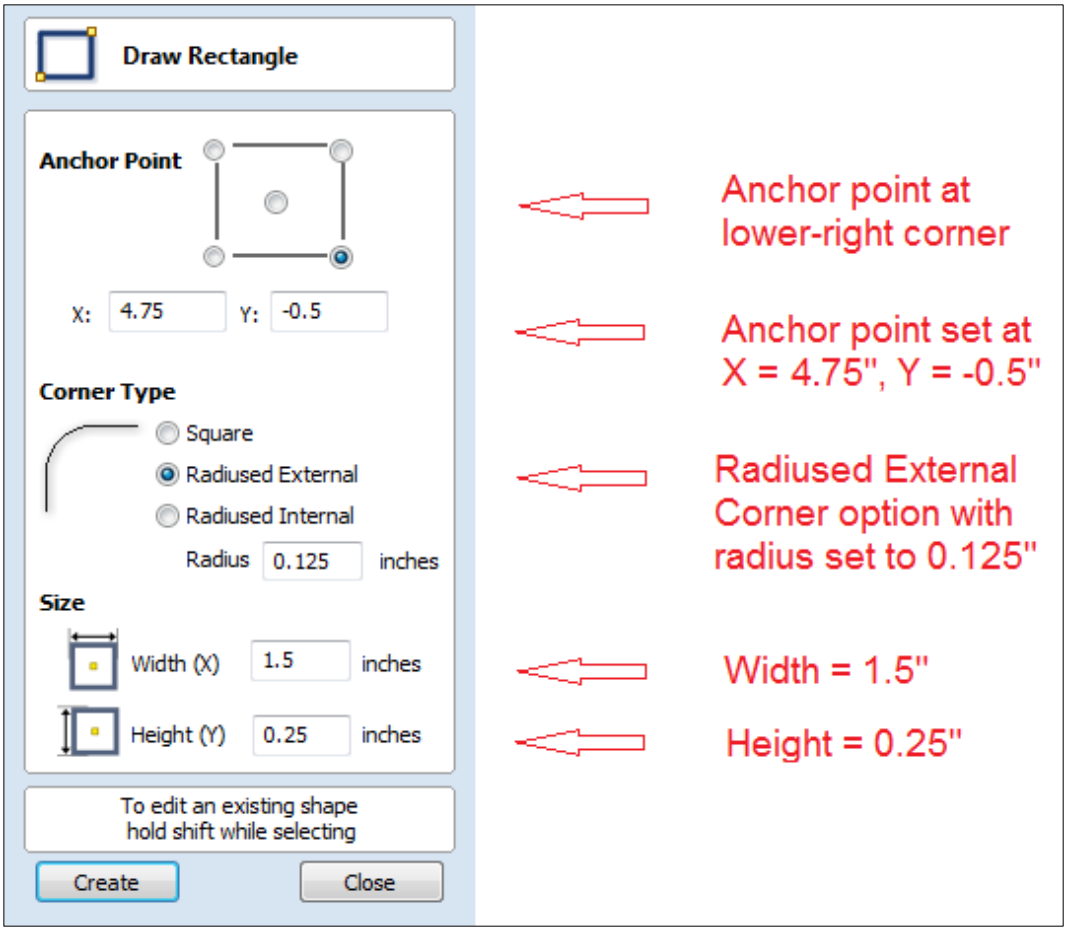
Draw the Tenons

Draw two rounded rectangles on the lower piece that will become the tenons.

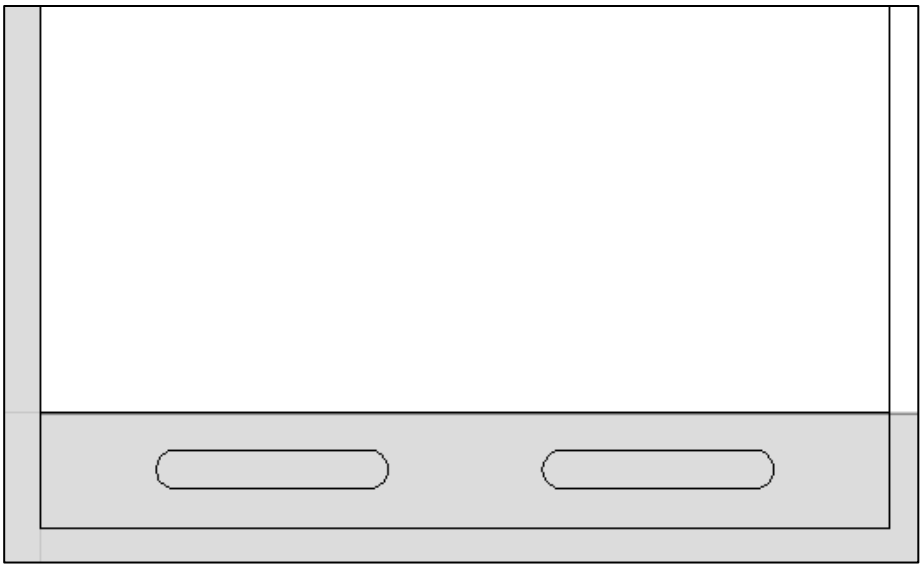
First tenon:



Second Tenon:



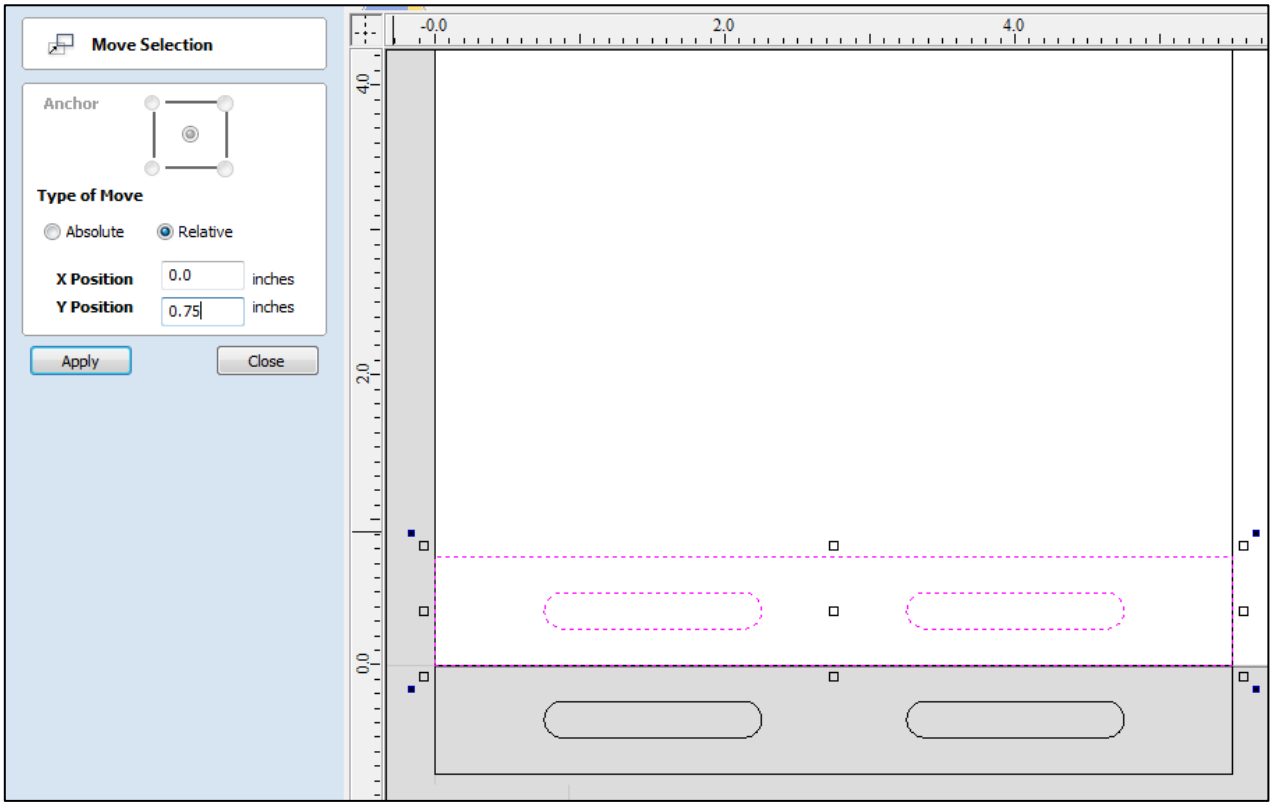
The layout should look like this:



