TB6560-T4 CNC Driver Manual

1. General introduction

Low noises and low vibration due to the using of the 16 excitation two-phase bipolar stepping motor driver chip TB6560AHQ imported from Japan. The electric circuit is well-designed. All the electric items have been strictly checked to insure the quality.

2. Specification

- rated voltage: DC12-DC30V;
- Single-chip motor driver for sinusoidal microstep control of stepping motors
- Forward and reverse rotation
- Selectable phase excitation modes (2, 1-2, 2W1-2 and 4W1-2)
- High output current: IOUT = AHQ: 3.5 A (peak)
- Thermal shutdown (TSD)

If you need 36v power please contact us.

3. Advantages

3.1 one power only

The control parts and the driving parts share one power. Users don't need any more power.

3.2 adjustable electric current

The out-put current can be adjusted according to user's needs.

3.3 well-arranged ports

The X port、the Y port、the Z port and the A port are connected to one port (3.96mm), which is very convenient for users to arrange the circuitry.

3.4 manual-control function

Users can manually control the drive board through a standard port which has 15 pins

3.5 protection of the computer

By using the isolating power(1000V DC\DC) and the optoelectronic coupler, the drive board are separated from the computer. Such design can protect user's computer in case the board are going abnormal.

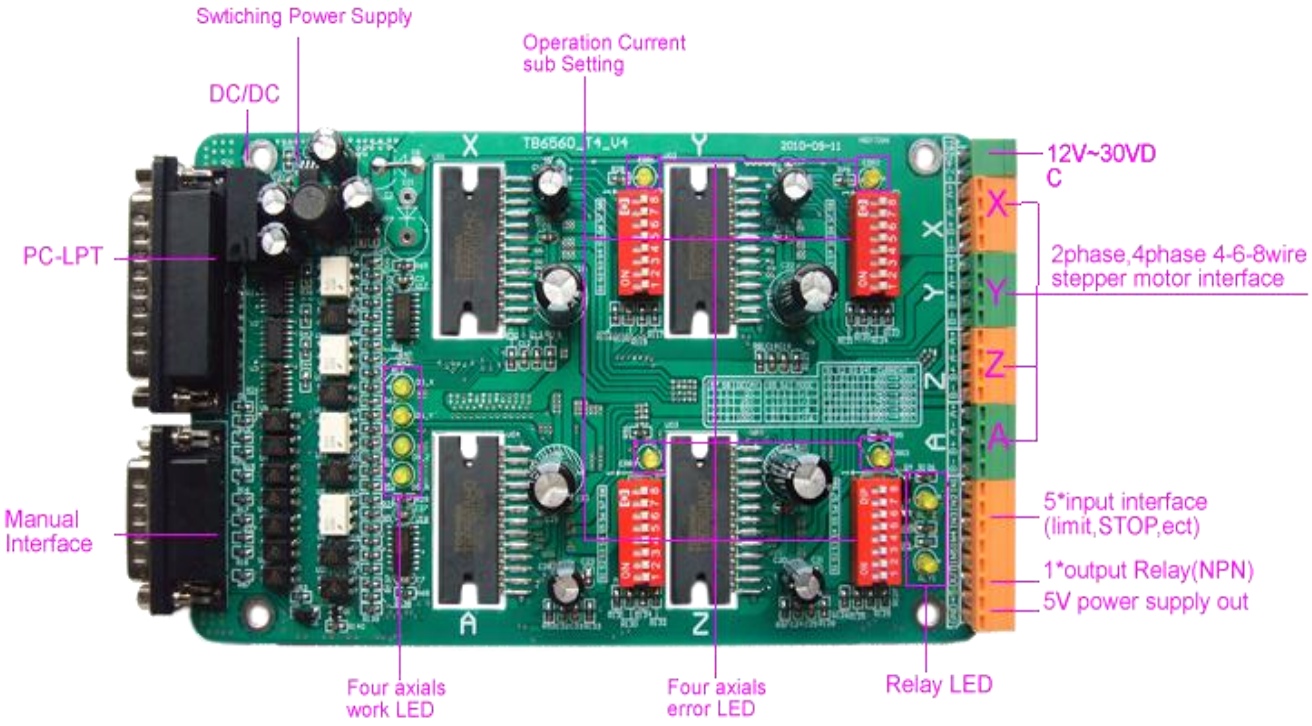
3.6 protection of the drive board

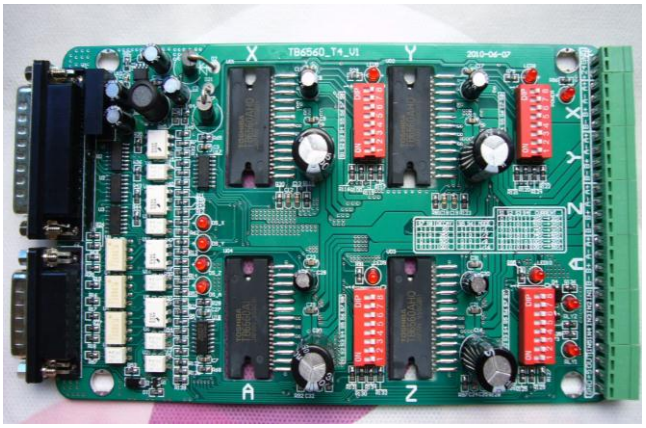
The electric current of the drive board can be locked to 100% / 75% / 50% / 20% (up to user's needs) of the normal one when no signals are received from the computer, thus the service life of the drive board is assured with less heat.

