

Quick Check list 7 Mar 2019:

**Rapid Z Gaps** and **Home Z** are set **above** the top of your **material** in CAD/CAM software.

**Mach2/3 Arcs (inch) (\*.txt)** is the postprocessor used.

Mark the **X,Y Datum** corner (lower left corner) & **Z Zero** (top or bottom of your material).

Mark **safe hold-down** (nail/screw/clamp) locations.

**Use your eye and ear protection!**

Set Up the CNC Router

**Power up: PC; Boot Mach3; select most recent Profile; Click OK**

white switch; press **RUN** when “0000.0” on display.; Power up air compressor in metal shop.

**Zero X & Y:** Dbl-click **Reset** to green. Click **REF ALL HOME**. Router will go to table X,Y = 0,0.

If number panels to the right of **Zero X** and **Zero Y** don't go to 0, click on each panel, enter 0 and press enter for **X** and **Y**.  
(If the machine won't zero X & Y with **REF ALL HOME** (outlines stay red), **shut down** and restart the PC and the Router.)

**Zero Z: Page Up Z axis 2”.** Move the spindle +6” on X and on Y axes with the arrow keys.

Click **Reset** to blinking red/green.

**Install collet & loosely** install the collet nut **by hand**. (CCW as seen from above.)

**Install 1st mill:** Press 1st mill into collet (flutes clear of collet); **finger** tighten.

Hold the wrenches as **close to the nut** as possible; **tighten** the collet nut **with 1 hand only**.

Put the wrenches back on the hooks, don't leave them on the spoil board!

**Do Not Overtighten - this will destroy the threads and render the \$600 Spindle useless!**

**Connect Z Zero probe; place it on the spoil board** (or your project) under the mill. Click **Reset** to green.

Click **Auto Tool Zero**. After the spindle touches the probe & **rises to 1.5”**, **remove** the probe.

Set Up Your Material

**Place your material on the spoil board; secure it** (screws or nails) square to the machine rails.

**Center** your mill on the **X,Y Datum** corner; Click **Zero X**. Click **Zero Y**.

**Run Your Project - Use your eye and ear protection!**

Open the Dust Collector (DC) gate. Check that the other gates in the shop are closed.

(—>) Click **Reset** to blinking red/gn. Change mill if necessary. Click **Reset** to green.  
**Page Up** to put mill ~2” above the spoil board. **Move mill for zeroing the in the Z axis.**

**Connect the Z Zero probe;** place it under the mill.

If Z zero set to base of material, place probe on spoil board. If set to top of material, place Z probe on material.

Click **Auto Tool Zero**. When the gantry stops, **remove** probe. **Place DC shroud. DC on!**

**Load GCode;** Check GCode for tool path name, installed mill, Speed & Feed. **Rewind.**

**To test** a toolpath with an “air cut”, set a block of scrap **greater** in thickness than your material **on top** of your material.

**Zero** mill to **top** of **block**. Set block aside and run toolpath. **Re-zero** the mill to your **toolpath Z Zero**.

(->>) Click **Cycle Start**

**Be sure the mill is spinning @ Speed!** Check that driver display is **Speed ± 10%**.

Be ready to click **Stop** or **Reset!**

If you have to **Stop** the machine before the tool path is complete: **raise the mill above your material;**

correct the problem; click **Rewind**. (The tool path will reset to the beginning.) Go to(->>).

When tool path is completed, **move the mill away** from the material.

Click **Close GCode**. Remove the dust collector shroud.

Go to (—>).

**Clean Up Any Mess!**

**When the project is complete, chop tabs** (mallet & chisel); **remove** your project.

**Remove your material. Remove all hold-downs. Clean up the chips** on the table and **floor!**

**Return the collet** to the tray. **Quit Mach3.** (alt f, shift x)

**Power down the router** (white switch), **dust collector & air compressor**. **Empty the DC box!**