6090 mini Numerical Control Carving Machine manual -MACH3 USB version

Shenzhen Scotle Technology Group Limited

Chinacncnzone

Address: 038-068 2F Handmade Culture Street, Phase III, Shuike Road, Bantian, Longgang, Shenzhen, China

Website: www.chinacnczone.com

www.scotle.en.alibaba.com

ChinaCNCzone
www.china-cncrouter.com

Directory

Part 1 Assembling 3

Part 2 Mach3 installation and setting 8

1 Download MACH3 8

2 Install MACH3 8

3 Mach3 software setting 10

Part 3 Start position setting 17

1 Confirm probe connection is correct 17

2 To confirm actual height of probe 18

3 Test Probe 18

4 Button Script setting 20

5 Select start position 22

Part 4 FAQ 26

1.The Axis moving direction is wrong 26

2. Manual reset limit switch 26

3. Package information 28

4 Rectangle work to round 28

5 USB motion card can be found by MACH3 29

6 How to ref all home 29

Part 1 Assembling

Tools and spare parts needed during assembly:

1.Waterpump *1

2.Spanner*2

3.USBcable *1

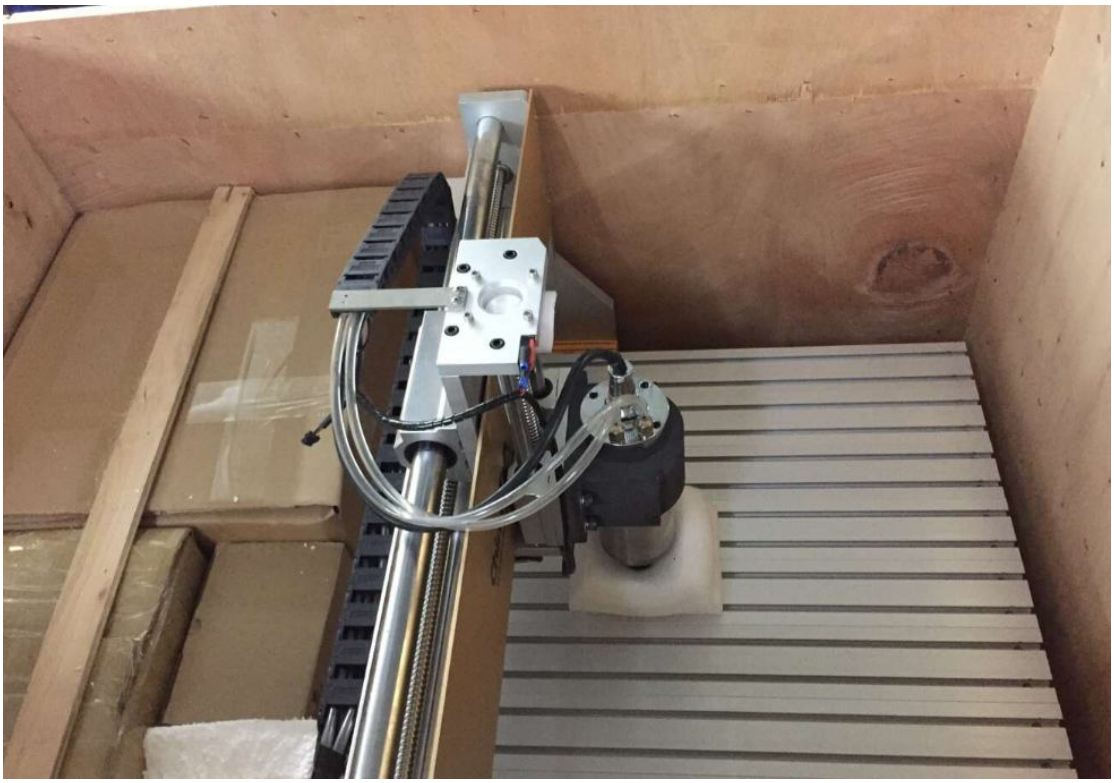
4.Millingbit *2,engraving bit *3

5.Clamp tool *6

6.Power cable *1

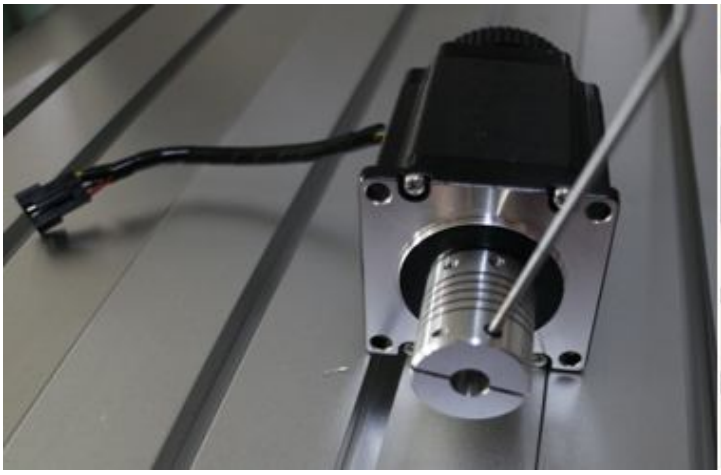
7.Stepper motors *3

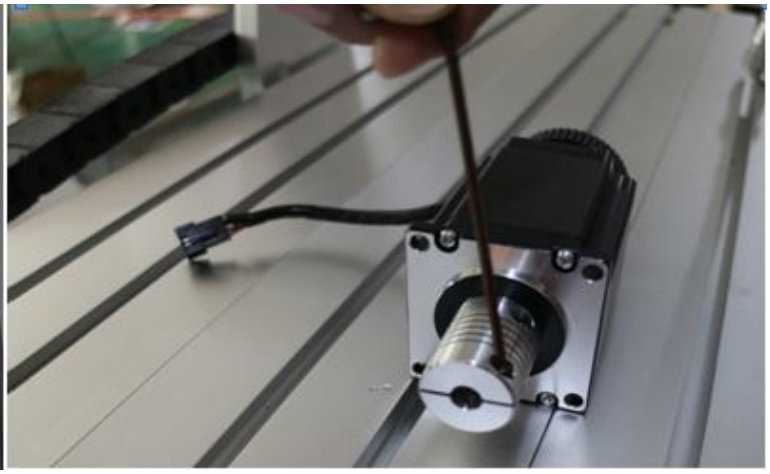
1. Open the wooden box you received as below:



2. Thenunpack wooden box, the machine is almost assembled. Only need to install step motors and water pump. All step motors are same for X Y Z Axis. At first, Put step motor to corresponding Axis. Tight the four screws and make sure tighten. Connected that corresponding cable.

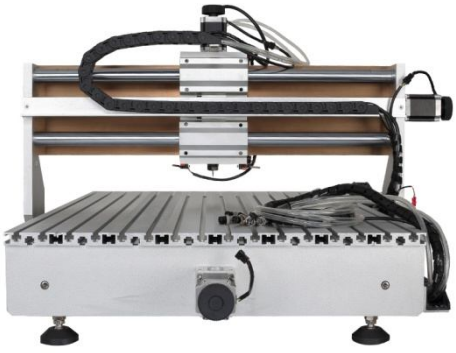
Second, You can try to found the screw position before installation. Third,





tight the screw of coupling, make sure ball screw and couple good contact.

At last , The step motors installation finished .



3.Controller box connection. Connect all lines from machine fram to controller box one by one, According to corresponding marks ,The installation of the machine is finished.

USB Port

4. Last step ,Water pump connection. Connect pipes between water pump and spindle.

Attention: The water pump can not put into the water, it's very dangerous. Just keep water pump outside of tank. If the water pump is wet, cut off the electricity and dry it.

And also connect power cable to controller box according to marks.

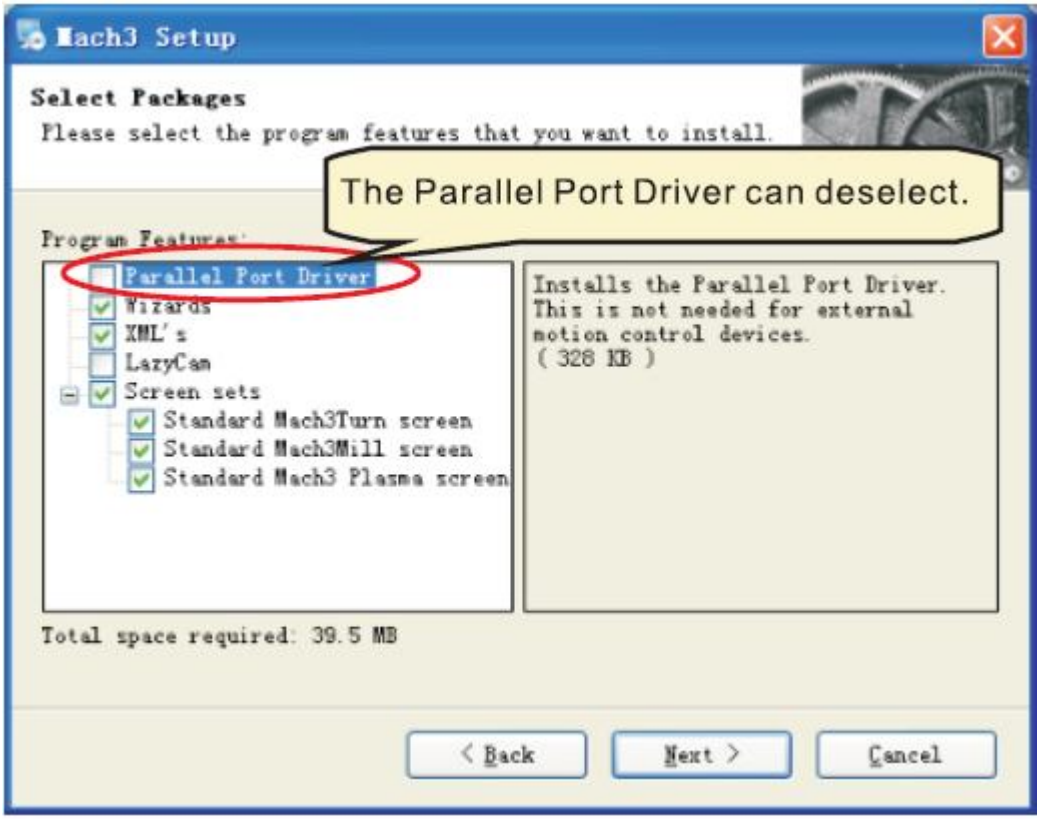
Part 2 Mach3 installation and setting

1 Download MACH3

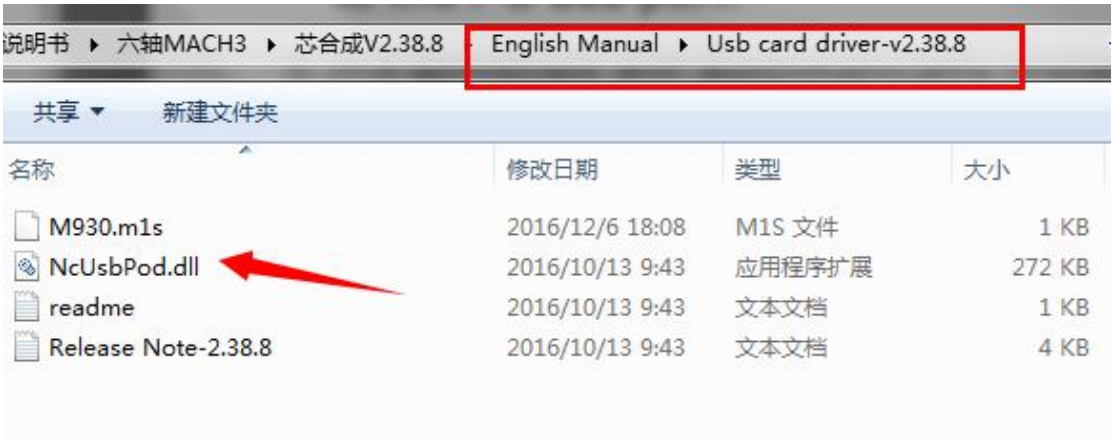
Downlaod lasted MACH3 version from MACH3 official website or you can directly install MACH3 from CD.http://www.machsupport.com/software/mach3/

