

ChinaCNCzone

Engrave your colorful life !

3040 3axis Steel Structure 2200W CNC Machine -MACH3 USB version



Scotle Technology Group Limited-----ChinaCNCzone

Address: 038-068 2F Handmade Culture Street, Phase III, Shuike Road,

Bantian, Longgang, Shenzhen, China

Website: www.chinacnczone.comwww.china-cncrouter.com

Directory

| | | |
|--------|--|----|
| Part 1 | Assembling..... | 3 |
| Part 2 | Mach3 installation and setting..... | 6 |
| | 1 Download MACH3..... | 6 |
| | 2 Install MACH3..... | 6 |
| | 3 Mach3 software setting..... | 8 |
| Part 3 | FAQ..... | 19 |
| | 1.The Axis moving direction is wrong..... | 19 |
| | 2.USB motion card can be found by MACH3..... | 19 |
| | 3. How to ref all home..... | 19 |
| | 4. Manual reset limit switch..... | 21 |
| | 5 How to active MACH3..... | 22 |

Part 1 Assembling

Tools and spare parts needed during assembly:

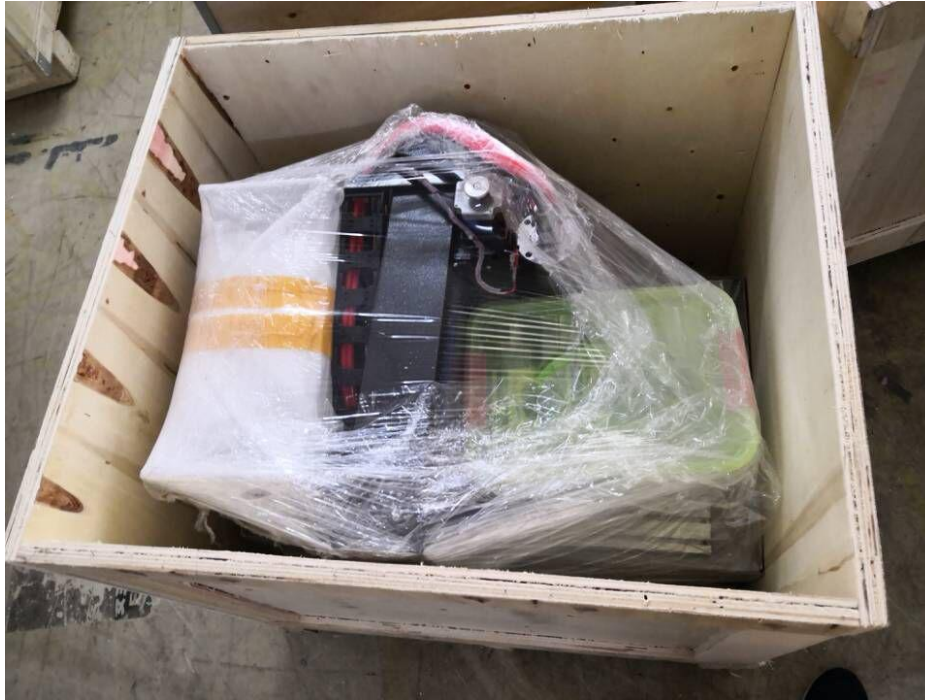


Packing list

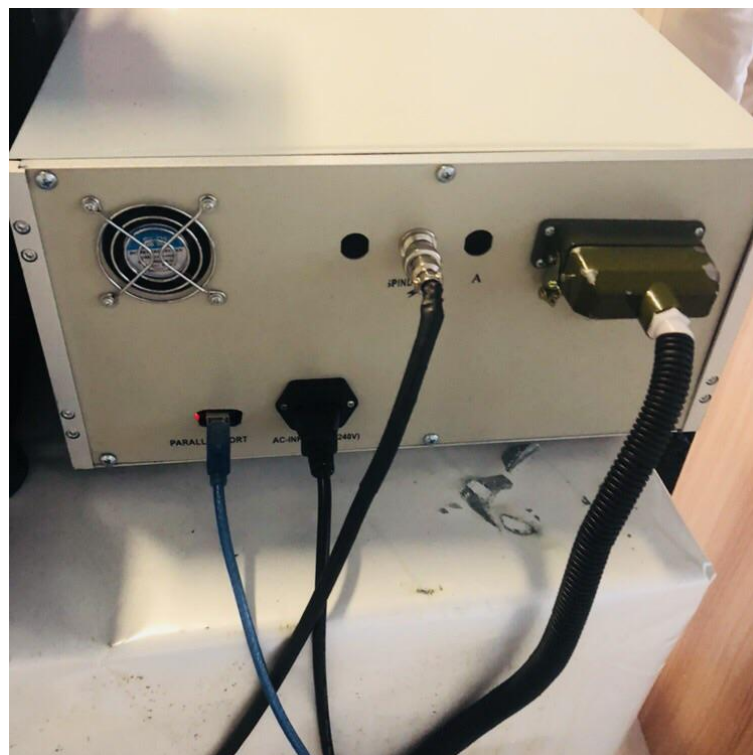
- 1 water pump* 2
- 2 water pump fixed feet * 8
- 3 Water pump inlet * 2
- 4 clamp tool * 6
- 5 Power Cable * 1
- 6 USB connect cable * 1
- 7 Spanner * 2
- 8 water sink outlet pipe * 1
- 9 Engraving bits * 5
 - 4F*6*6*19*63mm White steel bit * 1
 - 4F*6*6*15*50mm Tungsten steel milling bit * 1
 - 3.175*20°*0.1 * 1
 - 3.175*20°*0.2 * 1
 - 3.175*20°*0.3 * 1
- 10 Water box*2



