Getting started with laserWeb 4 and Vertigo CNC

Make sure you have the correct version on laserweb installed you can find the download here: https://github.com/LaserWeb/LaserWeb4-Binaries/releases

Mac users download the .dmg version
Windows user download the .exe version

Make sure you machine is plugged in and the laser is connected

The laser can be connected using the connector that is sticking out of the drag chain near the the router

Connecting

1. Connect you machine using the Coms tab
2. Machine connection should be set to USB
3. Choose the appropriate USB/SERIAL PORT and click connect
4. If the machine has connected correctly it will say machine connected in the console in the bottom right of the window
5. Once you have connected your machine move over to the Comms tab, and jog it around to make sure all the axis are working correctly

Loading a program

To load a program in laser web 4 go into the **Files** tab

1. Click **Add Document**
2. Choose what design you would like to engrave file formats supported by Laserweb 4 are: DXF/SVG/BITMAP/JPG/PNG
3. Once you have loaded the file you can change the size and placement by clicking on the appropriate file under the **Documents** menu

4. Once you are happy with the size and placement of the design click and drag the document into the GCODE menu
5. This will then open up more settings (for more information on these setting refer to the Laser Web interface overview)
6. When you are happy with the settings click **Generate** this will generate the Gcode
7. Once the G Code has been generated move over to the control tab
8. Jog the machine to the bottom left hand corner of your work piece and **Set Zero**
9. Use the **Check Size** button the make sure your design is in the right position and the correct size
10. Click **Run job** to start the program

Settings to be Aware of

MACHINE

Machine dimensions is where you put in the working area for your machine
Tool head, This should come preset as 0.2 this is correct for the Vertigo Tech lasers
Machine Z stage can be turned on if you want control of the z axis (most laser cutters/engravers do not have a Z axis so it usually isn't necessary to have this on)

GCODE

Check size power is how powerful the laser will be when you click "check size" in the control tab (I find between 30%-40% works, and is is bright enough so you can see the laser but will not leave a mark on wood)
Tool Test power is how powerful the laser will be when you click the "Laser test" button in the control tab
Tool test duration will be how long the laser stays on when you click the "Laser Test" button in the control tab
Gcode homing, set this to G28.2 and this will enable the **home all** Button on the coms tab. The machine will home using the homing switches just like if you were to push the homing butting on your machine

Focusing the laser

Before you start engraving with the laser you will need to make sure it is focused

The laser module has an adjustable lens a can be turned to focus the laser 'Spot' (When we discuss the word "spot", it is actually a very small rectangle that the laser is producing)

The best and safest way to this is use the test laser button, test the laser first, then once the laser is off again, twist the end a little, test the laser again and check the 'spot' keep doing this until the spot is at its smallest on your material (It is fine to pass it a couple of times in each direction until you get a feel for where the minimum will be).

For repeatability find a scrap block of wood set the Z height to that make sure the laser is focused from that height. You can then use that block of material to set the Z height from your workpiece, and the laser will be focused form that height

Care

Cleaning the lens

Sometimes soot or smoke can get onto the lens surface when processing, causing decreased levels in output power. Only clean the lens with approved lens wipes or a microfiber cloth. It is suitable to also use alcohol on the wipes or cloth when cleaning.

When using the router

If you are using the router and not the laser it is best to remove the laser completely, to prevent additional build up on the lens.

Safety

Laser light can cause damage to eyesight and skin if proper laser safety is not used. Always wear the appropriate laser glasses to prevent any laser light, either directly or indirectly to contact the eye.   Never expose skin directly to laser radiation. Focused light will increase the safety hazard