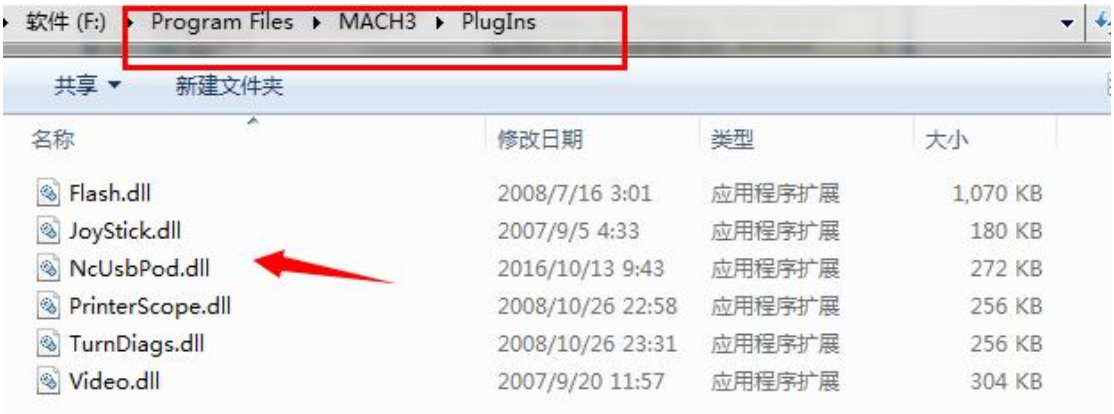
2 Install MACH3

Do not choose parallel port driver

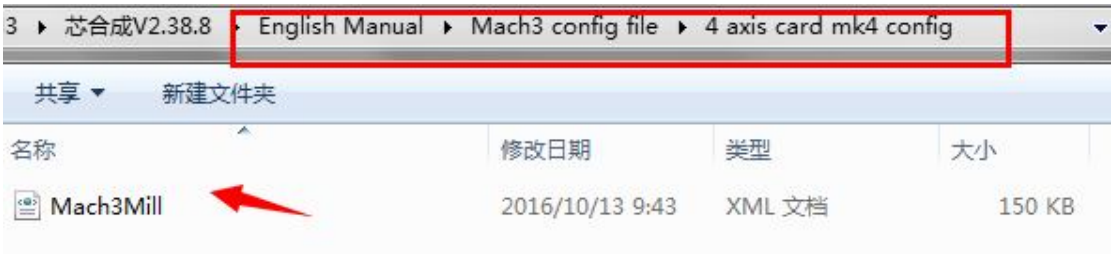


After installation finished ,Connect USB cable between controller box and computer. Copy NcUsbPod.dll from USB card driver file to MAC3/PlugIns file .This file to enable USB motion card.

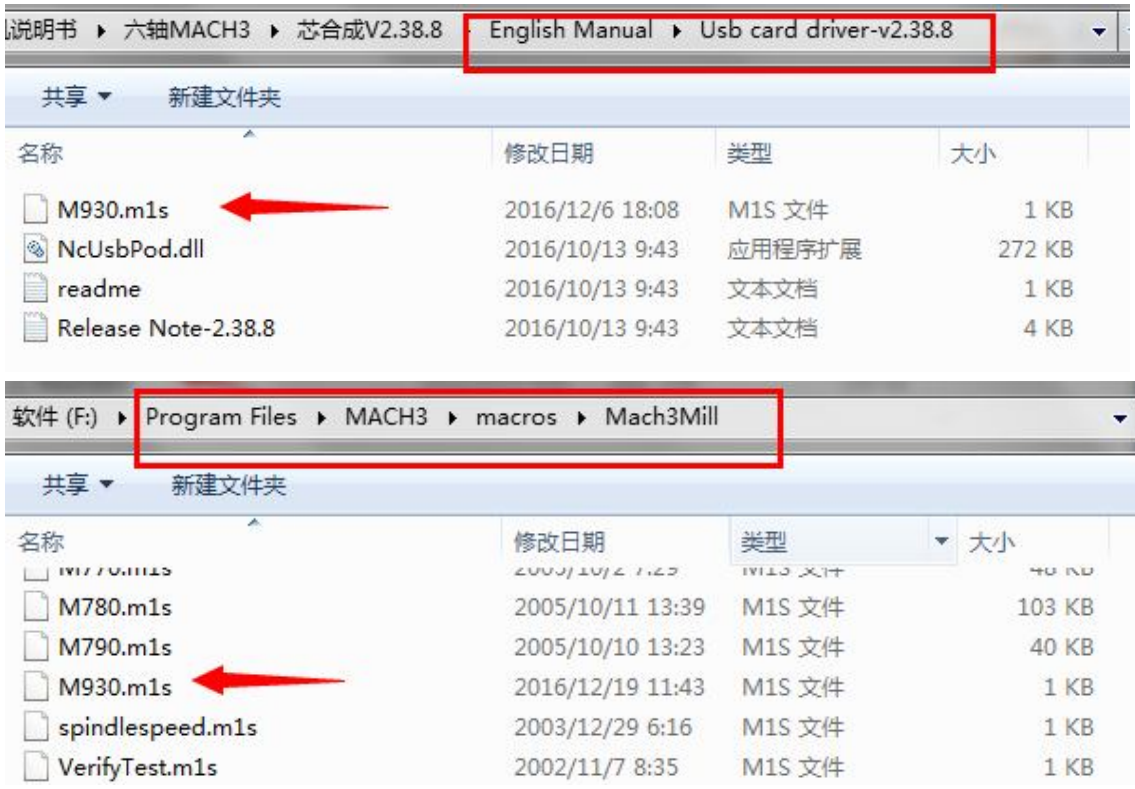




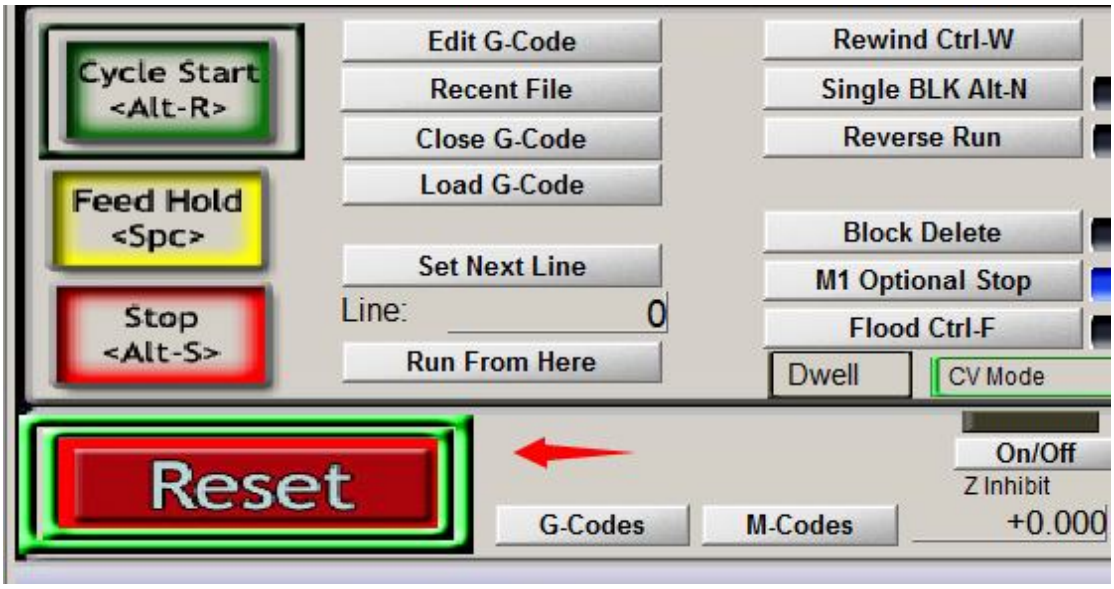
Then ,copy mach3mill.xml from file to mach3, The file is used to basic software setting .



Copy M930.m1s file from Usb card driver to Mach3/macros/Mach3mill file, This file used to auto zero tool setting.

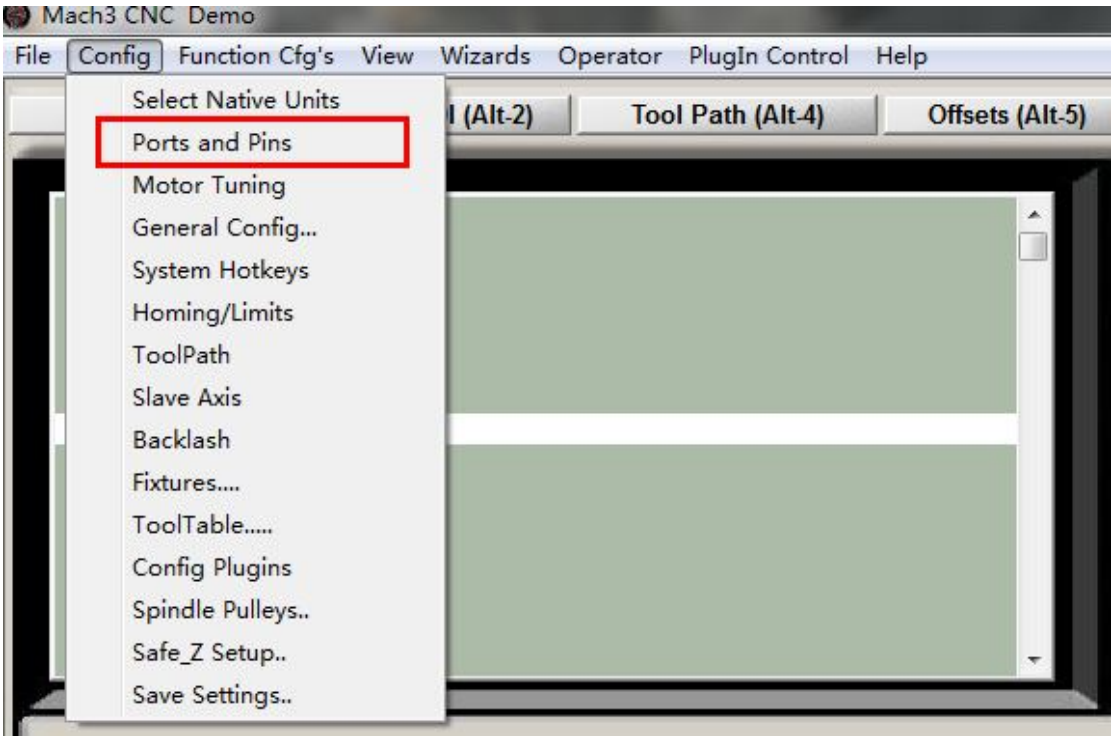


At last, click reset button to keep it green , let machine can normal work.

