

ChinaCNCzone

HY3040 5Axis USB Mach3 router machine Manual



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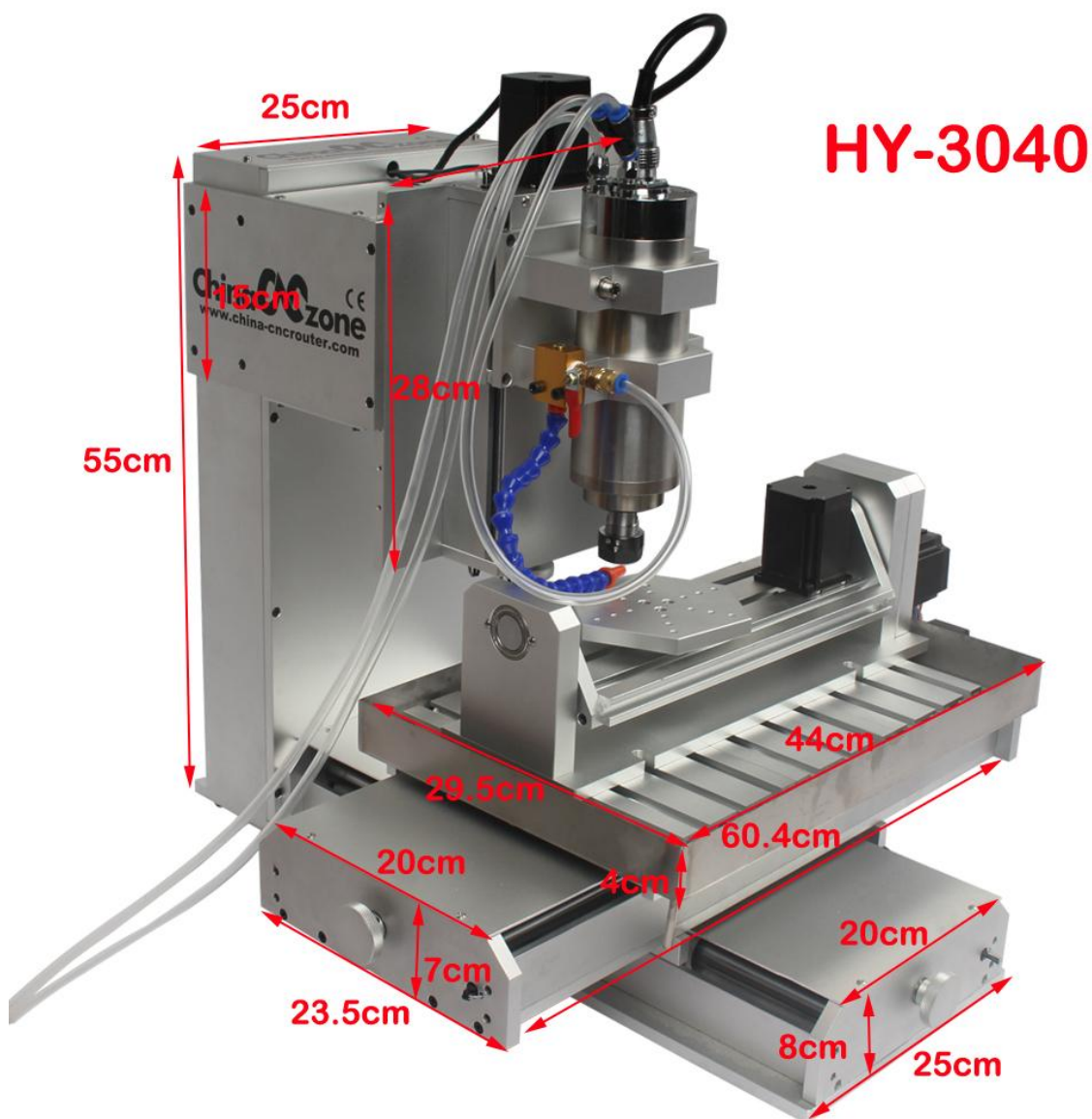
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Content

1.5Axis installation and cable connections
2.Mach3 installation and setting
3.Machine calibration
4.Starting point setting

The machine details size as below:



1, 5Axis Installation and Cable connections

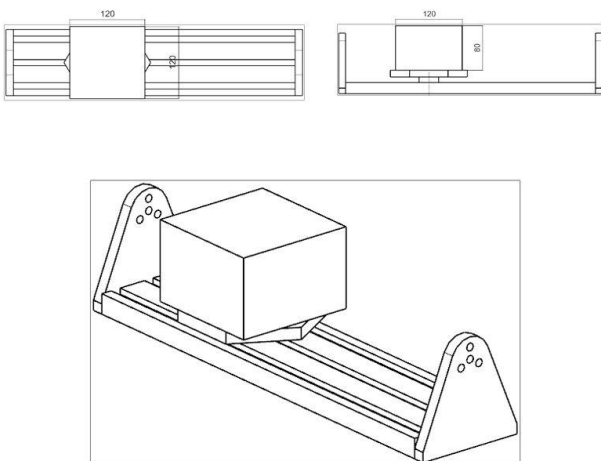
When you open the wooden box as below, You would find the machine was already assembled , You only need to connect USB cable , power cable and water pump. And then 5Axis installation was easy, if worried something wrong , you can check this video : <https://youtu.be/fxYzeXtKCuE>



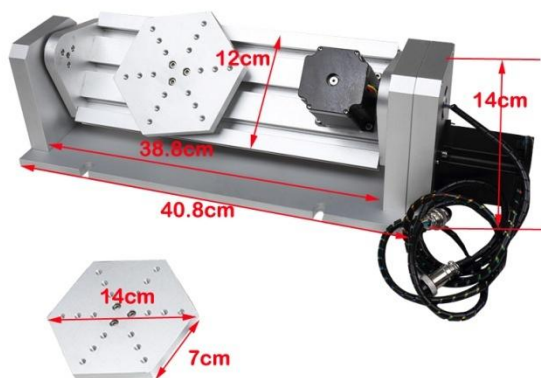
Remark : Please don't put the water pump into water, it should be stayed out of water tank

HY3040 5axis table workable size

Max. Object size: L=120mm W=120mm H=80mm D=120mm



HY-3040



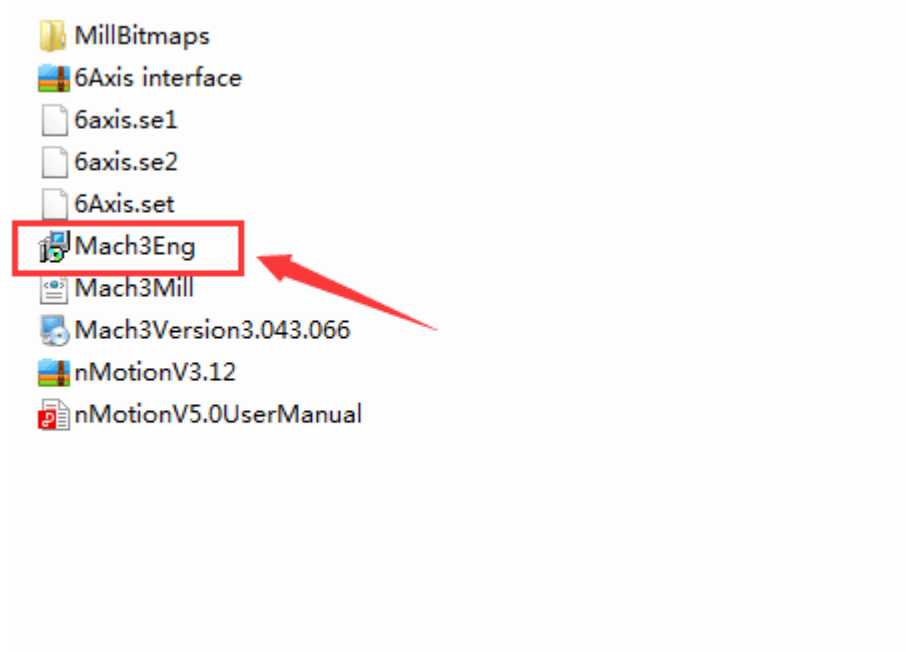
The HY3040 5Axis table detailed size and maximum work piece size .

2, Mach3 Installation

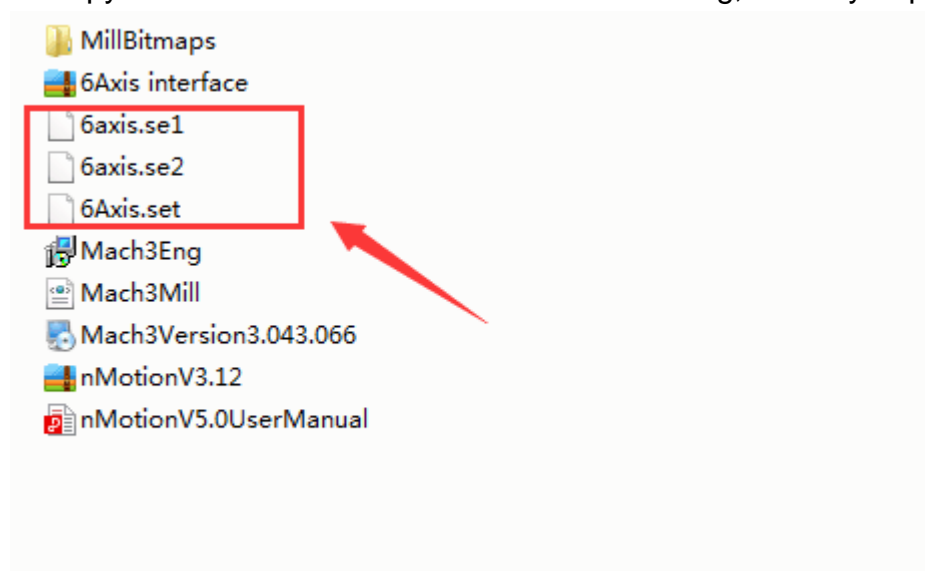
MACH3 was machine control software , The machine also need G code design software , We would try to provide fusion 360 G code design software in future.

But we are able to provide post processor for G code design .

1. Open the CD, and find the file name nMotion. Open it you can see all the files here. And click the Mach3Eng and install the software.



