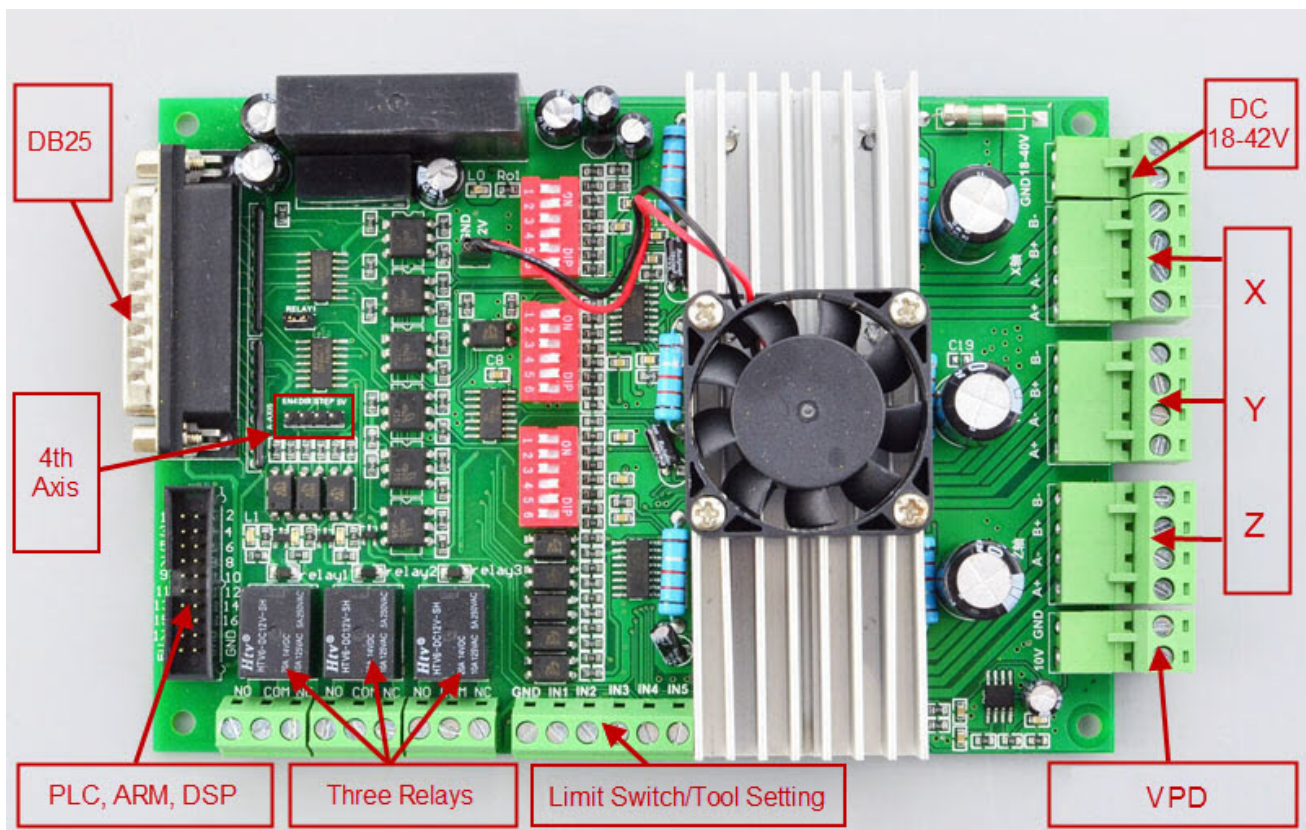


This document describes the basic functionality and the electrical specifications of StepperOnline's Three Axis TB6600 CNC Driver Board.

1. Key Features

- Supports MACH3, KCAM4, EMC2 etc...
- Can drive three channels 4.5A stepper motors, input voltage up to 18V - 40V.
- Resolution 1, 1/2, 1/4, 1/8, 1/16 micro stepping output.
- 100% Full DC-DC high-speed optical isolation to protect the user's computer and equipment.
- Three channels of 0.4 - 4.5A adjustable output current for 2/4 phase bipolar stepper driver.
- Build with 3 ways relay output and 5 ways limit interface
- Automatic idle-current reduction.