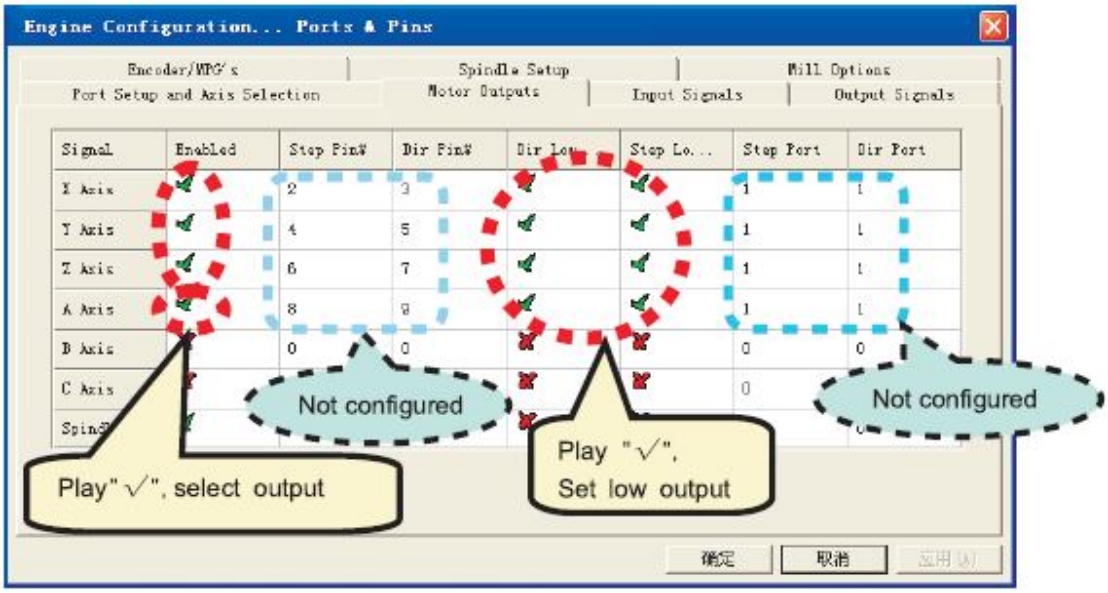


3 Mach3 software setting

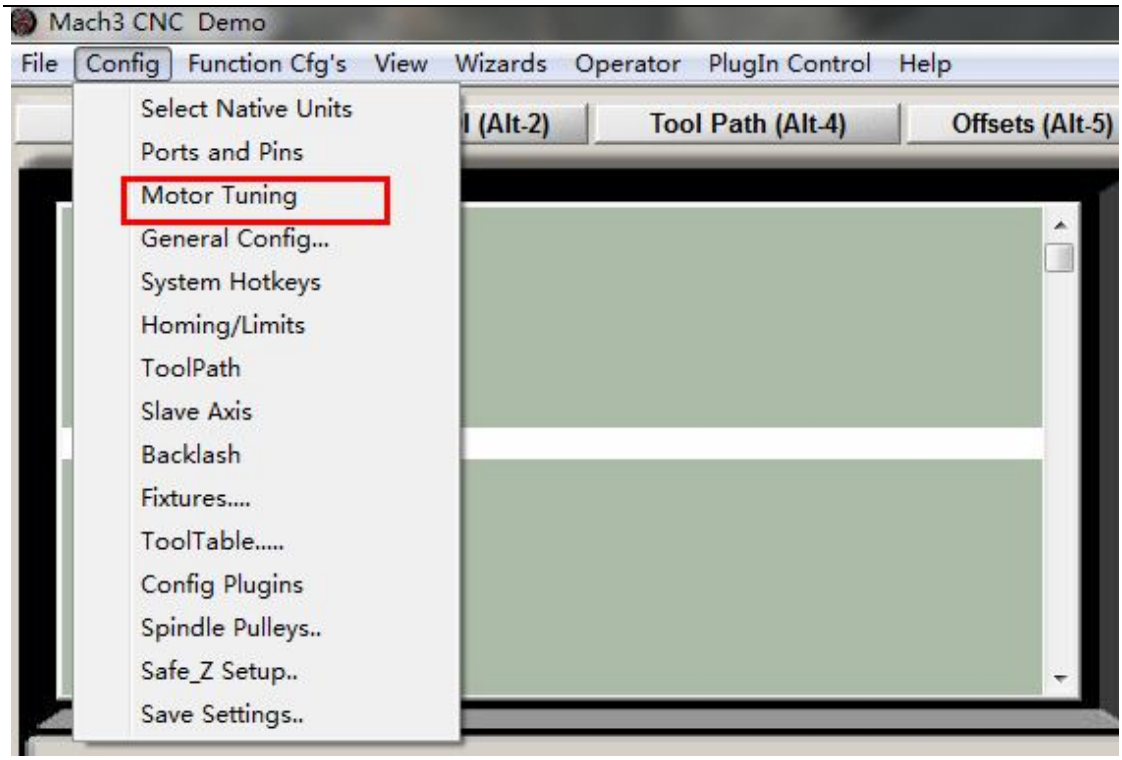
X Y Z A Axis output configuration as below, select config and Ports and pins .



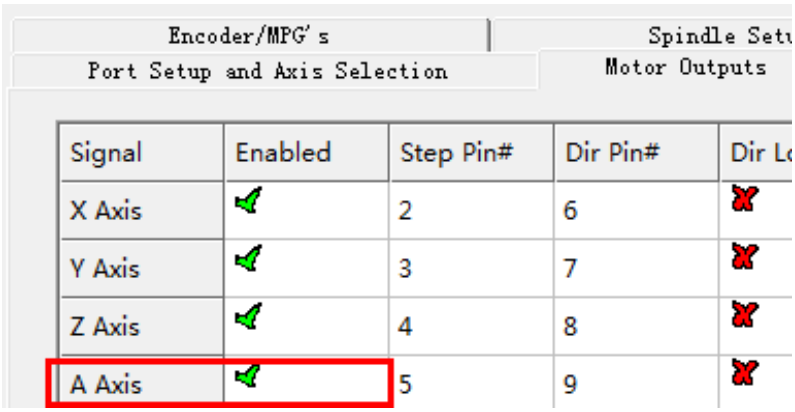
Then ,make all setting as below:

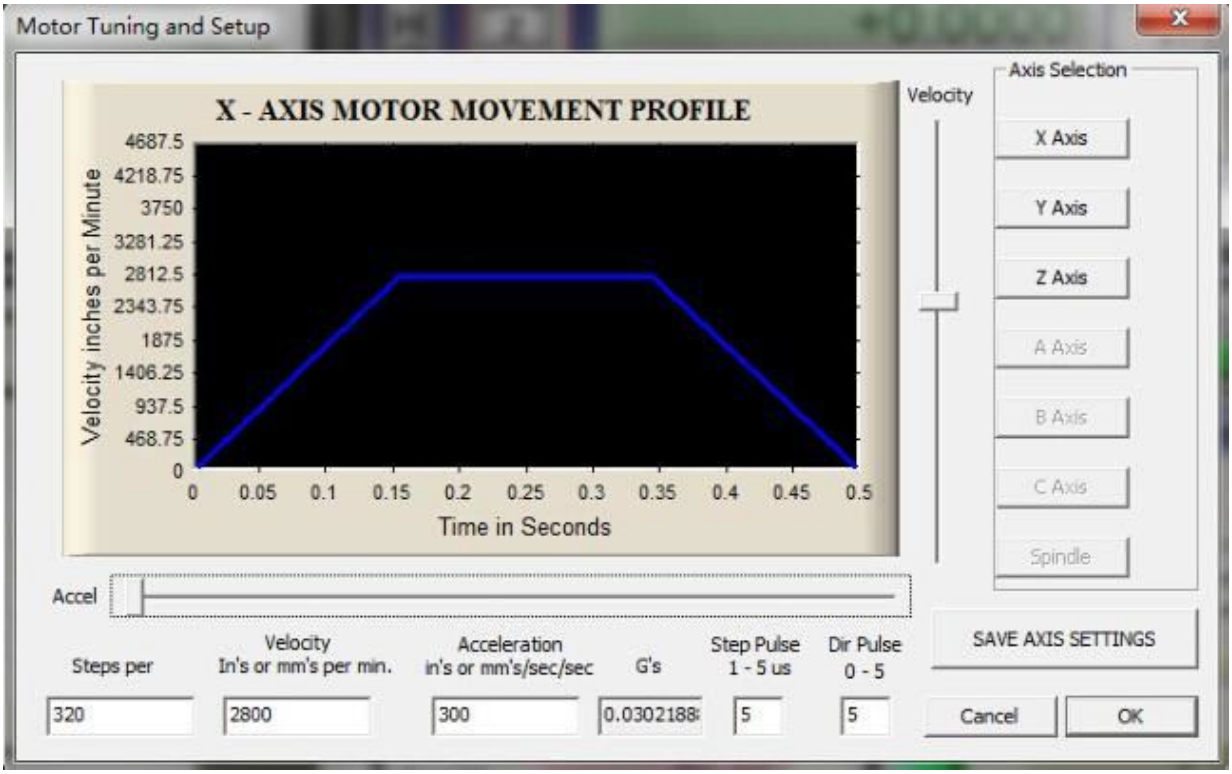


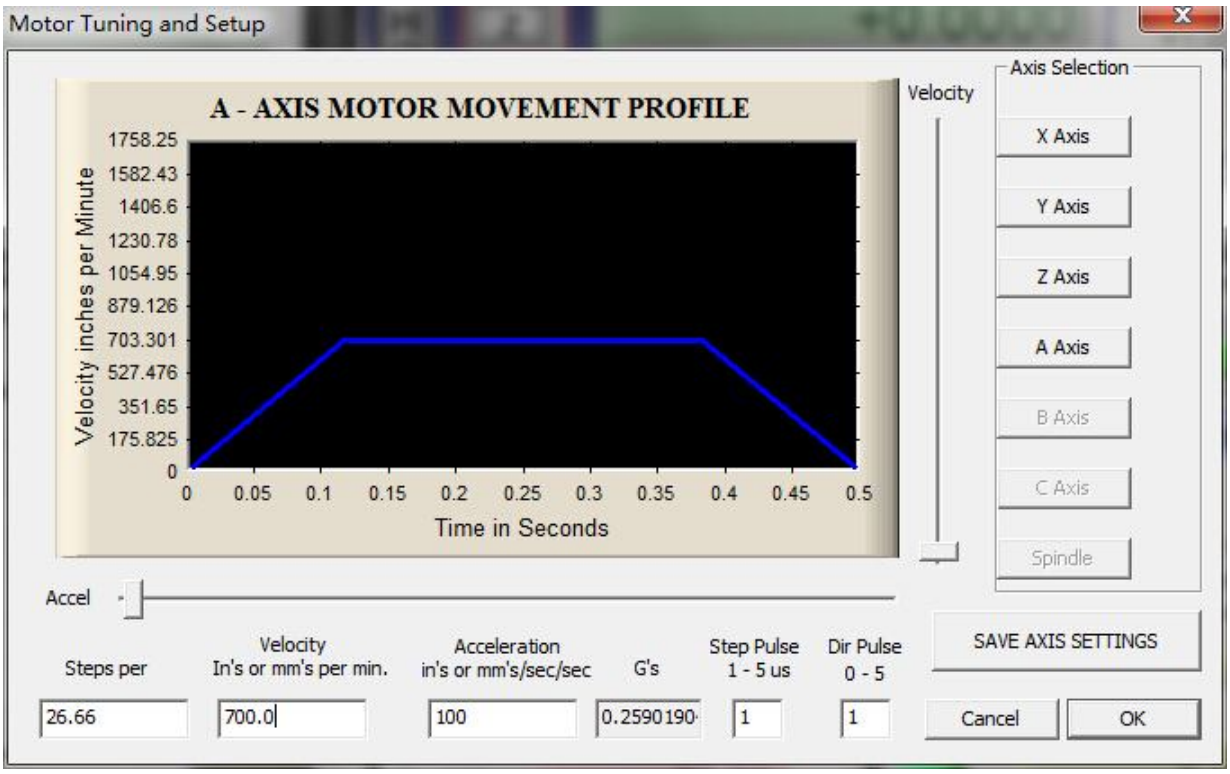
Motor parameter settings, X Y Z Axis setting is completely same ,The Axis setting is different.