2. Copy these 3 files in the CD to the C:\Mach3Eng, where you put your MACH3 software.

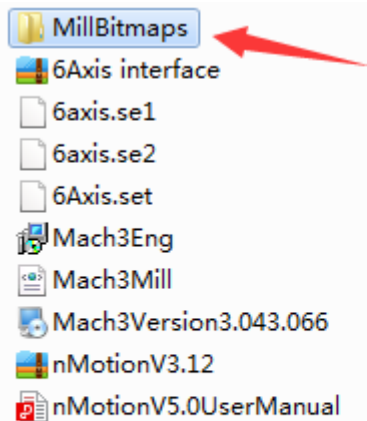


Drivers	2017/1/10 10:52	文件夹
Intel	2017/1/10 11:46	文件夹
Mach3Eng	2018/5/18 10:22	文件夹
Program Files	2017/11/11 8:37	文件夹
Program Files (x86)	2018/5/17 15:35	文件夹
RDWorksV8	2018/5/18 17:08	文件夹
Windows	2018/5/21 8:50	文件夹
用户	2017/1/10 10:57	文件夹

3. And finally it will show here.

Bitmaps	2018/5/18 9:55	文件夹	
Brains	2018/5/18 9:55	文件夹	
GCode	2018/5/18 9:55	文件夹	
macros	2018/5/18 9:55	文件夹	
PlugIns	2018/5/18 9:55	文件夹	
Shapes	2018/5/18 9:55	文件夹	
6axis.se1	2018/5/2 11:15	SE1 文件	102 KB
6axis.se2	2018/5/2 11:15	SE2 文件	102 KB
6Axis.set	2018/5/2 11:15	SET 文件	102 KB
1024.lset	2008/7/15 7:27	LSET 文件	52 KB
1024.set	2017/4/6 11:17	SET 文件	96 KB
1024_4axis.set	2016/7/10 10:36	SET 文件	94 KB
1024_6axis.se1	2017/4/6 10:40	SE1 文件	95 KB
1024_6axis.se2	2016/12/5 19:15	SE2 文件	93 KB
1024_6axis.se3	2016/10/31 22:33	SE3 文件	93 KB
1024_6axis.set	2016/12/7 20:58	SET 文件	95 KB
1024-6CN.set	2016/11/19 20:10	SET 文件	81 KB
1024E.set	2017/5/4 20:22	SET 文件	92 KB
Addons	2011/5/24 1:48	应用程序	3,897 KB

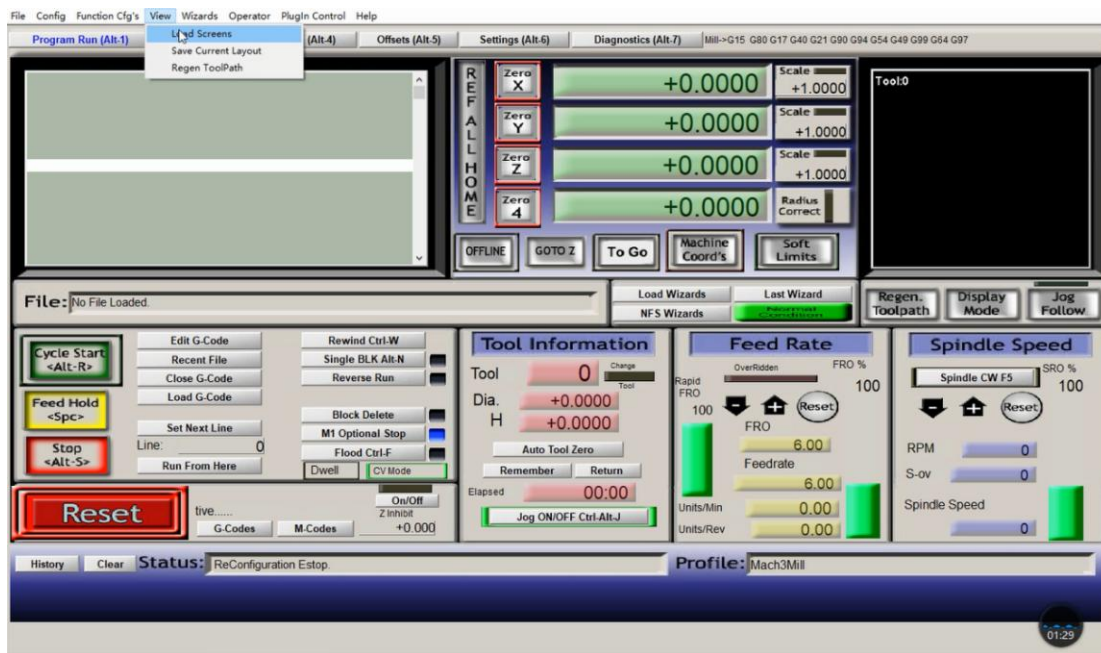
4. Then copy the MillBitmaps in the CD to the C:\Mach3Eng The file named: Bitmaps file.



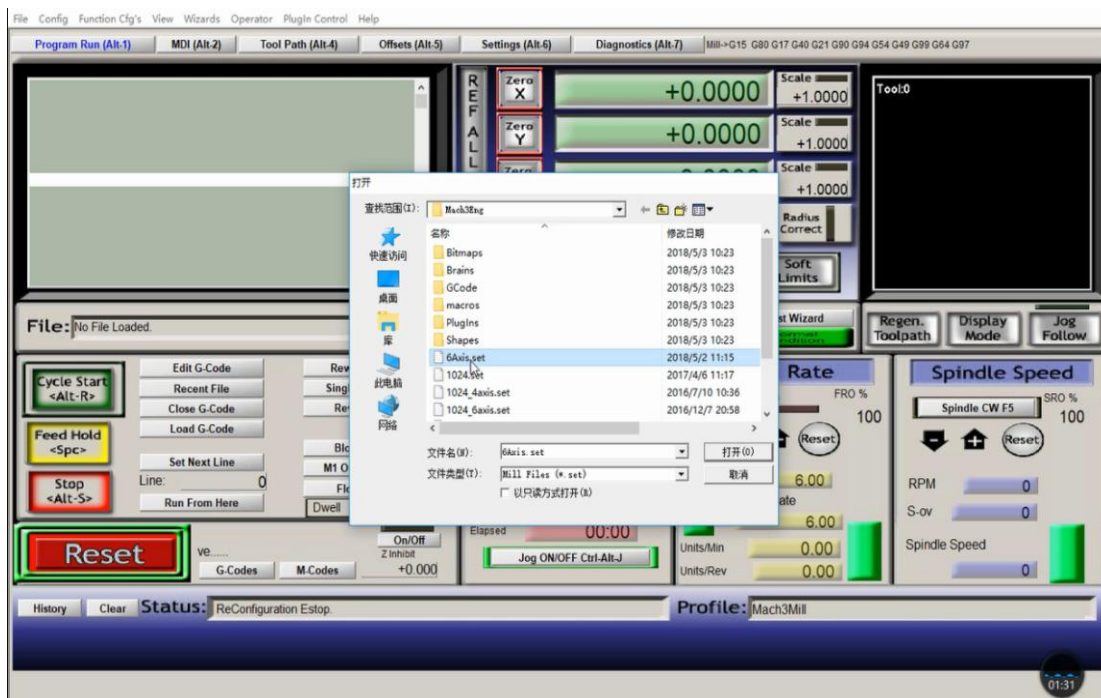
5. Finally it will show like this:

6AxisScreens	2018/5/18 9:55	文件夹	
ChinaLatheSet	2018/5/18 9:55	文件夹	
FSeeScreens	2018/5/18 9:55	文件夹	
MillBitmaps	2018/5/18 10:29	文件夹	
TurnBitmaps	2018/5/18 9:55	文件夹	
splash	2017/4/6 11:48	BMP 图像	599 KB
splash1	2017/4/6 11:49	BMP 图像	599 KB
splash2	2017/4/6 11:49	BMP 图像	599 KB

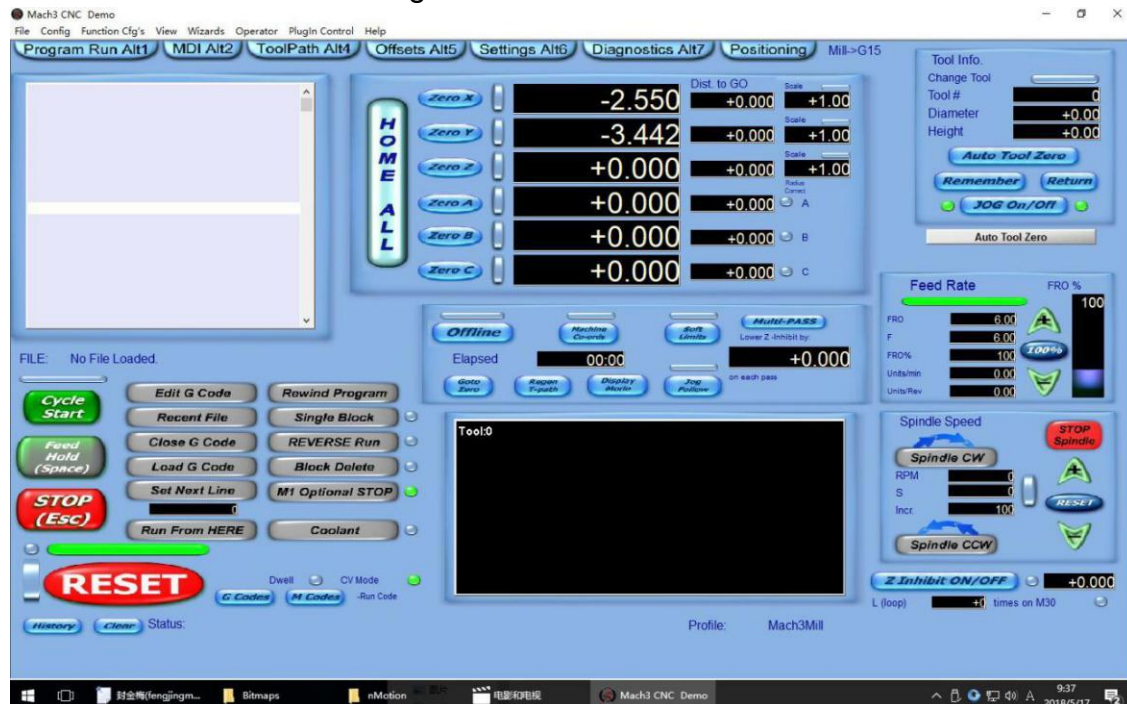
6. Open the Mach3Mill software. Click the View, then click Load Screens.



