

The brief performance of TB6560V2

We have accumulated many years of design experience in 3-axis engraving machine drive. And developed this type of TB6560V2. The following features:

- ◆ Three stepper motor drive can be run simultaneously
- ◆ With 4-axis expansion, if you need to extend it
- ◆ Spindle relay output, if you use the mach3 to control spindle start and stop
- ◆ Semi-flow control, when motor stop, current is reduced to the minimum
- ◆ The interface with the fans, you can add any fans
- ◆ With 3-way 0.8-3.5A (peak) adjustable current, rated output two-phase bipolar stepper motor driver
- ◆ Interface with Standard parallel port , support MACH2, KCAM4 series software
- ◆ Limit the interface with quadruple limit switches can be connected simultaneously
- ◆ Support the choice of four segments - 1,1 / 2,1 / 4,1 / 16
- ◆ Stability, and small heat, 24-36V single power supply input with switching power chip supply 5V power , 24V input is best
- ◆ By RC +7414 automatic semi-flow, reducing motor heating, when motor stops the current decreases automatically.

The definition of each signal output pin parallel port

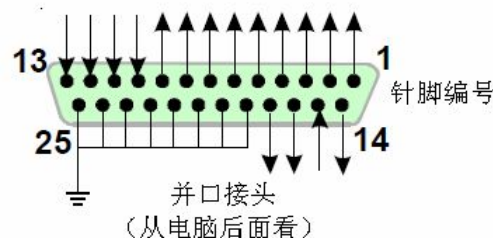


Fig.2

25-pin parallel port control is defined as follows:

DB25 PIN	The role of the pin on driver board	notes
1	EN	Enable all axis
2	STEPX	X pulse signal
3	DIRX	X direction signal
4	STEPY	Y pulse signal
5	DIRY	Ydirection signal
6	STEPZ	Z pulse signal
7	DIRZ	Z direction signal
10	LIMIT-1	Limit input1
11	LIMIT-2	Limit input2
12	LIMIT-3	Limit input3
13	LIMIT-4	Limit input4
15	LIMIT-5	Limit input5
16		
17		
18-25	GND	

The Regulation of Current, Subdivision, Decay Modes

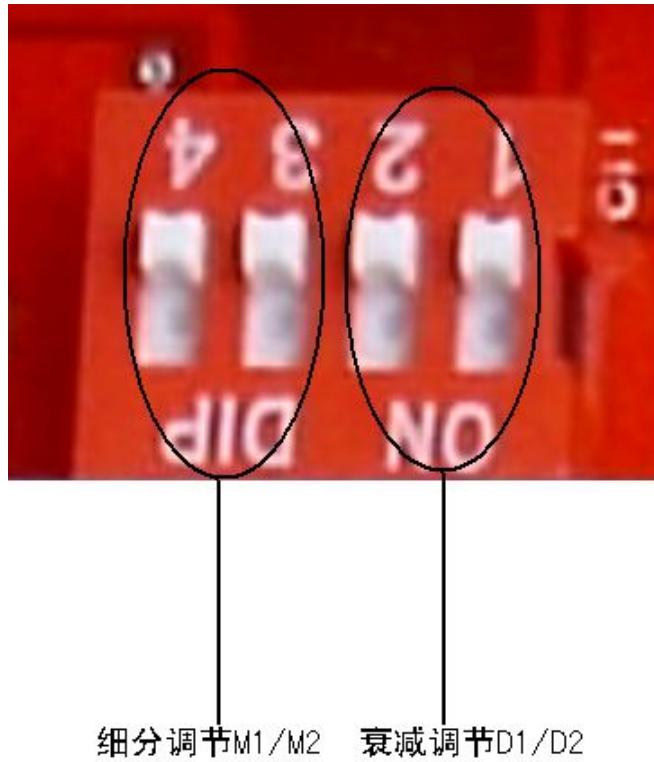


Fig.5

1. Current decay adjustment

The D1D2 are switches on the panel to set the current decay value

DIP switch on of two D1D2:, D1/D2:

ON/ON——100%; ON/OF——25%;

OF/ON——50%; OF/OF——0%;

DIP D1	DIP D2	Mode
ON	ON	Fast decay
OF	ON	50%fast decay
ON	OF	25%fast decay
OFF	OFF	Slow decay

2.Subdivision regulation

DIP switches on the M1, M2 two to adjust, driver board subdivision may be adjustable,DIP switch The correspondence location and mode of between segments as follows:

DIP M1	DIP M2	Subdivision mode
ON	ON	1/8
OFF	ON	1/16
ON	OFF	1/2
OFF	OFF	1

To make the motor run smoothly, please try to choose high segments, such as 1 / 16 segments

Current setting



电流调节拨码开关T1/T2

Fig.6

Current regulation is by the panel to T1T2 two DIP switches to control .Figure XYZA current regulation identifies the location of the 2-way DIP switch

Dip T1	Dip T2	Value of current
ON	ON	20%*2.5A
OFF	ON	50%*2.5A
ON	OFF	75%*2.5A
OFF	OFF	100%*2.5A

Proposed stepper motor current as close as possible the rated current

Notes: please operating motor 15-30 minutes when you finished the setting of current.If the motor temperature is too high, you should reduce the value. If reducing the current value, the motor output torque is not enough to improve the cooling conditions, are invited to ensure motor and drive are not too hot..

