

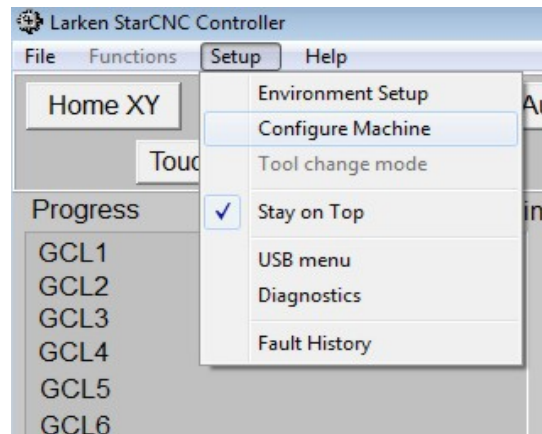
Configuring StarCNC for your model of Larken router

Also Setup for Safety Enclosure

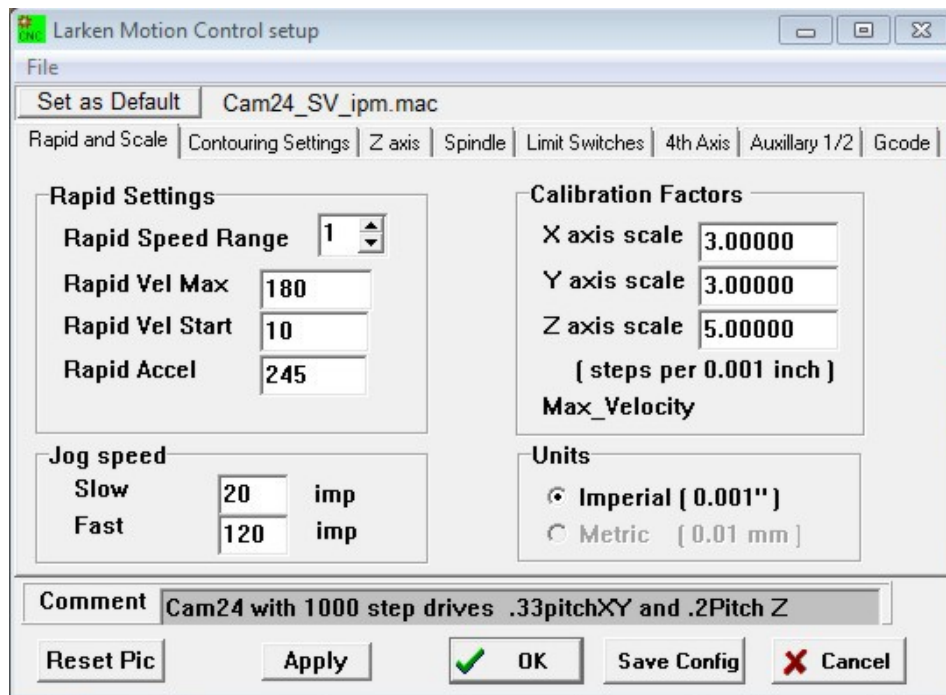
After downloading and installing StarCNC on your C:\ drive , you may need to change the machine configuration to match your cnc router.

We have made many different models of machines over the years and each model can have a different Leadscrew or Rack / pinion pitch , stepper drive resolution and default speed settings. To get your machine cutting the part at the same scale as the drawing , it needs to have x,y and z scale factors in the configuration correct.