7. Choose the 6Axis.set.

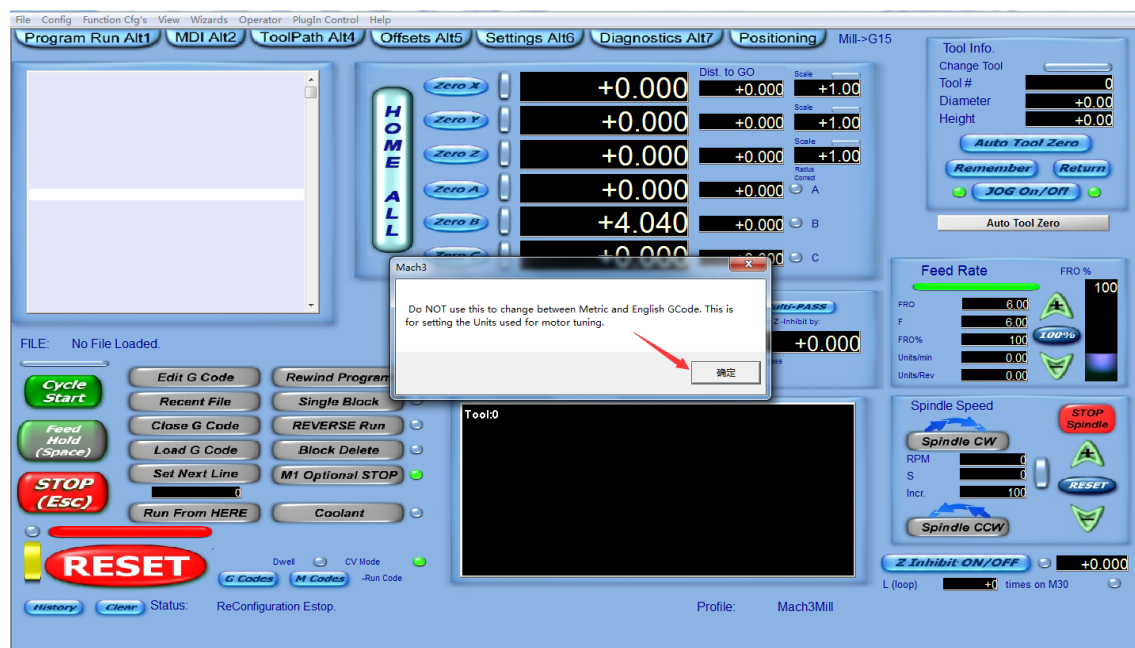


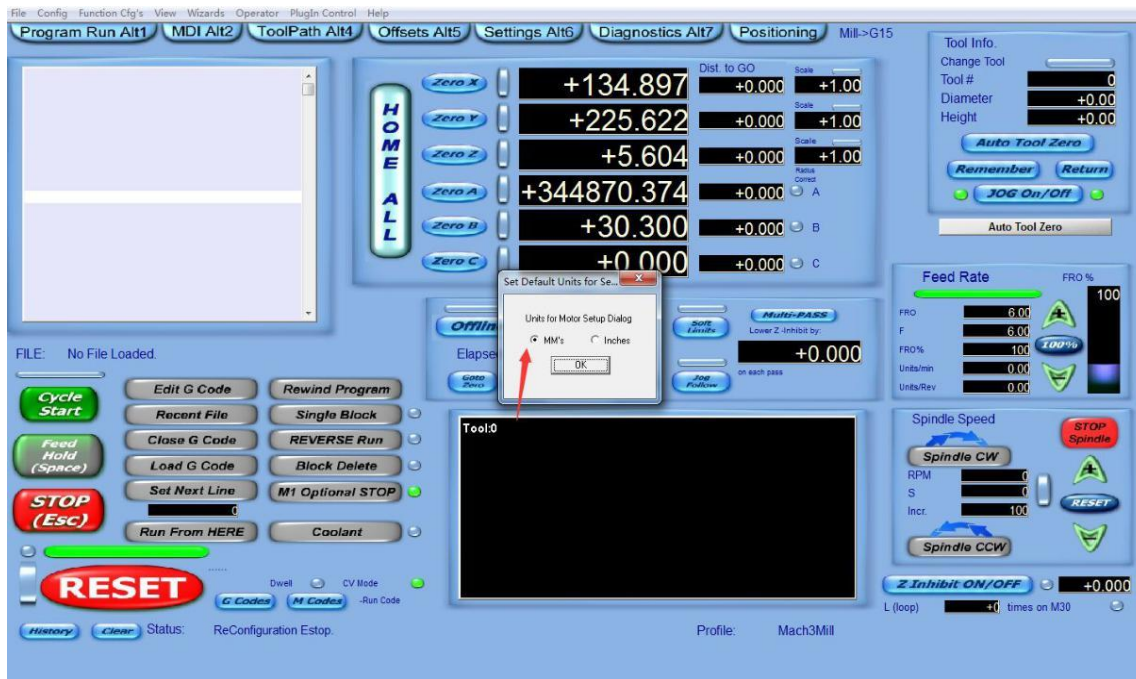
8. Then the screen will change like this:



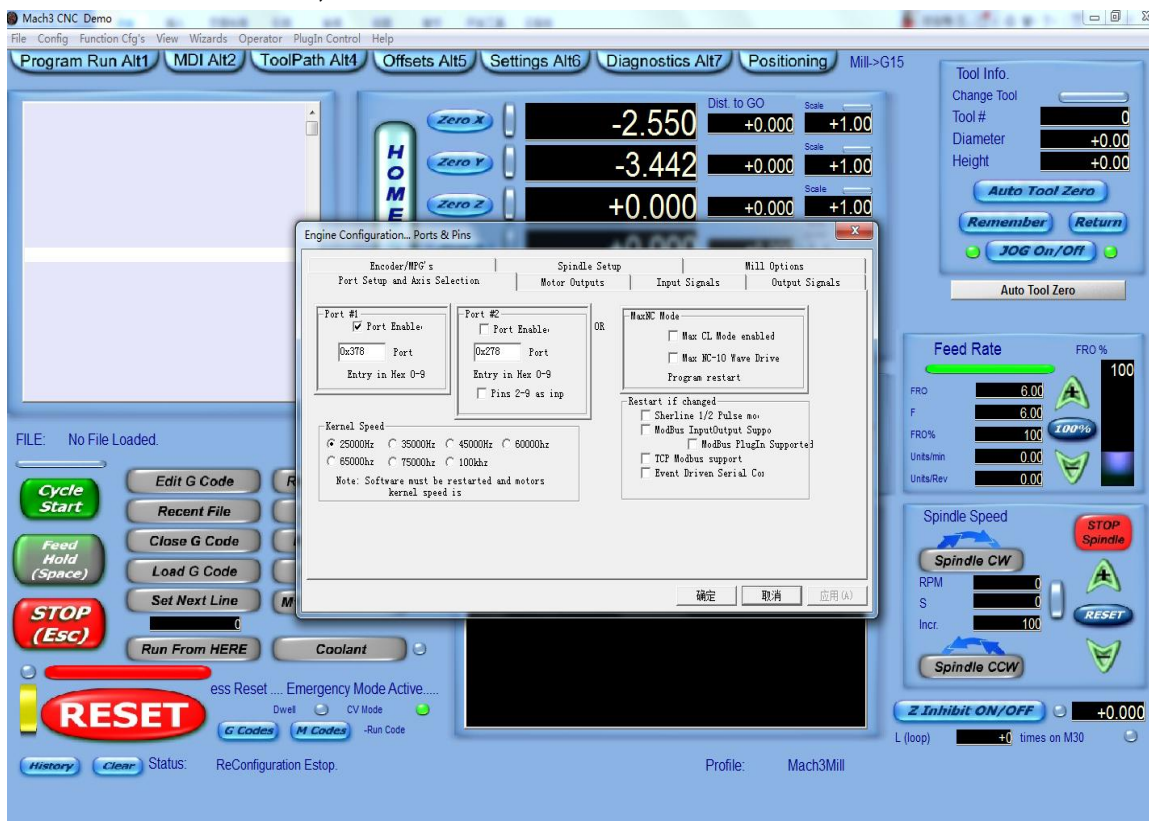
9. Then set up the pins and ports:

Click the CONFIG, then click the select native units, you need to choose MM's, then click OK.