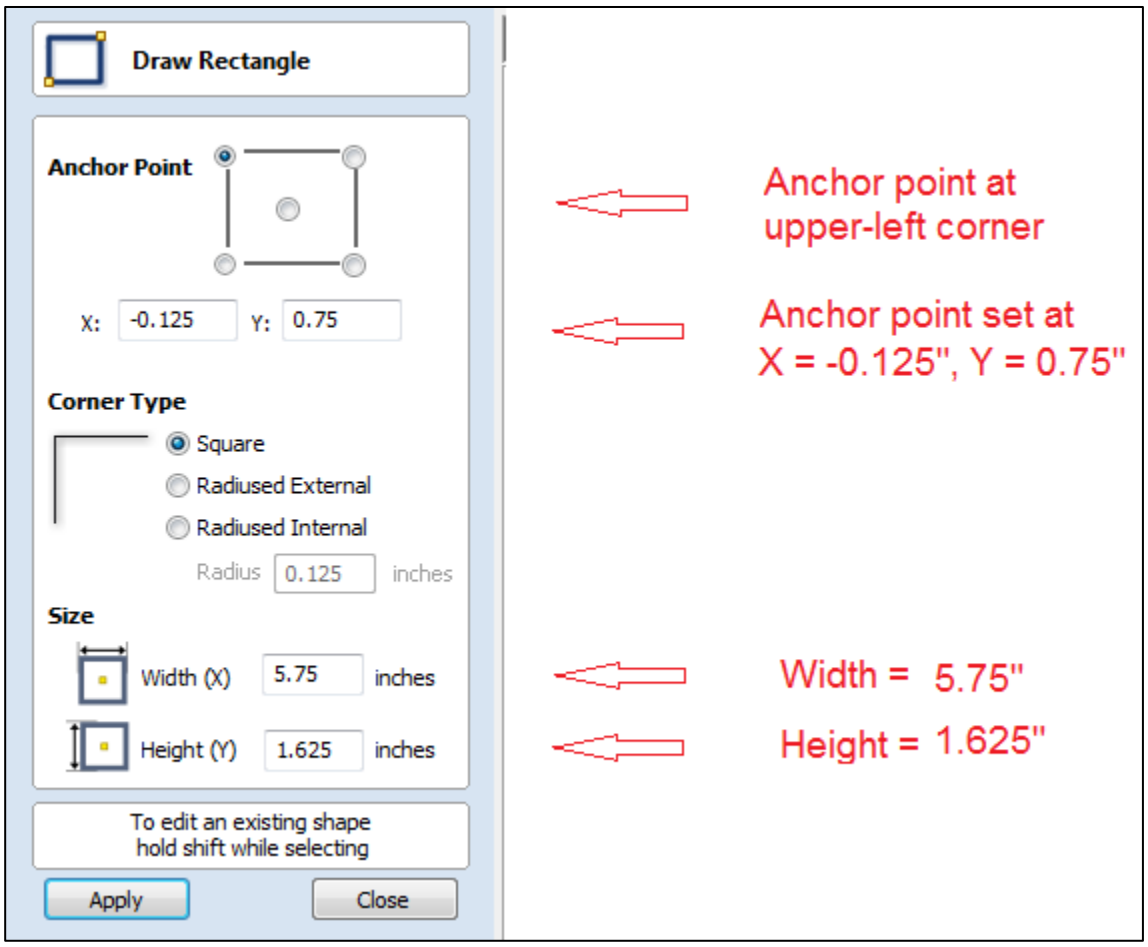
Next, to create the layout for the mortices.
Select the smaller rectangle with the two tenon rectangles, then go to Edit menu and select Copy.

Next, select Paste and a second copy will be superimposed over the original. While that copy is still selected, move it up 0.75” in the Y-axis