Go to Setup > Configure machine

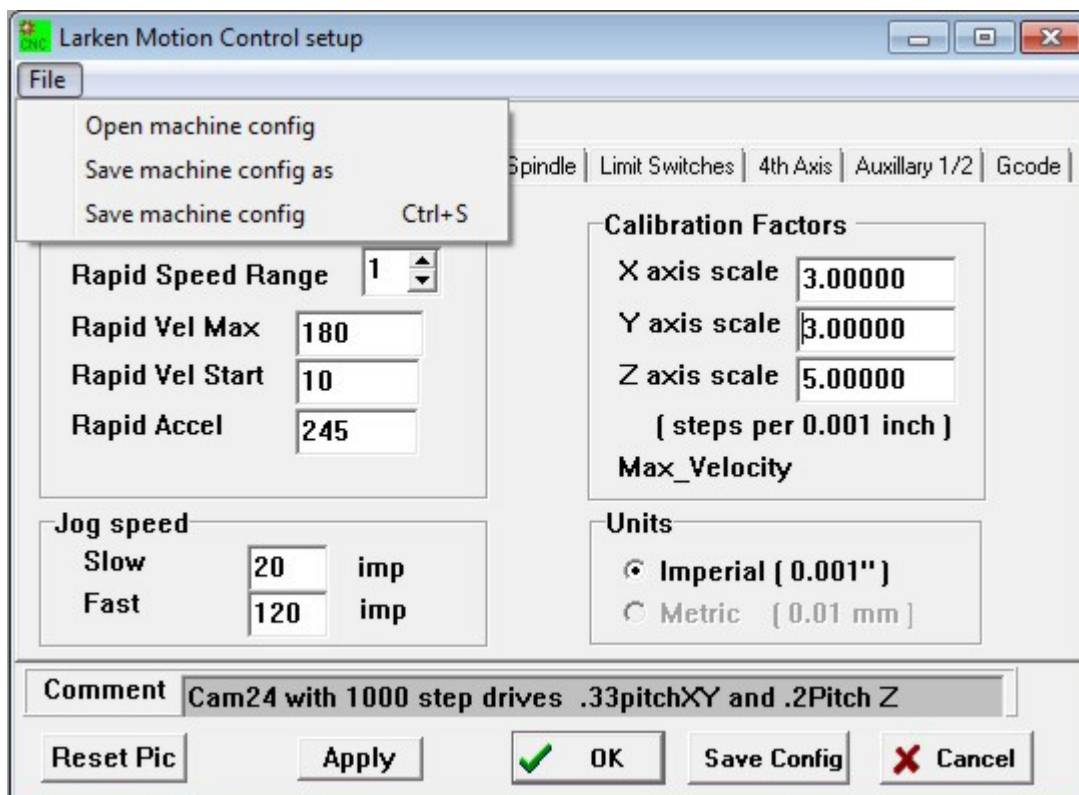


The configuration menu will appear. Across the top there are Tabs for each type of settings. Click the Rapid / Scale tab.



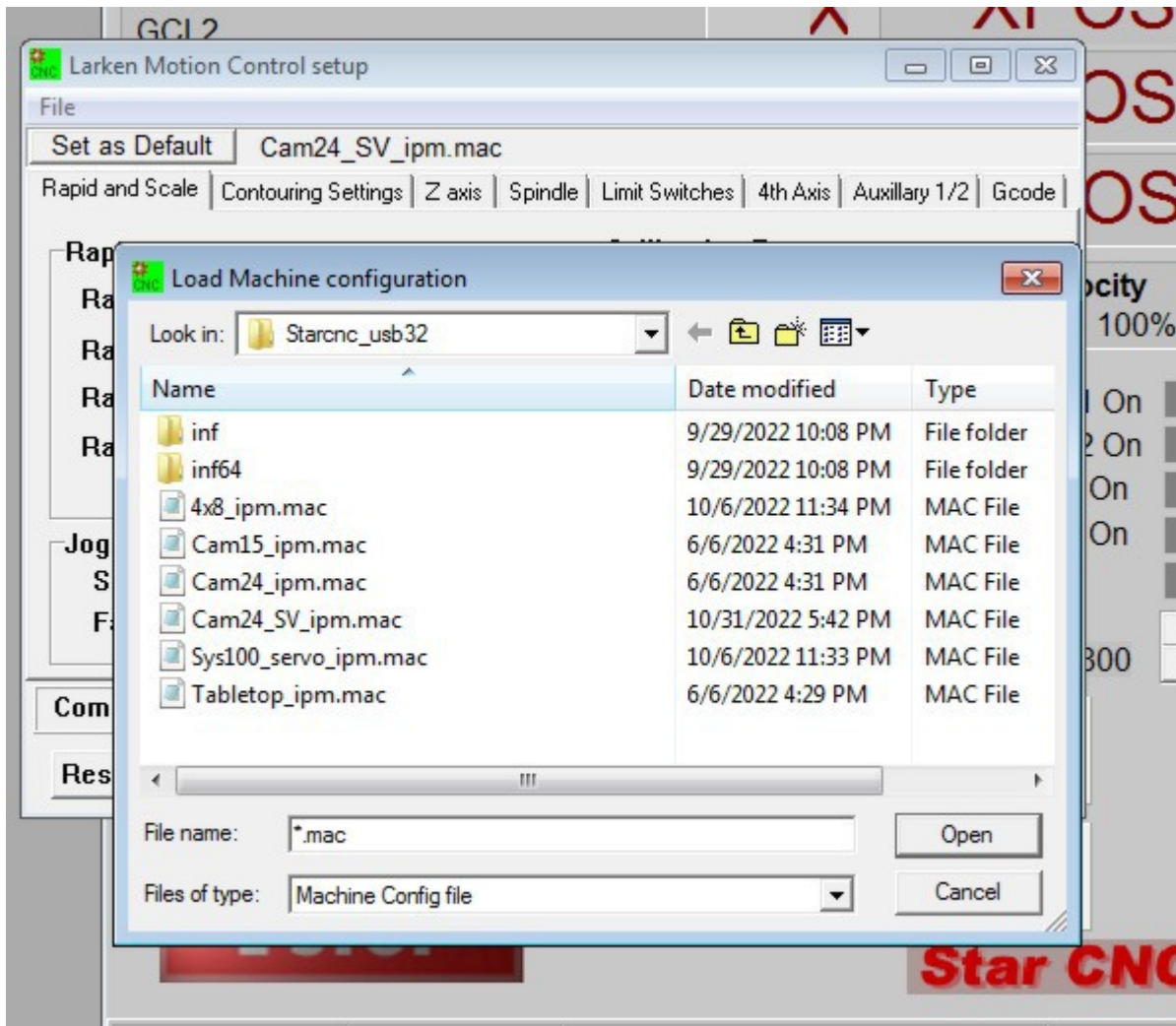
The StarCNC comes with a number of pre-configured configuration files. These have the Extension . Mac (Machine config)