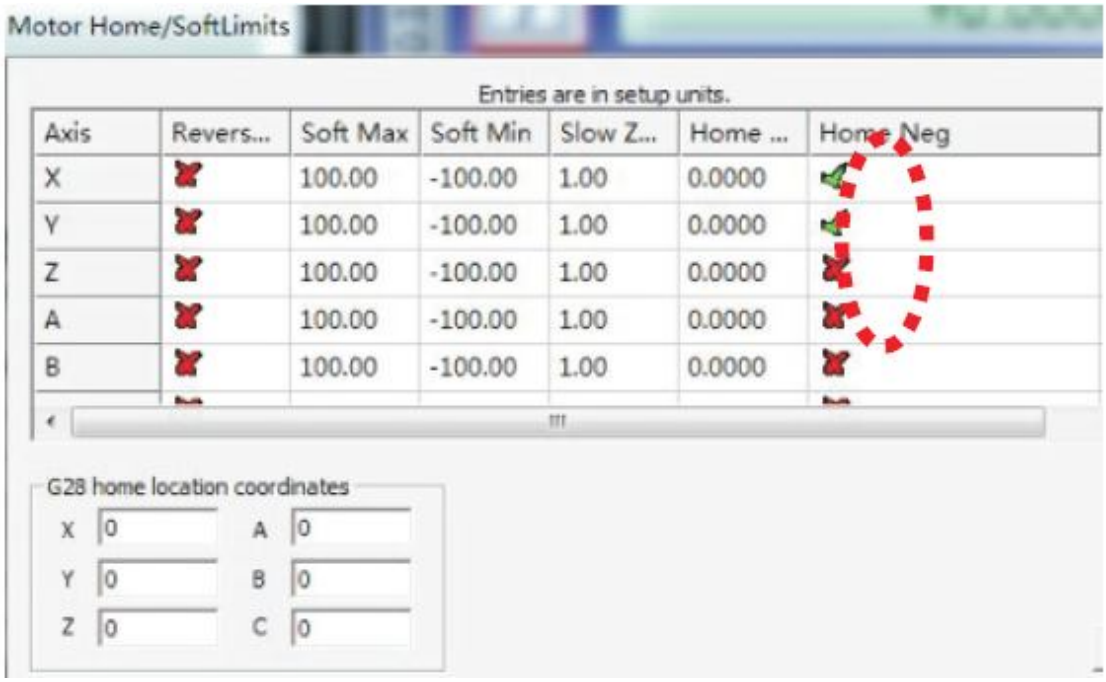
If can not set A Axis ,Need to Enable A Axis firstly in Motor outputs





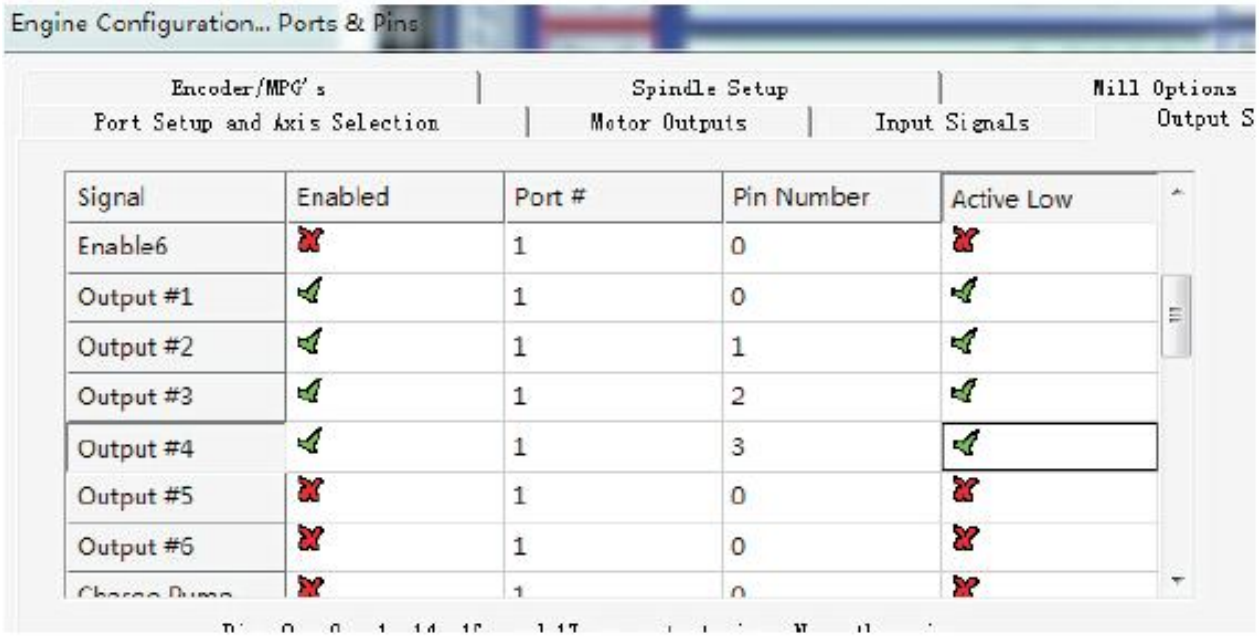


Homing/Limits home direction setting as below

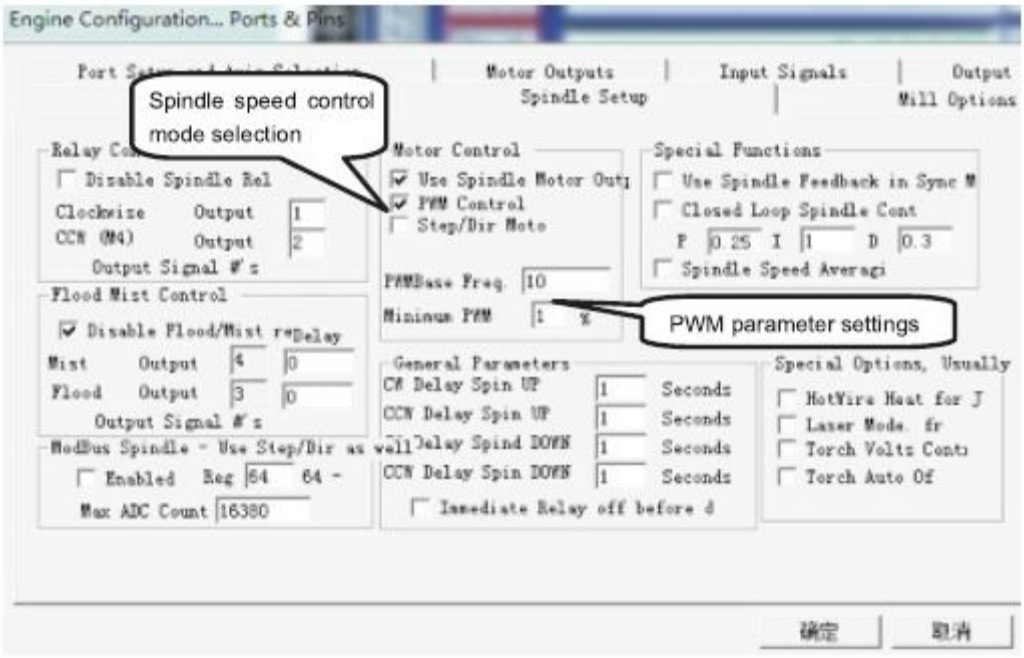


If home moving way reverse ,change Active low from √ to X ,or change from X to √.

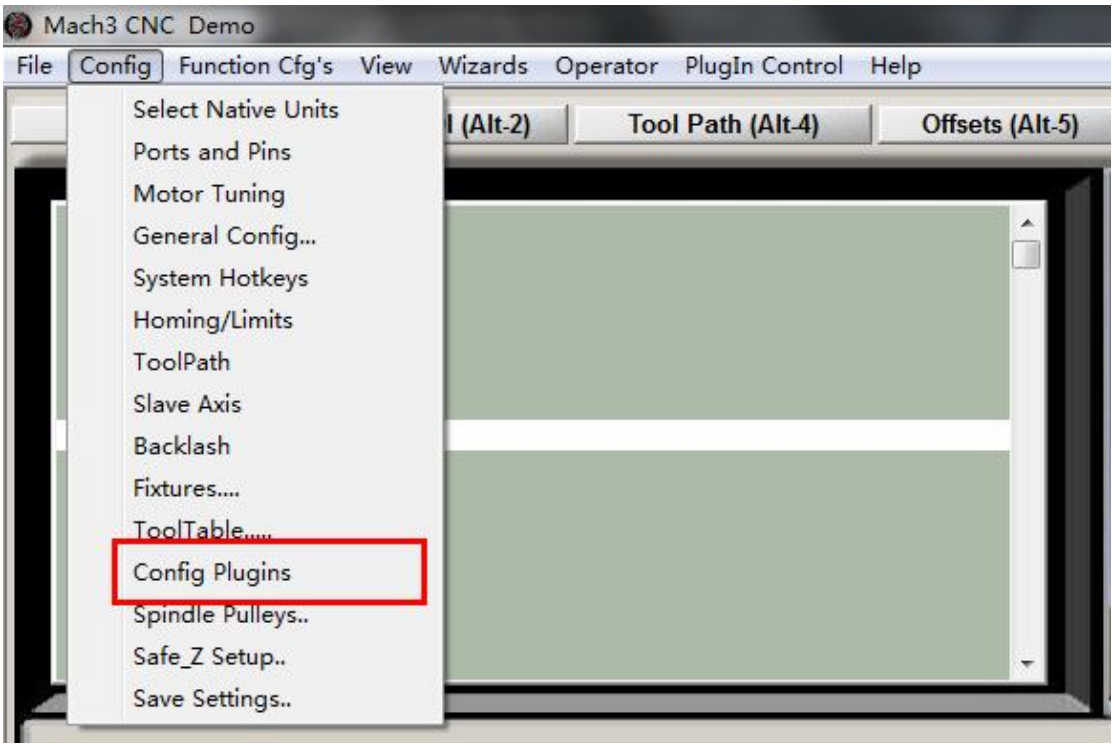
Output signals setting as below

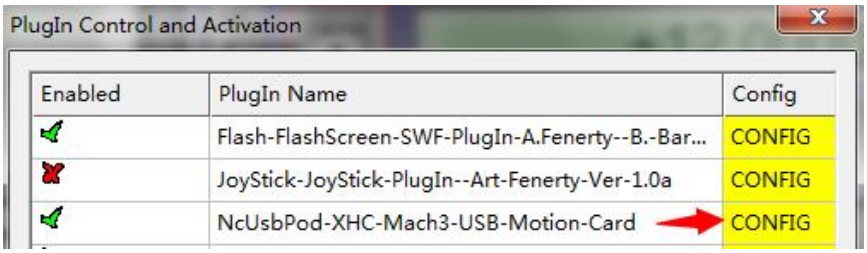


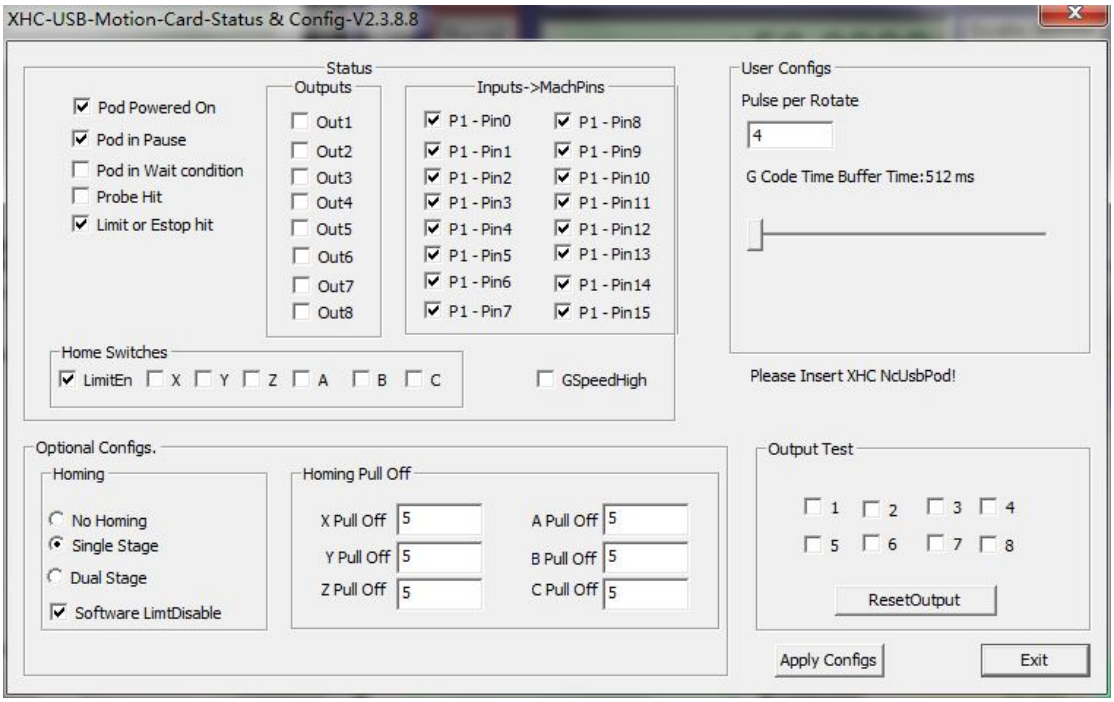
Spindle speed control as below:



USB Motion control card configuration



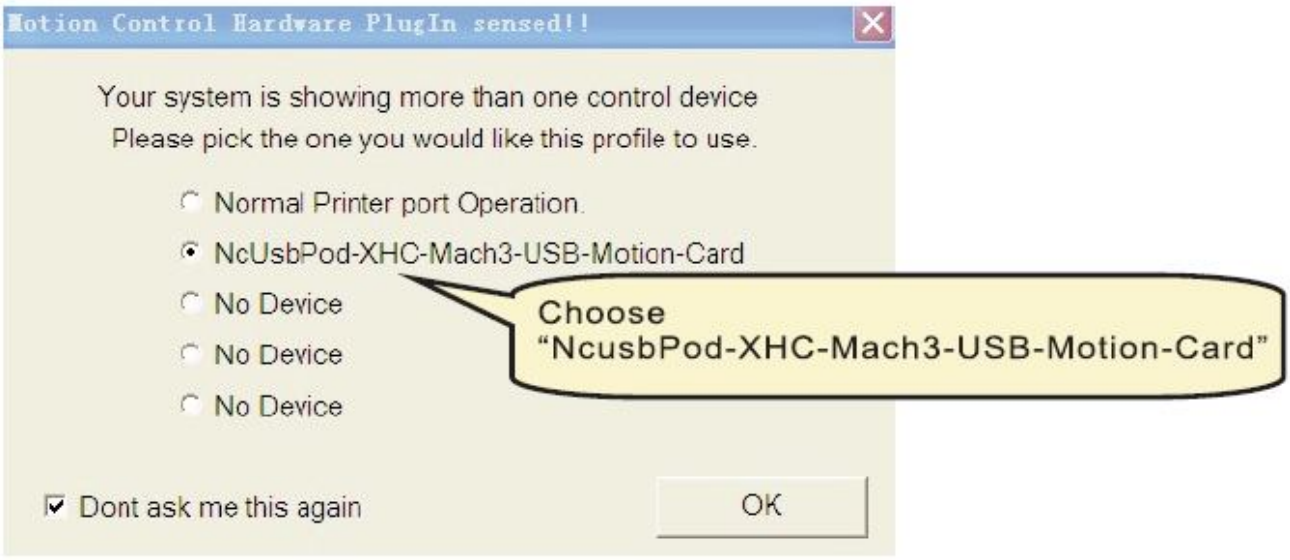




At last , Open

software ,Choose"NcUsbPod-XHC-Mach3-USB-Motion-Card",andChoo

se "Don't ask me this again"

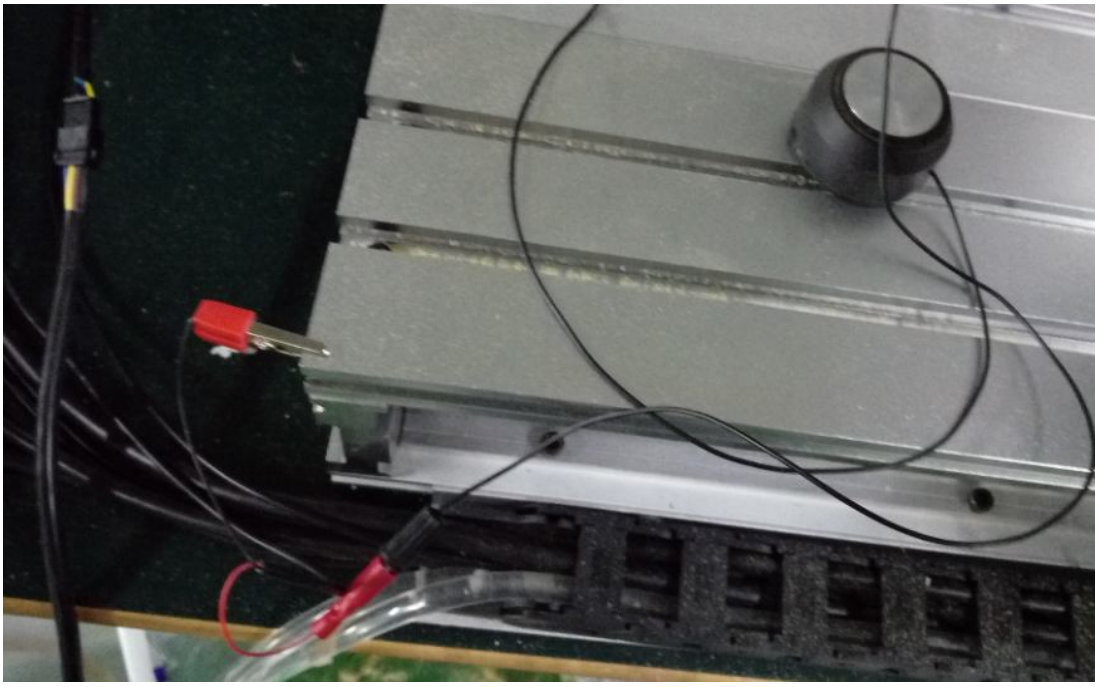


All above , The MACH3 installation and setting is finished.

Part 3Start position setting

The start position setting is a important preparation before start work .

1Confirm probe connection is correct



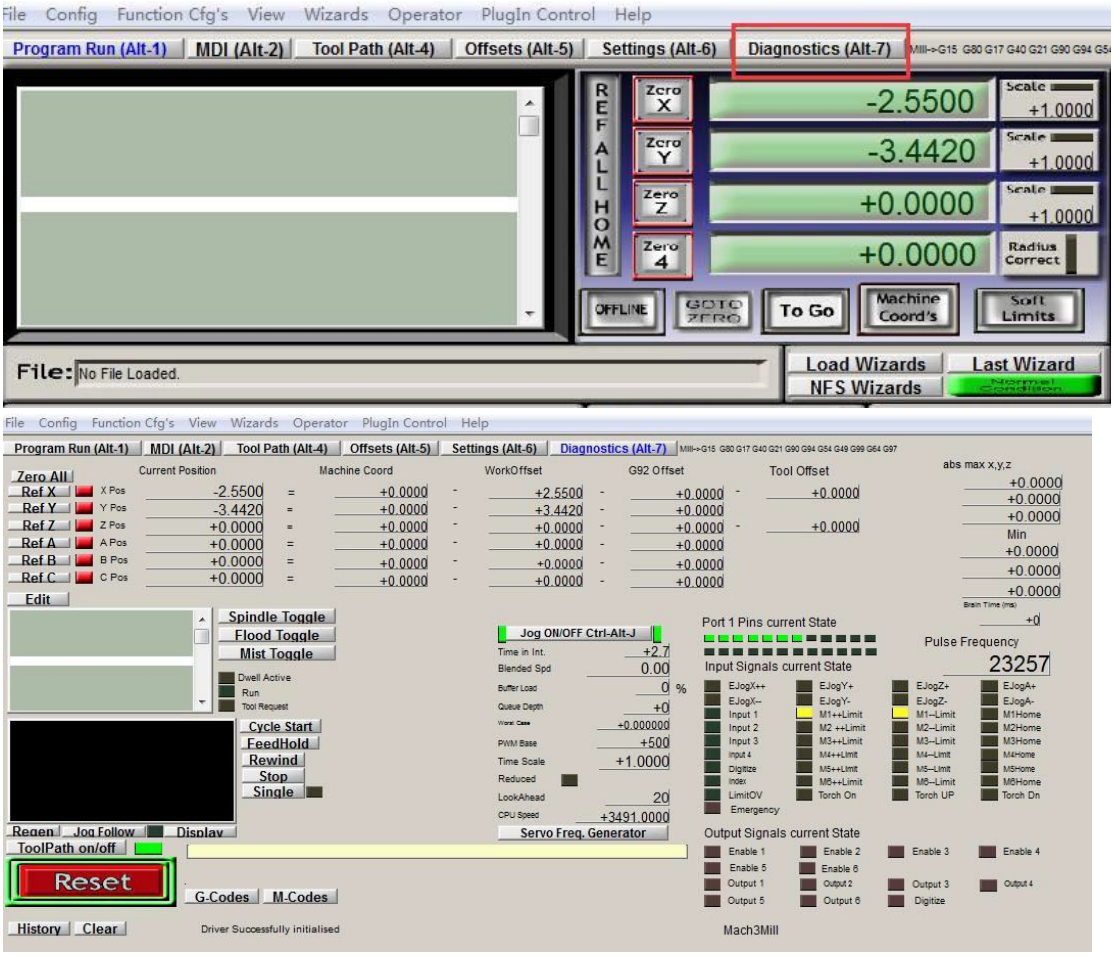
2 To confirm actual height of probe

Generally ,It is 26mm. The offset is actual height +0.5mm. For example ,The actual height is 26mm ,The offset is 26+0.5=26.5mm.

