

Rocking Horse

Fixturing, setup, and files



Required

Tools:

- ¼" 2-flute straight cutter loaded in Tool Slot #1 (or other, as this uses your machine's cutter compensation)

Files

- Scarfboard.ngc
- SideA-1.ngc
- SideA-2.ngc
- SideA-3.ngc
- SideB-4.ngc
- SideB-5.ngc
- SideB-6.ngc

Notes

Mach3 launcher- CNC4060mm

You will need a working area at least

All files in mm

Stock is ¾" thick, 11.25" wide and 48" long "1x12x4ft" Common Board" [<Click for link>](#)

Two boards are required for the project.

When clamping the board down, place the concave side up so that the clamps pull the board flat on the work surface.

Z0 is TOP of work piece

Tool height setter can be a nice piece of .75" thick hard wood or metal.

Clamps should not be more than .5" taller than work piece (I use .25" mdf repurposed scrap)

This code cuts fast! 2000 mm/min = 79 in/min for 25k rpm and .0015" chip load on a 2 flute straight cutter

If you have a spiral cutter, you MUST reduce the depth of cut to ½ of your tool diameter.

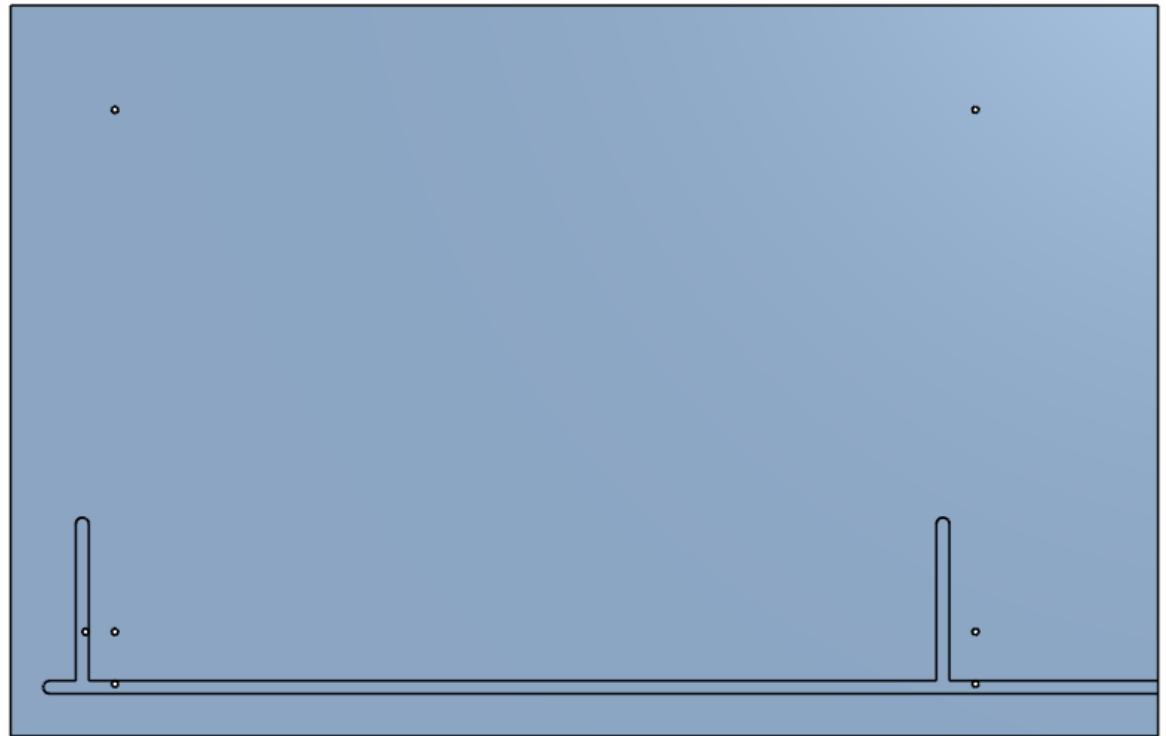
Between every cut, sand the scarfboard to remove burrs.