1. Open the wooden box you received as below:

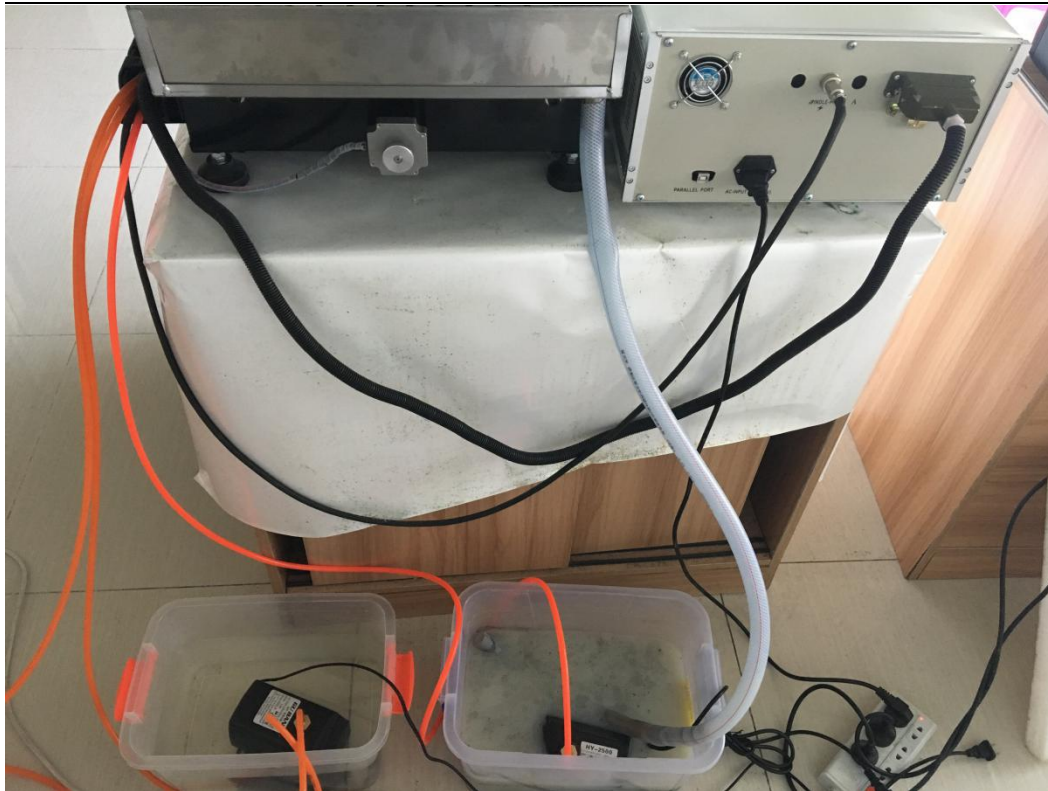


2. Controller box connection. Connect all lines from machine to controller box one by one; USB cable another side connect to computer.



3. Last step ,Water pump connection. Connect pipes between water pump and spindle. One pump for spindle, another for bits cooling.





Part 2 Mach3 installation and setting

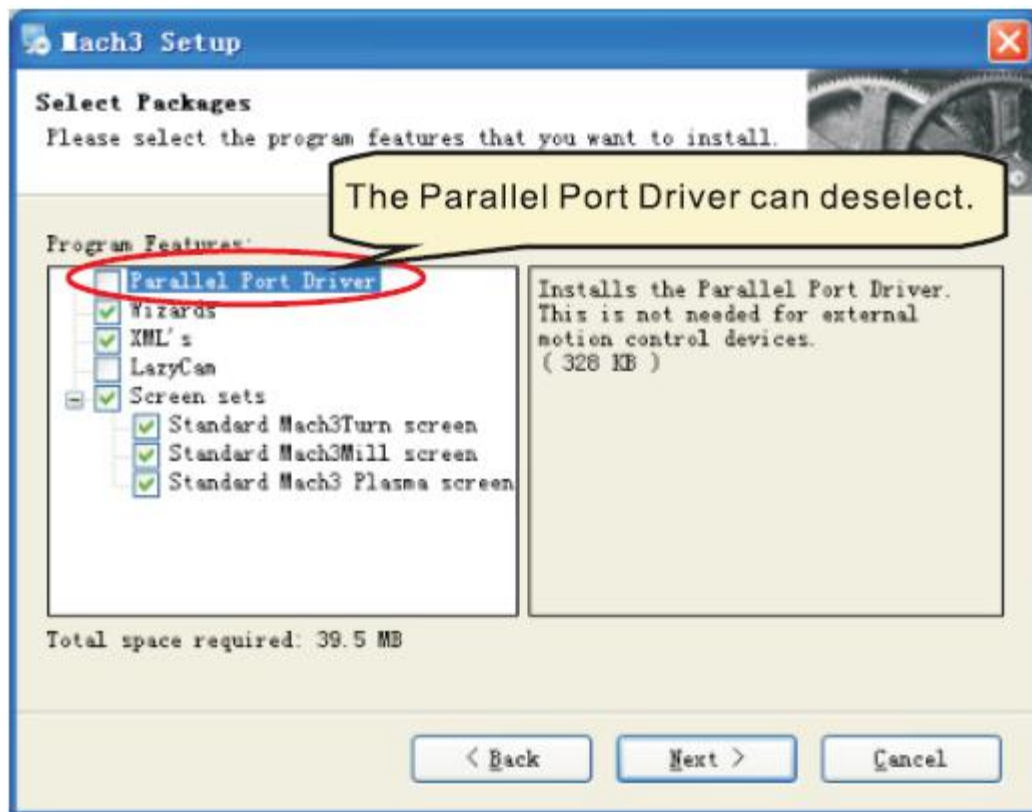
1 Download MACH3

Download MACH3 from our official website

www.china-cncrouter.com or you can directly install MACH3 from CD,
or get from the seller.

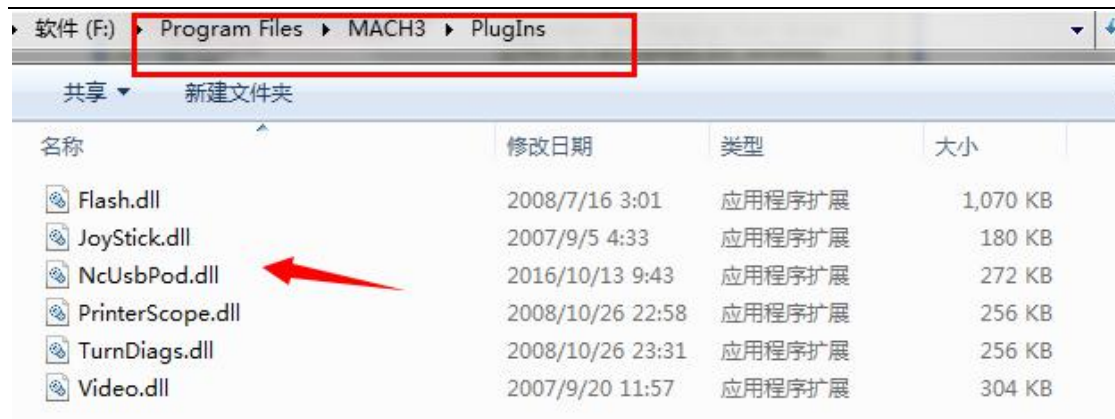
2 Install MACH3

Do not choose parallel port driver

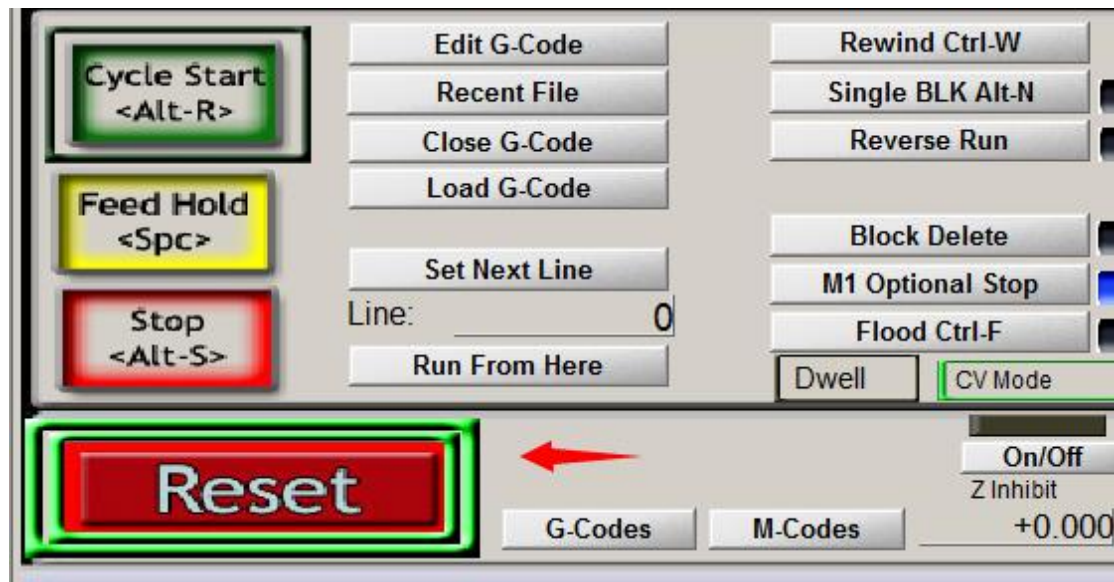


After installation finished ,Connect USB cable between controller box and computer. Copy [NcUsbPod.dll](#) from USB card driver file to [MAC3/PlugIns](#) file .This file to enable USB motion card.