The choice of stepper motors and its power

The panel of **TB6560V2** axis match with two and four-phase motor drive of domestic and foreign manufacturers , in order to obtain the most satisfactory results, need to set a reasonable supply voltage and current. The high-speed performance depends on the degree of the motor supply voltage.but the current set value determines the output torque of the motor.

A.Setting supply volatage

In general, when the higher the supply voltage, more great torque at the motor high speed, and avoid the motor out of step at high speed. On the other hand, the voltage too high may damage the drive, and work in high-voltage,vibratory at low speed
Reference value of power between 24-36VDC 6A

B.Setting output current

The larger of setting current, the greater of output torque in the same motor. But the problem is the larger current the more heat of motor and driver. So in general,we set the value at when it warm but not too hot to run at long-term.

- ◆ AT high speed mode of 4 and 6-wire: the output current equal or less rated value
- ◆ Larger torque mode of 6-wire: output current is 70%of rated value.
- ◆ Tandem-type connection of 8-wire:output current is 70%of rated value
- ◆ Parallel connection of 8-wire:output current is 1.4times of rated value.

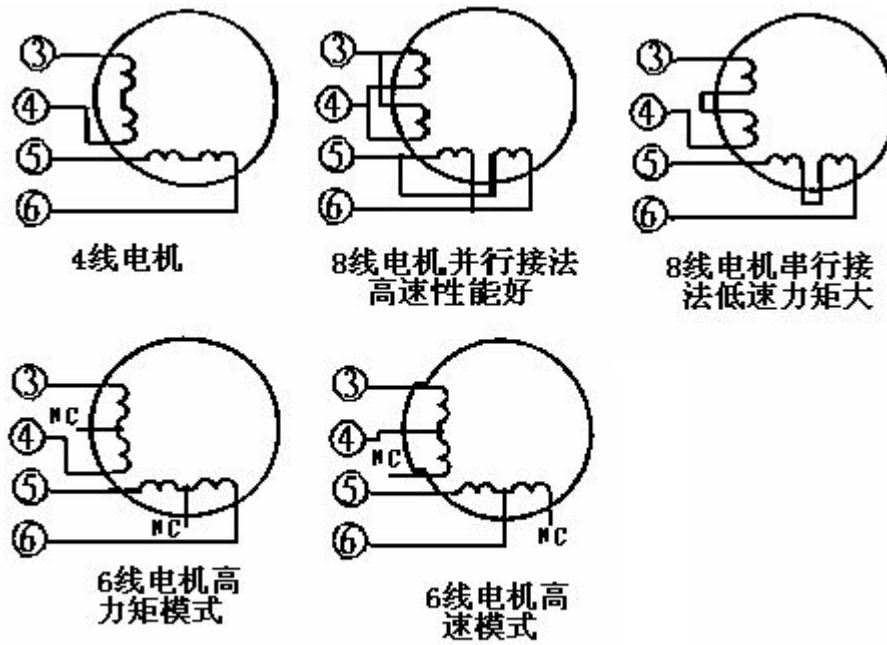


图 3. 电机接线

Notes: Motor A,-A, B,-B, connected respectively, four wires connected driver board AP, AM, BP, BM

1、Startup of Mach3



Fig 11 open mach3

Open MACH3, setting mach3MILL, then click OK button

2、The basic setting of Mach3:

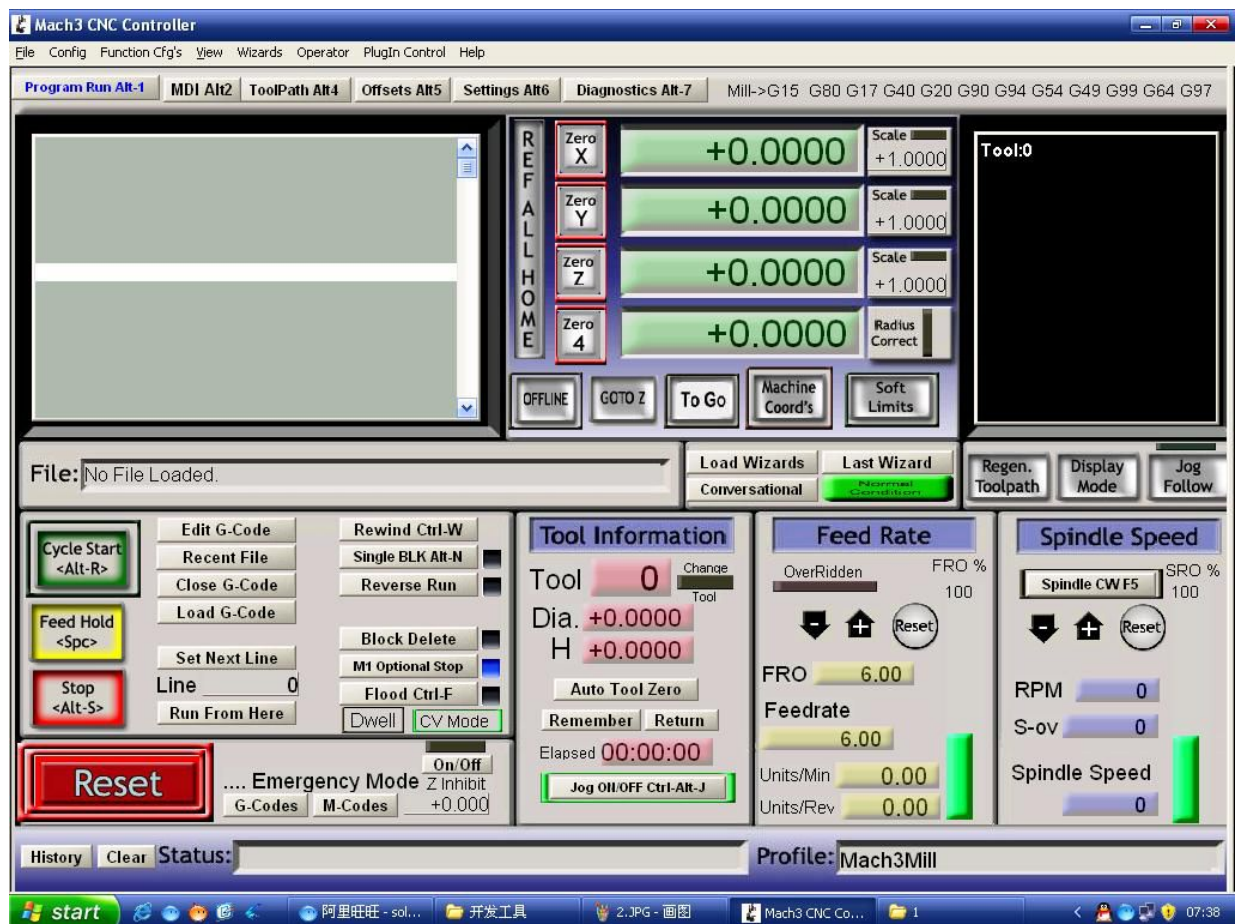


Fig 12 The main interface of mach3

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

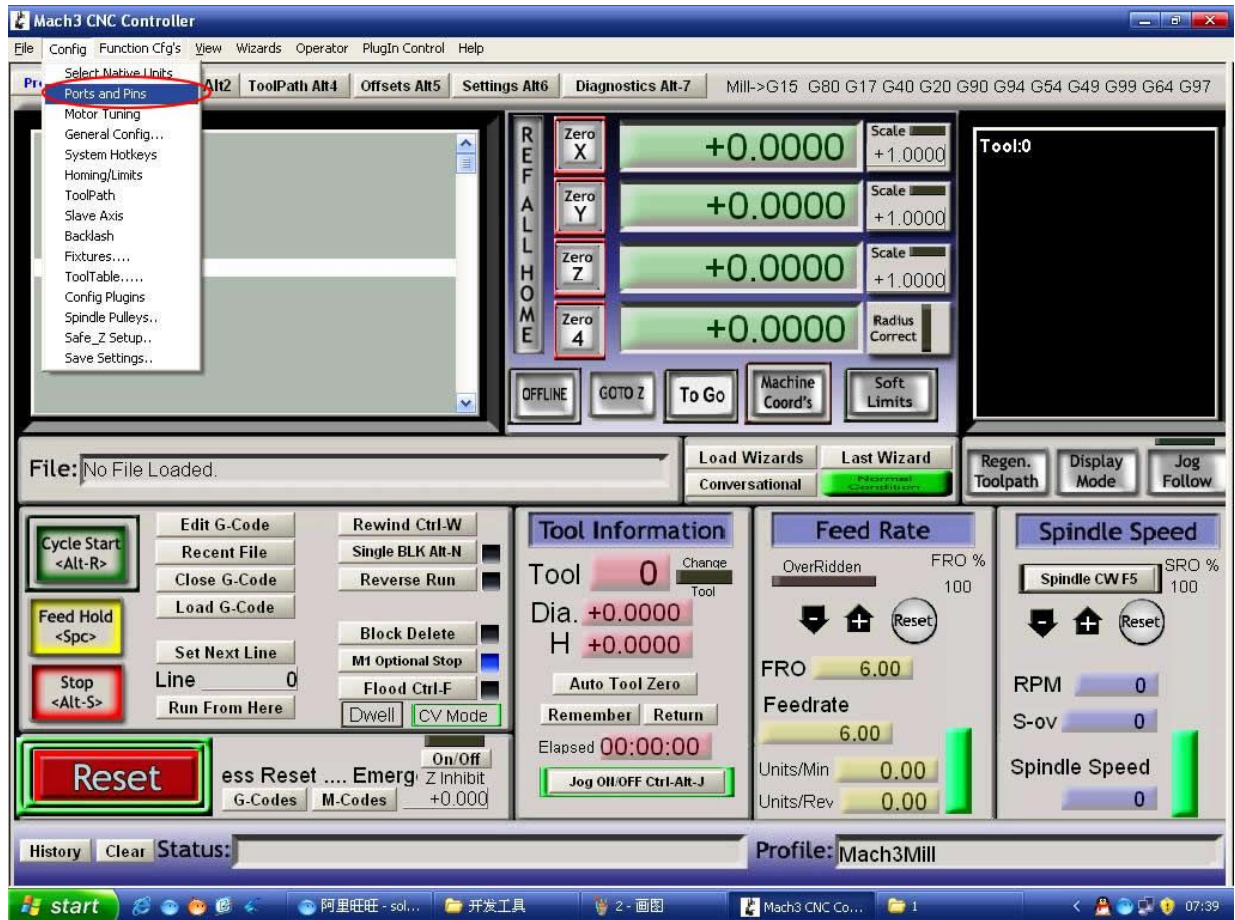


Fig 13 setting menu of mach3