Machine Setup for cutting

- Home your machine in X and Y
 - If you have built in homing switches, use them
 - If you do not have built in homing switches, move cutter to the lower left corner of the machine and ensure you are slightly away from the hard stops.
- Insert ¼" 2 flute straight cutter.
 - Ensure the cutter protrudes at least 1.25"/32mm from the arbor
 - Set your Machine Controller's tool table with a 6.35mm diameter tool in slot #1 (Mach3>Configure>tool table... make sure to hit "apply" before "ok" or the tool will not save)
- Home Z
 - If you have a tool height setter, use it to set the Z=0 to the top of the work
 - If you do not, place a piece of receipt paper on top of the work and lower the cutter .1mm at a time while spinning it by hand backwards until the paper spins with the cutter. Set this as the machine home (Mach3 press the "ref all home" button).
(at this point, the work piece can be moved under the cutter- don't move the cutter from X=0, Y=0 location)
 - Move the cutter up about an inch (25mm) to keep it from hitting the work if you jog at this point

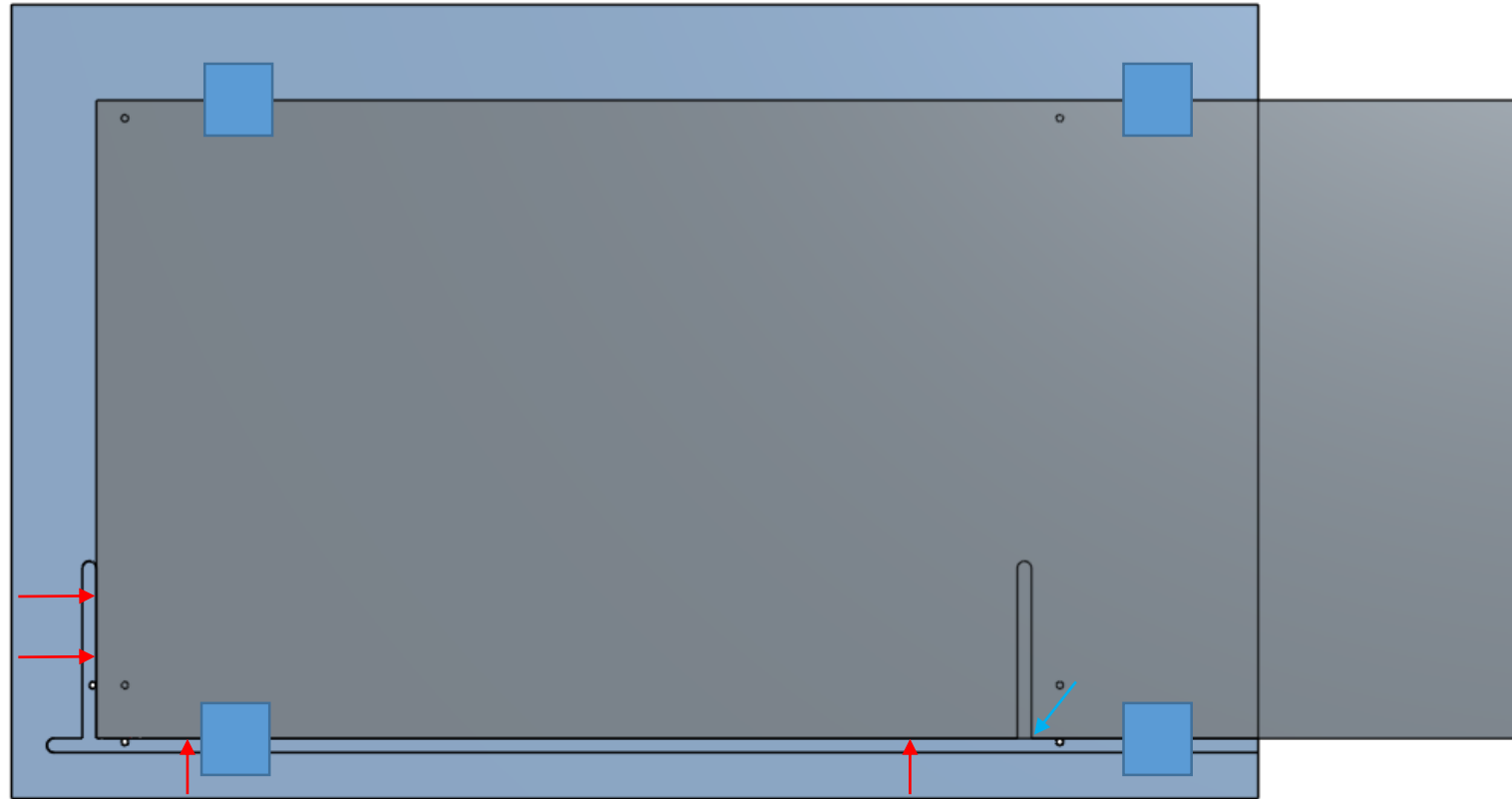
Scarfboard Fixture

- Remove all objects from the scarfboard
- This gcode will cut a slot 1/8" deep into the scarfboard at X=1" (25.4mm) and at the required alignment position Y=4" and 20.5"
- Run Scarfboard.ngc



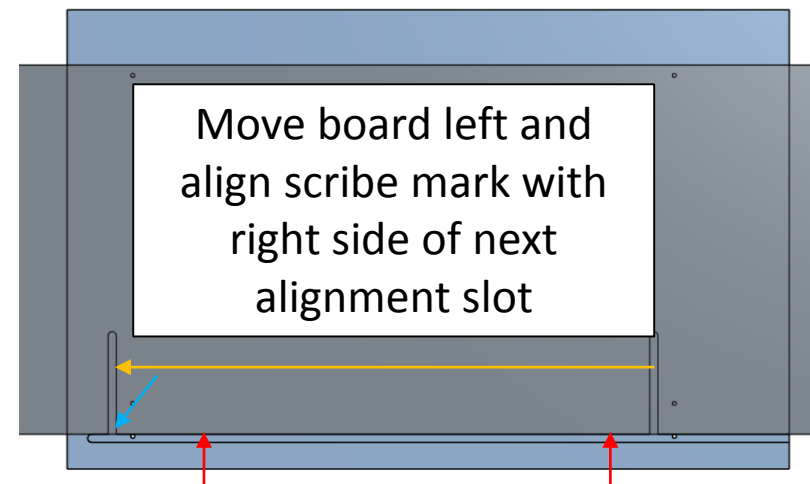
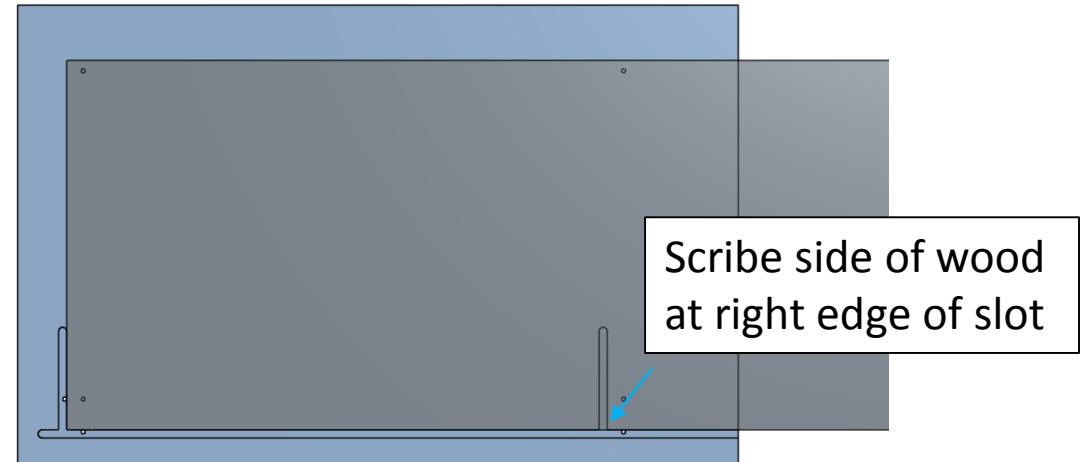
Board 1 run SideA-1

- Put Board 1 on using the two alignment edges shown →
- You will not have the holes shown...
- Clamp down here ■
- Run SideA-1.ngc
- Use a sharp knife or scribe to mark the *side* of the board at the second alignment feature here →




Moving the Board

- This applies for all board moves between each of the 3 cuts
- Use a sharp knife or scribe to mark the *side* of the board at the second alignment feature here prior to unclamping
- Move the board so that the scribe mark on the board lines up with the second alignment slot →
- Ensure alignment with the y-axis edge here →
- Make sure to use the same edge (right in the image) on both slots.