| 计算机 > 软件 (D:) > 工作软件 > 东达3040 > 2.Drive > | | | | 搜索"2.Drive" |
|---|-----------------|-------------|--------|-------------|
| 名称 | 修改日期 | 类型 | 大小 | |
| NcUsbPod.dll | 2018/1/15 16:13 | 应用程序扩展 | 420 KB | |
| XHC-MKX-V drive V2.58.4.zip | 2018/6/11 14:34 | 好压 ZIP 压缩文件 | 197 KB | |



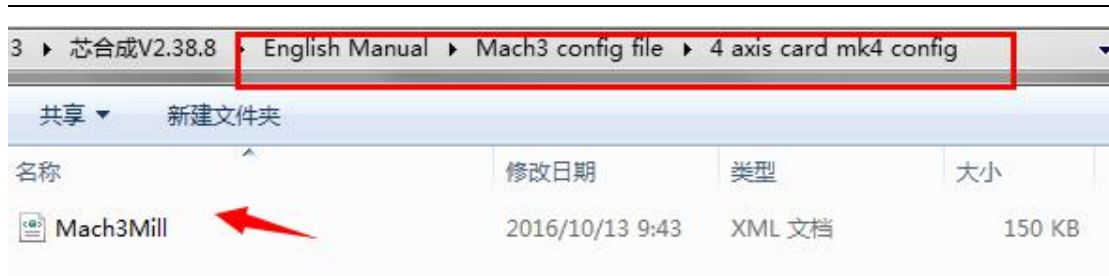
At last, click reset button to keep it green , let machine can normal work.



3 Mach3 software setting

Method 1:

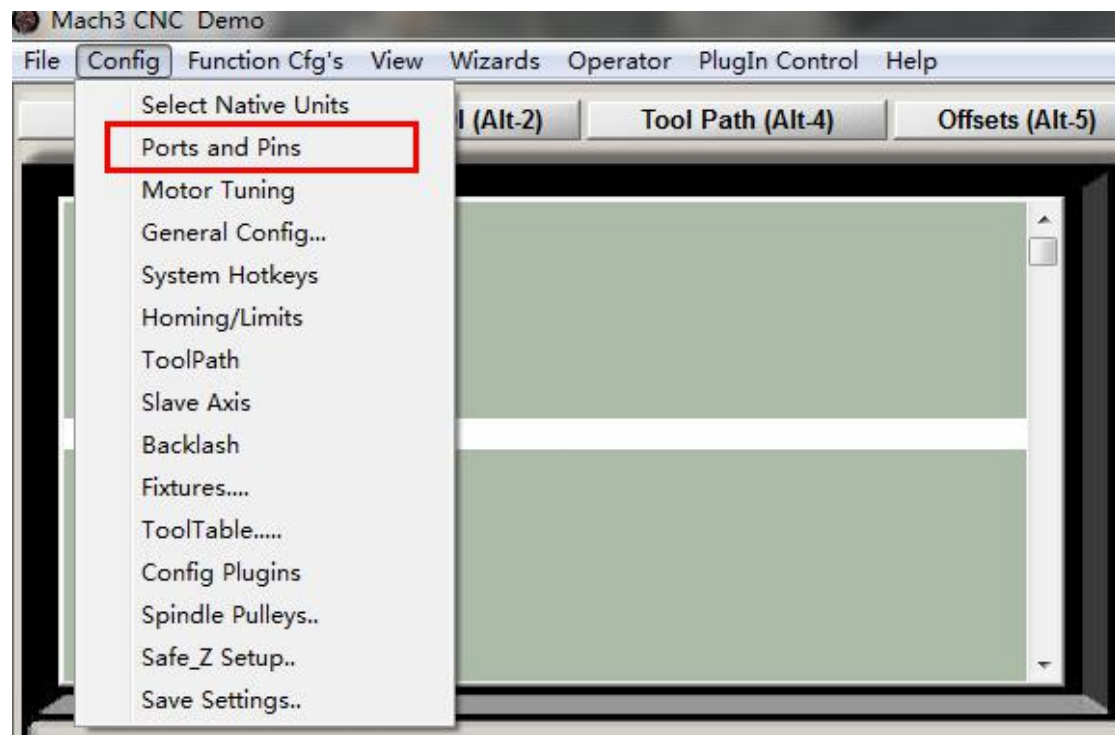
Copy [mach3mill.xml](#) from Setting file we gave to the filewhere Mach3 installed, The file is used to basic software setting .



Then all setting will be done, machine ready to work.

Method 2: manually setting step by step:

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



Then ,make all setting as below:

Engine Configuration... Ports & Pins

Encoder/MFG's

Spindle Setup

Mill Options

Port Setup and Axis Selection

Motor Outputs

Input Signals

Output Signals

Port #1

☐ Port Enable:

Port

Entry in Hex 0-9

Port #2

☐ Port Enable:

Port

Entry in Hex 0-9

☐ Pins 2-9 as inp

OR

MaxNC Mode

☐ Max CL Mode enabled

☐ Max NC-10 Wave Drive

Program restart

Kernel Speed

☒ 25000Hz
 ☐ 35000Hz
 ☐ 45000Hz
 ☐ 60000Hz
 ☐ 65000Hz
 ☐ 75000Hz
 ☐ 100kHz

Note: Software must be restarted and motors kernel speed is

Restart if changed

☐ Sherline 1/2 Pulse mo
 ☐ ModBus InputOutput Suppo
 ☐ ModBus PlugIn Supported
 ☐ TCP Modbus support
 ☐ Event Driven Serial Co
 ☐ Servo Serial Link Feedb

确定

取消

应用 (A)

Engine Configuration... Ports & Pins

Encoder/MFG's

Spindle Setup

Mill Options

Port Setup and Axis Selection

Motor Outputs

Input Signals

Output Signals

| Signal | Enabled | Step Pin# | Dir Pin# | Dir Low... | Step Lo... | Step Port | Dir Port |
|---------|---------|-----------|----------|------------|------------|-----------|----------|
| X Axis | | 2 | 6 | | | 1 | 1 |
| Y Axis | | 3 | 7 | | | 1 | 1 |
| Z Axis | | 4 | 8 | | | 1 | 1 |
| A Axis | | 5 | 9 | | | 1 | 1 |
| B Axis | | 10 | 11 | | | 0 | 0 |
| C Axis | | 12 | 13 | | | 0 | 0 |
| Spindle | | 0 | 0 | | | 0 | 0 |

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 | Output Signals | |
| 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 |
| Z -- | | 1 | 2 | | | 0 |
| Z Home | | 1 | 2 | | | 0 |
| A ++ | | 1 | 0 | | | 0 |

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

Automated Setup of Inputs

确定 取消 应用(A)