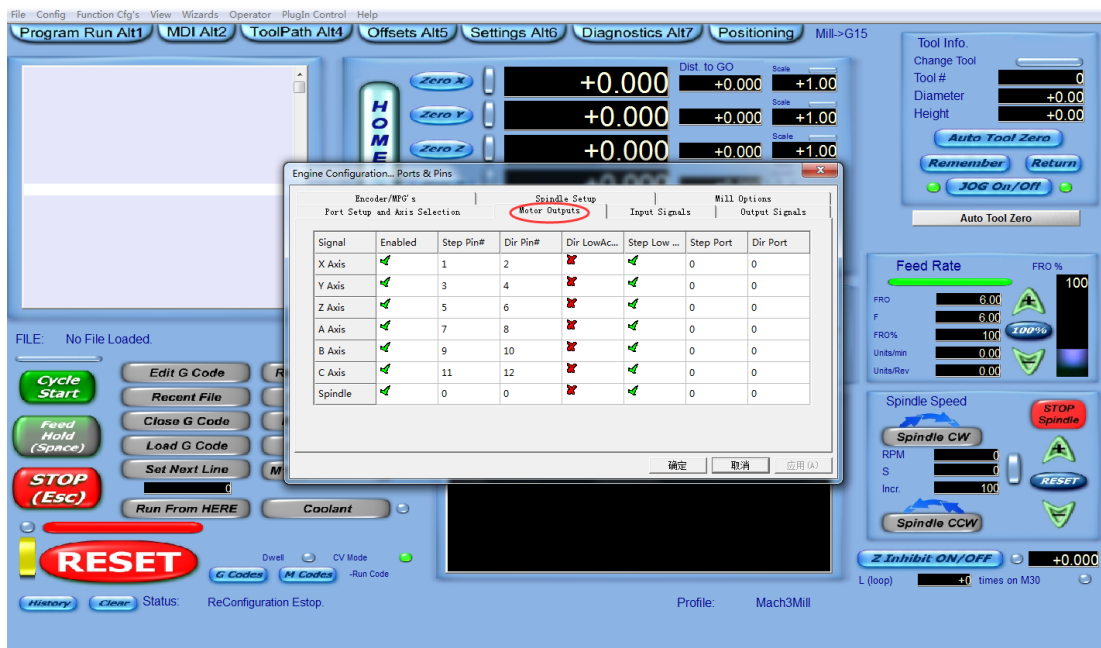




10. Click the CONFIG, to click the PORTS AND PINS.

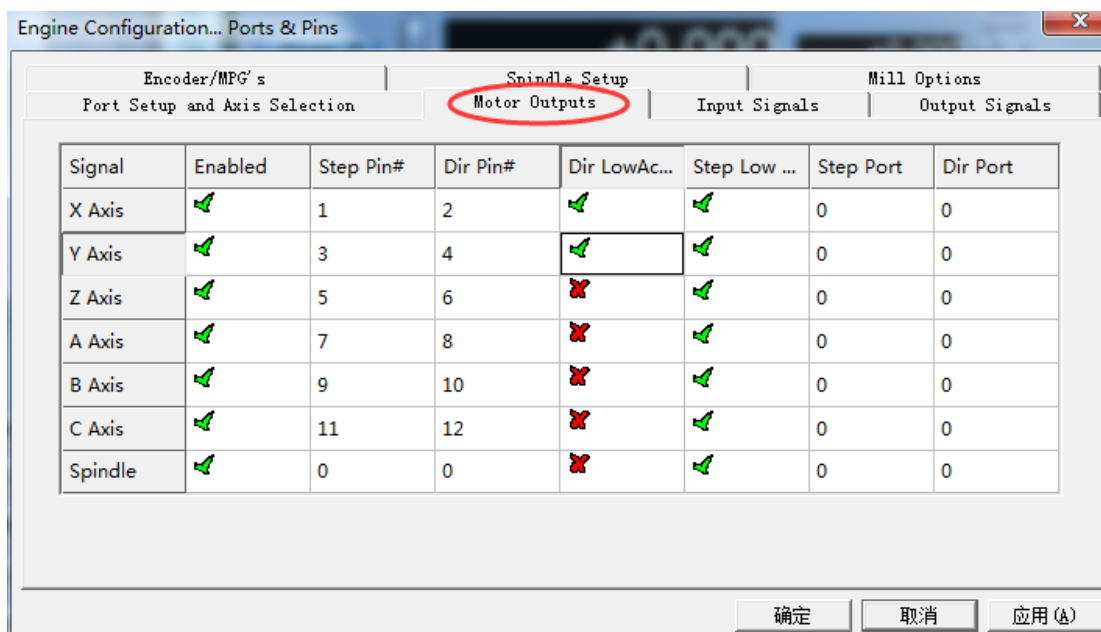


11. Click the Motor Output. Set Input Signal and Output Signal as pictures below show



12. Set the pins as follow:

Motor Outputs



Input Signals for mechanical limit, Estop , Probe , **Noted:The machine did not support Motor Home/Soft limit , So no need to set.**

Engine Configuration... Ports & Pins

Encoder/MPG's			Spindle Setup		Mill Options	
Port Setup and Axis Selection			Motor Outputs		Input Signals	
Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
X ++		2	1			0
X --		2	1			0
X Home		2	1			0
Y ++		2	2			0
Y --		2	2			0
Y Home		2	2			0
Z ++		2	3			0

Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

确定 取消 应用 (A)

Engine Configuration... Ports & Pins

Encoder/MPG's			Spindle Setup		Mill Options	
Port Setup and Axis Selection			Motor Outputs		Input Signals	
Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
Z ++		2	3			0
Z --		2	3			0
Z Home		2	3			0
A ++		0	0			0
A --		0	0			0
A Home		0	0			0
B ++		0	0			0

Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

确定 取消 应用 (A)

Engine Configuration... Ports & Pins

Encoder/MPG's			Spindle Setup		Mill Options	
Port Setup and Axis Selection			Motor Outputs		Input Signals	
Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
Input #3		0	0			0
Input #4		0	0			0
Probe		2	10			0
Index		0	0			0
Limit Ovrd		0	0			0
EStop		2	16			0
THC On		0	0			0

Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

确定 取消 应用 (A)

Output Signals:

Engine Configuration... Ports & Pins

Encoder/MPG's		Spindle Setup		Mill Options	
Port Setup and Axis Selection		Motor Outputs		Input Signals	
Signal	Enabled	Port #	Pin Number	Active Low	
Digit Trig		2	0		
Enable1		2	16		
Enable2		2	15		
Enable3		2	13		
Enable4		2	14		
Enable5		2	13		
Enable6		2	0		
Output #1		2	16		

Pins 2 - 9 , 1, 14, 16, and 17 are output pins. No other pin

确定 取消 应用 (A)

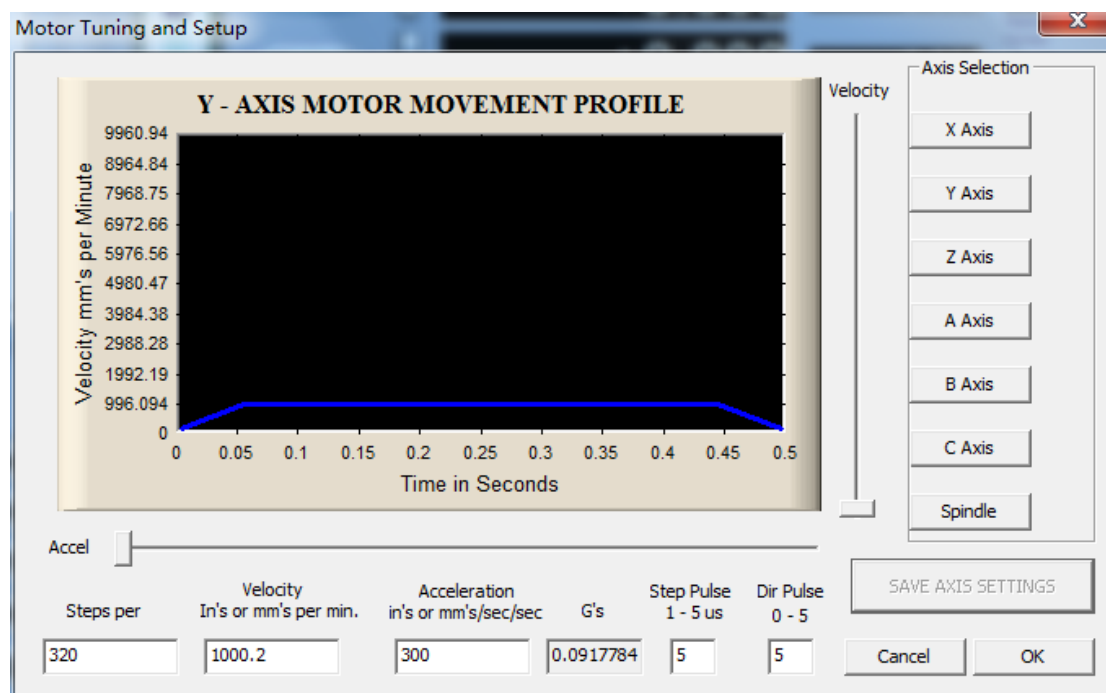
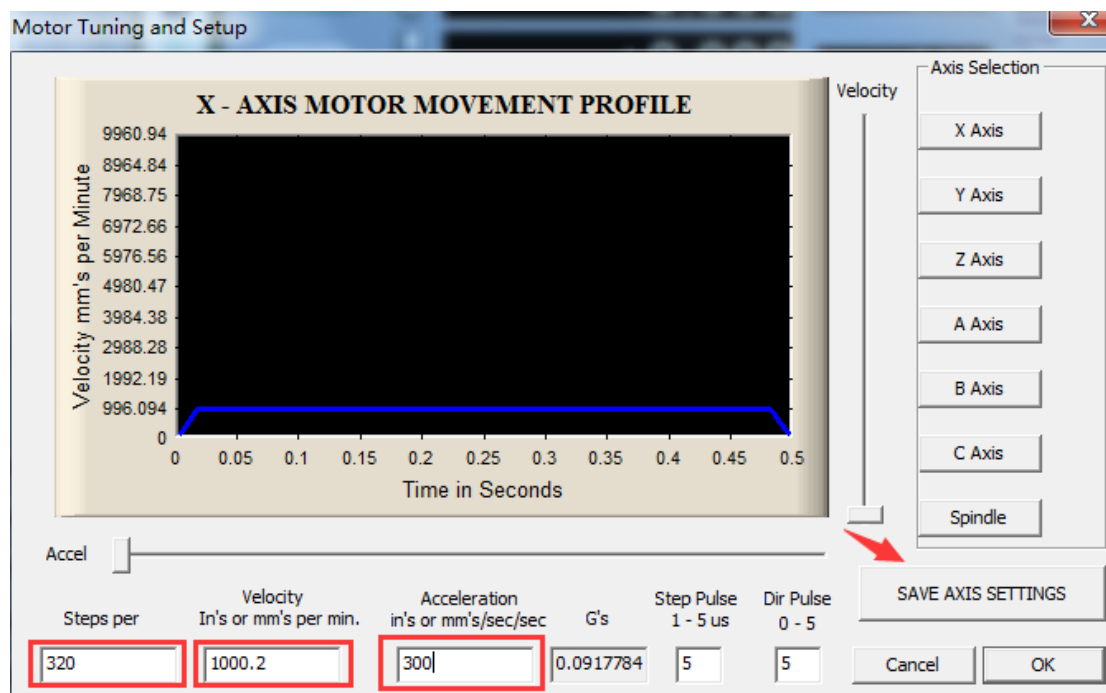
Engine Configuration... Ports & Pins