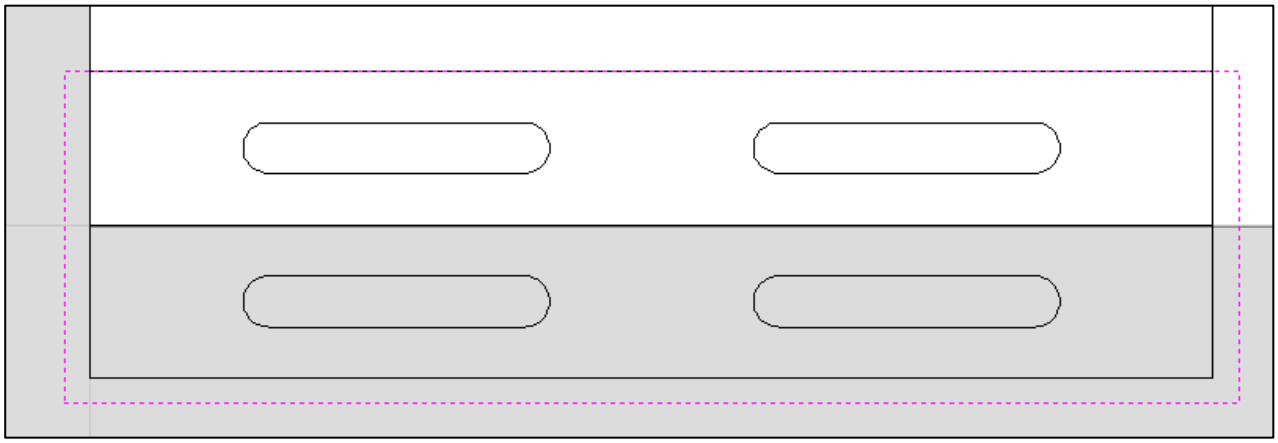
When complete, it will look like the below image:



One more rectangle is needed to be the boundry for the tenon pocket. Draw that rectangle using the following settings:

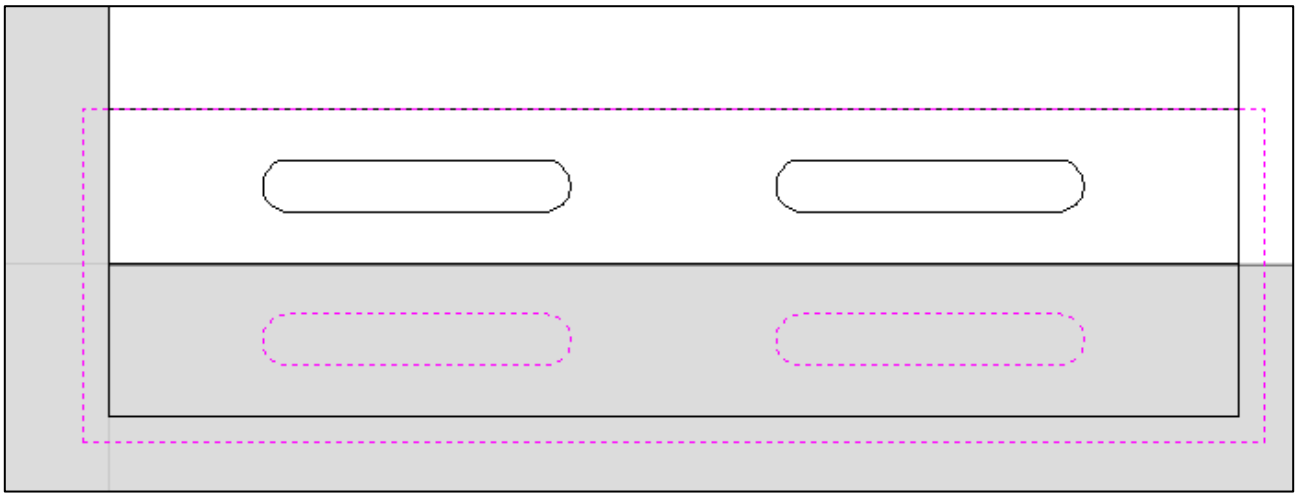


When finished, the drawing will look like this:

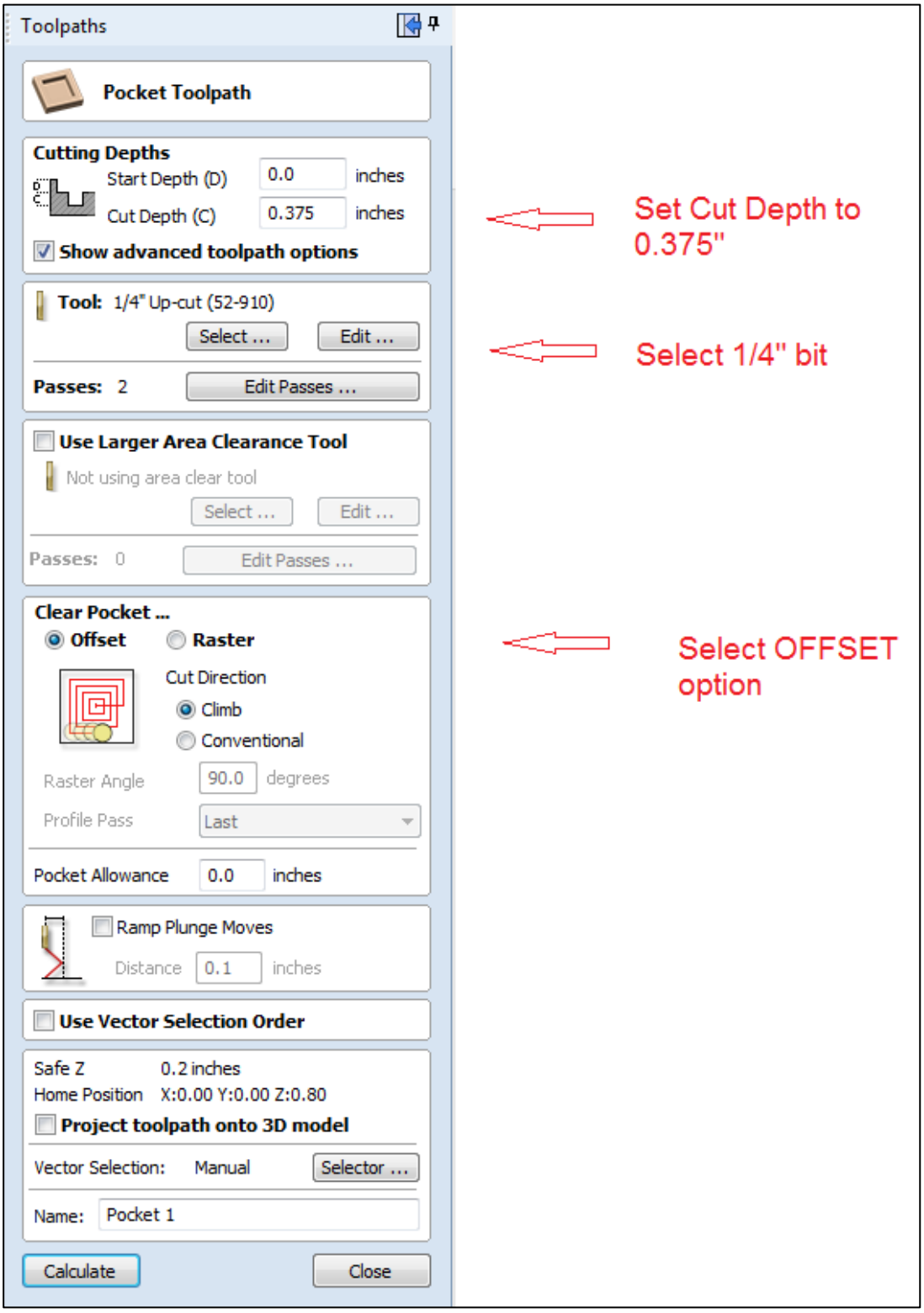


Toolpath the Tenon Pockets

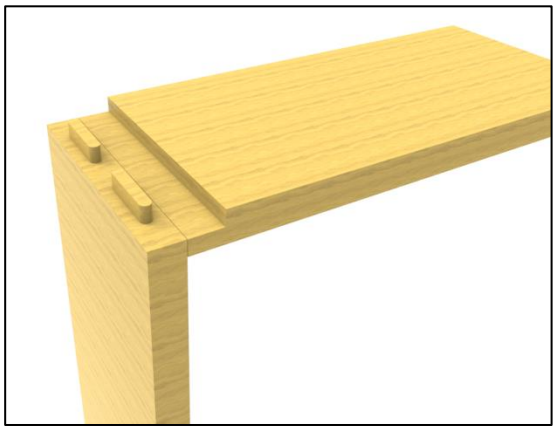
Select the larger rectangle and the two lower tenons



Create a pocketing toolpath using the selected vectors:

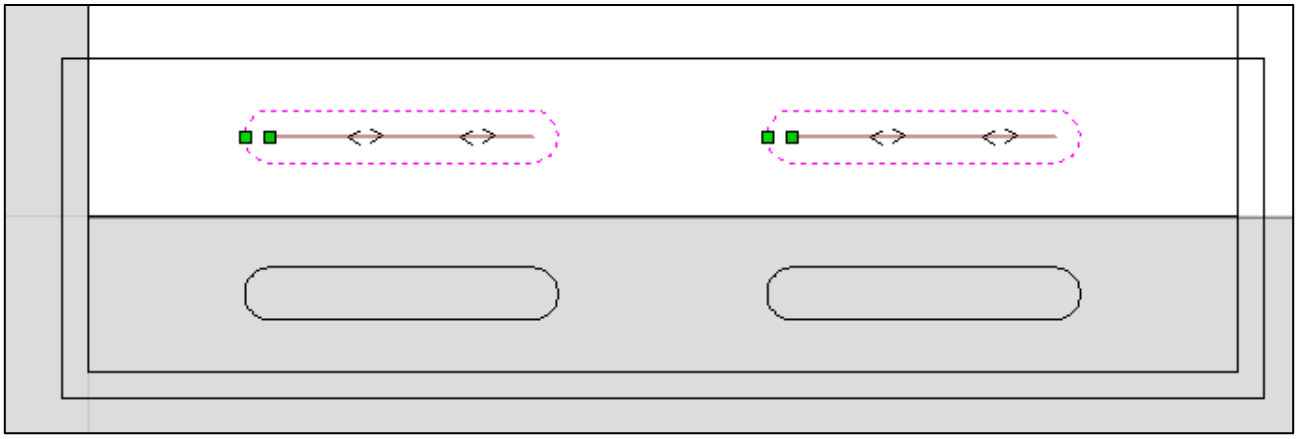


This will create the tenons on the vertical piece and a rabbet on the horizontal.