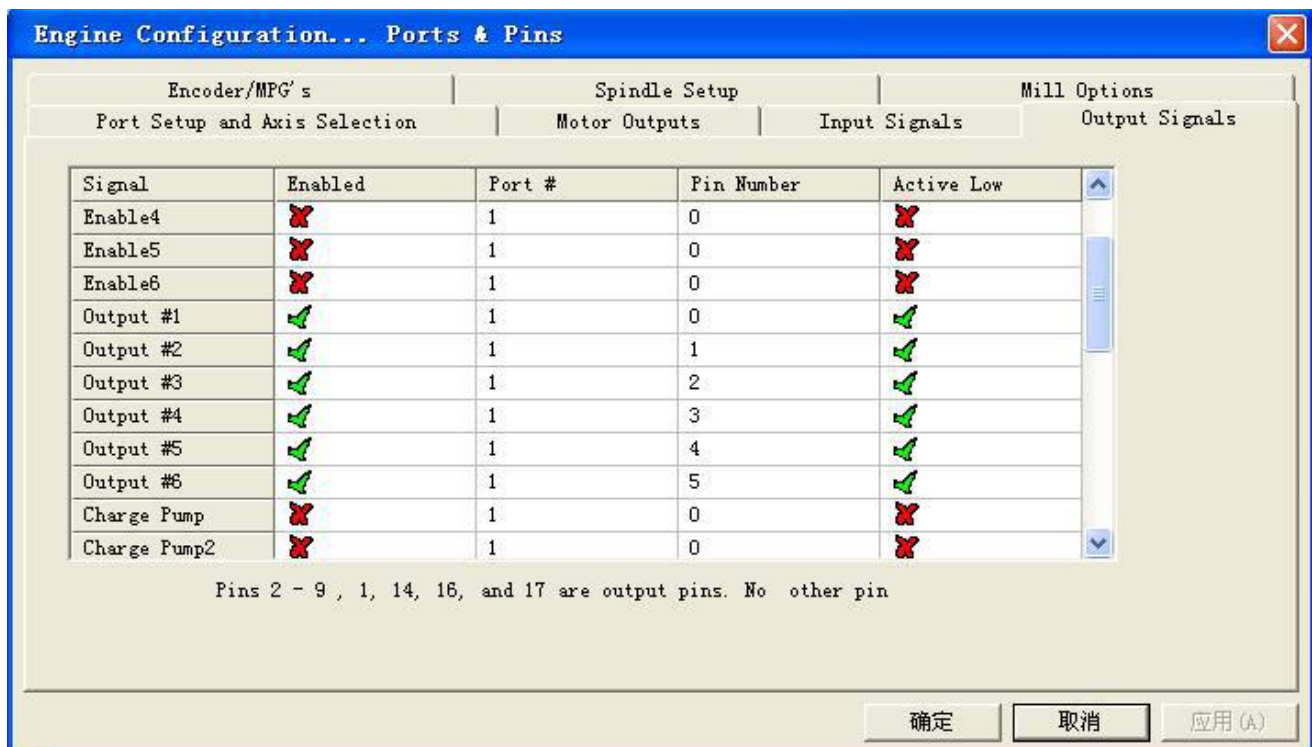
Engine Configuration... Ports & Pins

| Encoder/MPG's | | | Spindle Setup | | Mill Options | |
|-------------------------------|---------|--------|---------------|---------------|----------------|--------|
| Port Setup and Axis Selection | | | Motor Outputs | Input Signals | Output Signals | |
| Signal | Enabled | Port # | Pin Number | Active Low | Emulated | HotKey |
| C -- | | 1 | 0 | | | 0 |
| C Home | | 1 | 0 | | | 0 |
| Input #1 | | 1 | 0 | | | 0 |
| Input #2 | | 1 | 0 | | | 0 |
| Input #3 | | 1 | 0 | | | 0 |
| Input #4 | | 1 | 0 | | | 0 |
| Probe | | 1 | 4 | | | 0 |
| Index | | 1 | 0 | | | 0 |
| Limit Ovrd | | 1 | 0 | | | 0 |
| EStop | | 1 | 5 | | | 46 |

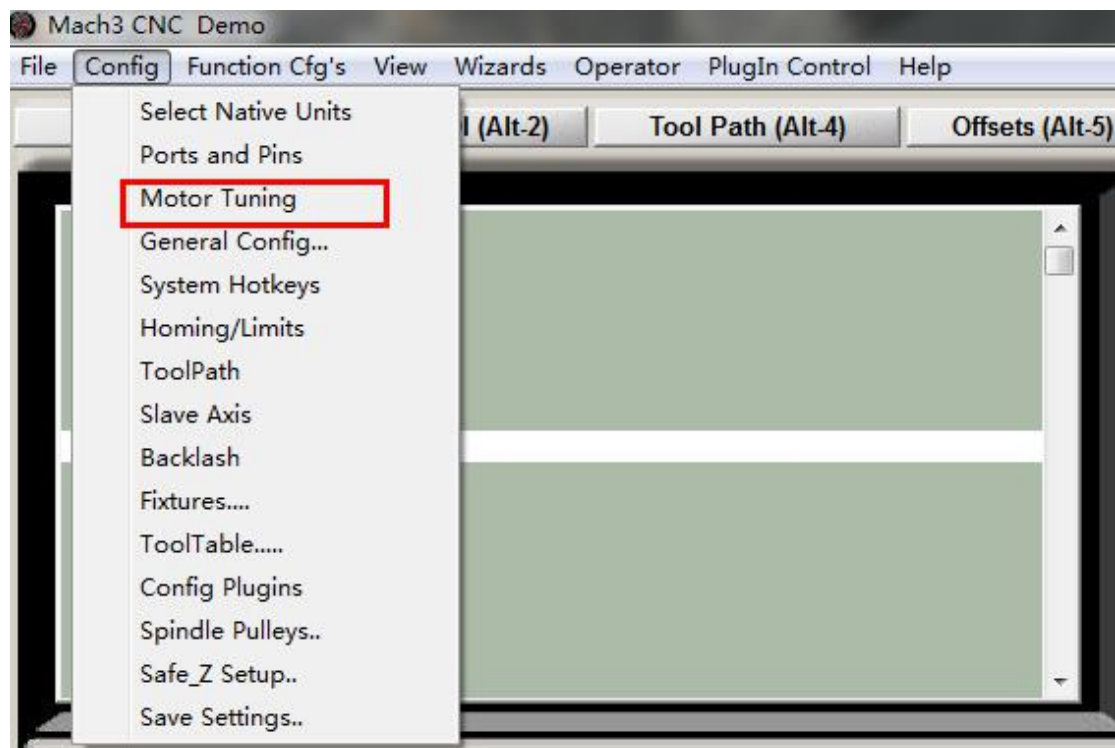
Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