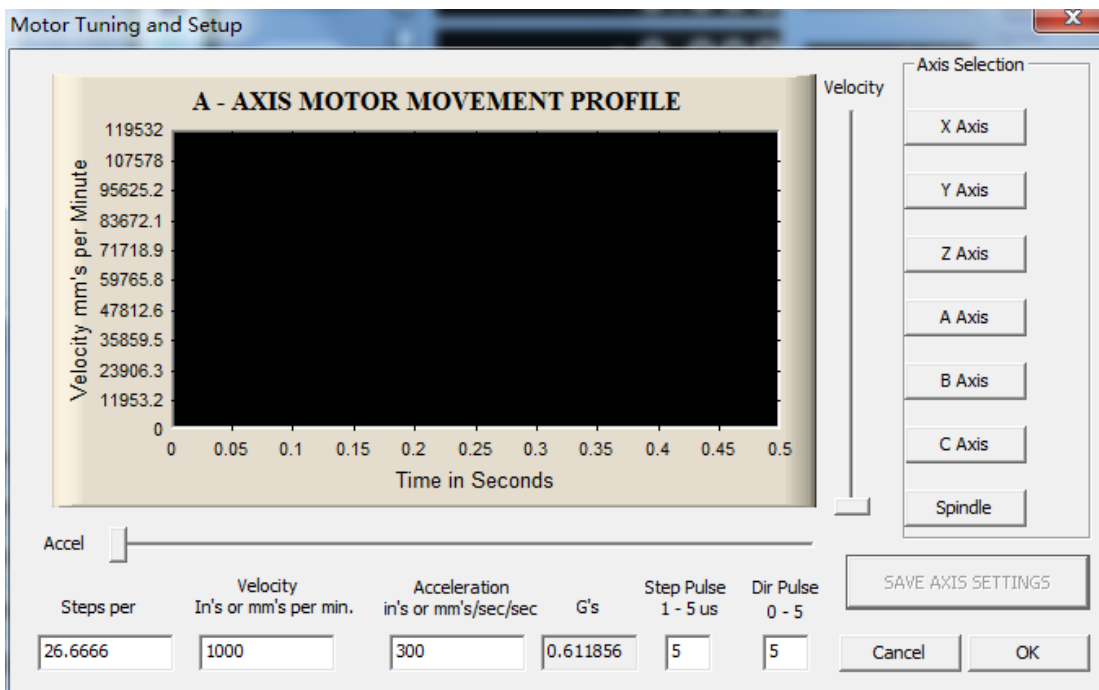
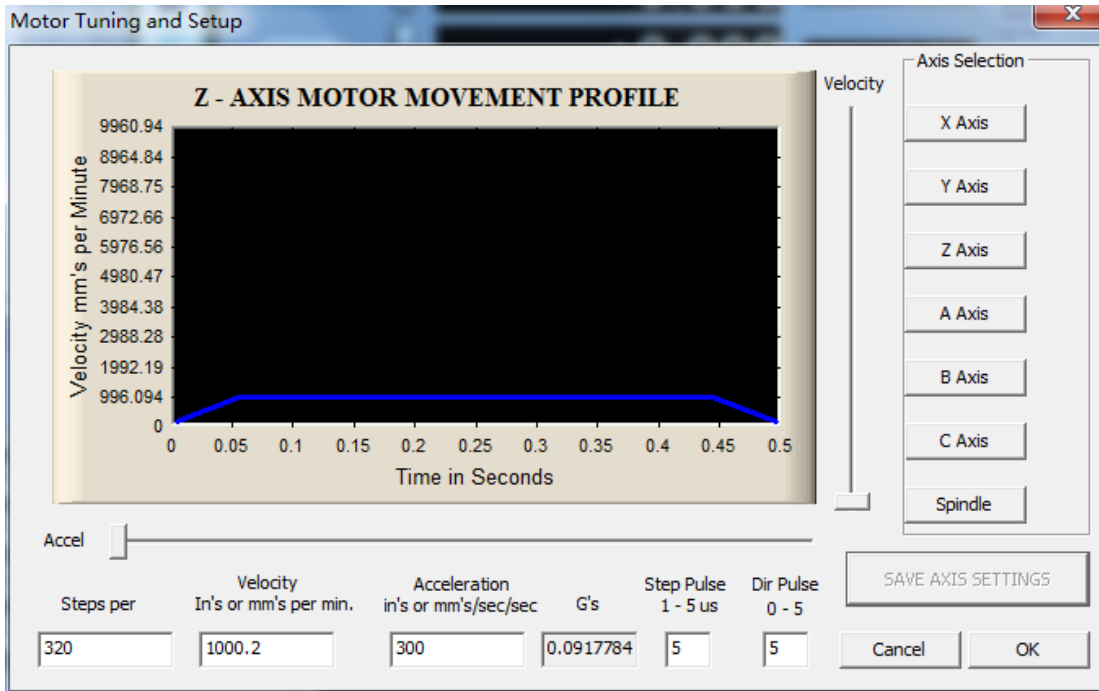
Encoder/MPG's		Spindle Setup		Mill Options	
Port Setup and Axis Selection		Motor Outputs		Input Signals	
Signal	Enabled	Port #	Pin Number	Active Low	
Enable4		2	14		
Enable5		2	0		
Enable6		2	0		
Output #1		2	0		
Output #2		2	0		
Output #3		2	0		
Output #4		2	0		
Output #5		2	0		

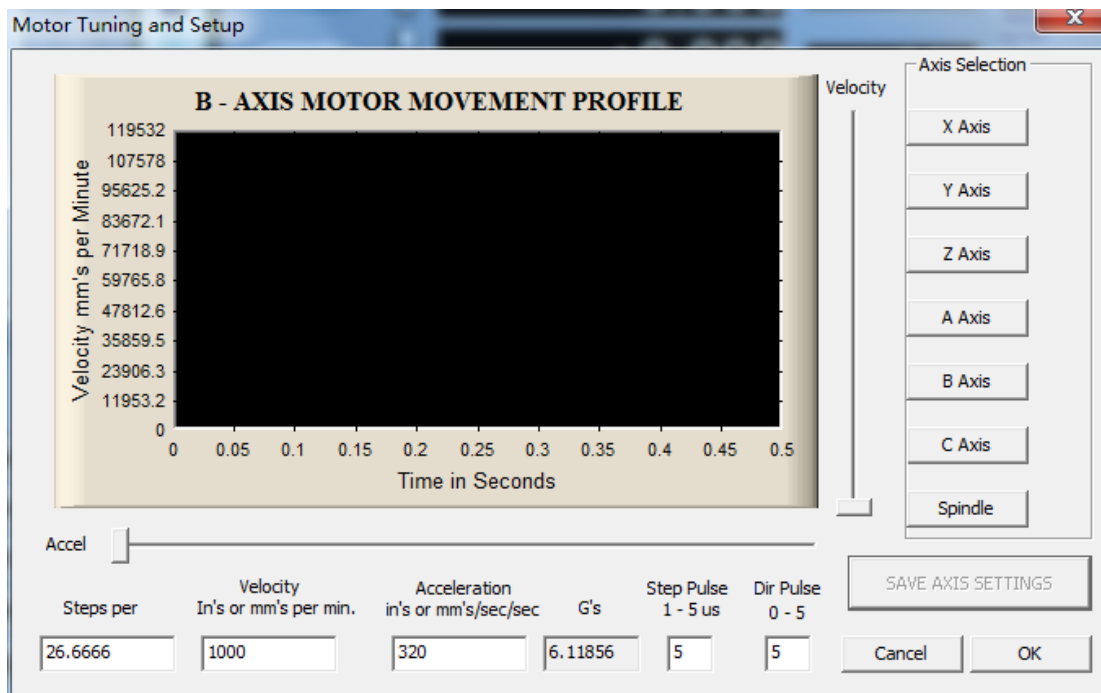
Pins 2 - 9 , 1, 14, 16, and 17 are output pins. No other pin

确定 取消 应用 (A)

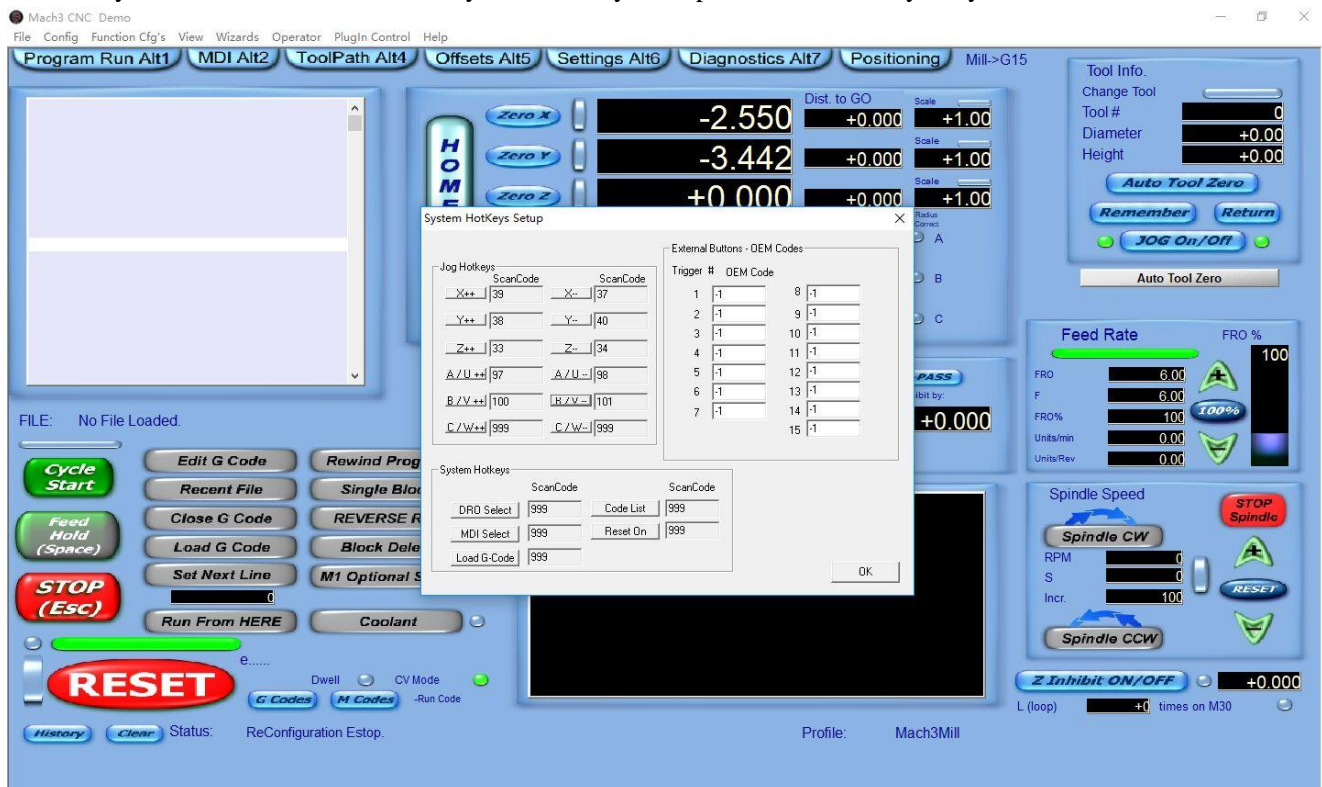
13. Click the CONFIG then choose the Motor Turning. Set motor turning as pictures below show and save. Finally click OK.