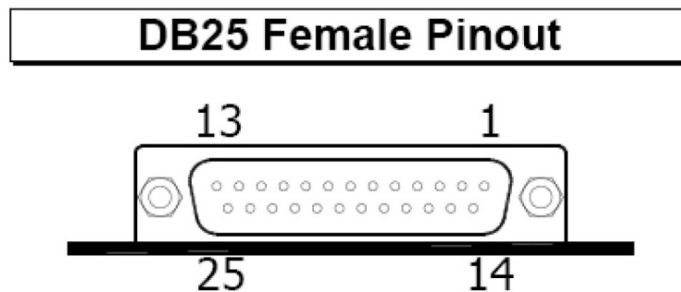
2. Photo of 3-AXIS CNC Board



VFD: Variable-frequency Drive

3. PIN Define

3.1 DB25 LPT pin define:



PIN	Pin Symbols	Description
1	PWM	0-10V output control
2	STEPX	X axis pulse
3	DIRX	X axis direction
4	STEPY	Y axis pulse
5	DIRY	Y axis direction
6	STEPZ	Z axis pulse
7	DIRZ	Z axis direction
8	STEPA	Extending axis pulse
9	DIRA/Reply 1	Extending axis direction/Relay 1 control (If control relay 1, please linking-up the jumper)
10	LIMIT-1	LPT input signal 1
11	LIMIT-2	LPT input signal 2
12	LIMIT-3	LPT input signal 3
13	LIMIT-4	LPT input signal 4
14	ENABLE_ALL	All axis enable input
15	LIMIT-5	LPT input signal 5
16	RELAY2	Relay 2 control
17	RELAY3	Relay 3 control
18-25	GND	GND

It is critical that the connection between computer parallel port and motor drive board be direct with the use of adapters (If your computer does not feature a DB25 outlet, you must install one, (these can be achieved via PCMCIA cards on laptop computers) The use of adapters and hubs is not advisable and most likely will not work.

3.2 2x10 GPIO Define

Please note: If external device is PLC or other controllers which output voltage higher than 5V, please connect a

resistor in series. (12V controller connect 1K resistor, 24V controller connect 2K resistor).

PIN	Pin Symbols	Description
1	PWM	0-10V output control
2	STEPX	X axis pulse
3	DIRX	X axis direction
4	STEPLY	Y axis pulse
5	DIRY	Y axis direction
6	STEPZ	Z axis pulse
7	DIRZ	Z axis direction
8	STEPA	Extending axis pulse
9	DIRA/Reply 1	Extending axis direction
10	LIMIT-1	LPT input signal 1
11	LIMIT-2	LPT input signal 2
12	LIMIT-3	LPT input signal 3
13	LIMIT-4	LPT input signal 4
14	ENABLE_ALL	All axis enable input
15	LIMIT-5	LPT input signal 5
16	RELAY2	Relay 2 control
17	RELAY3	Relay 3 control
5V	5V	Power for MCU (+5V)
GND	GND	GND

4. Setting

4.1 Current

Current	0.4A	1.6A	2.6A	3.2A	3.8A	4.0A	4.3A	4.5A
S1	ON	OFF	ON	OFF	ON	OFF	ON	OFF
S2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
S3	ON	ON	ON	ON	OFF	OFF	OFF	OFF

4.2 Subdivision

Subdivision	NC	1	1/2	1/2	1/4	1/8	1/16	NC
S4	OFF	OFF	OFF	OFF	ON	ON	ON	ON
S5	OFF	OFF	ON	ON	OFF	OFF	ON	ON
S6	OFF	ON	OFF	ON	OFF	ON	OFF	ON

5. Selecting and Connecting Stepper Motors

WARNING: INCORRECT WIRING OF THE STEPPER MOTOR TO THE DRIVE BOARD CAN LEAD TO IMMEDIATE DAMAGE OF DRIVE BOARD - DO NOT CONNECT OR DISCONNECT MOTORS WHILE POWER IS ON.

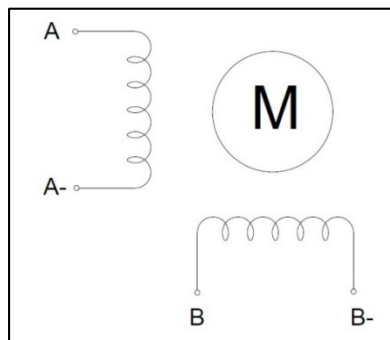
4 Wire, 6 Wire, and 8 Wire stepper motors can be used with 3-AXIS CNC Board.

4 Wire motors are recommended as they are by their manufacture true bipolar motors and easier to properly connect to stepper motor drive controller.

It is critical to obtain a proper motor coil diagram of any motor you wish to utilize (making cross connections between the two coils will destroy the control circuitry).