Open the config menu, PORT & PIN menu, as fig 13

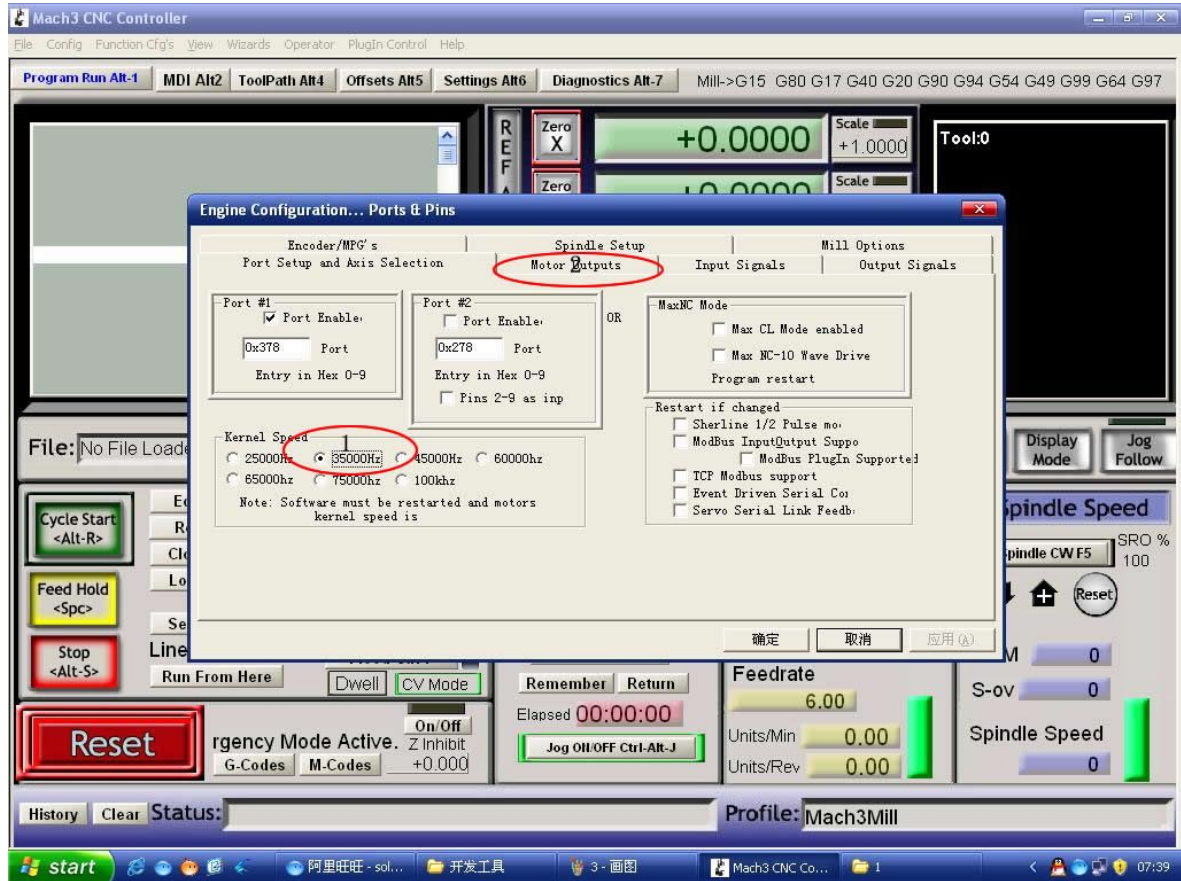


Fig 14.setting the basic frequency

You may set the basic frequency on the circlet1,the parameters will change the rotation speed of motor. Then click circlet2.

