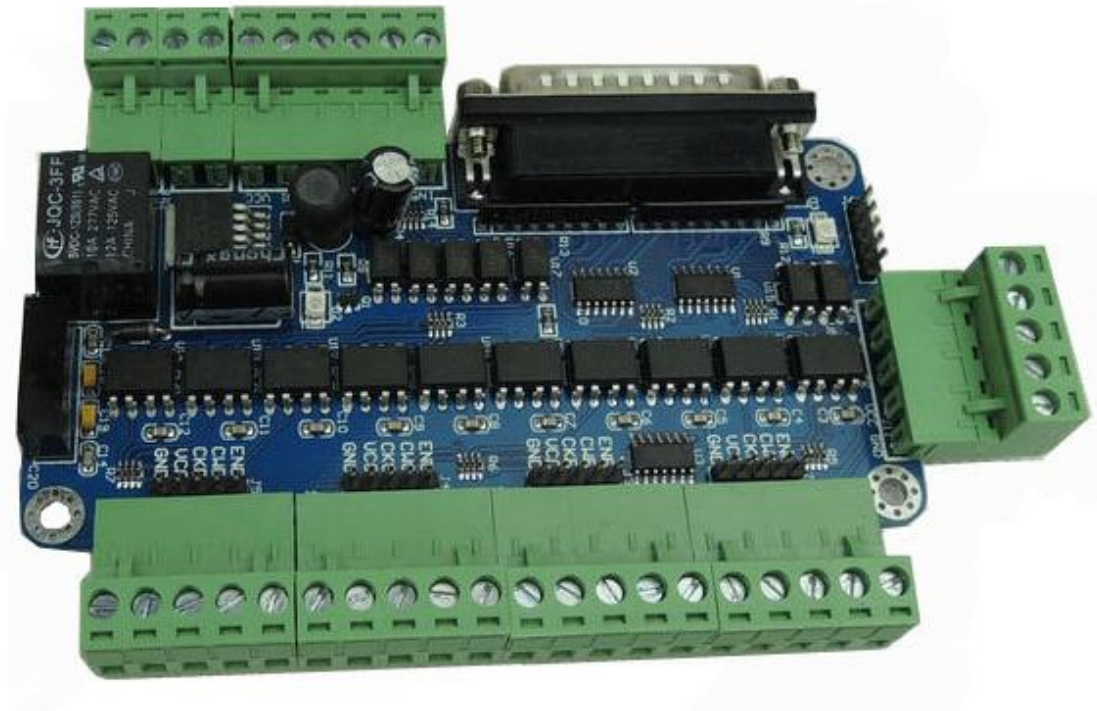

5 Axis CNC Breakout Board



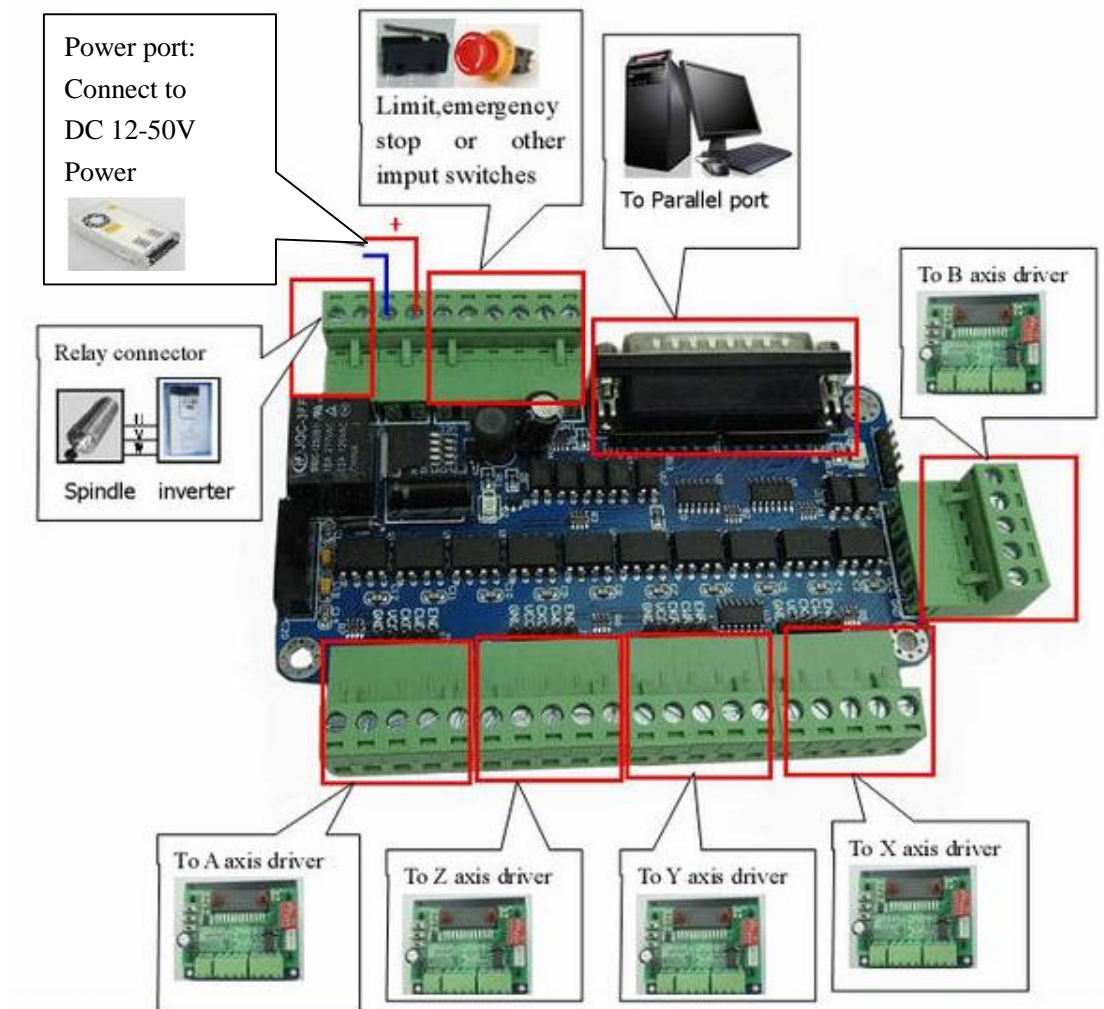
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I 、 Features:

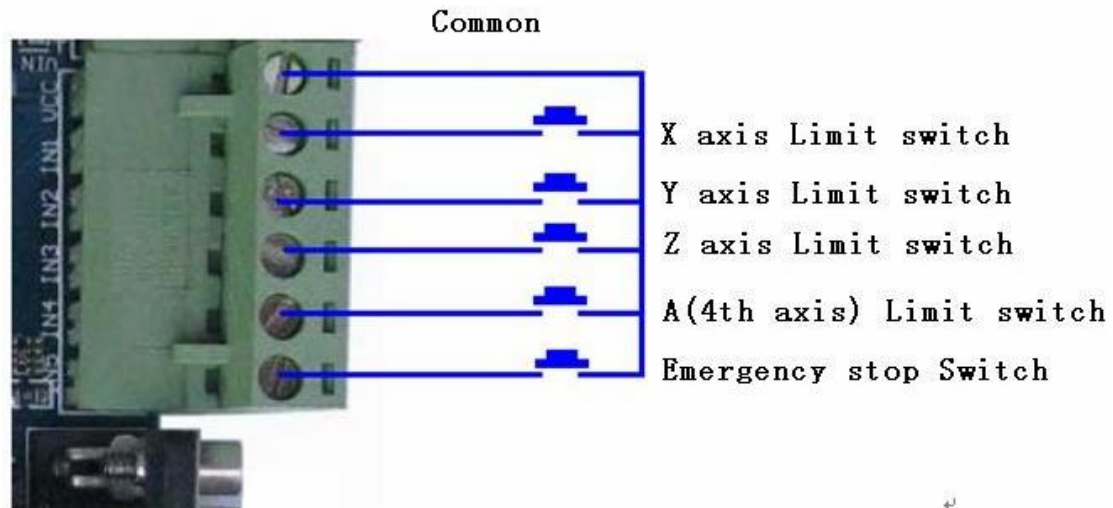
- 1.Full support for MACH3, KCAM4, EMC2, and support parallel port to control the host computer software;
- 2.5 output signal ,can connect with 5 stepper motor driver ;
- 3.4 input port, Can connect to the limit switch, emergency stop, or other Input devices ;
- 4.One relay, it can be used to control spindle start and stop;
- 5.Interface board built-in 5V power converter chip, can be connected with DC 12V-60V power supply. (suggest 12-50V)

II 、 Electrical drawing

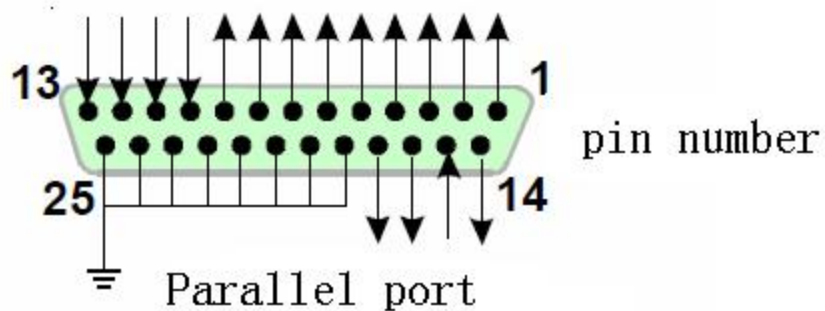


III 、 limit switches and emergency stop switch connection methods:

Input interface, you can access limit, emergency stop switch can also be connected to the reset, the knife and other input devices, when used according to the actual situation of your set of reference the following figure:



IV、 Definition on pins of parallel port:

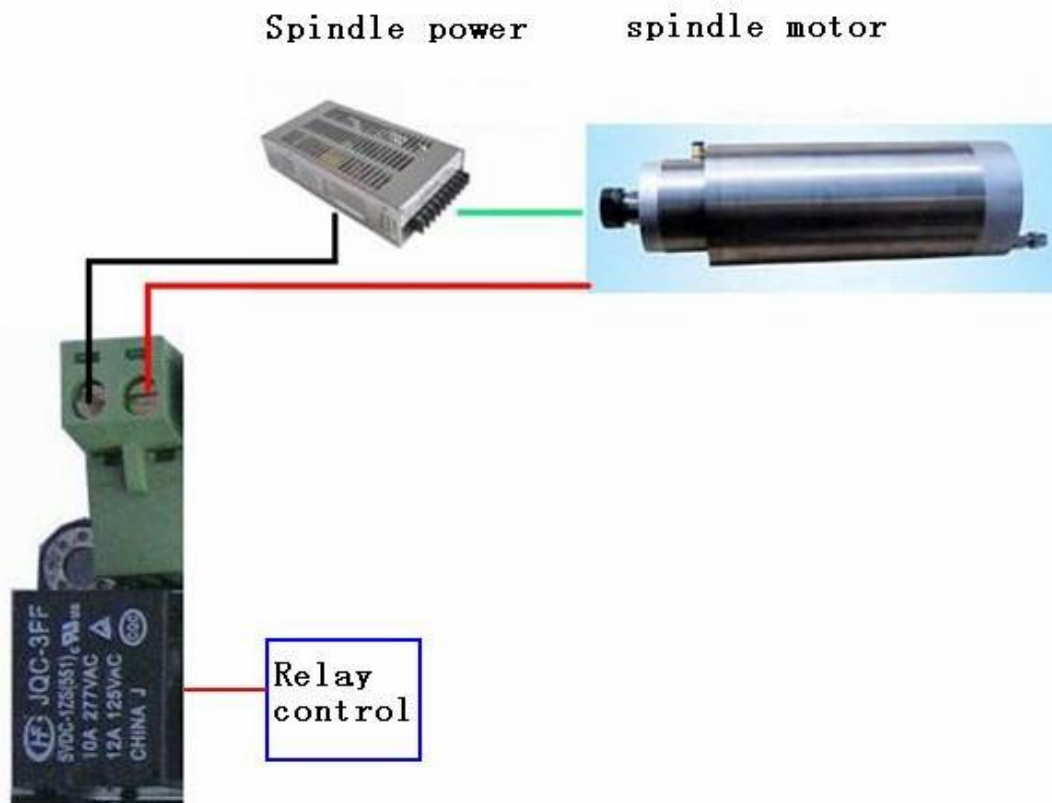


25-pin parallel port control is defined as follows:

DB25 PIN	The role of the pin on driver board	notes
1	EN	Enable of all axes
2	CKA	X pulse signal
3	CWA	X direction signal
4	CKB	Y pulse signal
5	CWB	Y direction signal
6	CKC	Z pulse signal
7	CWC	Z direction signal
8	CKD	A pulse signal

9	CWD	A direction signal
10	IN1	X axis Limit
11	IN2	Y axis Limit
12	IN3	Z axis Limit
13	IN4	A axis Limit
14	Relay control	
15	IN4	Emergency stop
16	CKE	B (5th axis) pulse signal
17	CWE	B(5th axis) direction signal
18-25	GND	