To load a new one click on 'File: at the top.

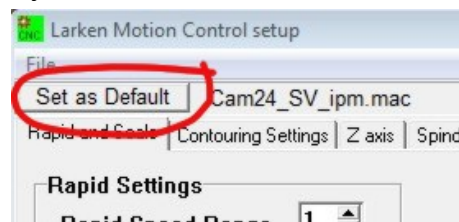


Select the one for your machine type.

If your machine is a larger router with Rack / Pinion select the 4x8 config to start with since , scale, feeds and some settings are different than a table top..



After loading a new Configuration , Click the **“Set as Default”** button at the top to make it load automatically when you run StarCNC



After loading a new .Mac or changing Scale factors **Reset the system**

Exit StarCNC . Turn off the controller wait 20 seconds and turn it back on , then restart StarCNC .

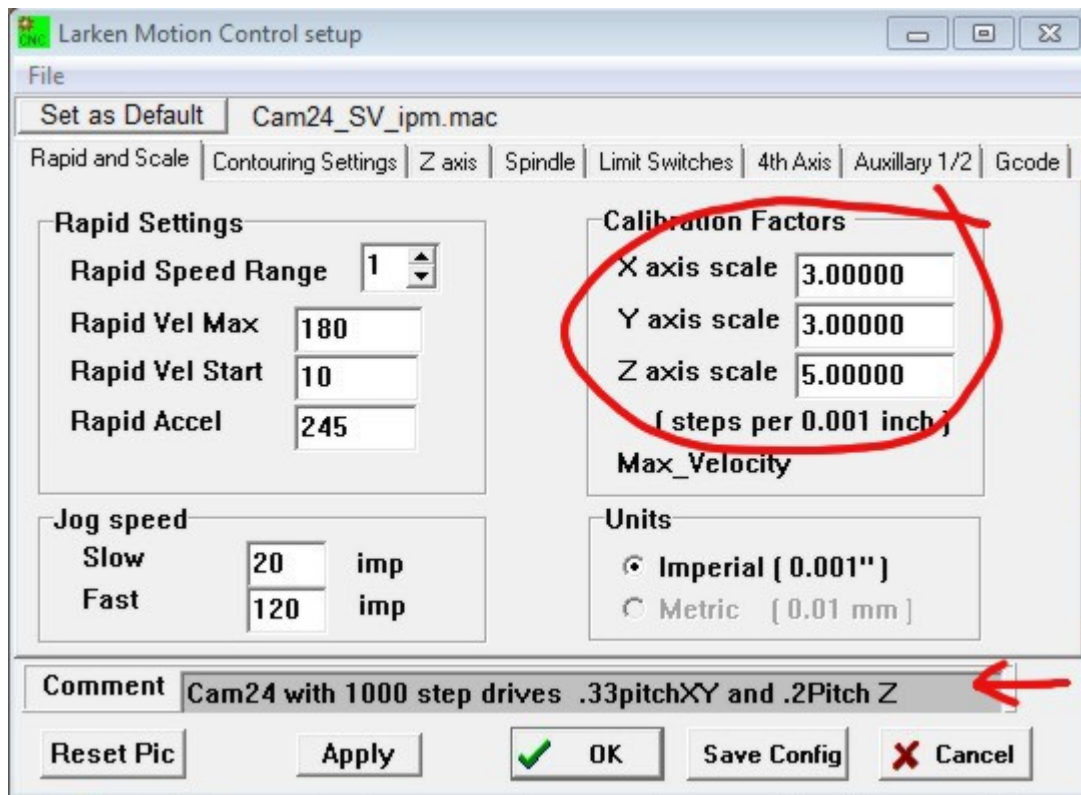
Checking the Scale Factors

These are the Scale factors for each axis that calibrate the amount the machine moves for the coordinates that the drawing (gcode file) tells it . It is the number of steps the motor needs to move to move the machine 0.001" . (which equals the scale factor x 1000 to move 1")

This scale factor is depending on how many turns / . inch the lead screw is ... and how many steps / turn that the motor needs .

The formula is Scale Factor = (Screw Turns/ Inch x Motor steps / Turn) / 1000

So on this Cam24_SV machine below it has 3 turns / inch thread and a motor with 1000 steps / turn ... so the scale factor is 3.000



Most older Larken 2424's have 3 thread / inch screw on x and y and a 5 thread/ inch screw on the Z axis . Most of the stepper drives were 800 steps / turn (called ¼ step)

So scale factor are (800 x 3 tpi / 1000) X= 2.400 , Y= 2.400 ,

and on Z axis (800x 5 tpi / 1000) Z=4.000

Scale factors for different models . (Drive - Step/turn) (Screw-Turns/inch)
 (scale factor = Number of steps to move 0.001" inch)

Cam 24	(800 drive 3 Tpi)	X 2.400 , Y 2.400, Z 4.000
Cam 24	(1000 drive 3 Tpi)	X 3.000 , Y 3.000, Z 5.000
Cam 24_CL	(1000 drive 3 Tpi)	X 3.000 , Y 3.000, Z 5.000 (closed loop stepper)