14. Finally click the CONFIG, find the System HotKeys Setup and set the hotkeys as you like.

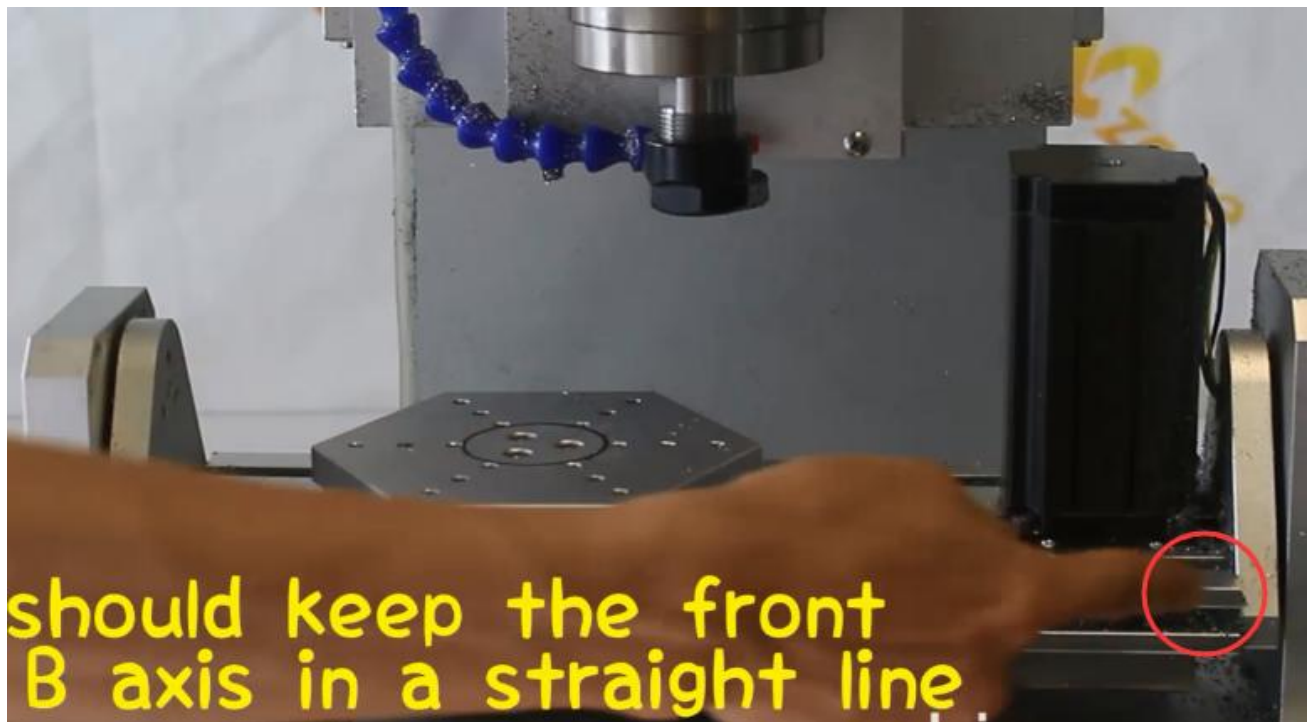


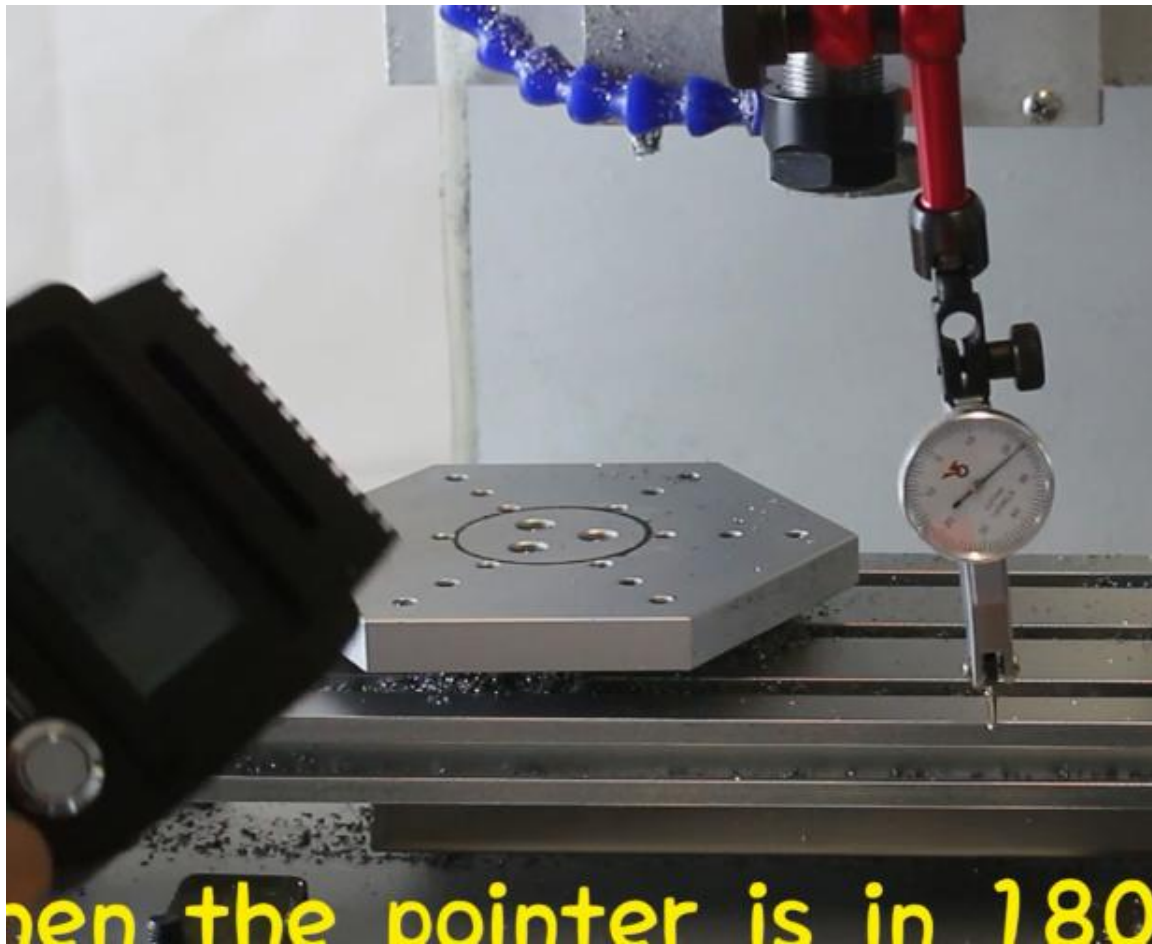
Remark: In the manual , We did not provide detailed MACH3 using instructions , Hope you can search on Youtube to learn more details about MACH3 . Actually , When Finished all setting according to our manual , You only need to load G code to run the machine , No need to use other more MACH3 functions,

3. Machine calibration

The calibration need to use level indicator , that was necessary . The hand wheel was optional , You also can use computer control . The more details in this link: <https://youtu.be/fxYzeXtKCuE>

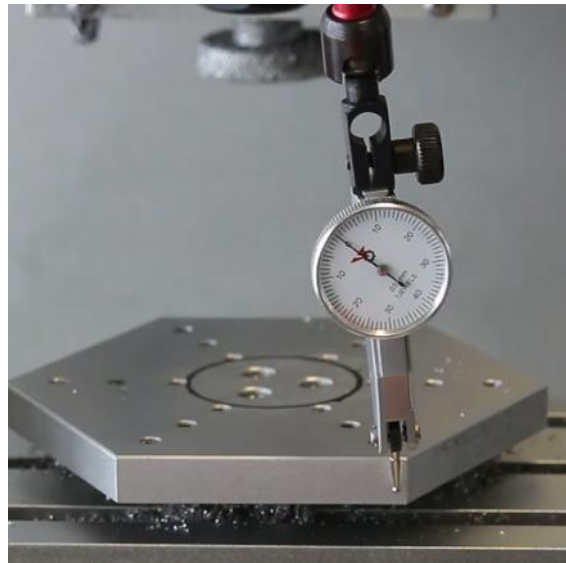
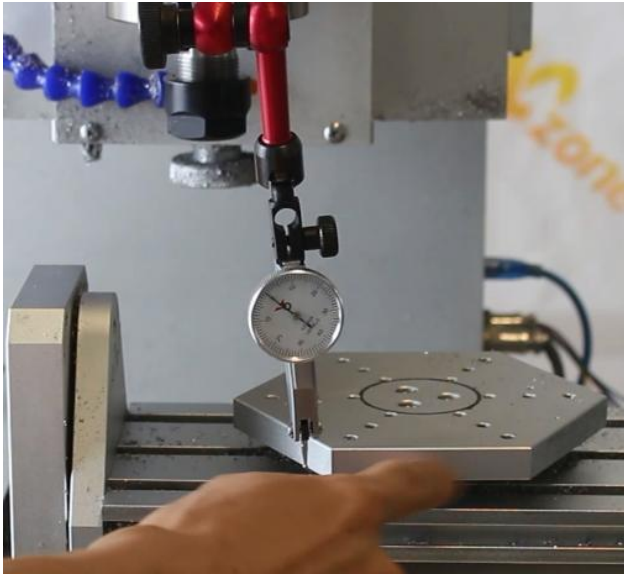
1 , Make sure the 5Axis table was parallel with X Axis. Using level indicator to check





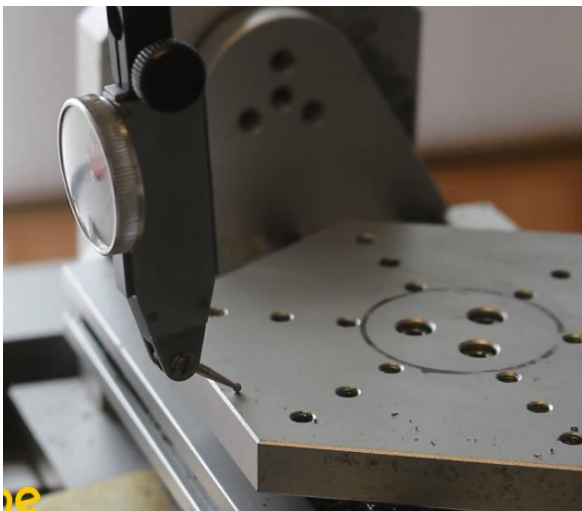
Remark: if not parallel, Hope you can soft some thing to hit the 5Axis table to adjust the position ,for example ,using wood hammer ,Did not use hard thing and use large power to hit the table ,it would damage the 5Axis table .