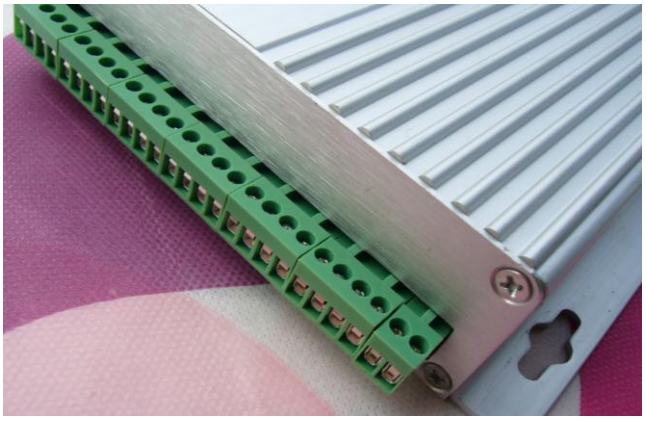
3.7 good-cooling functions

All the items are fixed in an aluminum box which has good performance of the abstraction of heat to ensure the service life.

4. Configuration and pictures of the items







5. Ports

5.1 DB25 LPT pin definition：

1: the 2nd output control (corresponding circuitry please see OUT on the board, for electric relay or PWM OC output control, output current=50mA, voltage=24V)

2 ： X axis pulse input

3 ： X axis direction setting

4 ： Y axis pulse input

5 ： Y axis direction setting

6 ： Z axis pulse input

7 ： Z axis direction setting

8 ： A axis pulse input

9 ： A axis direction setting

10：LPT input signal 1 (corresponding IN1 on the board)

11：LPT input signal 2 (corresponding IN2 on the board)

12：LPT input signal 3 (corresponding IN3 on the board)

13：LPT input signal 4 (corresponding IN4 on the board)

14：NC

15：LPT input signal 5 (corresponding IN5 on the board)

16：All axis enable input

17：The 1st circuitry output control (corresponding display light see RY1 on the board, for electric relay or PWM OC output control, output current=50mA, voltage=24V)

18：GND

19：GND

20：GND

21：GND

22：GND

23：GND

24：GND

25：GND

5.2 Manual control ports and definition

Input signal=0-5V

1 ： X axis pulse input

2 ： X axis direction setting

3 ： Y axis pulse input

4 ： Y axis direction setting

5 ： Z axis pulse input

6 ： Z axis direction setting

7 ： All axis enable input

8 ： The 1st circuitry output control (corresponding display light see RY1 on the board, for electric relay or PWM OC output control, output current=50mA, voltage=24V)

9 ： A axis pulse input

10：A axis direction setting

11：24V output
12：The 1st output
13：5V output
14：Direct connecting to IN1
15：Power GND

5.3 Power port

Power: 12-24V
Current: 10A
Please see the picture for reference.
Up: power GND
Down: power 12-24V

5.4 Ports for extending

From up to down:
1、IN1
2、IN2
3、IN3
4、IN4
5、IN5
6、OUT (display light see RLY2 to show the working condition ;current=50mA,voltage=24V)
7、+5V
8、GND

6. Subdivision surface mode setting

	S5	S6
1	1	1
1/2	1	0
1/8	0	0
1/16	0	1

7. Decay mode setting

	S7	S8
NO DECAY	1	1
SLOW DECAY	1	0
MID DECAY	0	1
FAST DECAY	0	0

Notes: if the drive board has abnormal noise under working or locking condition, you can solve the problem by adjusting the decay mode.

8. Current adjusting and default testing

	S1	S2	S3	S4
20%-->20%	0	0	1	1
50%-->20%	0	1	0	1
75%-->20%	0	0	1	0
75%-->50%	1	0	0	0
100%-->20%	0	1	0	0
100%-->50%	0	0	0	0

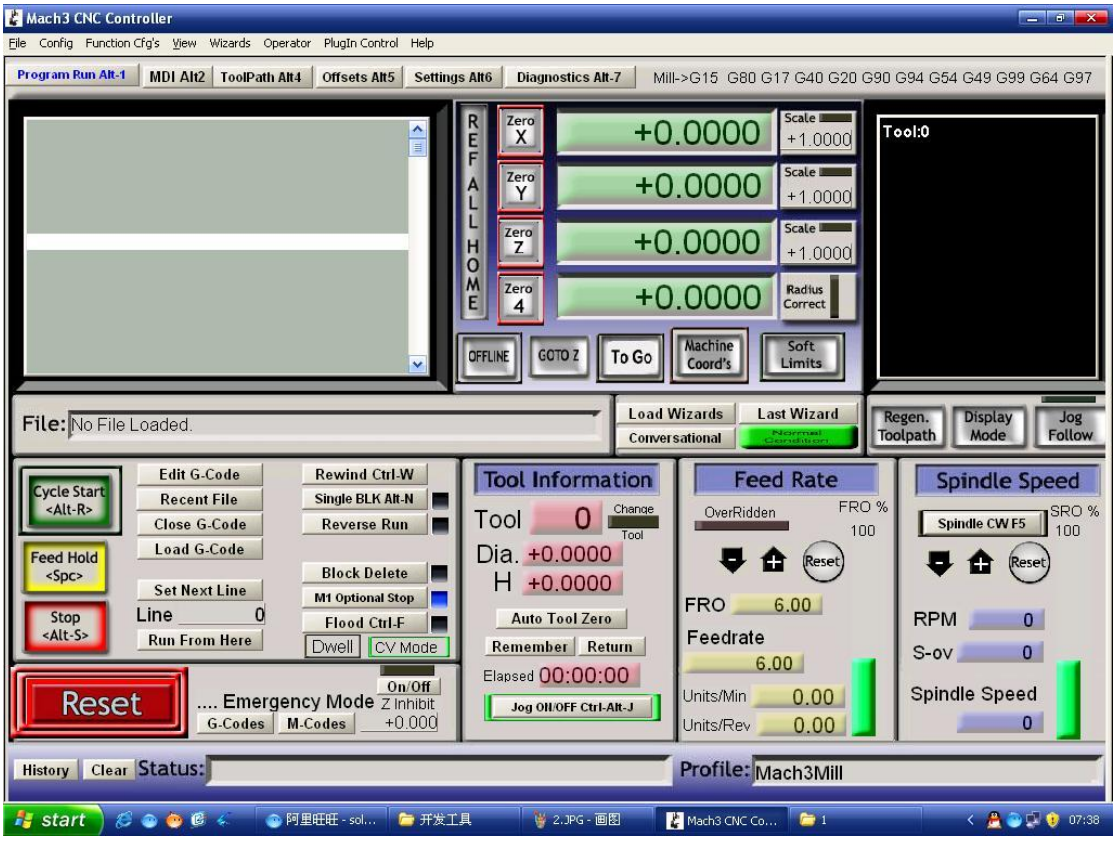
Explanation:
EXAMPLE: 75%-->20%
Working Current=3.5A *75%
Pause current=3.5A *20%