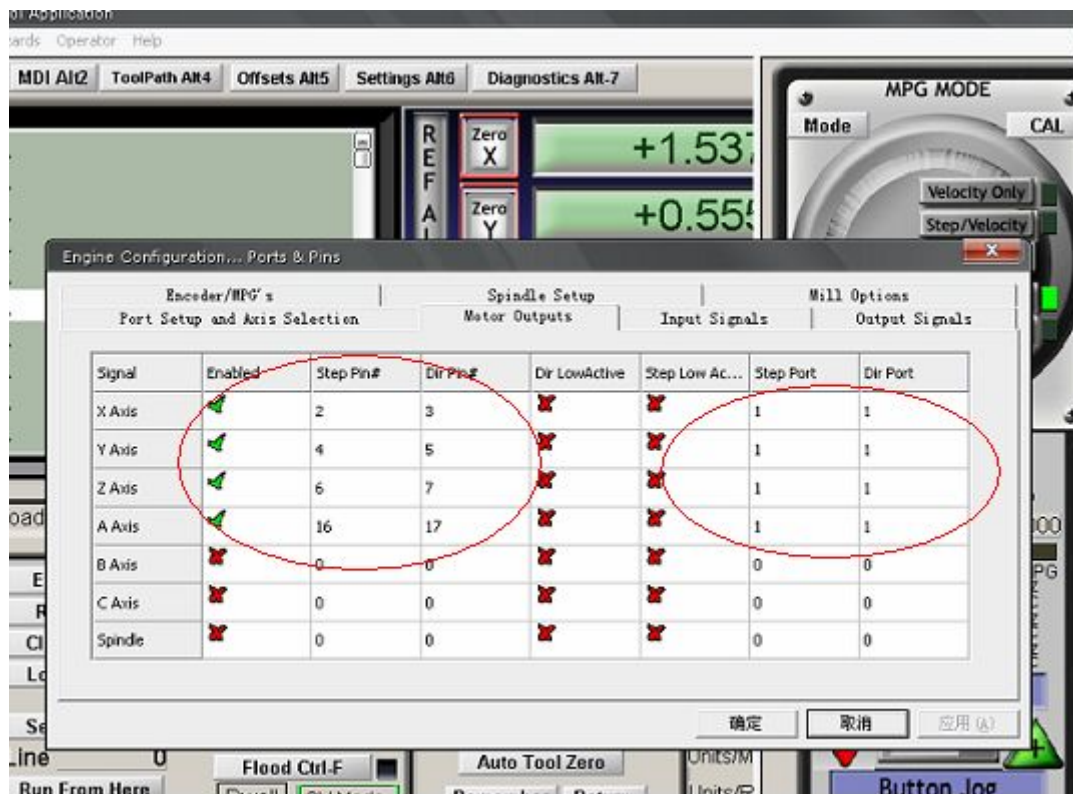


Fig15. Setting pulse and direction pin

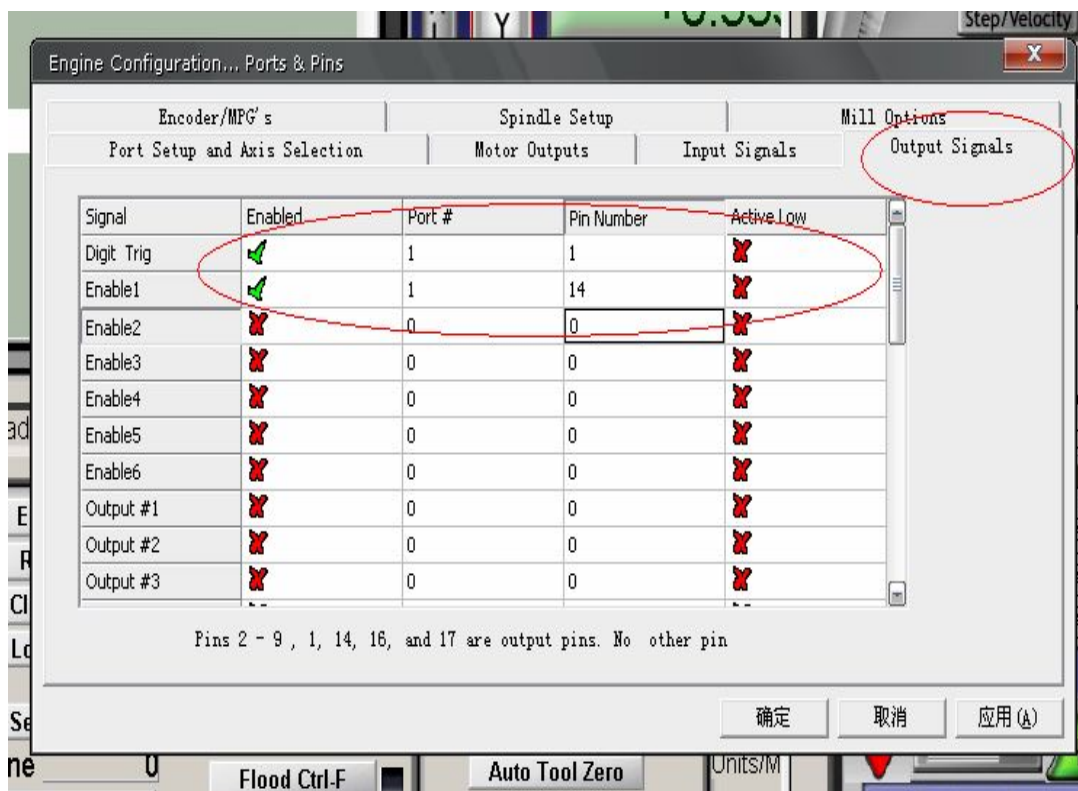


Fig 16

According to the definition of the board parallel port, follow the map on the circlet settings to indicate the definition of modification

Then select the output signals in part, see in Figure 16, according to the setting circlet, where 1 means enabled, the 14 is relay.