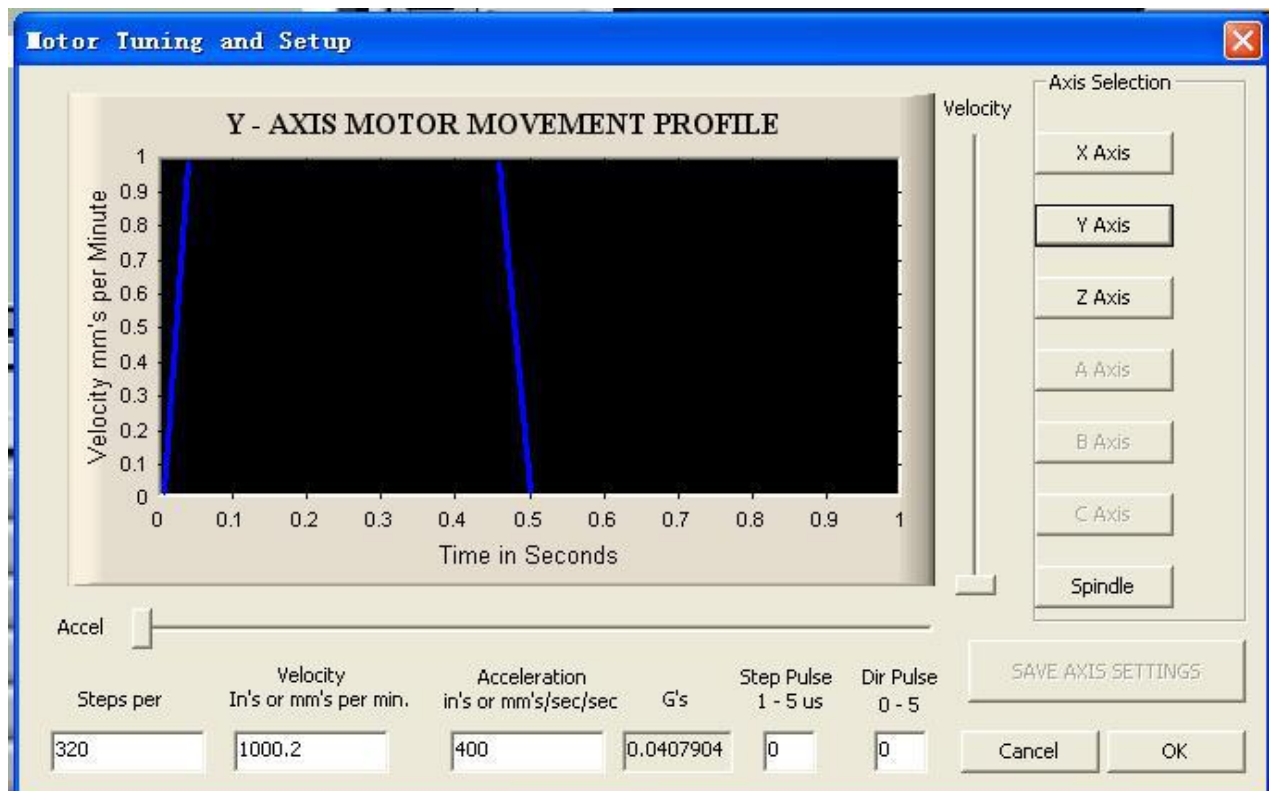
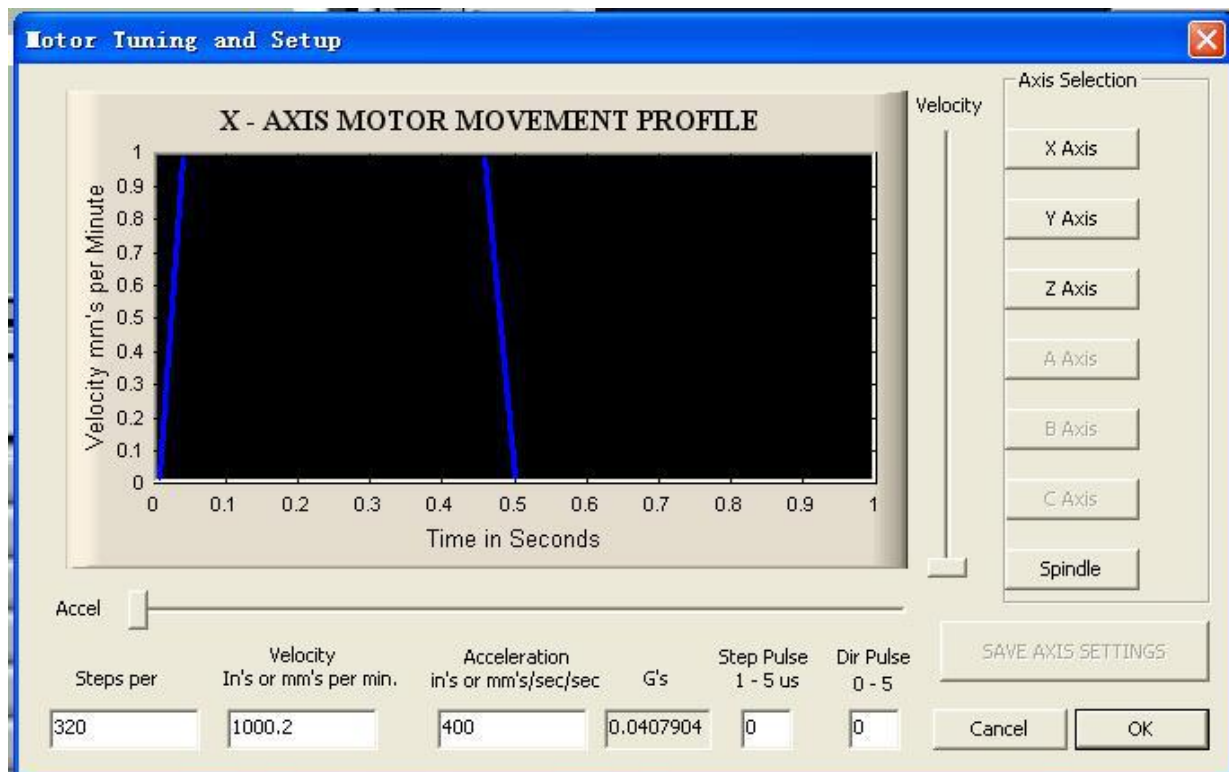
Automated Setup of Inputs

