



## Big Red Checklist

### Prior to Turning On Big Red

- Check that the dust collector bag at the back right corner of the room is not full. Empty if necessary.
- Make sure that there is nothing on the rails and no other material leaning against the machine.

### Turning Machines On

- Turn the computer and monitor on
- Turn on/Reset the grey APC power strip.
- Turn on/Reset the black and yellow power strip. It is usually left on.

### Software

- Start the “Mach 4 Loader” program from the desktop
- Choose the “4X8 CNC Minimal” profile at the prompt, unless you’ve been shown how to use the probe, in which case select the “4X8 CNC Probe” at the prompt.
- Click the green flashing “Enable” button in the lower left hand corner of the Mach 4 screen.
- Before doing anything else, check to make sure there is nothing on the bed or rails that could get hit when you move the machine.
- Make sure that the machine is raised up enough not to hit anything on the bed.
- Press the “Ref All Home” button.

### Loading Tool

- Remove the dust shroud - the black plastic ring with the bristles is held on by magnets.
- Choose the correct colette for the endmill size and load the tool.



- Tighten the colette to finger tight then use the wrenches but do not turn with the wrenches more than 1/8th of a turn.
- Replace the dust shroud

## Setting Up To Cut

- Make sure that the endmill height is high enough so that when you move the machine it doesn't hit anything. Do this in the "Jogging" tab and make sure you know whether the machine is moving in fixed length steps or continuous. Move the machine so that it is out of the way and you can secure your workpiece.
- Secure your workpiece
  - If cutting all the way through, make sure to use a spoilboard.
  - You can clamp your workpiece or spoilboard to the table.
  - You can glue or screw your workpiece to a spoilboard.
  - Don't damage the table top.
- Position the endmill over the X0 Y0 point of your workpiece. This is usually the bottom left corner of your workpiece unless you have set it up differently in your GCode. **BE AWARE OF CLAMPS AS YOU MOVE THE MACHINE.**
- Press the "Zero X" then "Zero Y" buttons
- Move the endmill so that it is above the highest point on your workpiece. If your workpiece is flat, move the endmill so that it is over any point on your workpiece.
- VERY SLOWLY** and **CAREFULLY**, lower the Z height until your endmill just grips a piece of paper inserted between the endmill and the top of your workpiece. Lower no faster than 0.0100 when you're close to your workpiece to avoid driving the endmill into the workpiece and either marking the workpiece or breaking your endmill.
- Press "Zero Z"
- Raise your endmill up so that you can freely move the machine without hitting anything.

## Check and Load Your GCode

- If it is the first time you've run the GCode you are about to run, it is a good idea to double check your code to make sure that your feeds, speeds, and rapid Z gap movement height are set correctly.
- Select the "File Ops" tab and press "Load G Code"
- When the "Select File" menu opens, change the file type that the program is looking for to "Text Files (\*.txt)" in the drop down menu in the bottom right corner.
- Navigate to the folder where your GCode is stored and select your GCode file.



## Starting Your Cut

- Turn on the vacuum
- Make sure the dust shroud is on.
- Make sure that the top line of your GCode is selected in the GCode window in the upper left corner of Mach 4.
- Check that the feed and speed sliders are set to 100%
- Have the Emergency Stop button ready.
- Press the green "Cycle Start" button.

## Post Cut

- Turn off the vacuum
- Remove your endmill and put the colette back in the tray
- Remove your workpiece, spoilboard and any offcuts.
- Vacuum on, under and around the machine
- Return the clamps, calipers and any other miscellaneous tools used to their correct locations.
- Shut down the computer
- Turn the machine off by the switch on the grey APC power strip.

For more detail, with photos of some steps, see the Big Red CNC Tool Training slideshow.