Board 1 run SideA-2

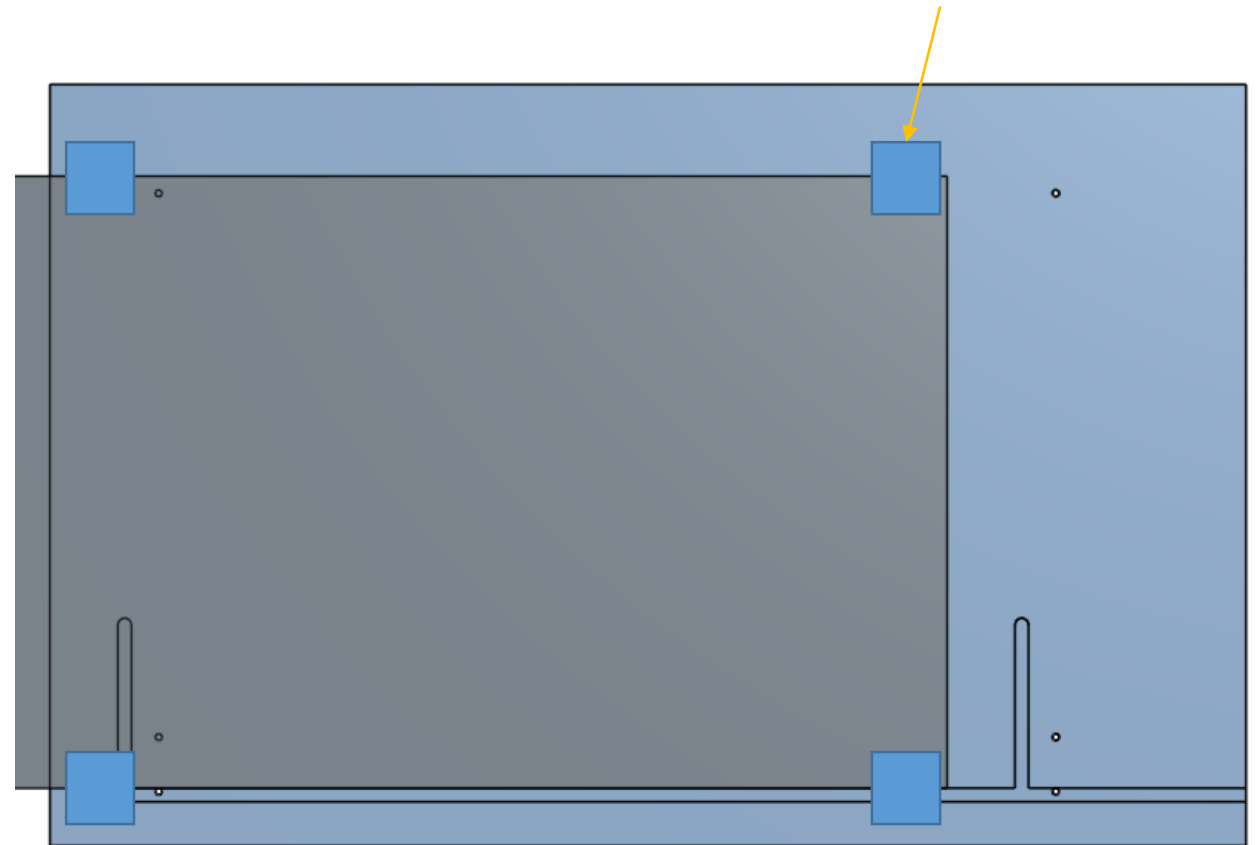
- Move the board according to the Moving instructions slide
- Clamp down here 
- Run SideA-2.ngc