Cam 15-1	(800 drive 3 Tpi)	X 2.400 , Y 2.400, Z 4.000
Cam 24-2	(800 drive 5 Tpi)	X 4.000 , Y 4.000, Z 4.000
Labbot16-1	(800 drive 2.5 Tpi)	X 2.000 , Y 2.000, Z 4.000
Labbot16 -2	(1600 drive 2.5 Tpi)	X 4.000 , Y 4.000, Z 4.000
Cam 40	(800 drive 8mm ptc)	X 2.540 , Y 2.540, Z 4.000
Cam 50	(800 drive 2.5 Tpi)	X 1.600 , Y 1.600, Z 4.000

System 60 stepper	(Rack/Pinion)	X 1.25620 , Y 1.25620 , Z 4.000
System 60 Servo	(Rack/Pinion)	X 1.5720 , Y 1.5720 , Z 4.000
Shop Cam 4x8	(Rack/Pinion)	X 2.5050, Y 2.5050 , Z 10.000
System 400	(Rack/Pinion)	X 1.0055 , Y1.0055 , Z 4.000
Canuk 4896 (4848)	(Rack/Pinion)	X 2.548 , Y2.548 , Z 8.000 (1600 drive)
Canuk 4896 (4848)	(Rack/Pinion)	X 3.185 , Y3.185 , Z 10.000 (2000 drive)

Older Tabletop Servo models

Cam24 servo (25/48belt, 4Xservo, 500line encoder , 3-TPI screws)
 X 2.880 , Y 2.880 , Z 2.50000000

Some special model scale factors may be written on the control box or machine . Or contact Larken is you need help setting the correct scale for your machine.

Manual Calibration

Also you can manually adjust scale factors . Lay a ruler or tape measure on the table. Using a pointed tool jog the machine to 1" mark on the ruler. Zero the axis with the Set YX" button . Now Jog the machine to the 11" mark on the ruler (a total of 10")

Then change the scale factor and click apply until the coord display for that axis shows 10.000 inches. X and Y axis scale factors should be the same. The Z axis is usually a finer screw.

Be sure to save any changes to the configuration



After loading a new .Mac or changing Scale factors **Reset the system**

Exit StarCNC . Turn off the controller wait 20 seconds and turn it back on , then restart

StarCNC .

Enabling Door Interlock for Safety Enclosure

Go to the Limit Switch Tab

Check the “ Use Safety Interlock “ input to enable StarCNC to use safety features .

Click “ Save Config “ to make it default .

Restart Star CNC.