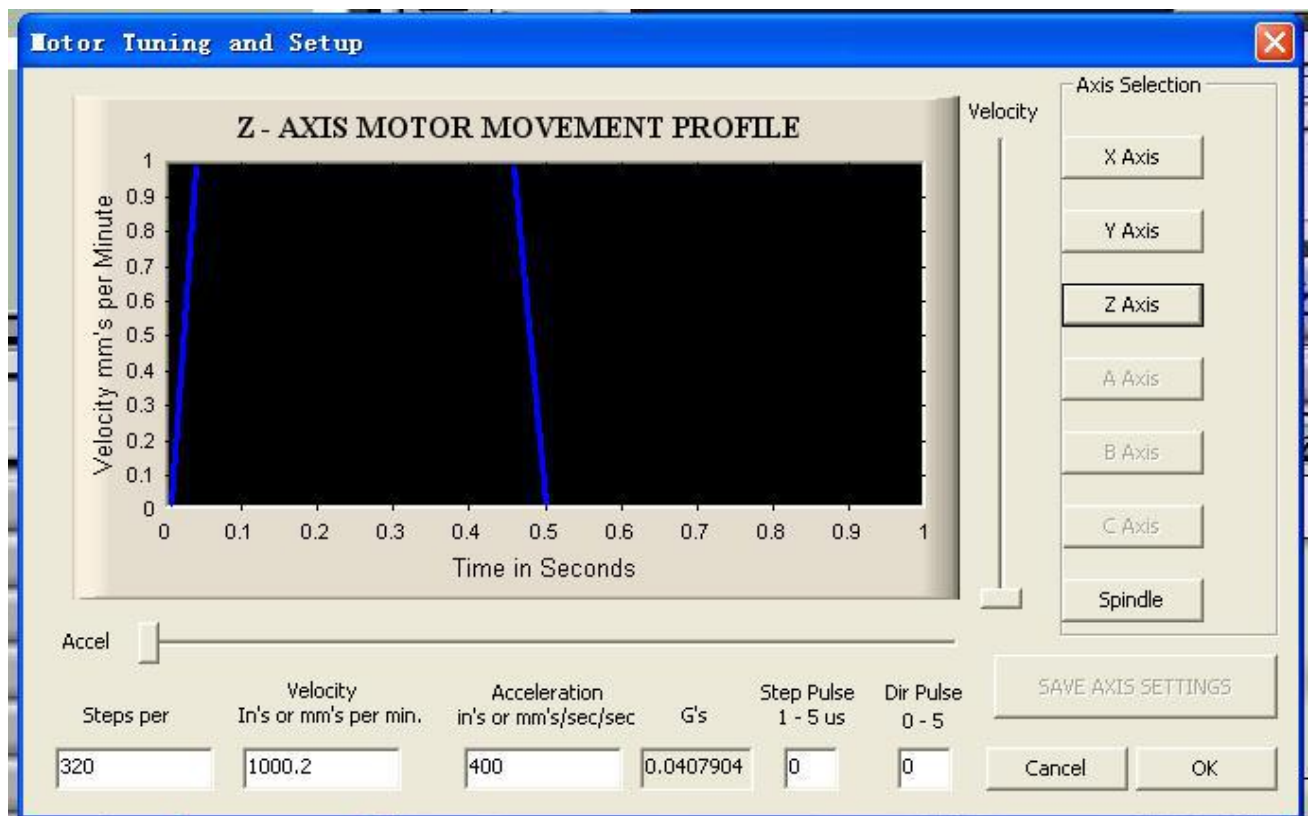
确定 取消 应用(A)



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







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 | |
| | | | | Output 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)

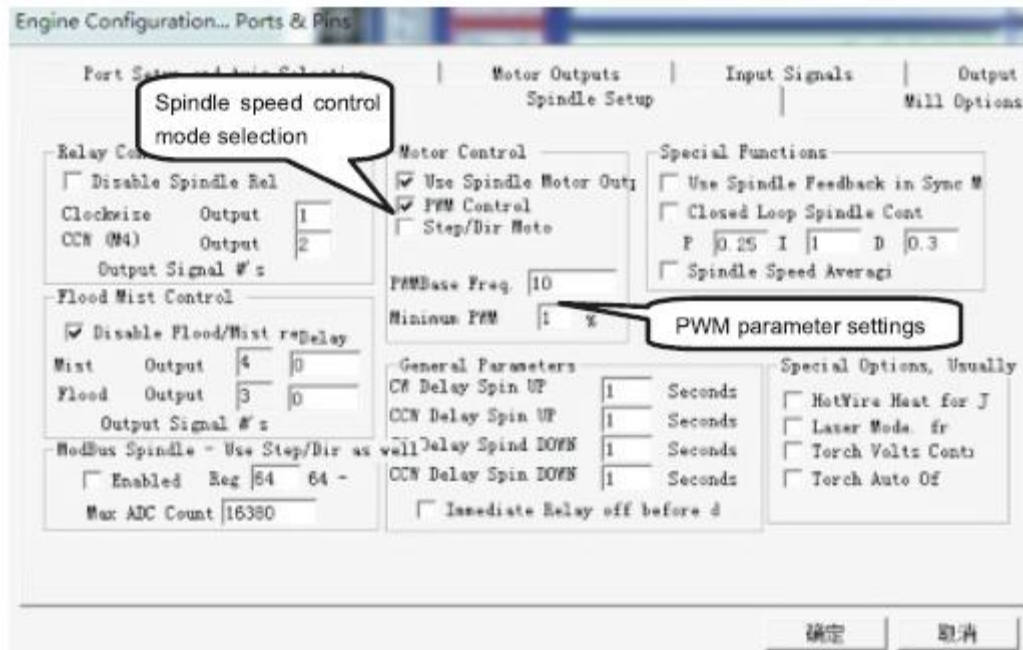
Engine Configuration... Ports & Pins

| Encoder/MPG's | | Spindle Setup | | Mill Options | |
|-------------------------------|---------|---------------|------------|----------------|--|
| Port Setup and Axis Selection | | Motor Outputs | | Input Signals | |
| | | | | Output 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 | | |

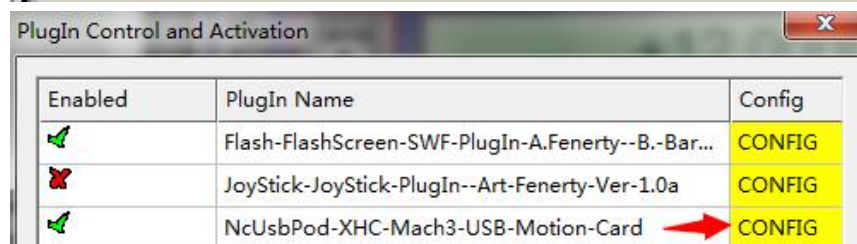
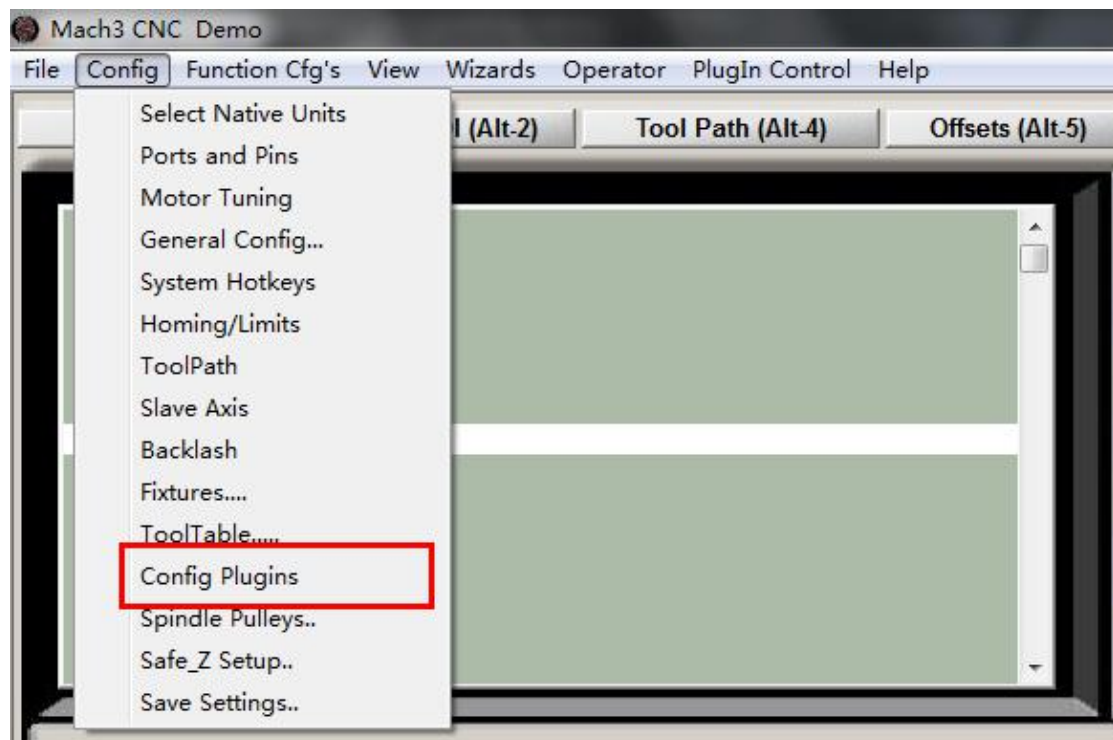
Pins 2 - 9 , 1, 14, 16, and 17 are output pins. No other pin