2, Make sure the A Axis table was parallel with X Axis. Using level indicator to check



Remark: if not parallel, You can rotate Axis table the angle to adjust and keep it parallel.

3 , Make sure the A Axis table was level with Y Axis. Using level indicator to check



Remark: if not level, You can rotate B Axis angle to adjust and keep it level.

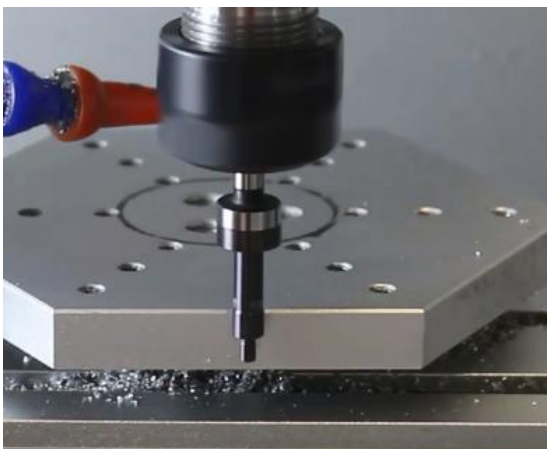
4. Starting point seting

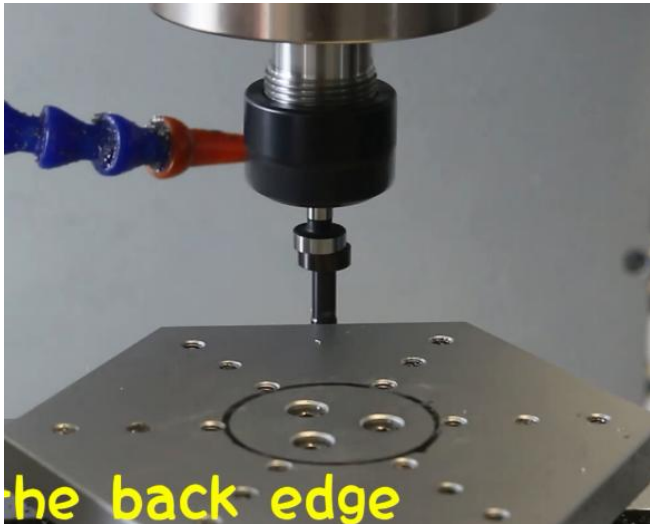
After calibration , The Starting point only set X Y Z Axis ,The B Axis already zero in the calibration when calibrate A Axis, **A Axis** no need to set starting point. And this setting need auto checking tool , Our standard accessories already included , The edge finder and Vernier caliper was necessary , but this two was optional tools .

Firstly , Install the Egde finder into spindle collet, like install engrave tool. Meanwhile , The spindle speed was 400-600RPM , The VFD number was from 8-10.

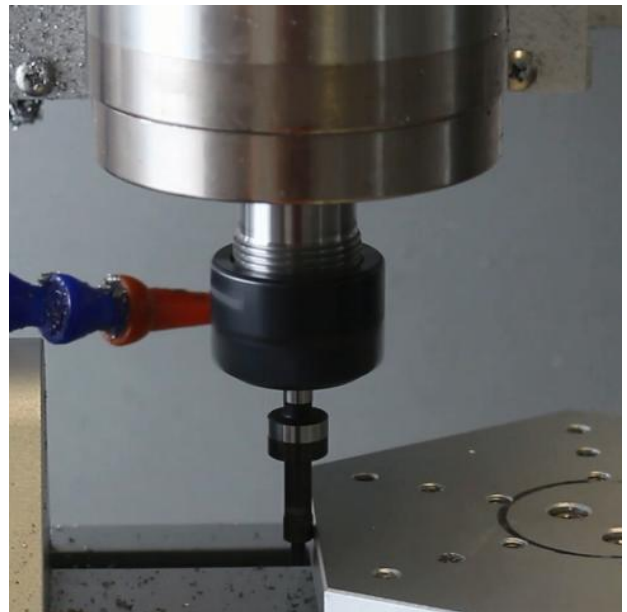
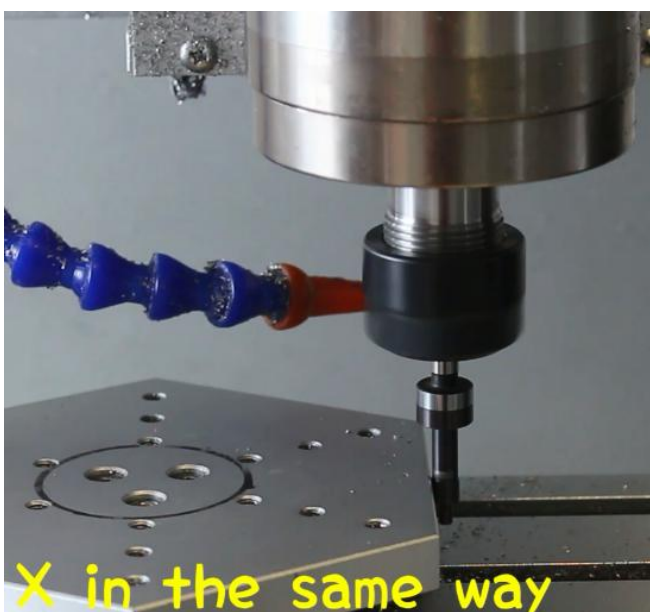


Secondly , Y Axis starting point setting , Moving the edge finder to the front of the Axis table ,and then Zero Y Axis , Moving it to other side , The MACH3 software show the total edge finder traveling area. The Y Axis starting point was the middle point . Normally, The number was 63. At last , Moving the spindle to 63.000, and Zero Y Axis . The Y Axis starting point was finished .





Thirdly, X Axis starting pointing setting , Rotate the A Axis 30 degree , and then repeat same method of Y Axis to zero X Axis.