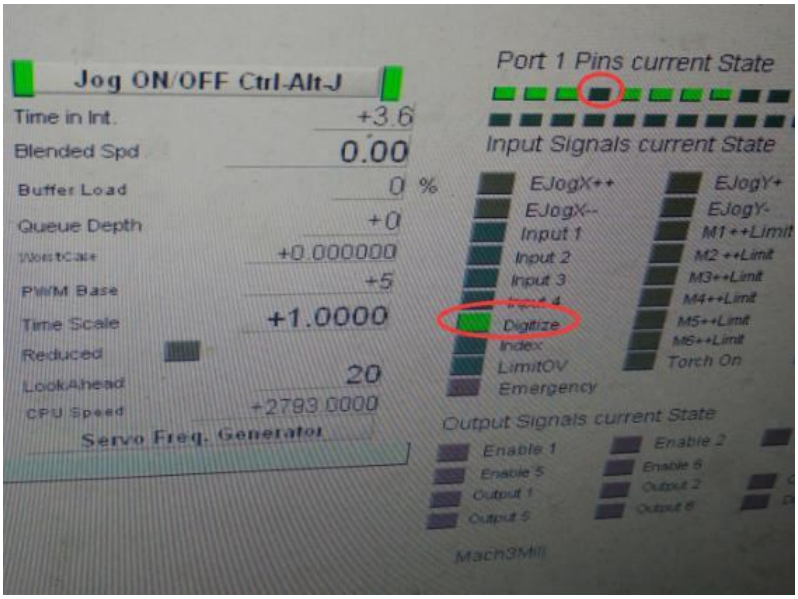
3 Test Probe

Click Diagnostics, Entry intoDiagnostics interface ,test the probe whether

is correct connection

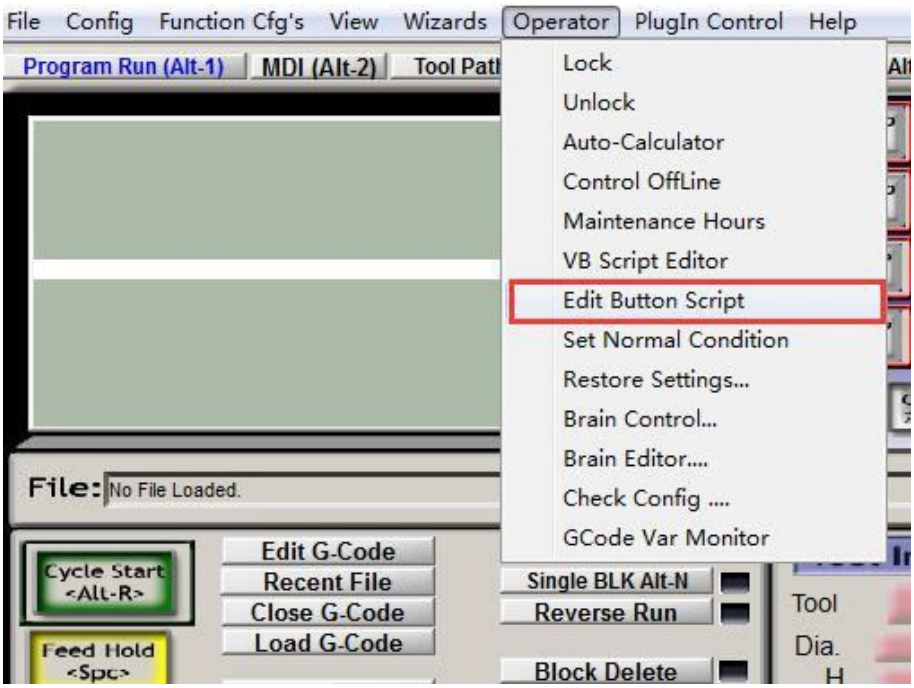


Then using probe to touch engraving bits ,The below one will get black ,and the other one will get light, ,The test is finished ,it shows the probe hardware connection is correct.

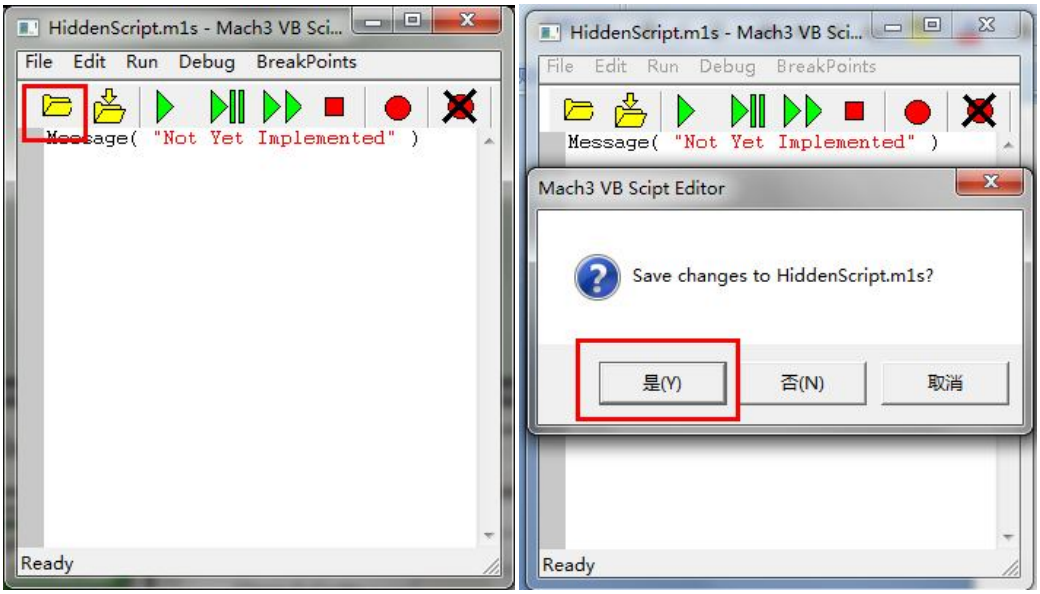


4 Button Script setting

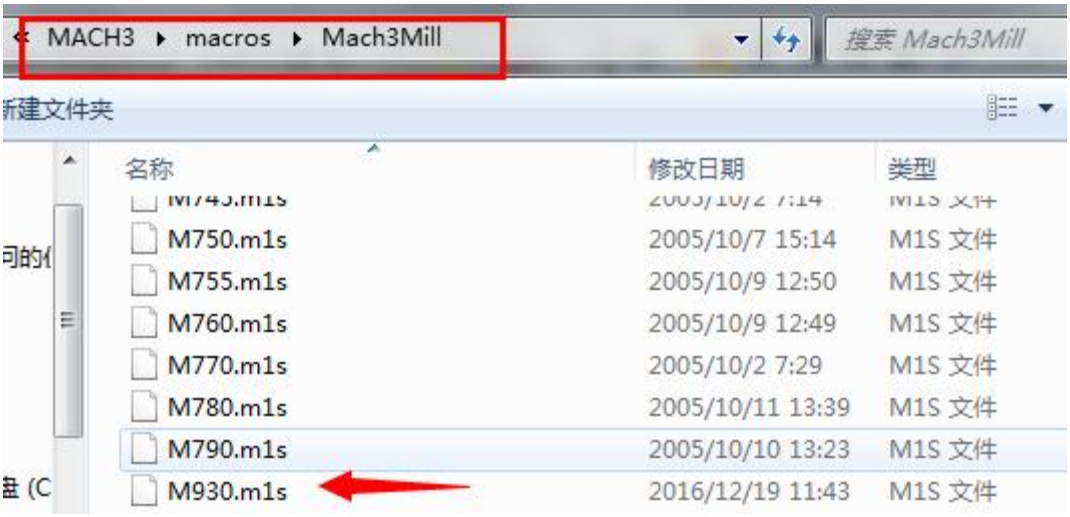
Then Click “Program Run (Alt-1)”,then click “Operator” and choose “Edit Button Script”, Then The Auto zero tool button will flash (Meanwhile other button also flash , ignore it)

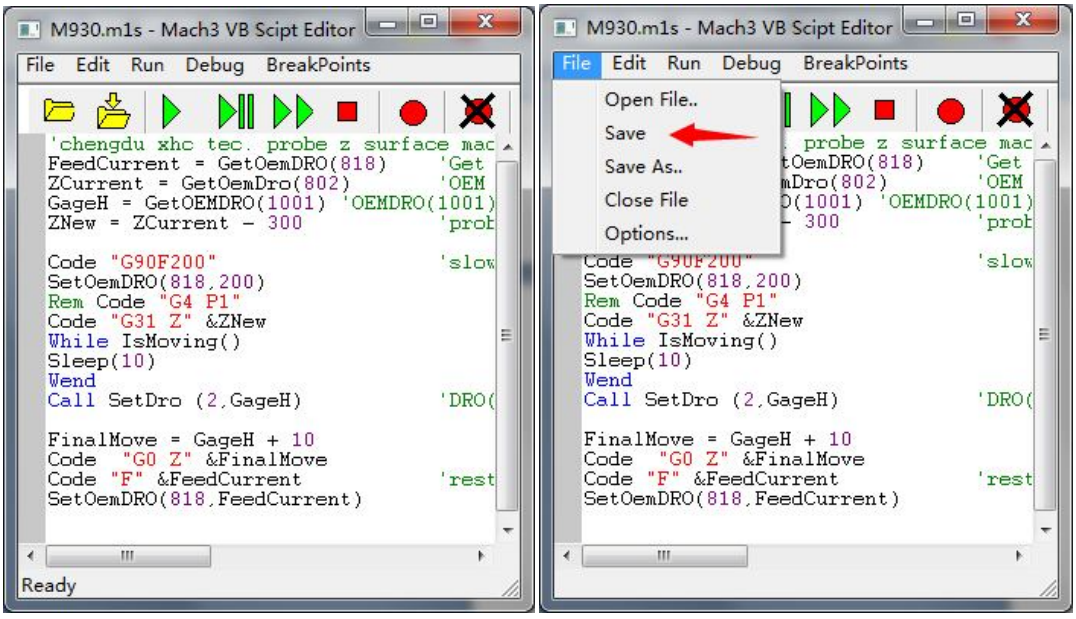


Click Auto zero tool button ,and enter into MACH3 VB script interface, and click open file ,and choose save.

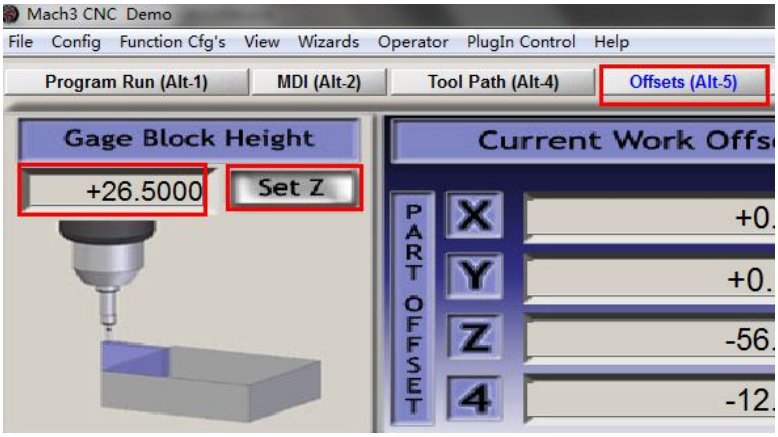


Then find M930.m1s file from MACH3/macros/Mach3mill,open it .





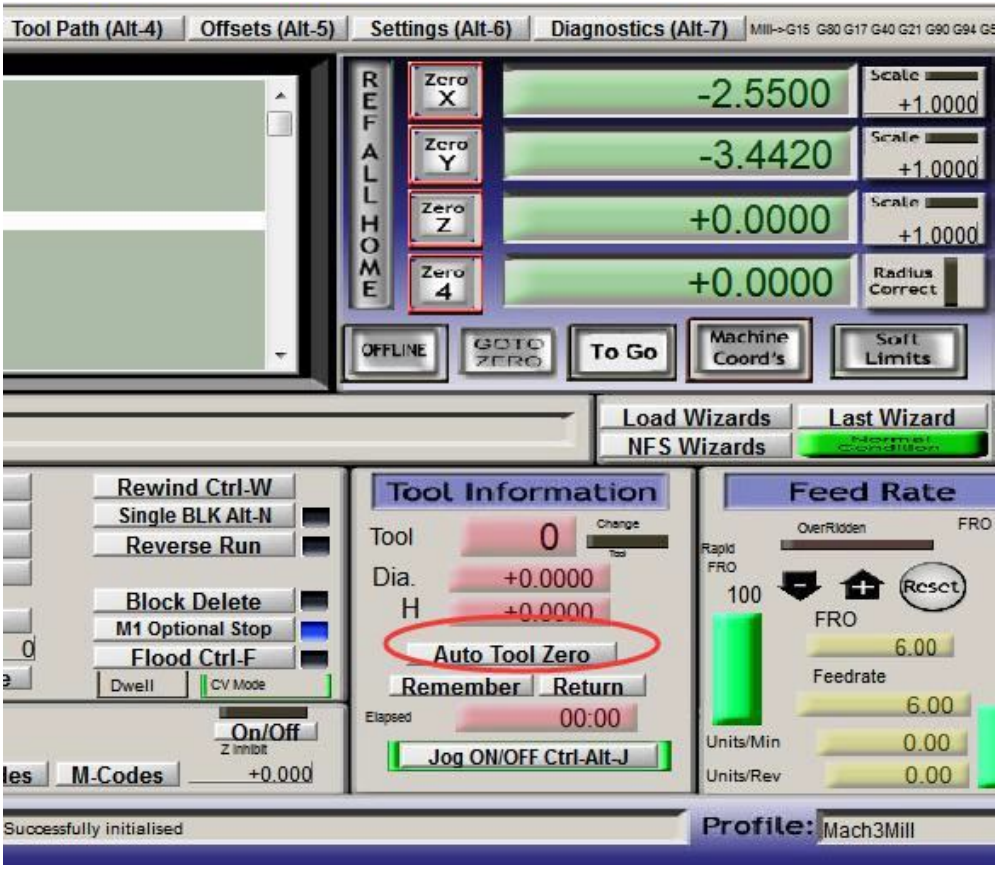
At last Click “Offsets(Alt-5)”,and change Gage Block Height to “26.5” which previous measured offset.