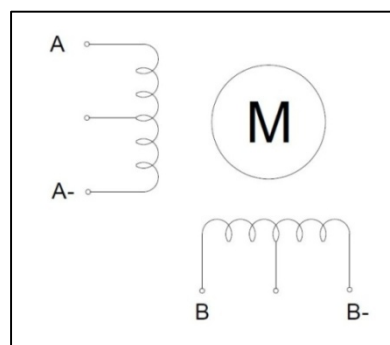
1.8 deg per step resolution is the industry standard for most automation grade stepper motors and is recommended for most applications.

a. 4 WIRE STEPPER DIAGRAM



Each wire is connected to its corresponding terminal block location (i.e. A- wire is connected at A- location)

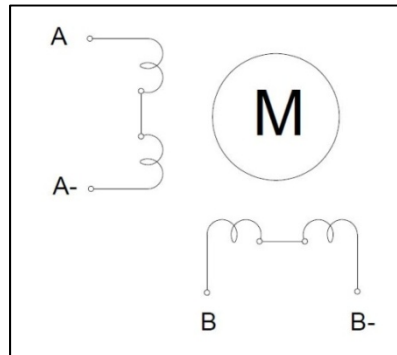
b. 6 WIRE STEPPER DIAGRAM



Center wire of each coil not connected (insulate termination)

Remaining wires are connected to their corresponding terminal block location (i.e. A- wire is connected at A- location).

c. 8 WIRE STEPPER DIAGRAM

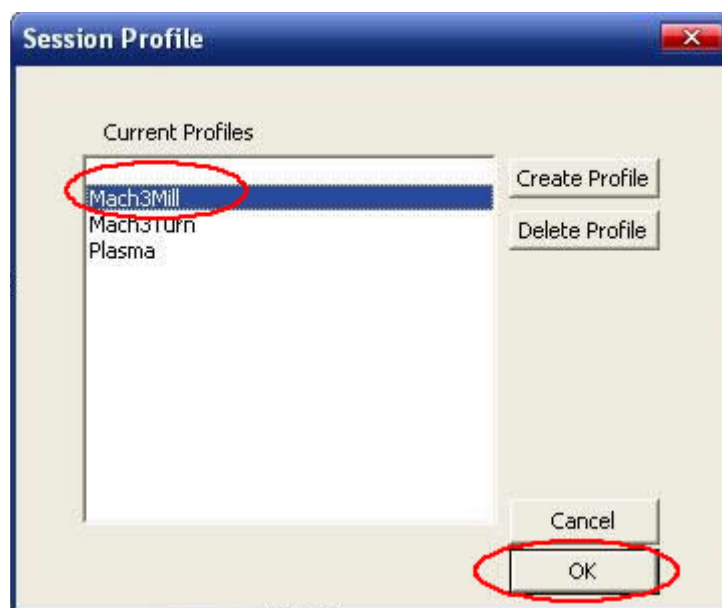


2 center wires of each coil connected (insulate connection)

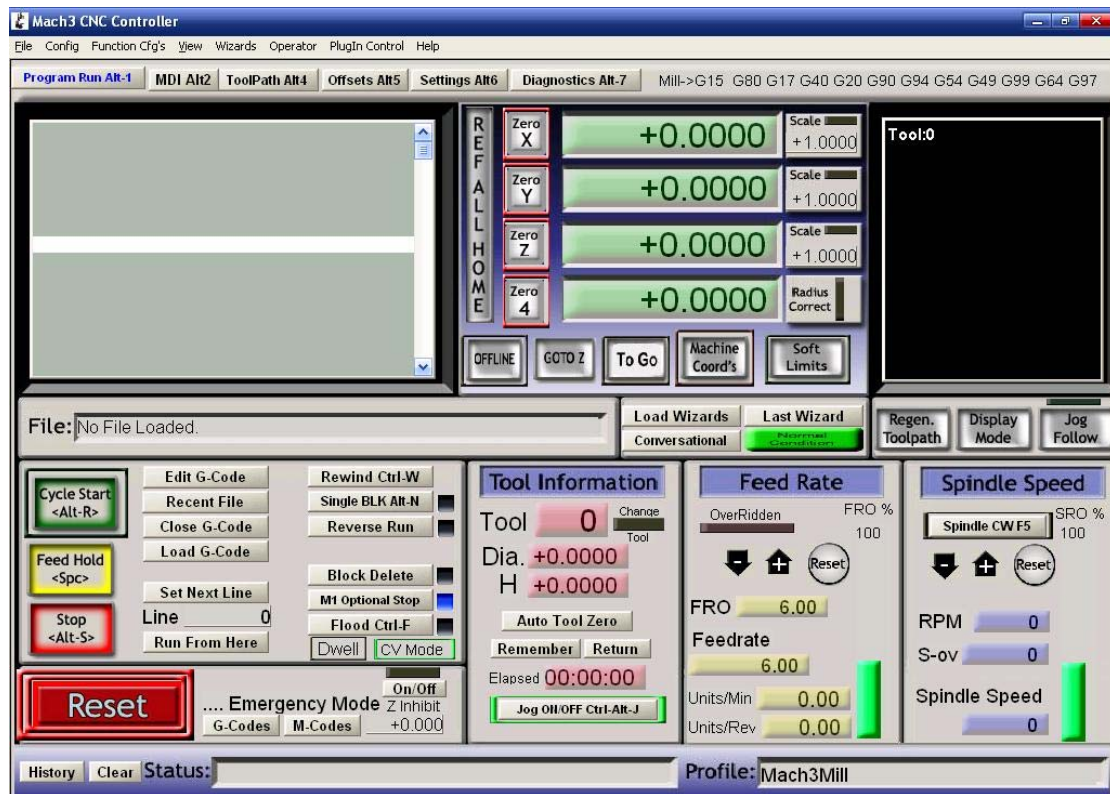
Remaining wires are connected to their corresponding terminal block location (i.e. A- wire is connected at A- location).