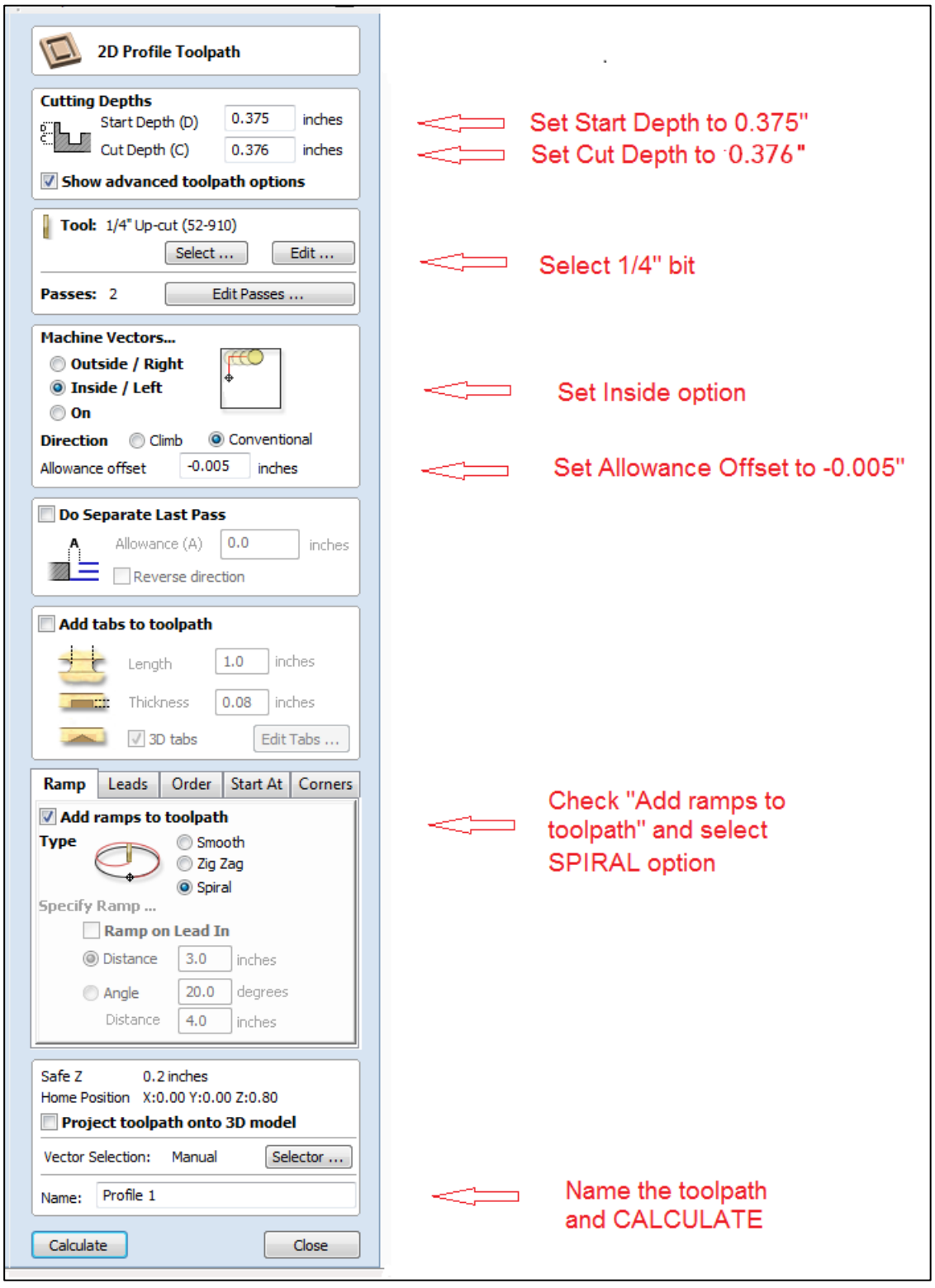


Create the Mortices:

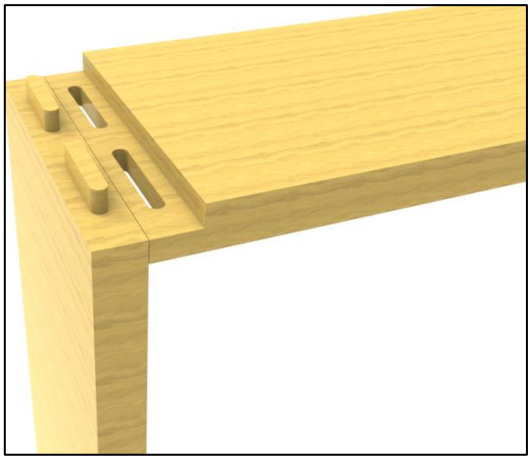
Select the other two rounded rectangles



Using the 2D profile toolpath option, use the inside option to create mortices



This will create the mortices on the horizontal piece.

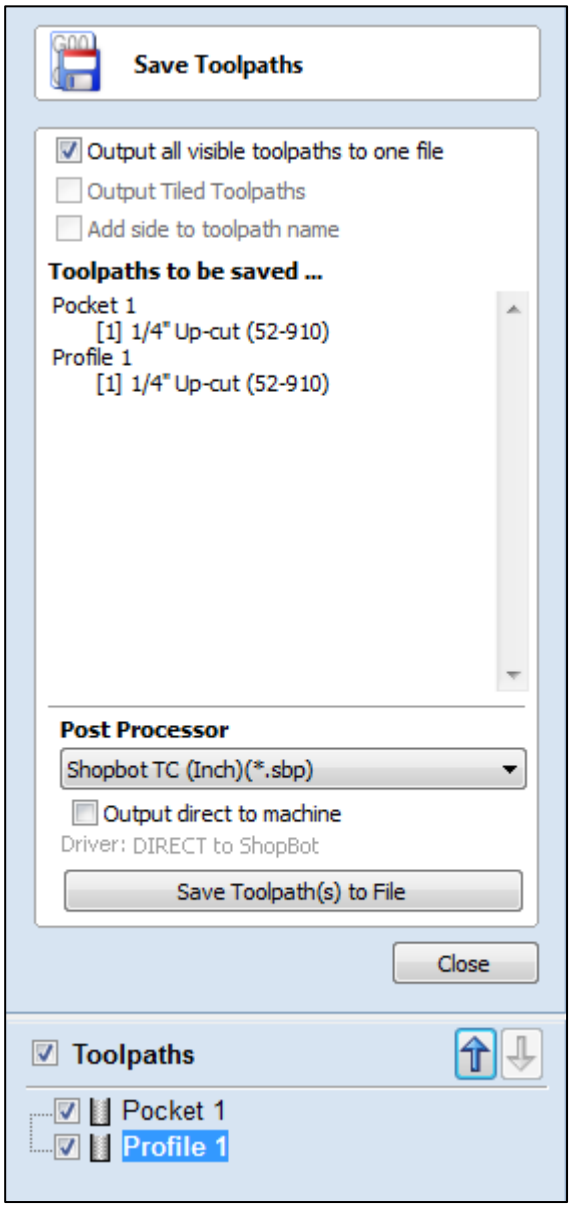


Save the toolpaths

Now to save the cutting file.