9. How to use MACH software?

For reference:

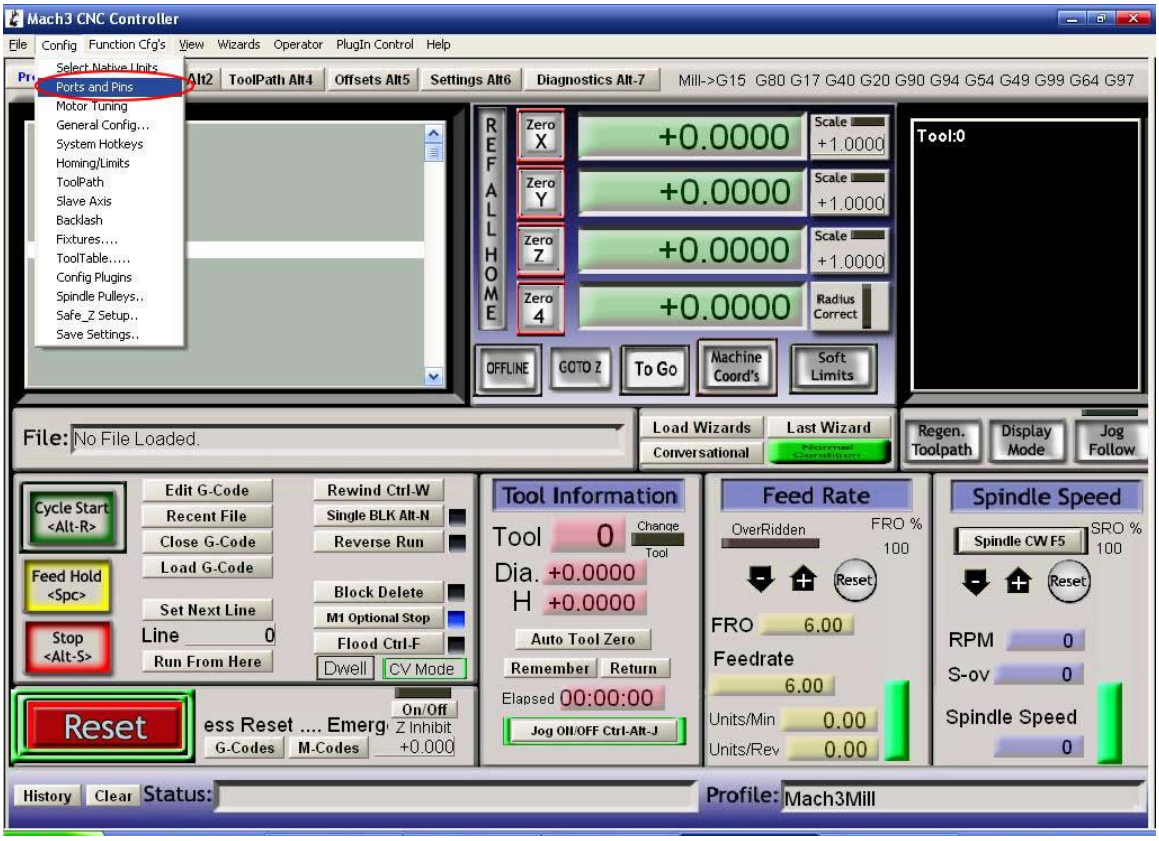
Pic.1

See Pic.1: Run MACH3.exe file, choose Mach3mill, and click OK.