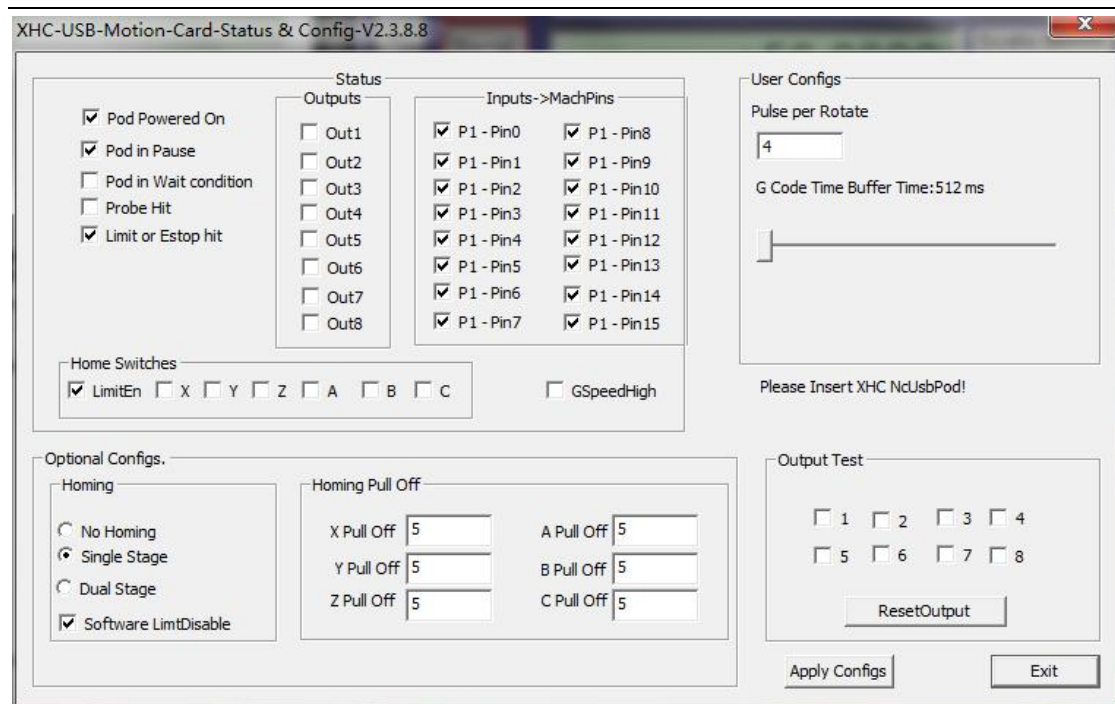
确定 取消 应用 (A)

Spindle speed control as below:



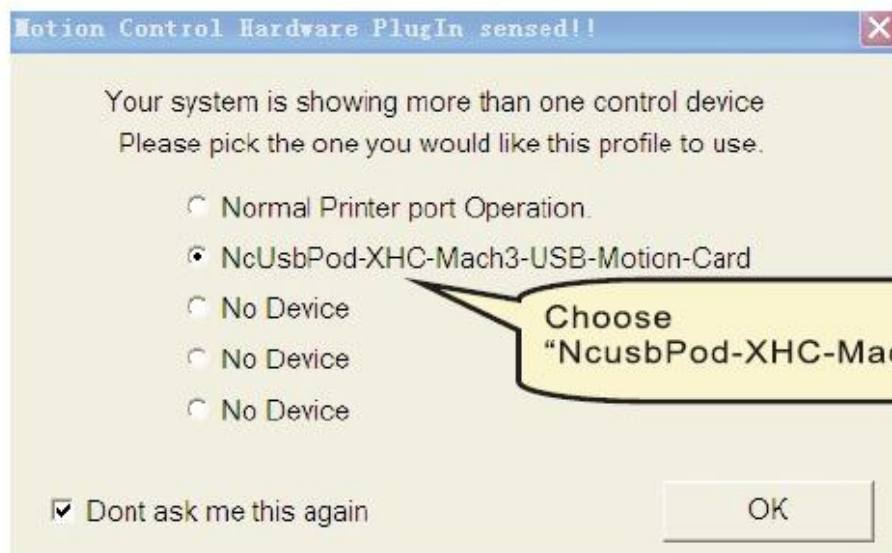
USB Motion control card configuration





At last , Open

software ,Choose"NcUsbPod-XHC-Mach3-USB-Motion-Card",andChoo
se "Don't ask me this again"

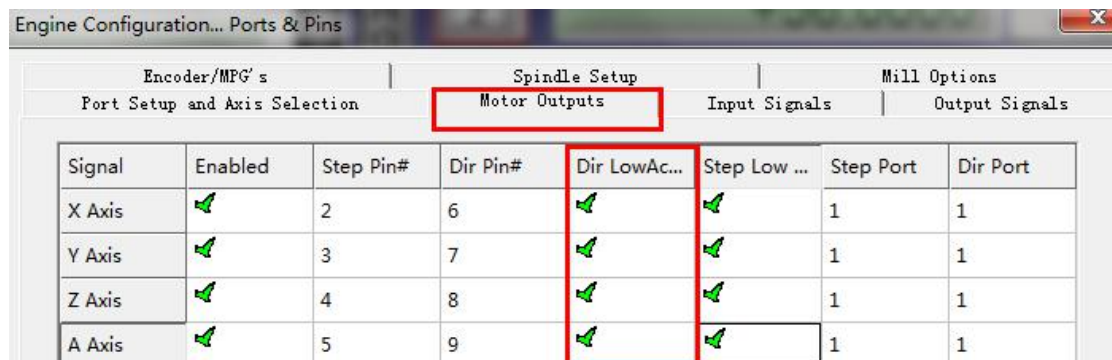


All above , The MACH3 installation and setting is finished.

Part 3 FAQ

1.The Axis moving direction is wrong

Which Axis goes wrong direction , you change that Axis below Dir low active setting ,If home moving way reverse ,change Active low from ☒ to ☐ ,or change from ☐ to ☒.



2.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.