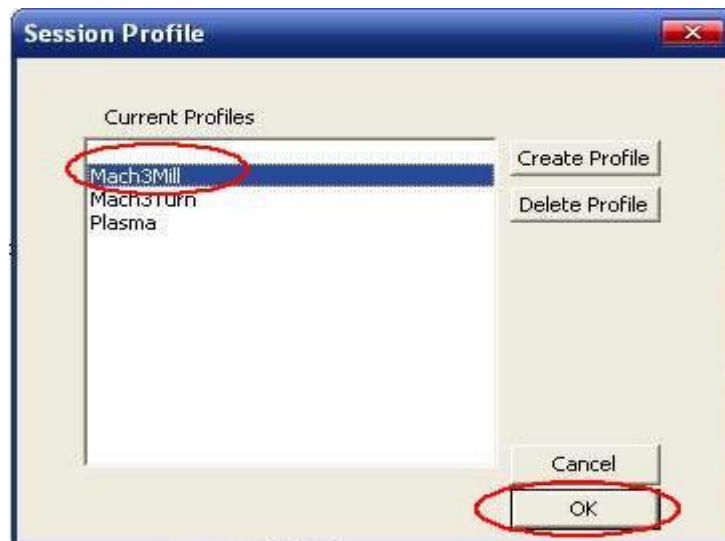
V、Relay control port connection method



Note: Relay control port can be connected to the spindle motor, spindle motor control switch or not to switch, the maximum can take 10A 277VAC spindle motor.