3.setting of limit switch of mach3

Click input signal, the parameters as fig 17

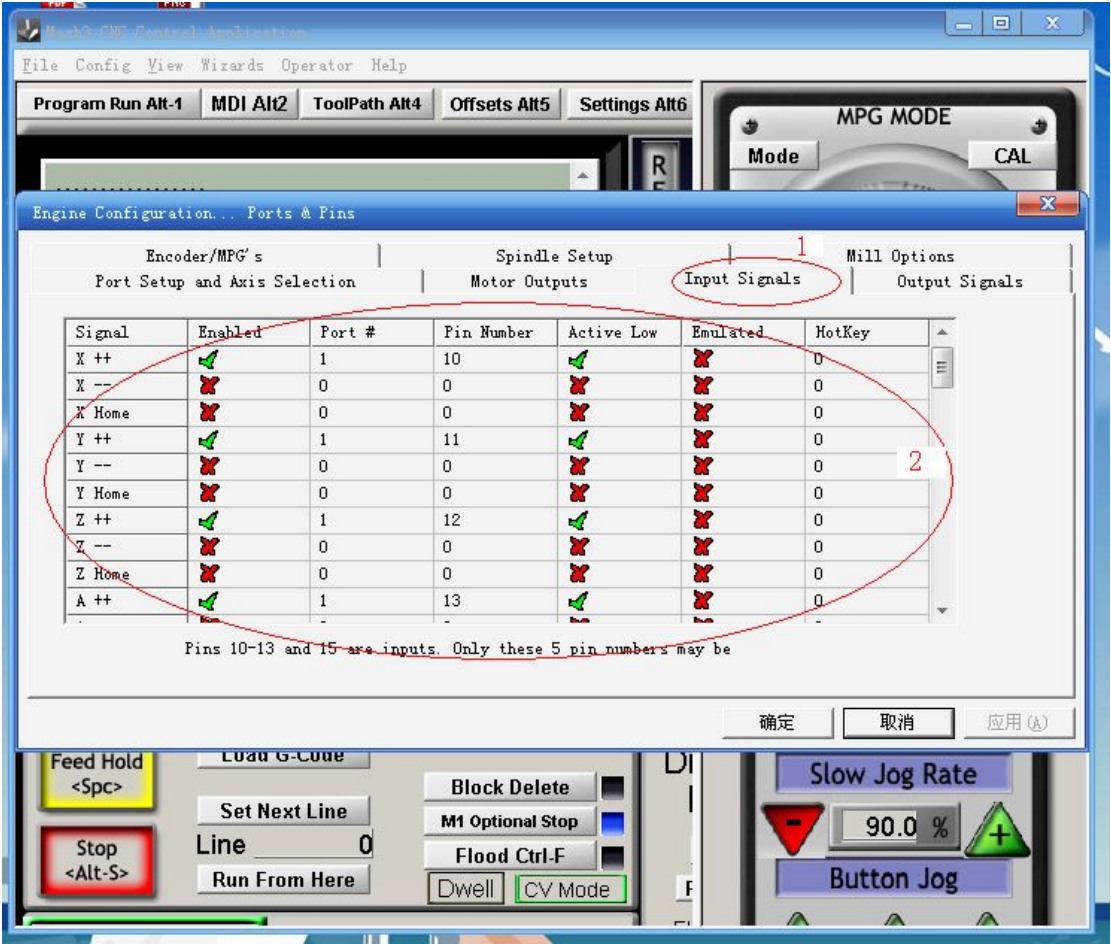


Fig 17

4. Running G code

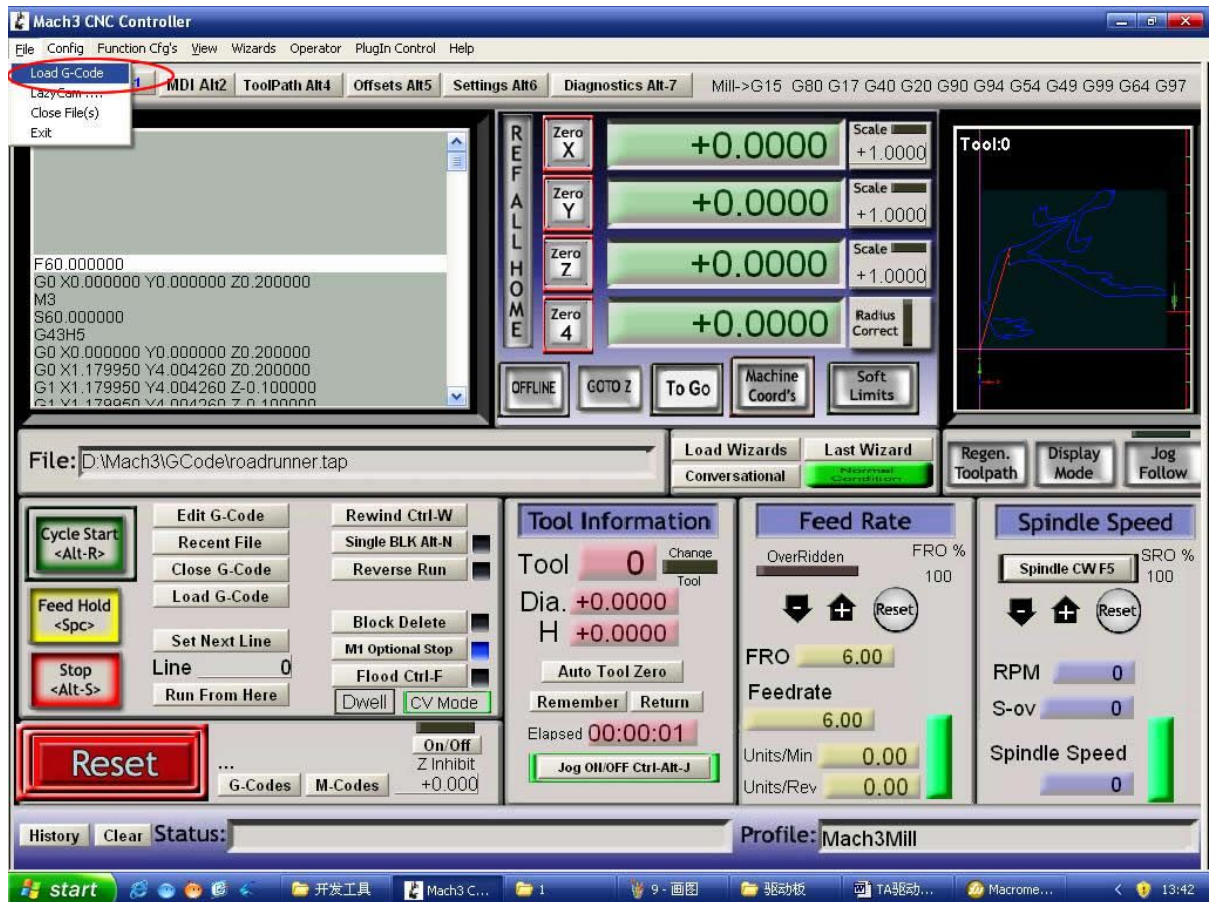


Fig 18 open the G