3. How to ref all home

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

Engine Configuration... Ports & Pins

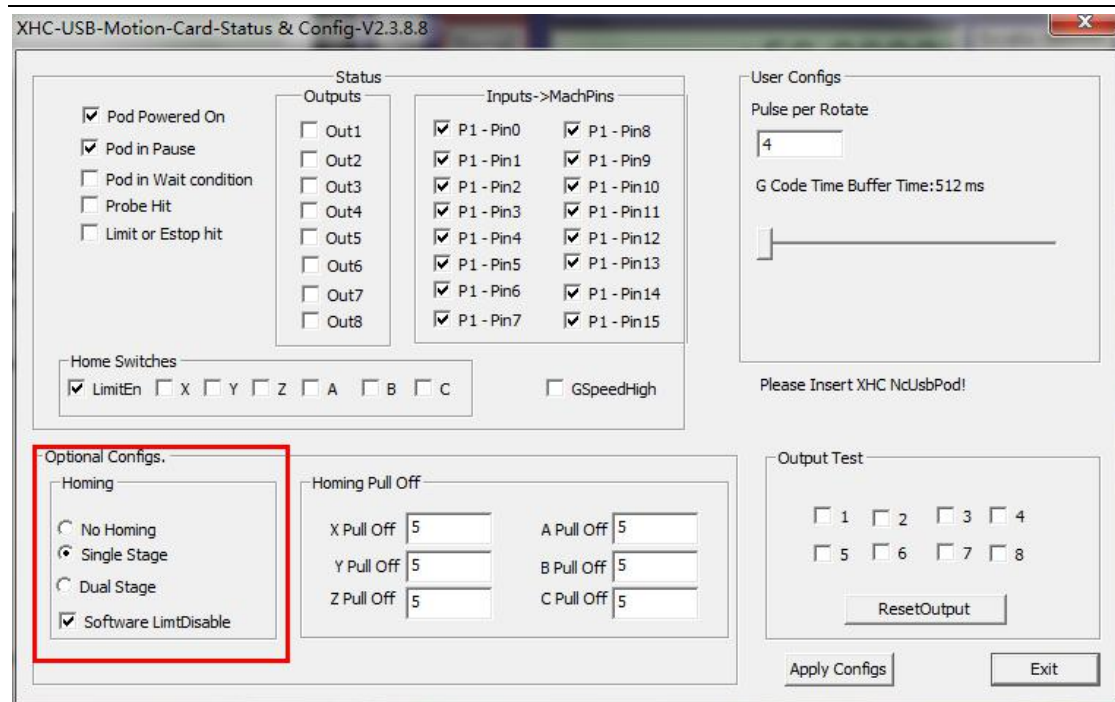
| Encoder/MPG's | | Spindle Setup | | Mill Options | | |
|-------------------------------|---------|---------------|------------|---------------|----------|--------|
| Port Setup and Axis Selection | | Motor Outputs | | Input Signals | | |
| Signal | Enabled | Port # | Pin Number | Active Low | Emulated | HotKey |
| X ++ | | 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 |

Engine Configuration... Ports & Pins

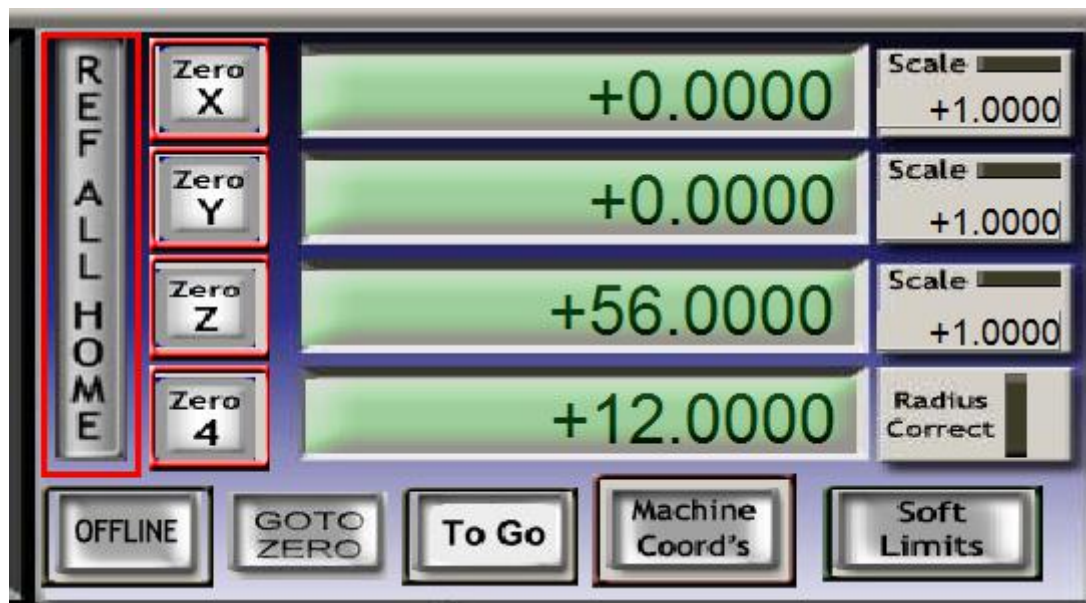
| Encoder/MPG's | | Spindle Setup | | Mill Options | | |
|-------------------------------|---------|---------------|------------|---------------|----------|--------|
| Port Setup and Axis Selection | | Motor Outputs | | Input Signals | | |
| Signal | Enabled | Port # | Pin Number | Active Low | Emulated | HotKey |
| X 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 |

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

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



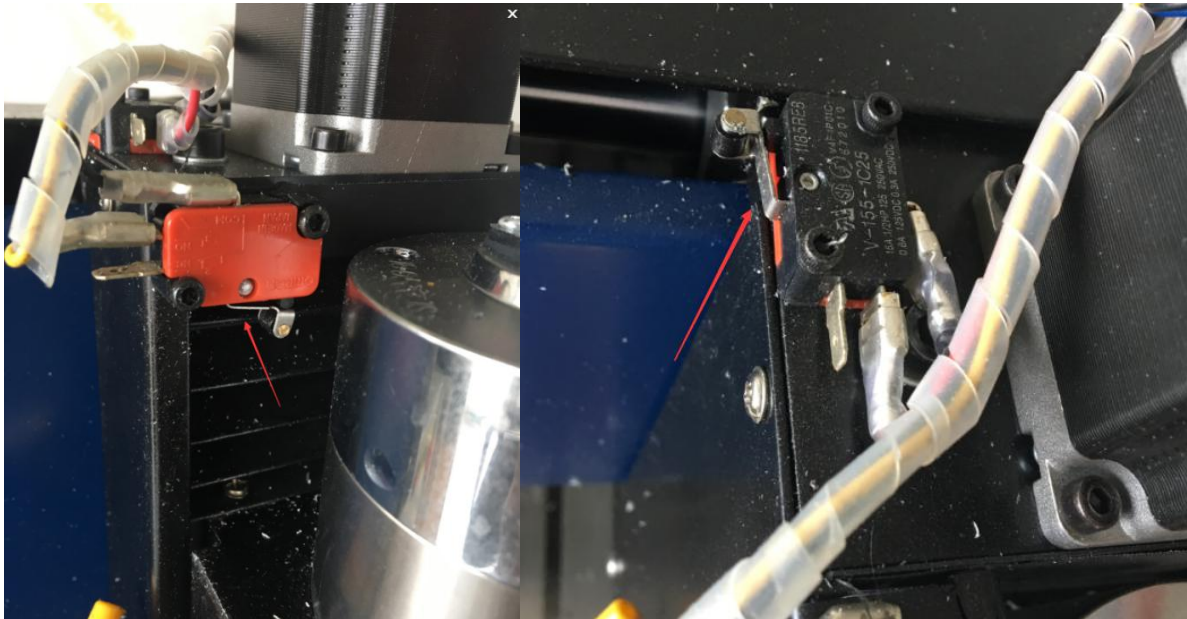
At last ,click ref all home button in MACH3.



4. 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 .



5 How to active MACH3

if MACH3 software said limited version , Please copy Mach1lic to
MACH3 file