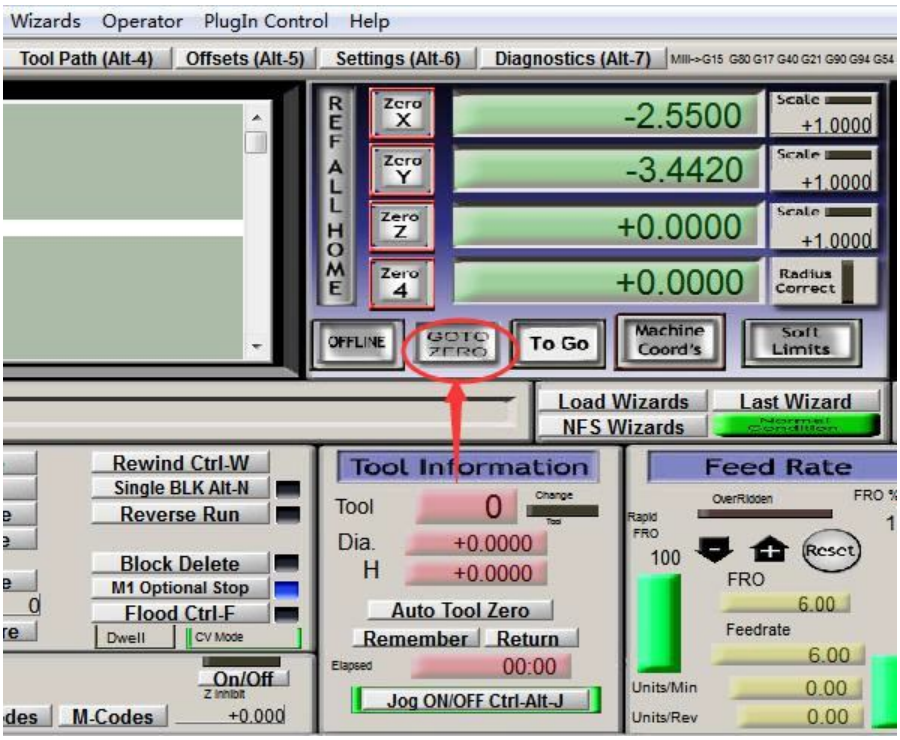
5 Select start position

the spindle to the position where you want , Then cleaning X and Y Axis using Zero X , Zero Y .

Put probe under spindle again, click auto zero tool again , The Z Axis will automatic touch probe and return back , Meanwhile Z Axis will Automatic Zero Z .



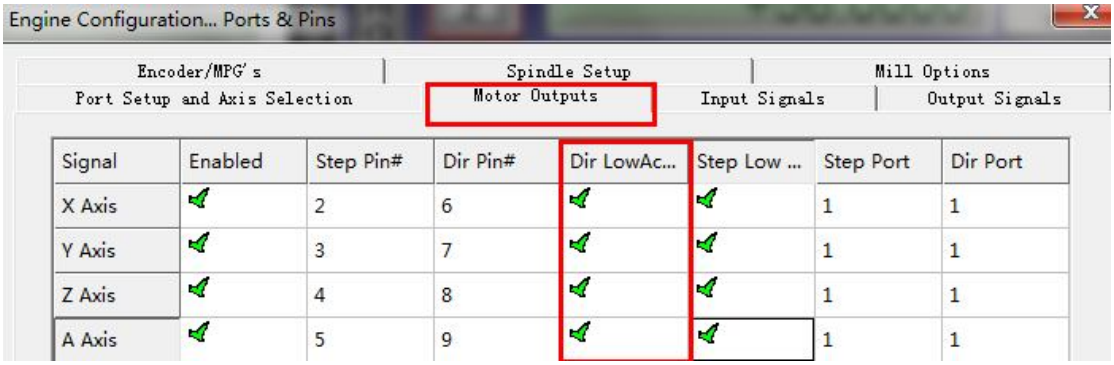
At last , Take probe away from work piece ,Click Goto Zero button ,The machine will automatic go to zero point. The start point setting is finished.


Wizards
Operator
PlugIn Control
Help
Tool Path (Alt-4)
Offsets (Alt-5)
Settings (Alt-6)
Diagnostics (Alt-7)
REF ALL HOME
Zero X
Zero Y
Zero Z
Zero 4
-2.5500
-3.4420
+0.0000
+0.0000
Scale
+1.0000
Radius Correct
OFFLINE
GOTO ZERO
To Go
Machine Coord's
Soft Limits
Load Wizards
Last Wizard
NFS Wizards
Rewind Ctrl-W
Single BLK Alt-N
Reverse Run
Block Delete
M1 Optional Stop
Flood Ctrl-F
Dwell
CV Mode
On/Off
Z Inhibit
M-Codes
+0.000
Tool Information
Tool
0
Change
Dia.
H
+0.0000
+0.0000
Auto Tool Zero
Remember
Return
Elapsed
00:00
Jog ON/OFF Ctrl-Alt-J
Feed Rate
OverRidden
Rapid FRO
100
Reset
FRO
6.00
Feedrate
6.00
Units/Min
0.00
Units/Rev
0.00

Part 4 FAQ

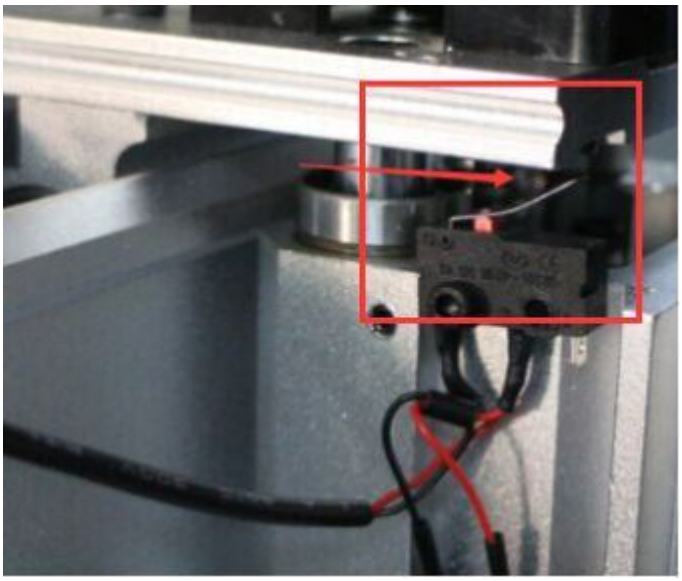
1.The Axis moving direction is wrong

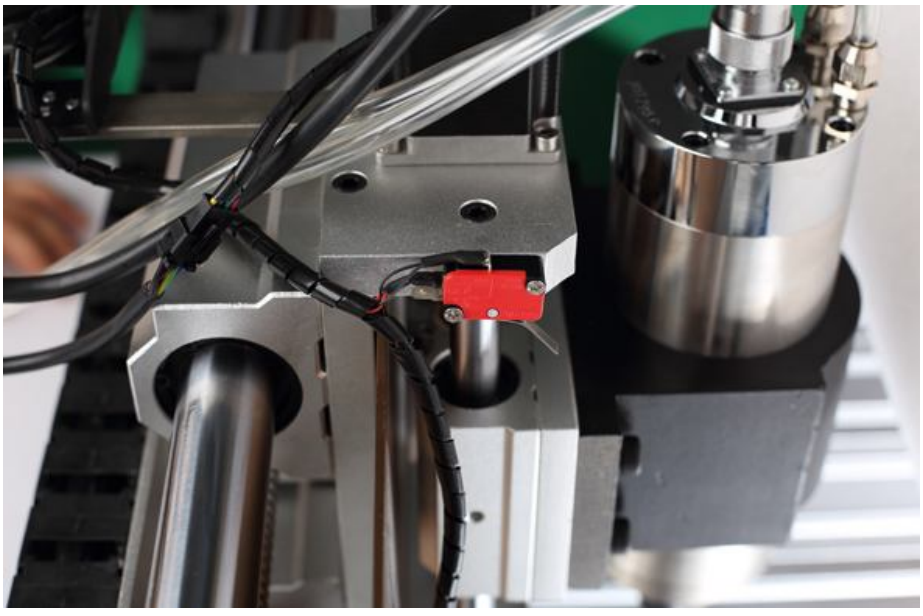
Which Axis goes wrong direction , you change that Axis below Dirlow active setting ,If home moving way reverse ,change Active low from √ to X ,or change from X to √.



2. Manual reset limit switch

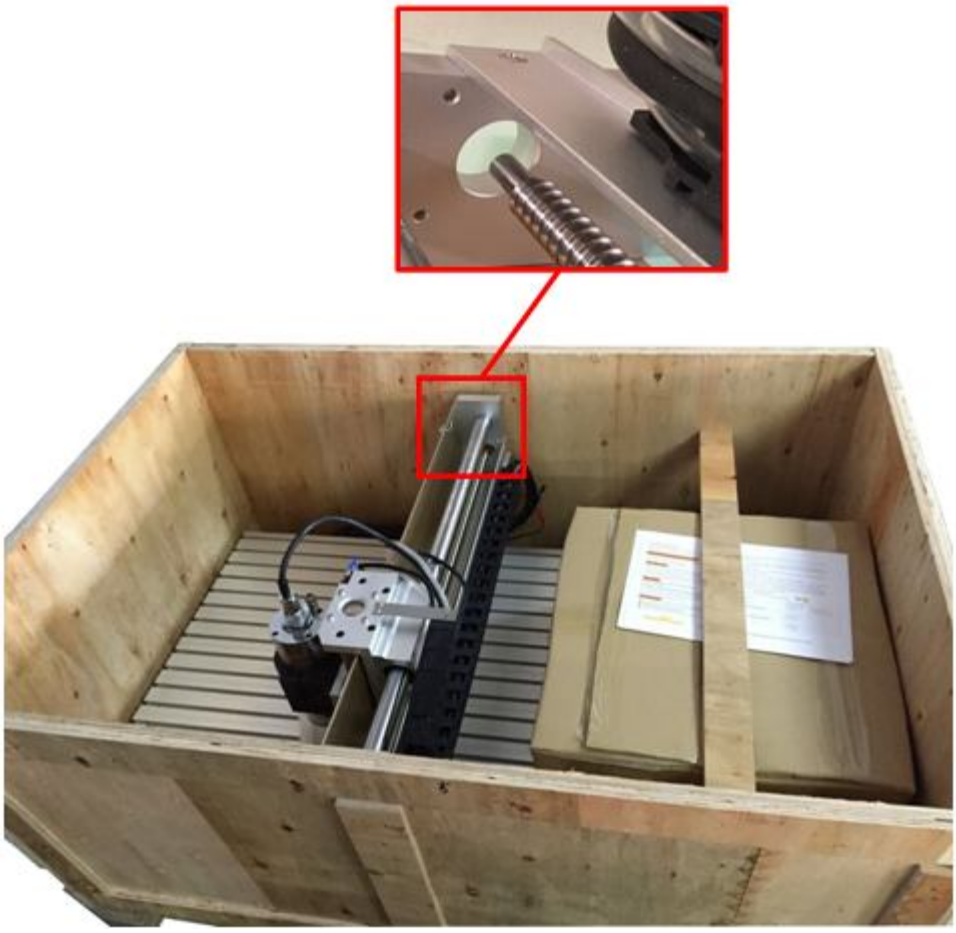
All X Y Z has 2 limited switch . Once the Axis touch below limit switch ,Machine will stop work ,and reset button will get red in controller box . Then Manually Moving axis away from limit switch(switch off machine, easy to move) , press reset to make sure to get green at last restart machine to work .