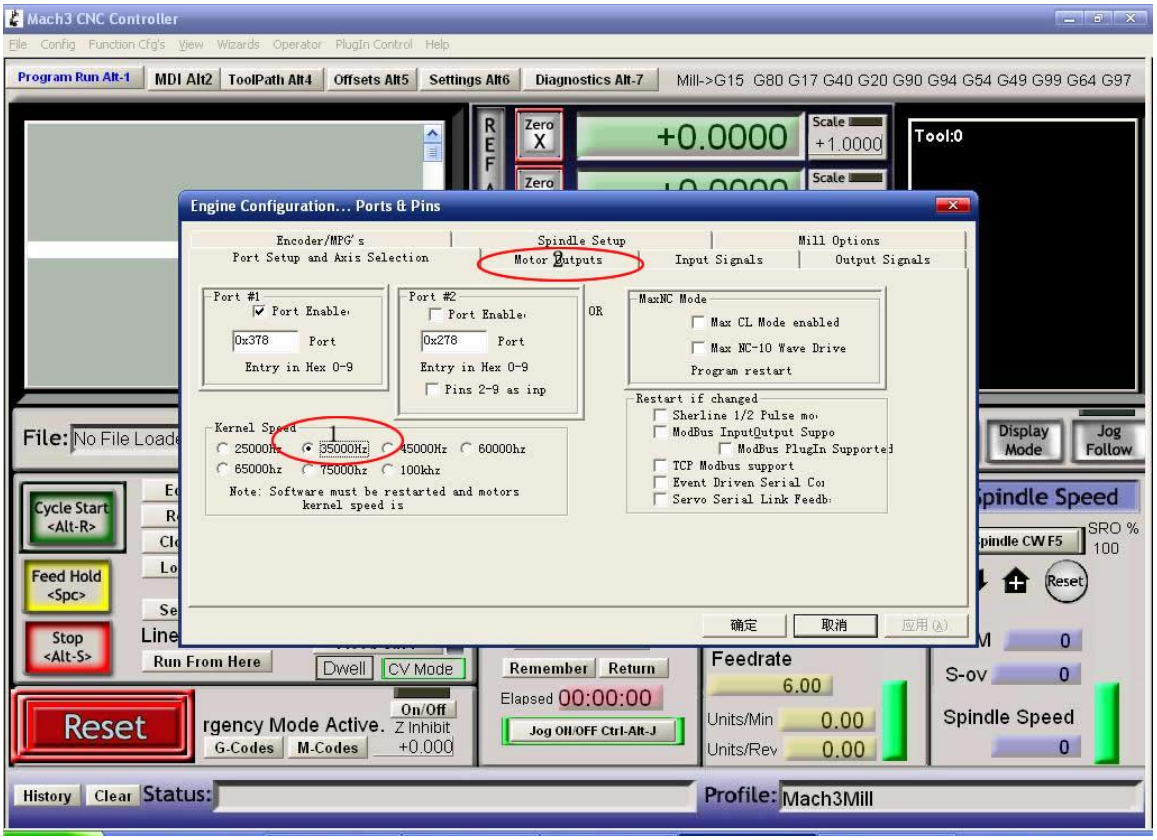
Pic.2

See the Pic.2 for reference, there are common use buttons.



Pic.3

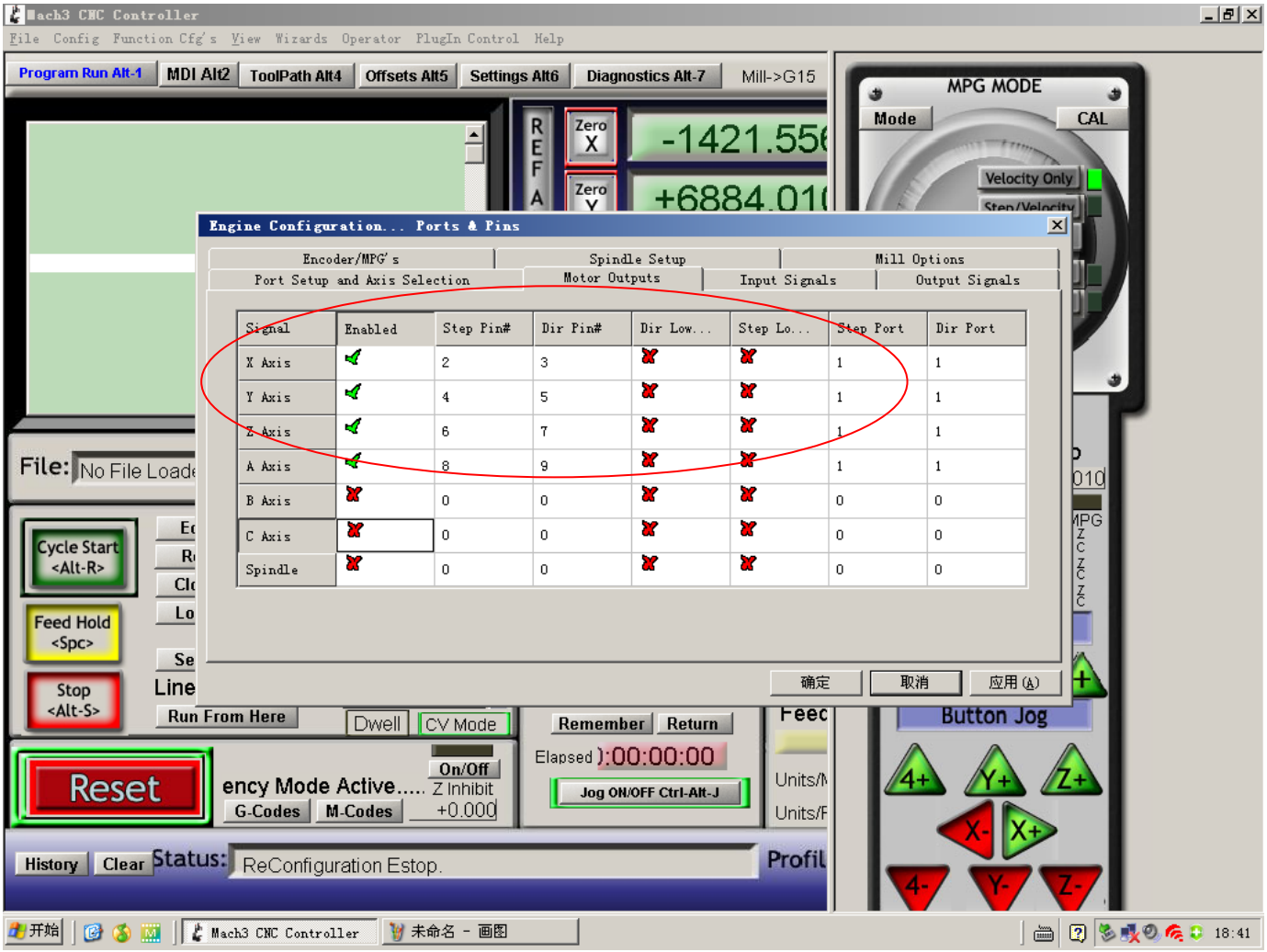
See Pic.3: Click “Config” -----Ports and Pins