At last , Z Axis starting point setting as below

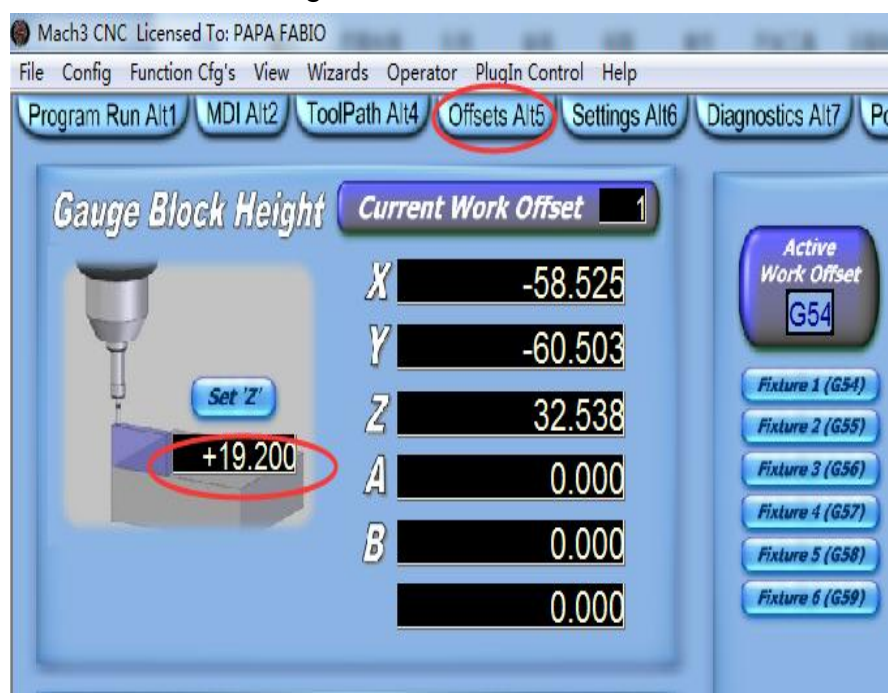
1, Clamp the clip on the worktable



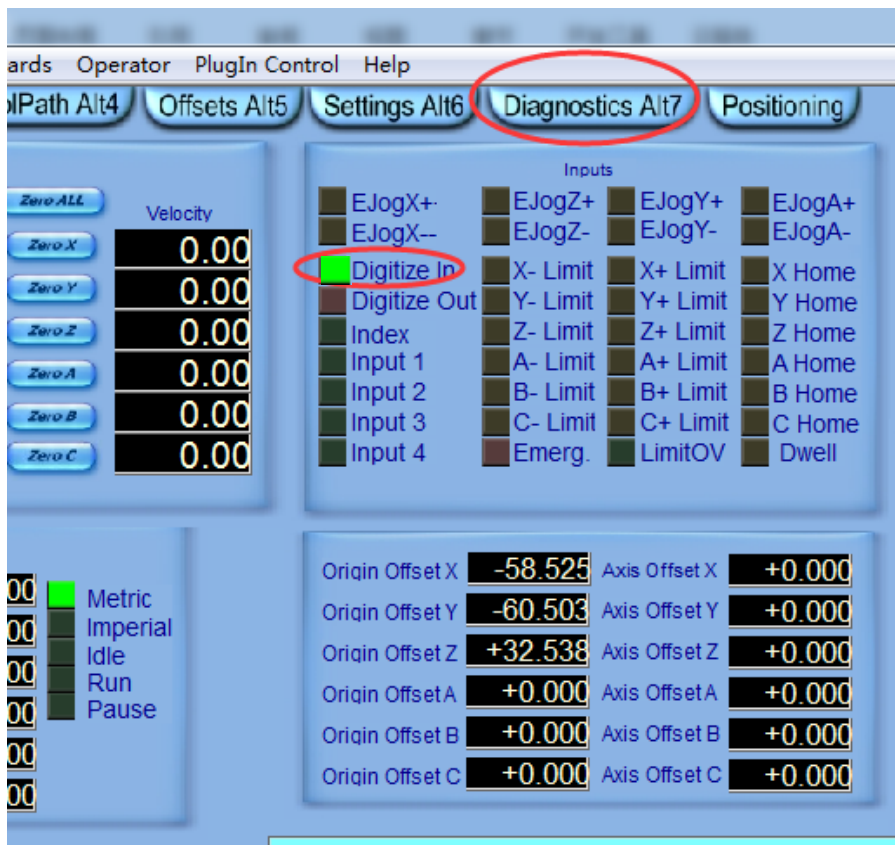
2, Measure the height of the sensor



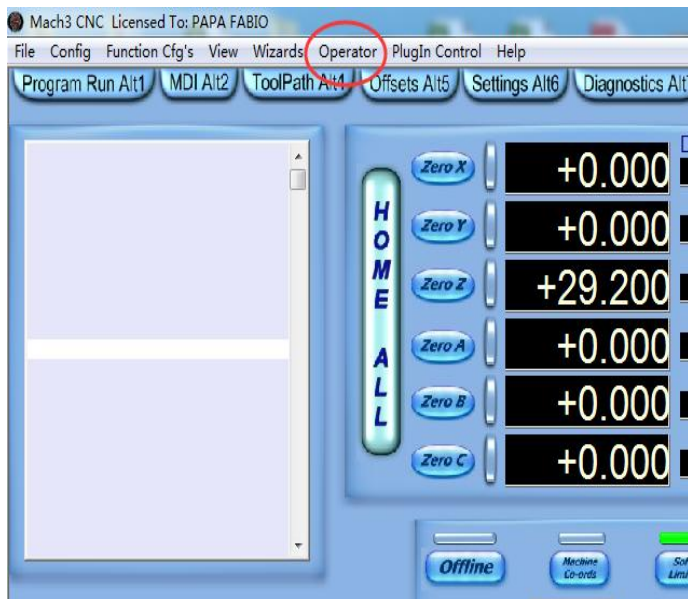
3, Then enter the height of the sensor into the offset




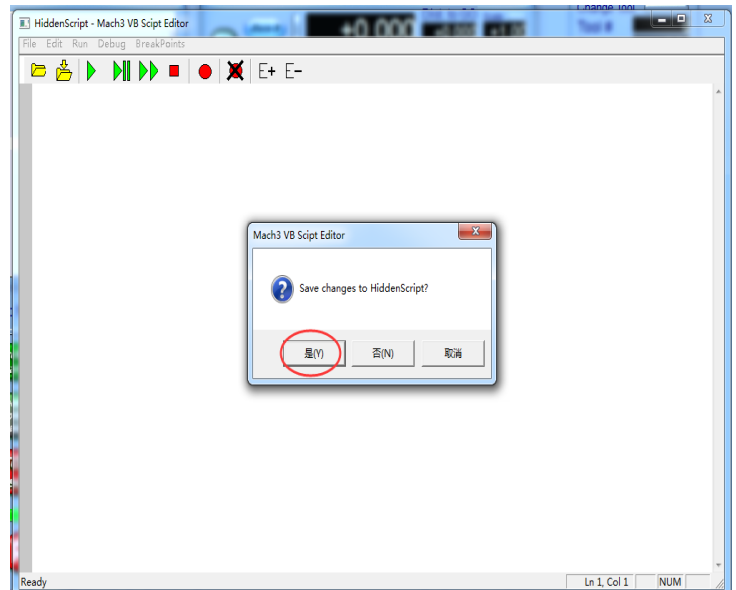
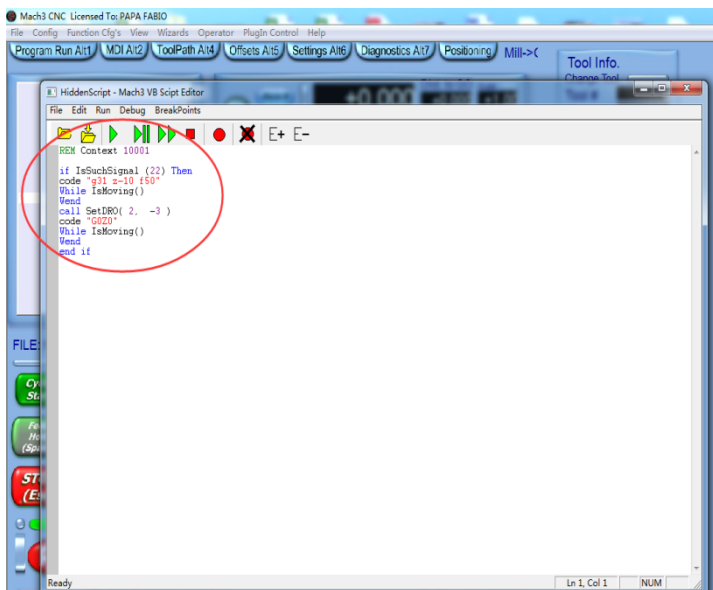
4,move on to "Diagnostics At7" interface, then use the sensor to touch the bit to see if the "Digitize In" flash green, if so, it means the connection is good, if not, check if there is anything wrong with the connection



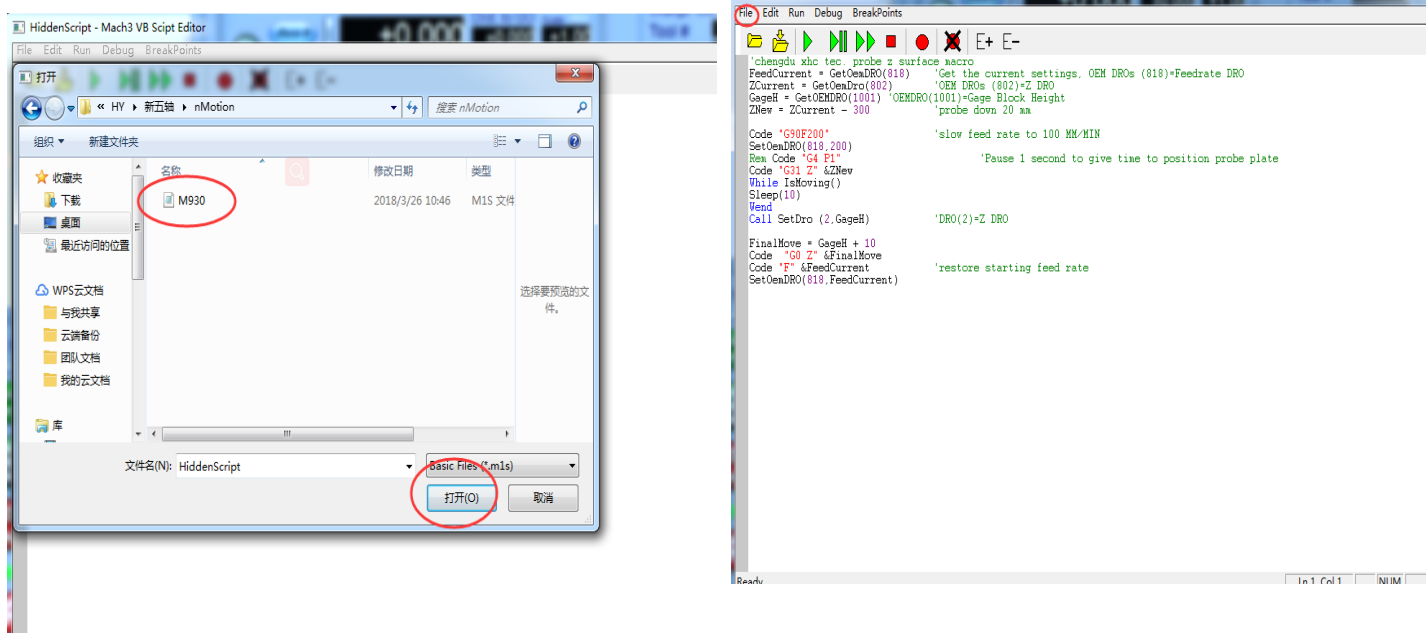
5, Click Operator, choose “Edit button script”, when you see the “Auto Tool Zero” flickering, click it



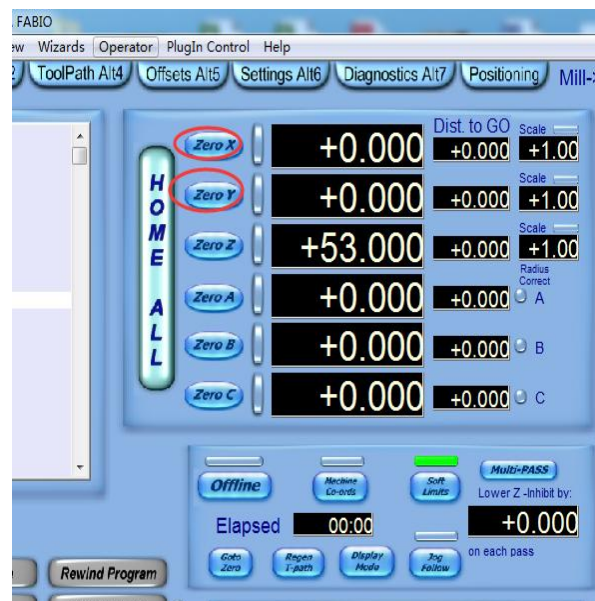
6, Delete the default script, click “”, when “Save changes to HiddenScript” shows up, click “YES”



7, Load M930 in CD content,click “File” and “Save”



8, Move the the spindle to starting point you want, then ZERO X, Y axis



9, click “Auto Tool Zero”, then the spindle will move down and bounce back.

Move the sensor out, click “Go To Zero”. Starting point setting done.