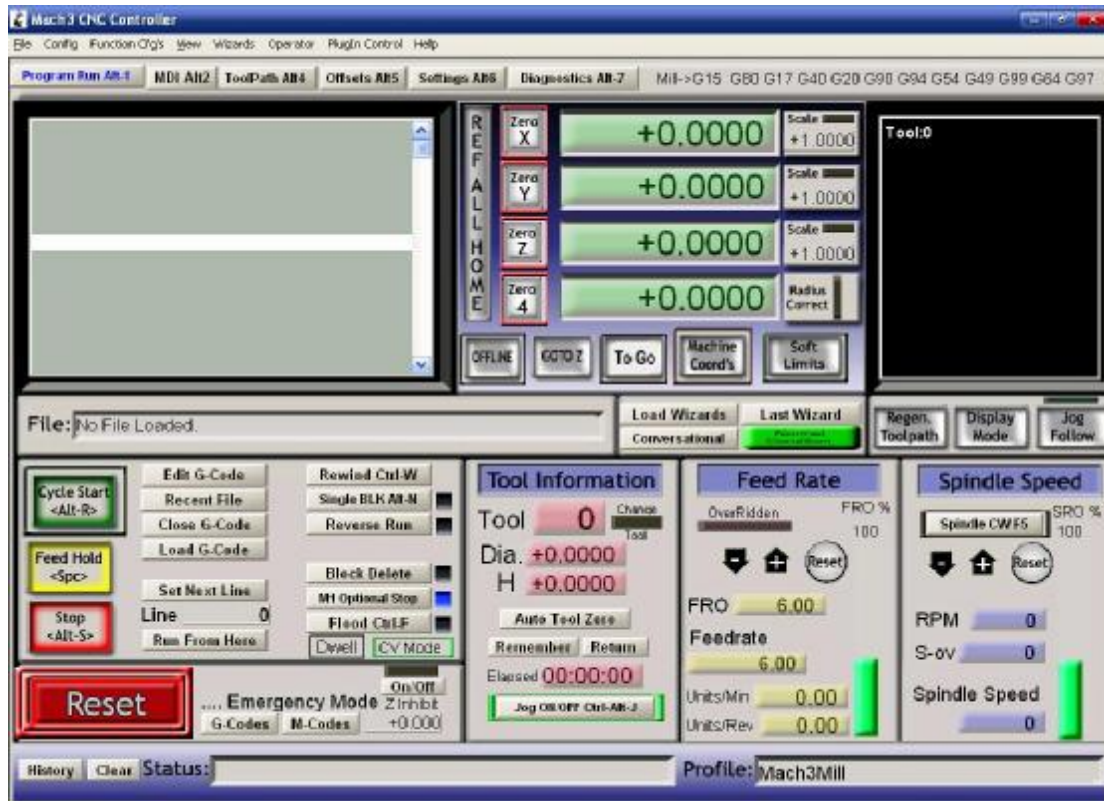
VI 、 Usage of MACH3

1、 Startup Mach3



open mach3

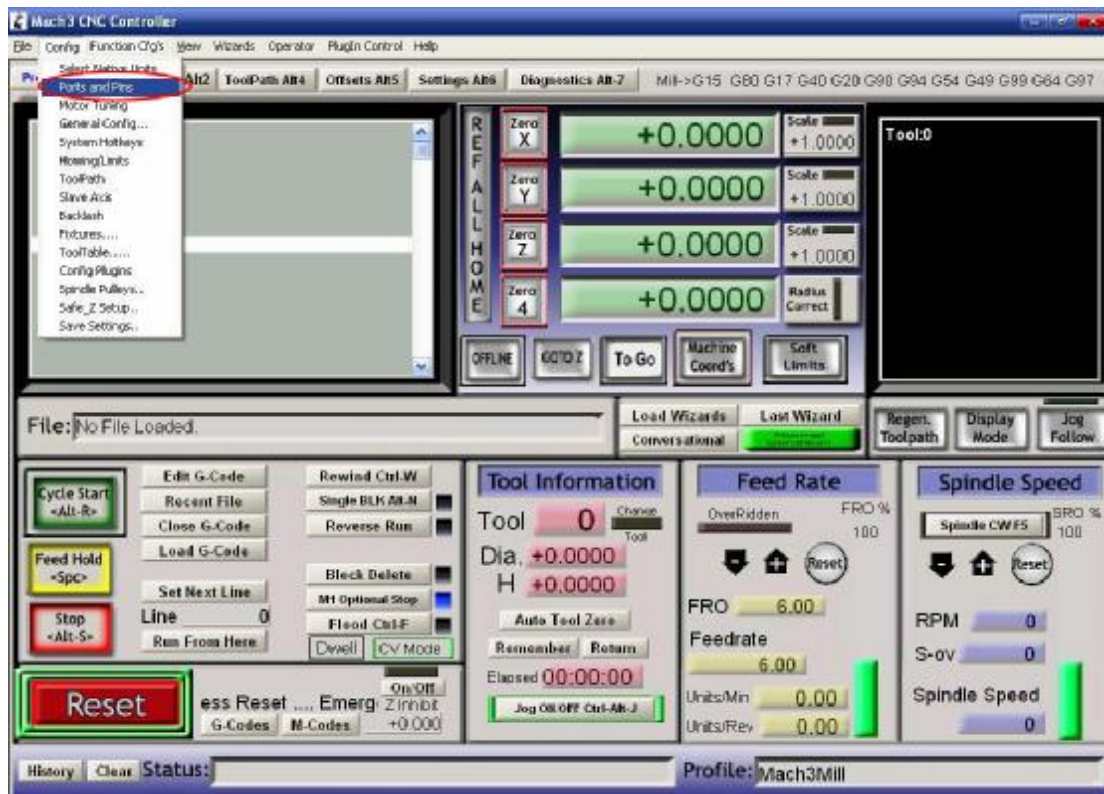
When you have installed the software, here are 3 icons on the desk,let's click the march3Mill, as fig 11.



the main interface of march3

The main interface of MACH3 as fig 12 , some basic buttons on it,Here, we first configure MACH3.