Pic.4

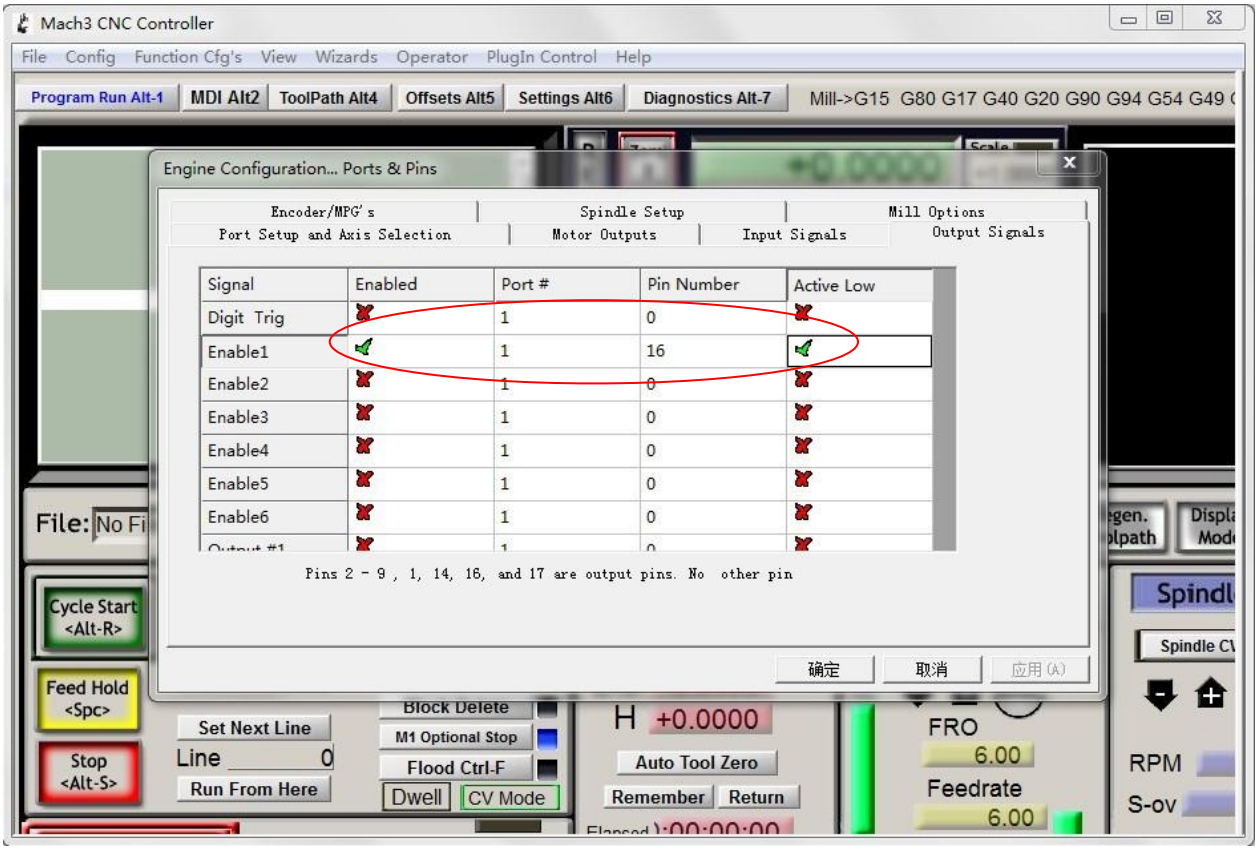
CIRCLE1: Frequencies setting, to control the speed (Pic.4)

CIRCLE2: Ports & Pins setting (please see Pic.5 for reference)



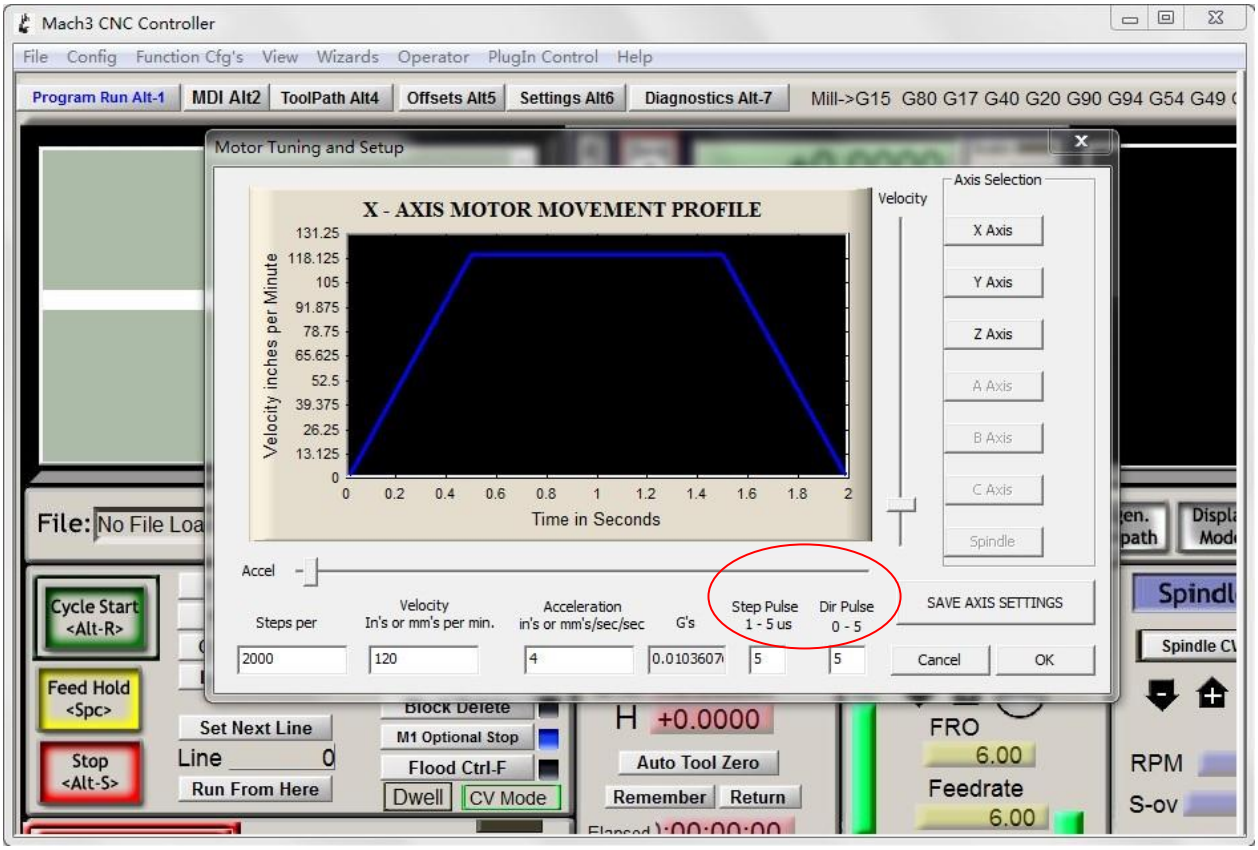
Pic.5

Please set the X\ Y\ Z\ A axis as Pic.5 shows.