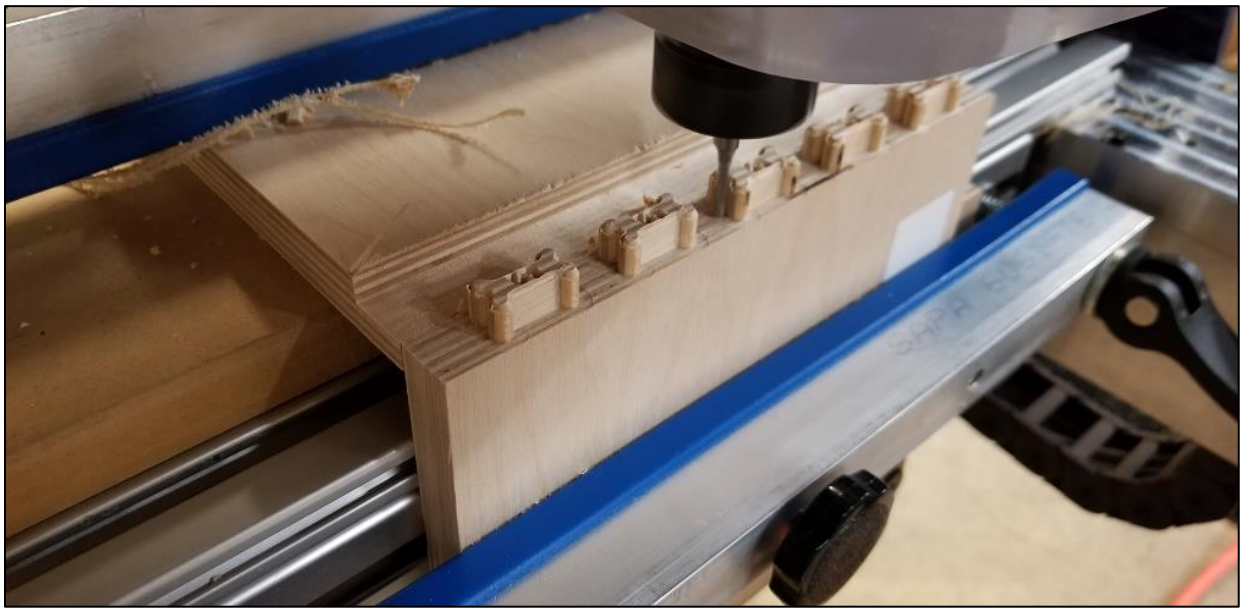
Click the checkbox to make all toolpaths visible, then click the icon to save toolpath.

Add a check to output all visible toolpaths to one file, then click “Save Toolpath(s) to File”, which is the file needed to run on the ShopBot.



Exploring other tenon shapes

The same technique for creating these tenons can be applied to make all kinds of interesting connections that would be very difficult to do any other way. Here are some examples of other possibilities:



Item Number	Quantity	Part Number	Description
1	4	003997	Threaded Rod 5/16-18 x 6"
2	1	005688	Deck Aluminum 168mm x 19mm Clamp
3	1	005687	Extrusion 1.5 x 6 X 23
4	4	006238	Knob 5/16 Five arm
5	4	005694	Spring Compression OL 1" OD.375
6	1	005690	Gusset Clamp Right
7	4	002408	T-nut 5/16-18
8	2	006235	Rod .75 x 21
9	4	005698	Fence Block HDPE
10	4	000848	Washer Flat 5/16 Z USS
11	2	006234	Fence Angled
12	2	006237	Lever Handle
13	8	005699	Thumb Knob 1/4"
14	4	005228	SHCS M6-1.0 x 14
15	8	002033	B/HSCS 5/16-18 x 3/4
16	4	003886	Set Screw 1/4-20 1/2"
17	8	000894	Nut Weld 1/4-20
18	1	005685	Gussel clamp felt
19	2	006239	Bar Aluminum Clamp
20	4	006233	Block Mount Rod .75
21	8	000896	SHCS 1/4-20x3/4
22	4	006236	Cam Bore .75 - .49 to .59
23