If using 6 or 8 wire motors, connected using series wiring method, reduce labeled amperage rating by 50% (i.e. a motor rated at 4 amps should thus be considered now rated at 2 amps).

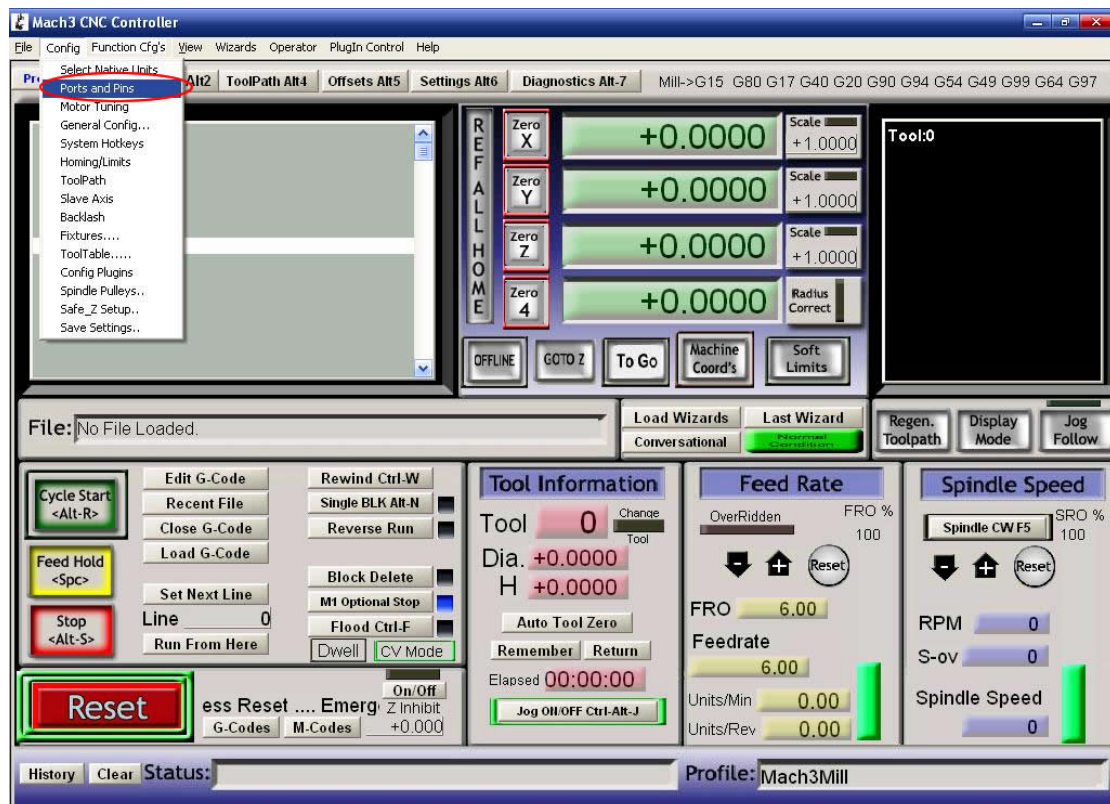
6. How to use MACH software?