Pic.6

Choose “Output Signals” and then set as Pic.6 shows.



Pic.7

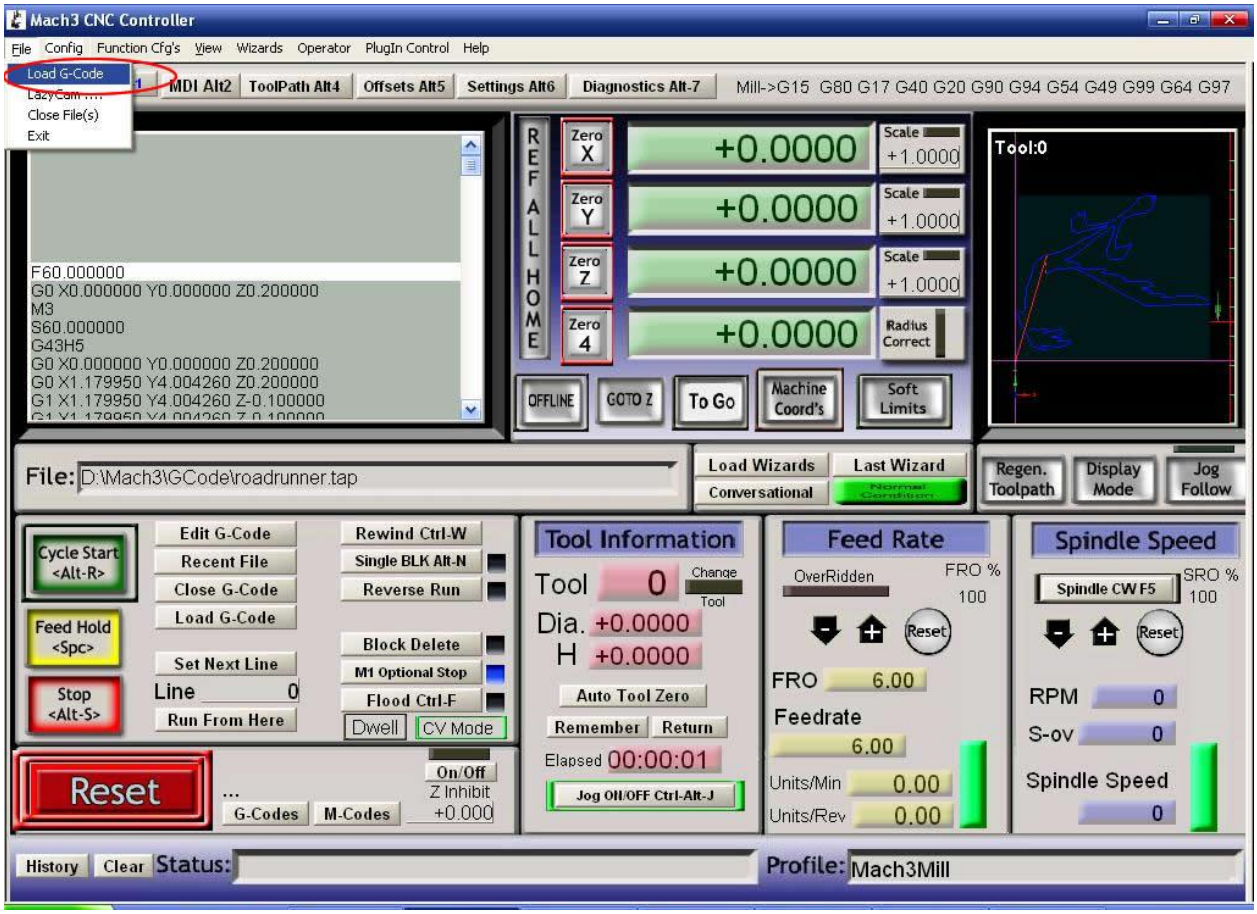
Pulse width setting:

Step impulse: 5us

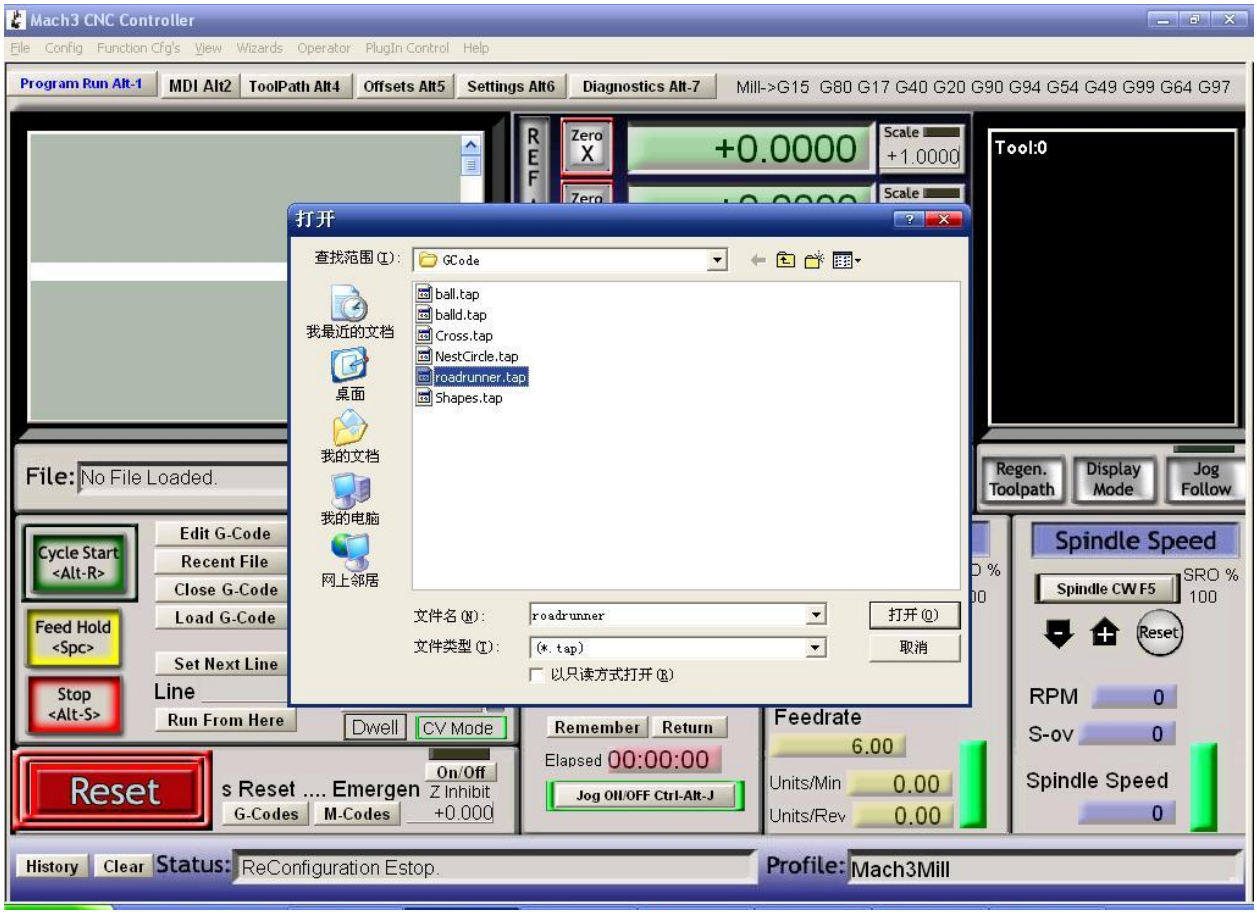
Direction impulse: 5us

See Pic.7 for reference

Please click “load G-code”, see Pic.8 and Pic.9.



Pic.8


Mach3 CNC Controller
File Config Function Cfg's View Wizards Operator PlugIn Control Help
Program Run Alt-1
MDI Alt2
ToolPath Alt4
Offsets Alt5
Settings Alt6
Diagnostics Alt-7
Mill->G15 G80 G17 G40 G20 G90 G94 G54 G49 G99 G64 G97
Zero X
+0.0000
Scale
+1.0000
Tool:0
打开
查找范围(I):
GCode
我最近的文档
桌面
我的文档
我的电脑
网上邻居
ball.tap
balld.tap
Cross.tap
NestCircle.tap
roadrunner.tap
Shapes.tap
文件名(N):
roadrunner
打开(O)
文件类型(T):
(*.tap)
取消
以只读方式打开(R)
File: No File Loaded.
Regen. Toolpath
Display Mode
Jog Follow
Cycle Start <Alt-R>
Feed Hold <Spc>
Stop <Alt-S>
Edit G-Code
Recent File
Close G-Code
Load G-Code
Set Next Line
Line
Run From Here
Dwell
CV Mode
Remember
Return
Elapsed 00:00:00
Jog ON/OFF Ctrl-Alt-J
Feedrate
6.00
Units/Min 0.00
Units/Rev 0.00
Spindle Speed
Spindle CW F5
SRO %
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Reset
RPM 0
S-ov 0
Spindle Speed 0
Reset
s Reset .... Emergen
On/Off
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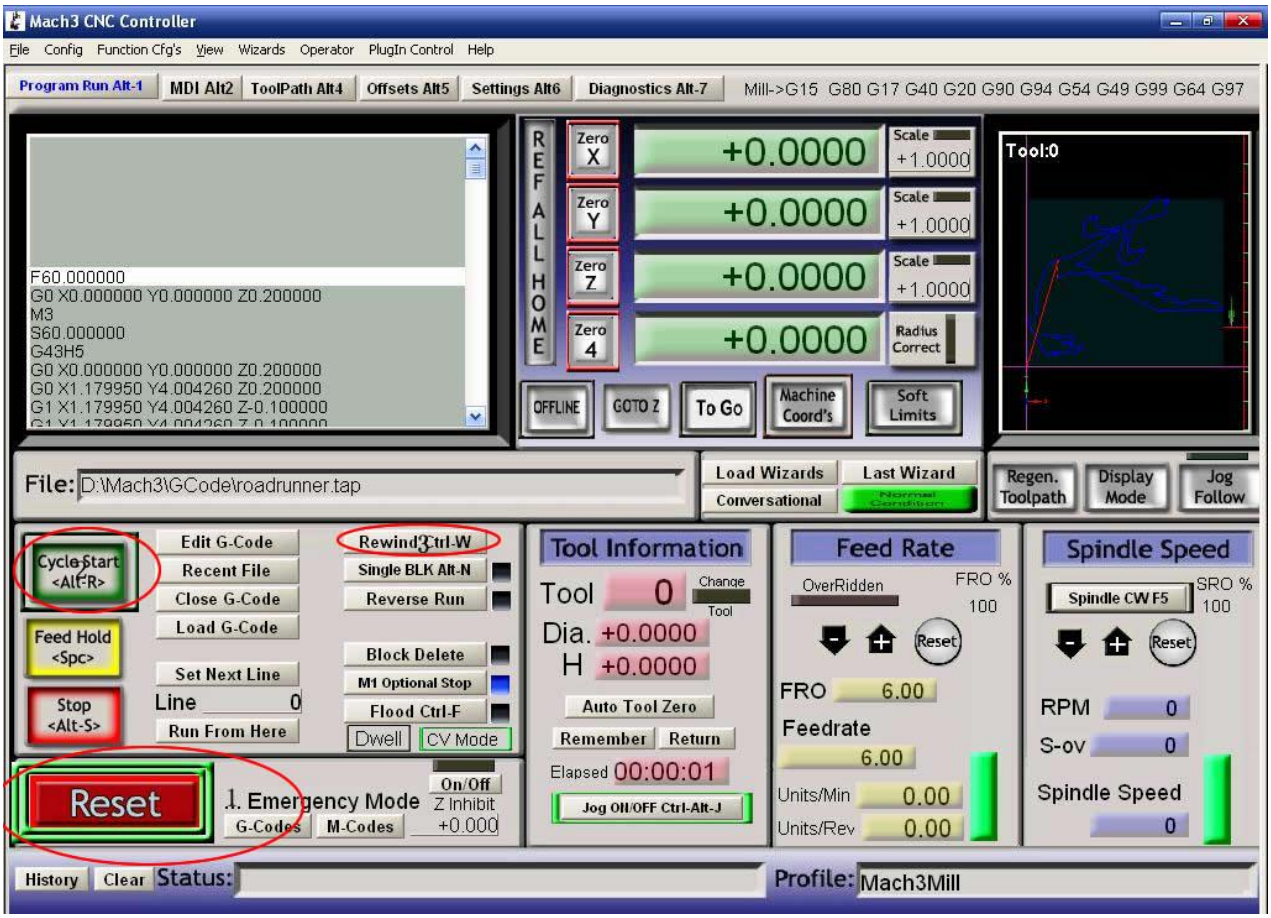
G-Codes
M-Codes
History
Clear
Status: ReConfiguration Estop.
Profile: Mach3Mill