2、 The basic set of mach3



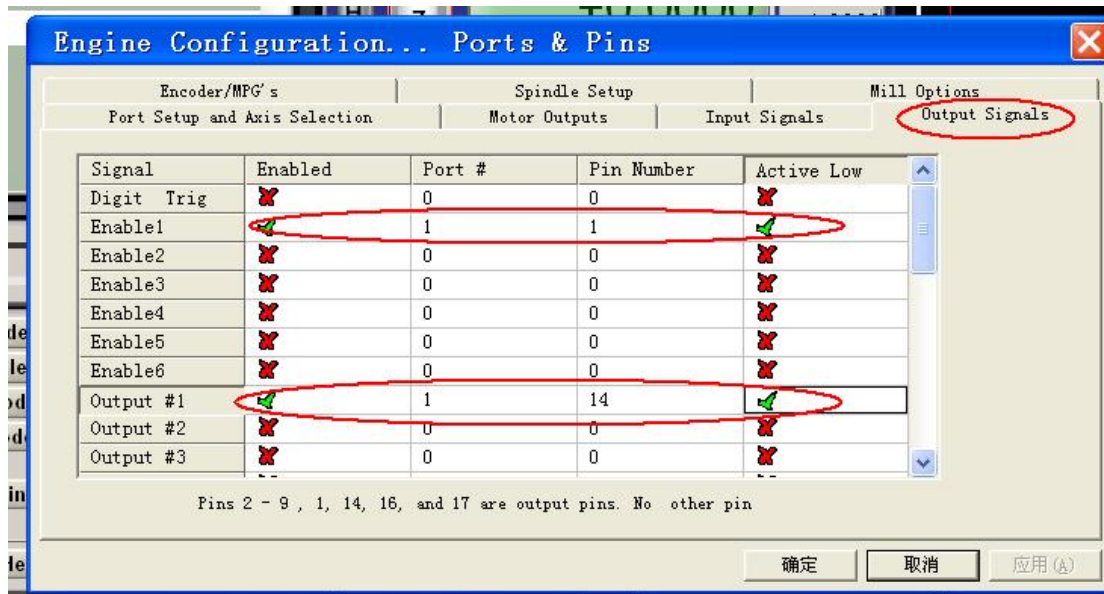
set menu of mach3

Open the config menu, ports and pins menu, marked with red circle

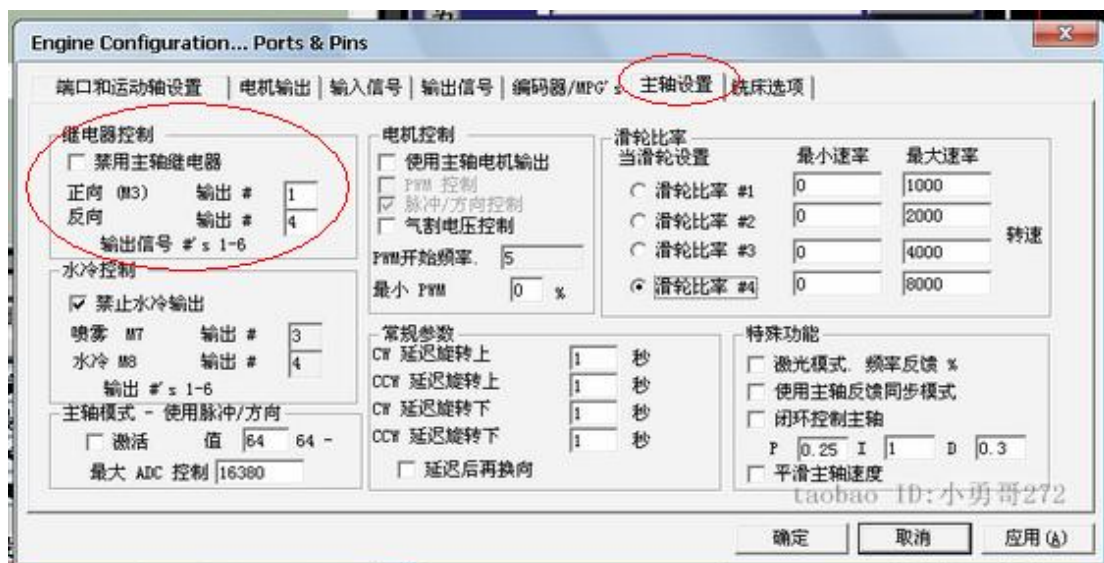


basic setting of direction and pulse pins

When you finished the setting, click output signals then set ENABLE and Relay

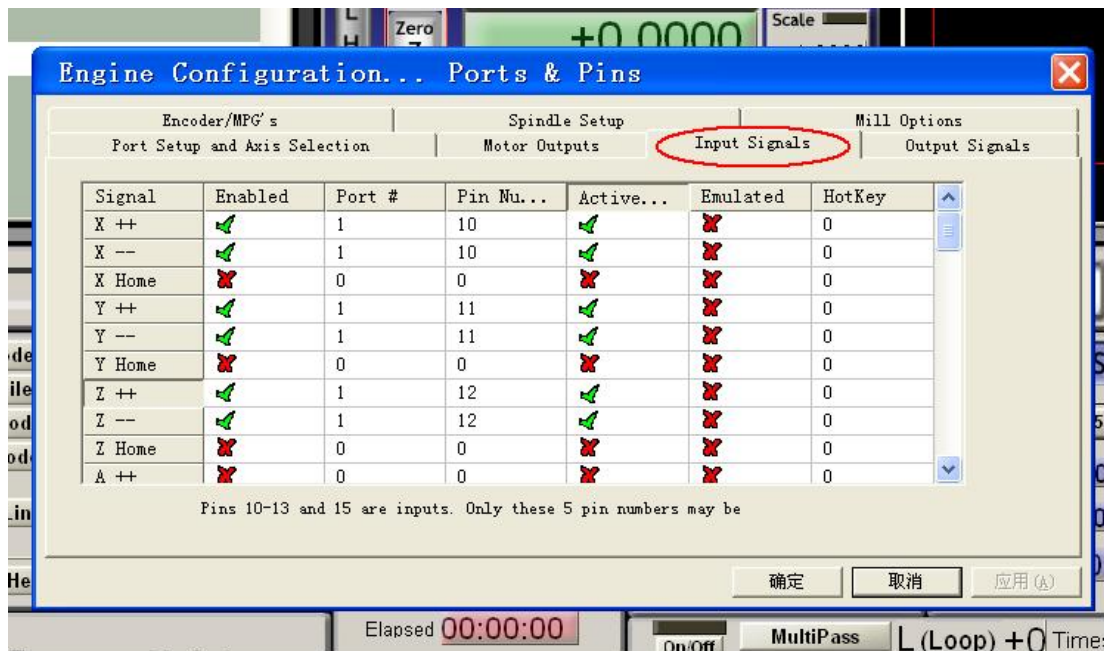


1 pin is the pin of control enabled, if the motor is not locked, you can switch the 1 pin's position, only the motor is locked, when give pulsed to the driver, it can respond. 14 pin is a relay control pin, when the relay is not energized, the spindle also need to be controlled by the following settings.