Board 1 run SideA-3

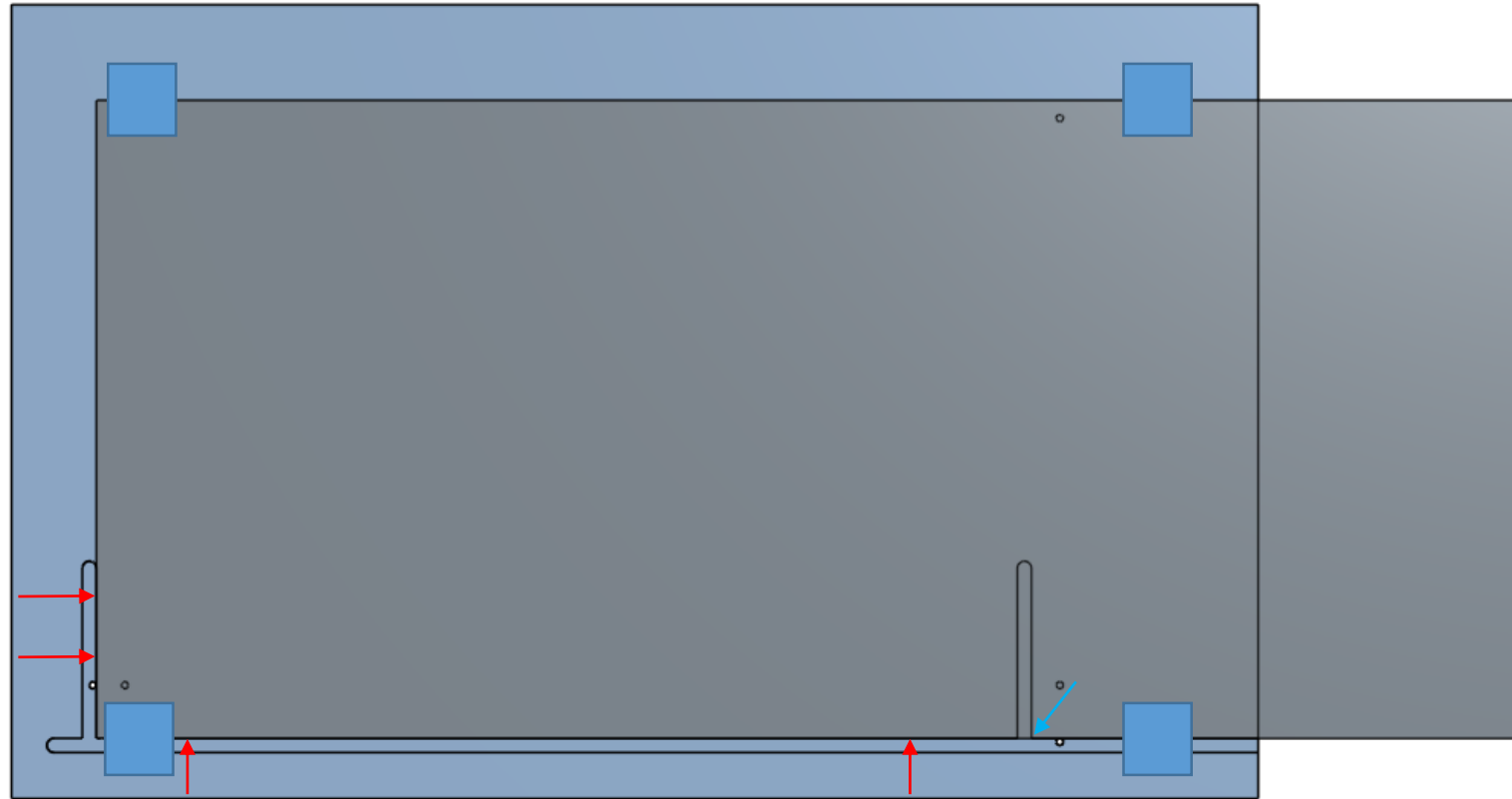
- Move the board according to the Moving instructions slide
- Clamp down here 
- Run SideA-3.ngc

Make sure this clamp does not protrude more than .5" (12mm) on to board




Board 1 run SideB-4

- Put Board 2 on using the two alignment edges shown →
- You will not have the holes shown...
- Clamp down here ■
- Run SideA-1.ngc
- Use a sharp knife or scribe to mark the *side* of the board at the second alignment feature here →




Board 1 run SideB-5

- Move the board according to the Moving instructions slide
- Clamp down here 
- Run SideB-5.ngc



Board 1 run SideB-6

- Move the board according to the Moving instructions slide
- Clamp down here 
- Run SideB-6.ngc

Make sure this clamp does not protrude more than .5" (12mm) on to board