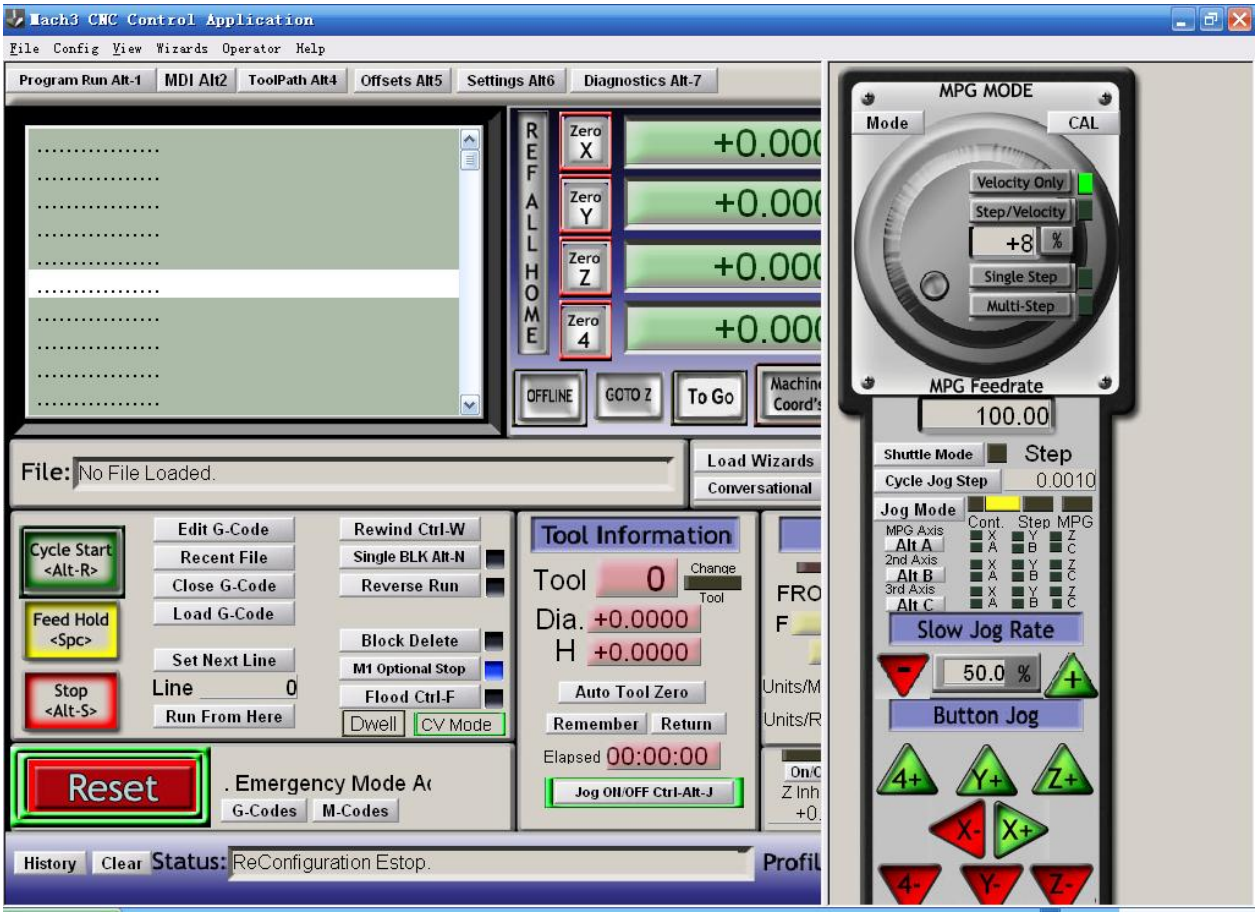
Pic.9



Pic.10

After loading the G-code, the reset light is blinking which means you are in stop condition. You can solve it by clicking the "Reset" button(see circle 1), then click circle 2 to start "Cycle-start".

If you need manual control, please click "TAB" button on the Keyboard (see Pic.11)



Pic.11

10.Notes

Please make sure that the drive board is under the rated temperature after working inconsistently for half an hour. If not, please contact us for help.

11.Contact us

Web: http://stores.ebay.co.uk/SAVEBASE

E-mail: ebay@savebase.com