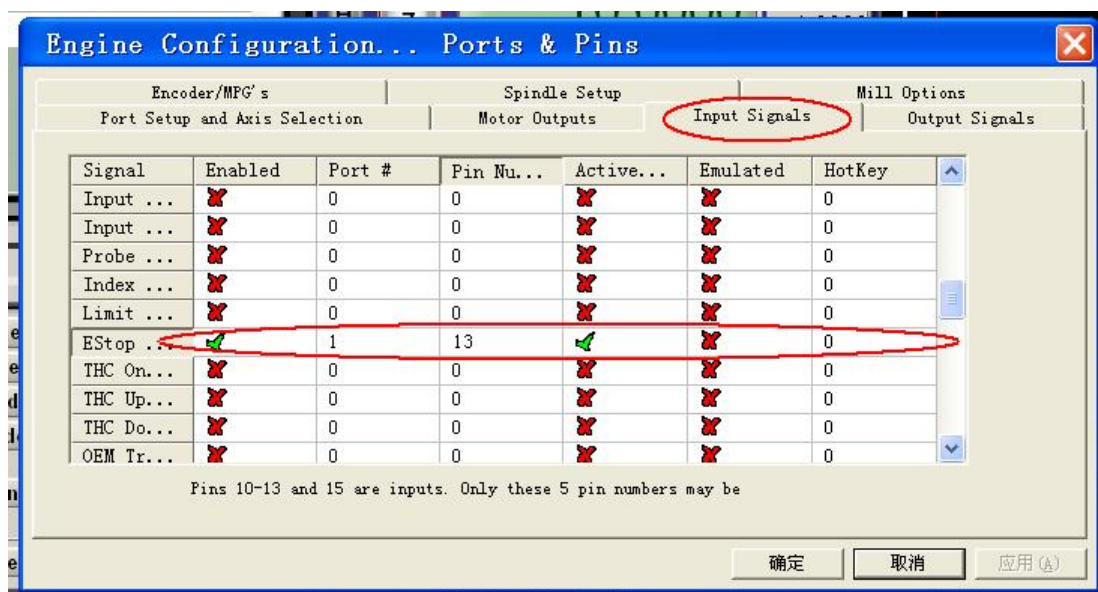


3、Adjusting limits witch of mach3

Click *input signal*, the parameter as follows



Emergency stop switch setting: Is the machine in case of an emergency requiring emergency stop, we put the parallel port pin 13 as an emergency stop input pin, the corresponding mach3 settings as shown below:



For the three-axis system, the four input pins can limit switches, emergency stop switch, reset switch settings, there are many ways to set, I only listed one of them, you can according to your actual needs reference mach3 user's manual for mach3 settings.

4、Running of G code

G is the numerical instructions control program code , mach3 for customers to

test software comes with the G code, you can easily test machine.click the File, as
fig 18