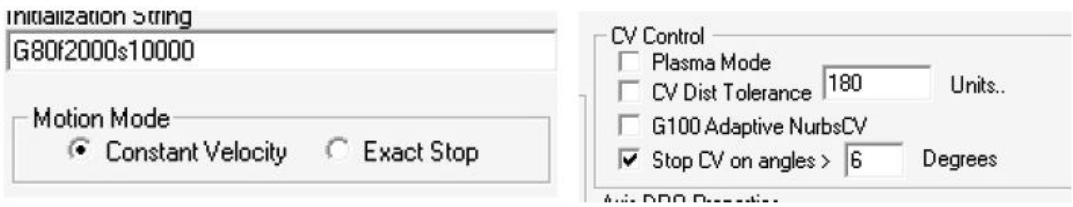
3. Package information

When unpack wooden box, some client thought machine lack accessories , That is misunderstanding .After you installed step motor ,The machine will be ready



4 Rectangle work to round

Enter into General Logic configuration , select Motion mode to constant Velocity , Select CV control stop CV on angles> 6 degrees as below:

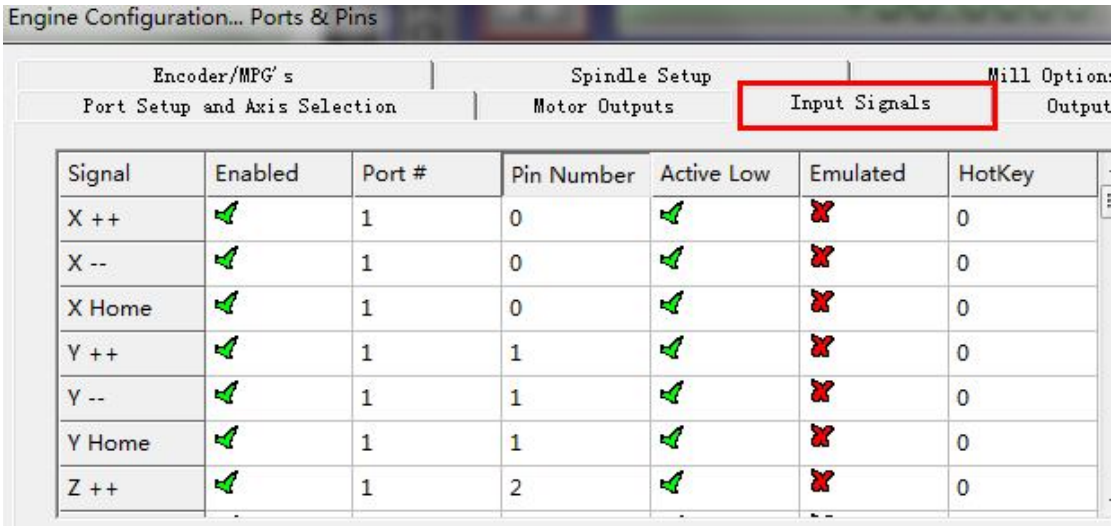


5 USB motion card can be found by MACH3

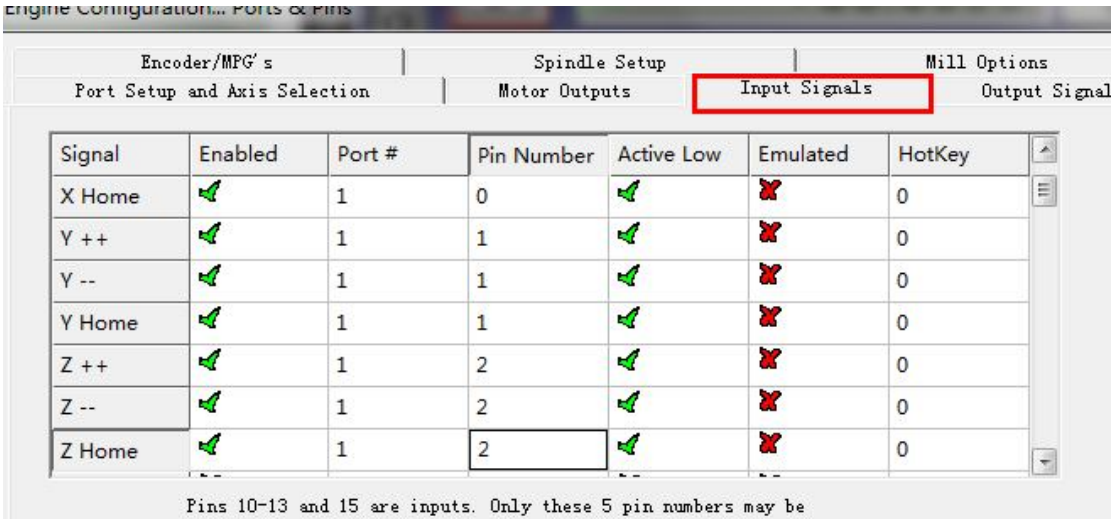
Make sure USB cable connection is good ,make sure VFD has ground and input power of VFD has electrical filter to isolate noise.

6 How to ref all home

Firstly enbale X Home ,Y Home ,Z Home , and confirm setting is correct.

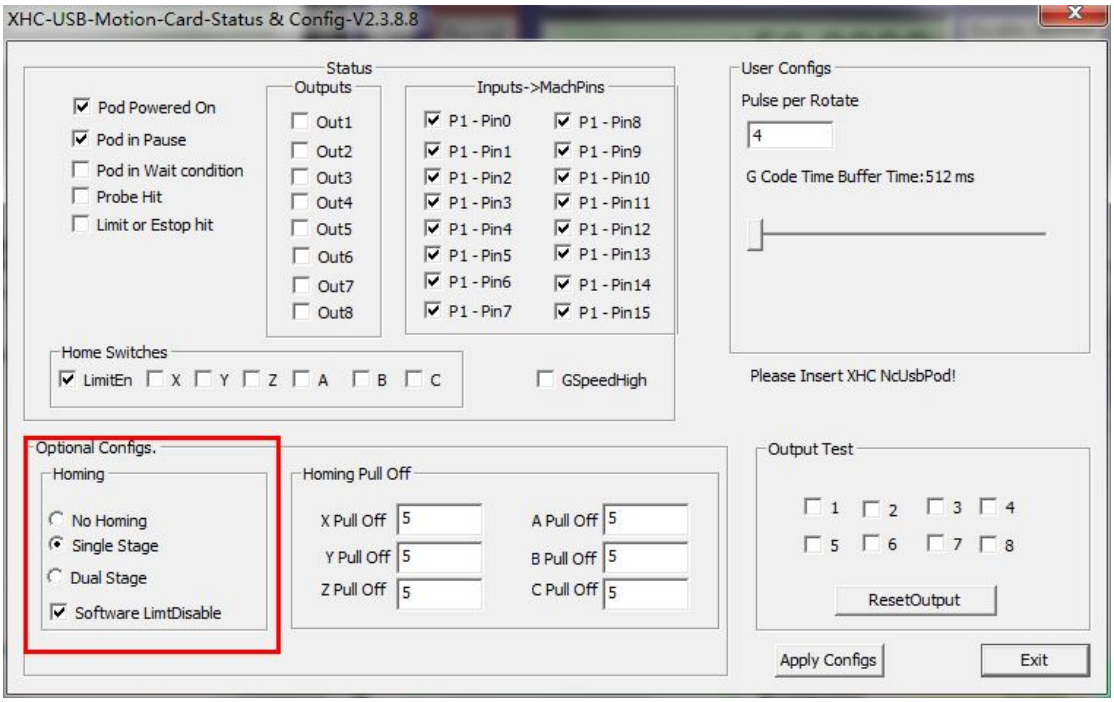


Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
X ++	✓	1	0	✓	✗	0
X --	✓	1	0	✓	✗	0
X Home	✓	1	0	✓	✗	0
Y ++	✓	1	1	✓	✗	0
Y --	✓	1	1	✓	✗	0
Y Home	✓	1	1	✓	✗	0
Z ++	✓	1	2	✓	✗	0

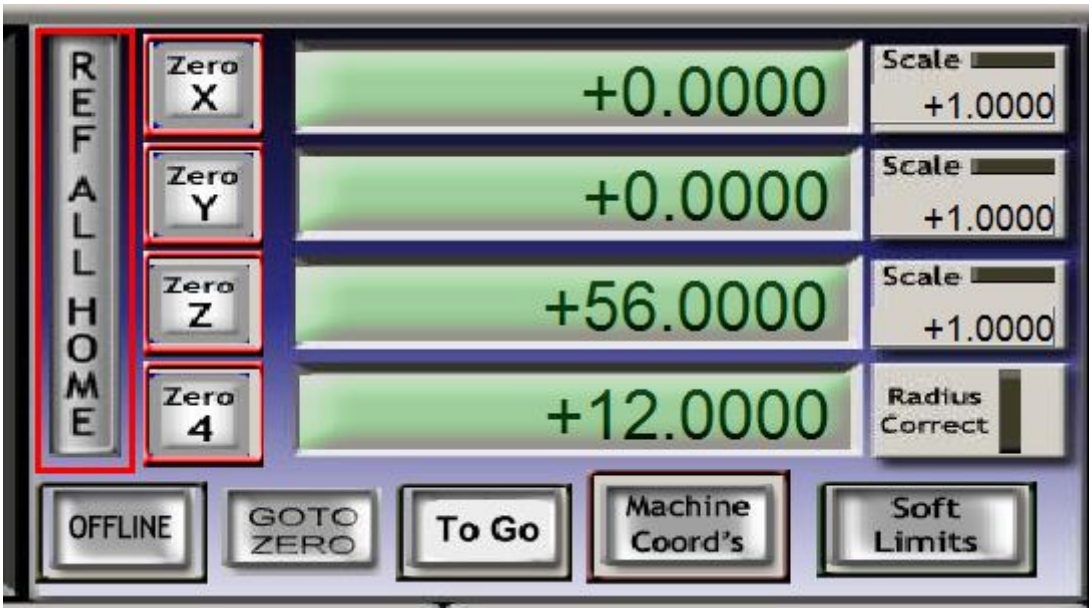


Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
X Home	✓	1	0	✓	✗	0
Y ++	✓	1	1	✓	✗	0
Y --	✓	1	1	✓	✗	0
Y Home	✓	1	1	✓	✗	0
Z ++	✓	1	2	✓	✗	0
Z --	✓	1	2	✓	✗	0
Z Home	✓	1	2	✓	✗	0

Secondly ,Confirm plugin setting correct ,especially ,Choose single stage



At last ,click ref all home button in MACH3.



ChinaCNCzone, to be your best [mini CNC router](#) manufacturer.