All settings are okay, then open your G code

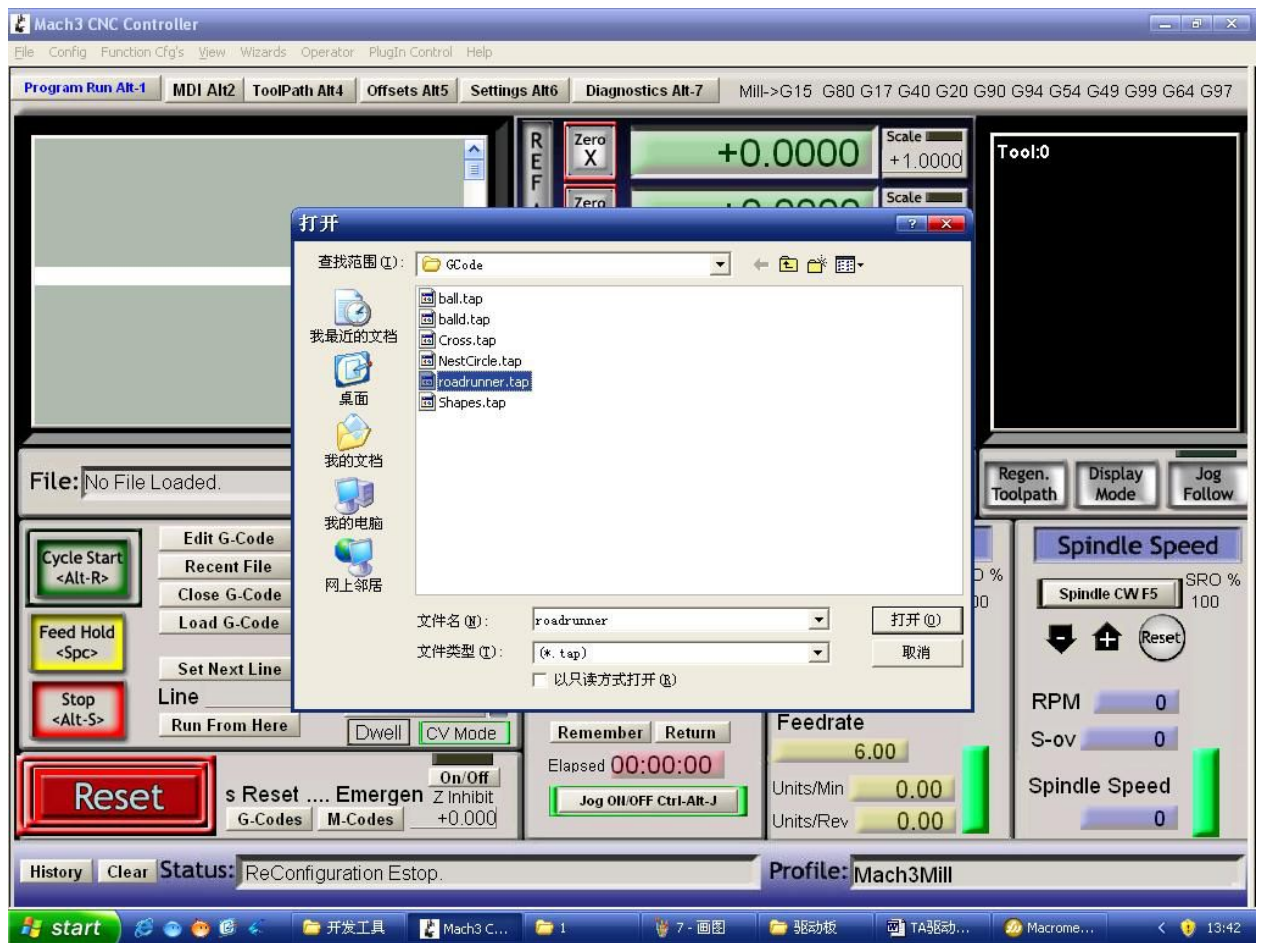


Fig 19. Open MACH3 own G code testing procedures

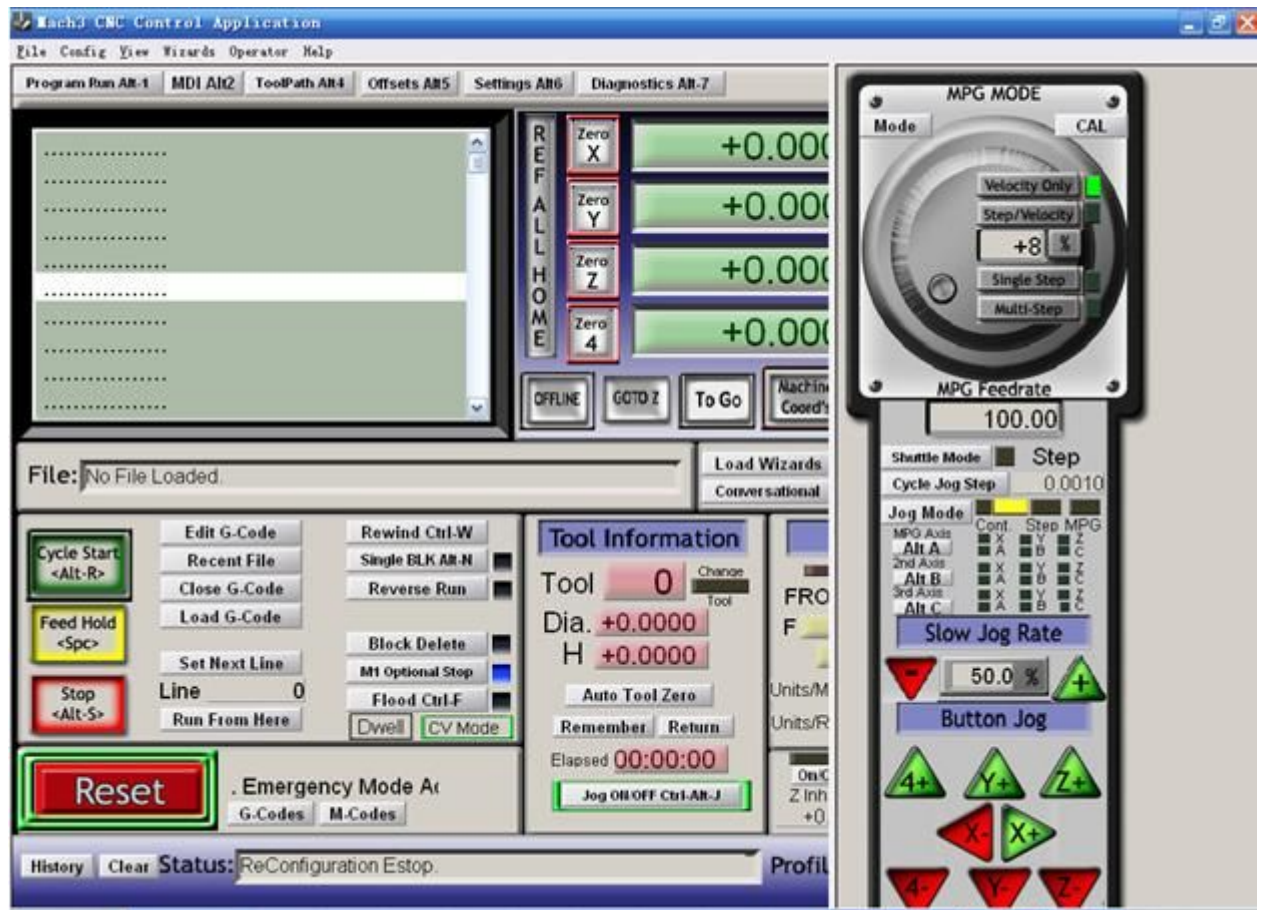


Fig 20

When you run the G code, RESET can see the red flashing, click it to stop flashing, then running as CYCLESTART marked with circlet 2

Also if you need manual control, you can press the keyboard's TAB key to open the manual .of control panel as fig 21