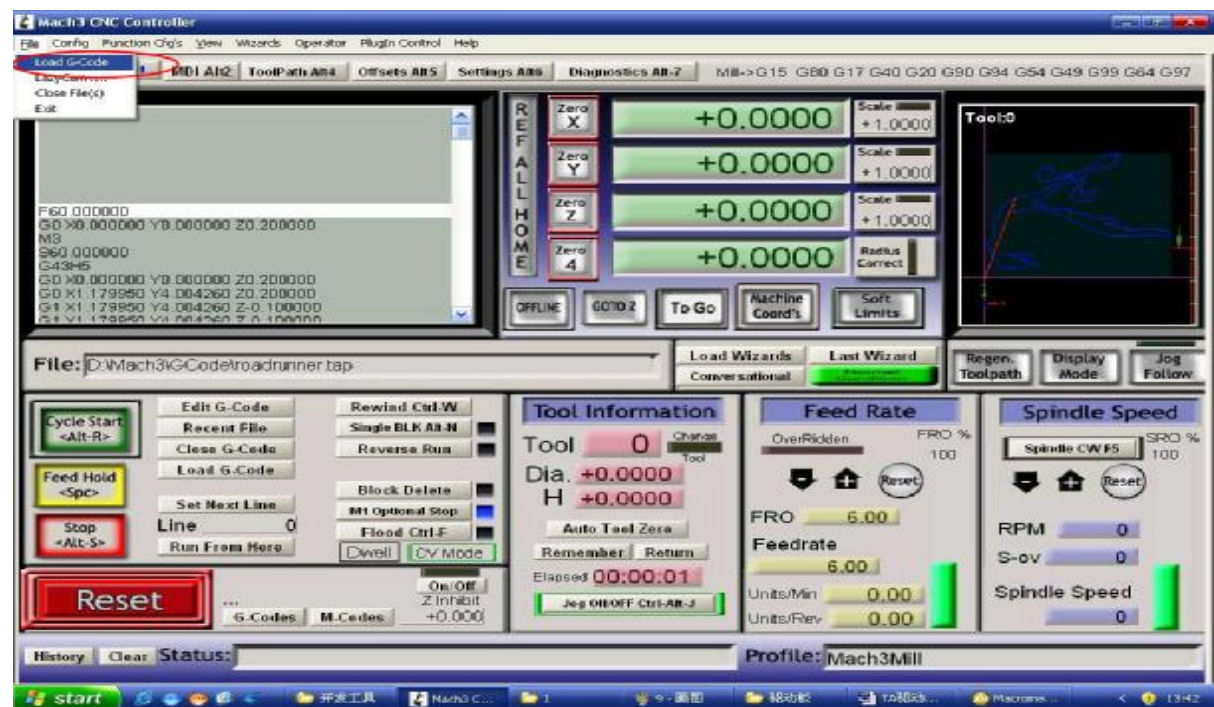


Fig 18 Open G


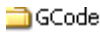
Click the red circlet **Load G-code** and open the icon  Mach3 and click  GCode ,and choice a G code, the interface as follows as fig 19



Fig 19 Open the testing procedures of G

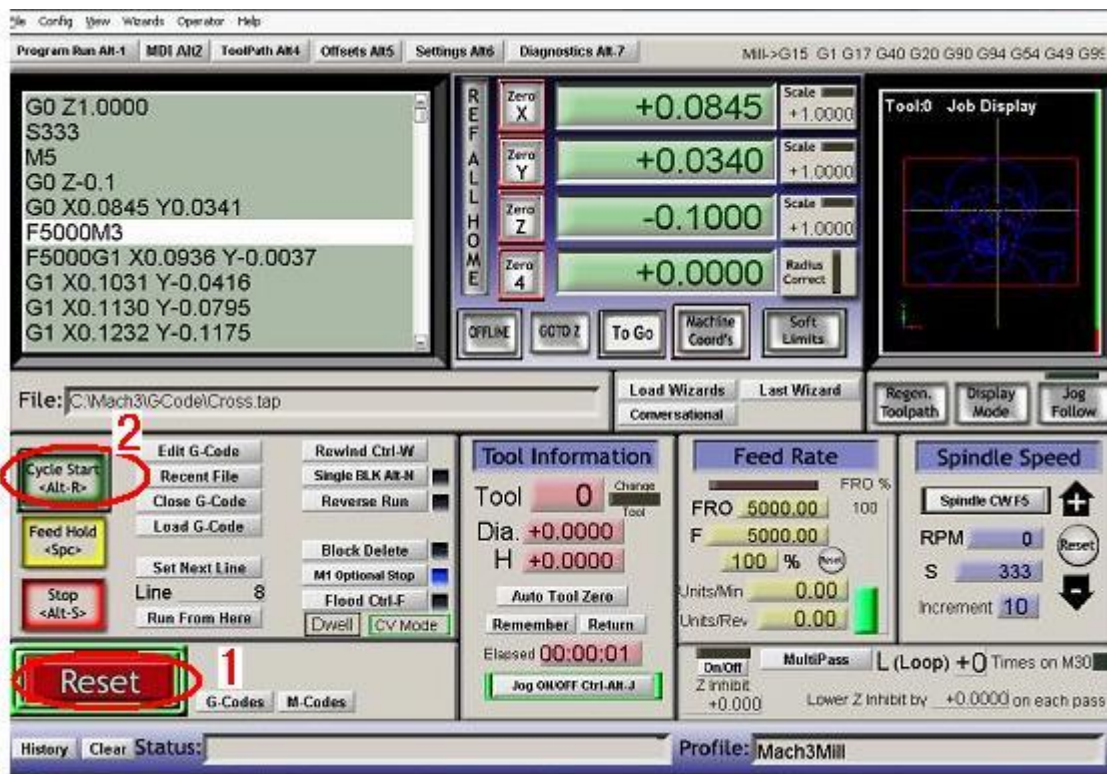


Fig 20

When you open the G code, you may watch on a flashing red button **RESET**, click it to stop, and click the **CYCLESTART**.

If you want to run your own G code for processing, find your location of G code,

and leading it in.,

5、 How to use the manual control interface of MACH3

If you want manual control, press the keyboard “TAB” as follows as :