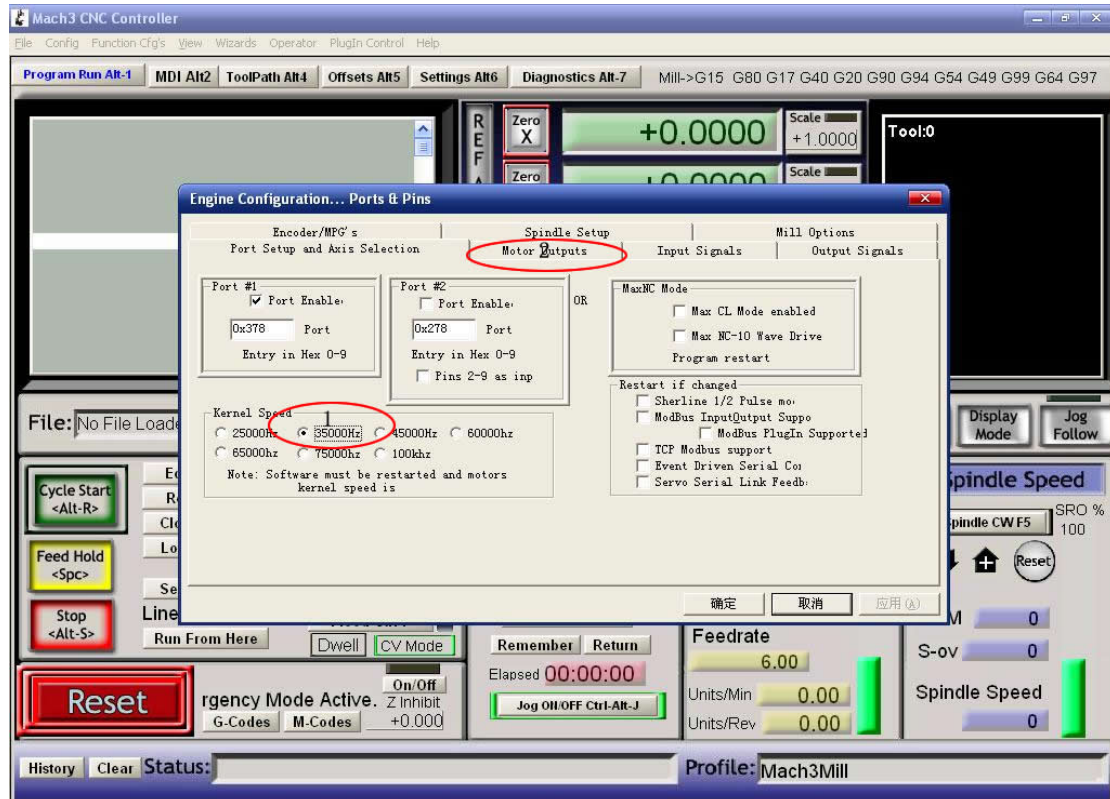
Pic.1



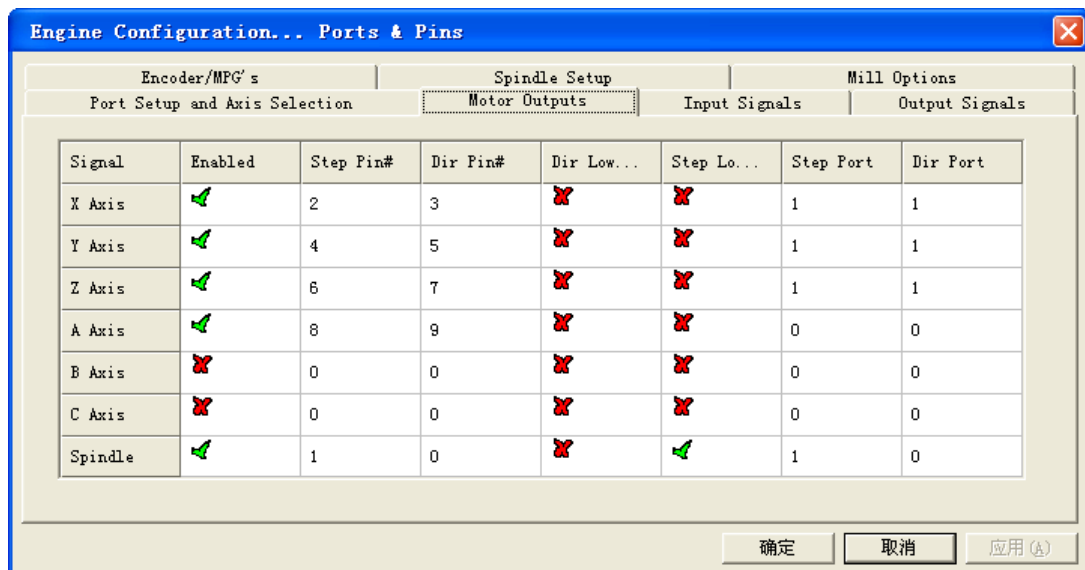
Pic.2



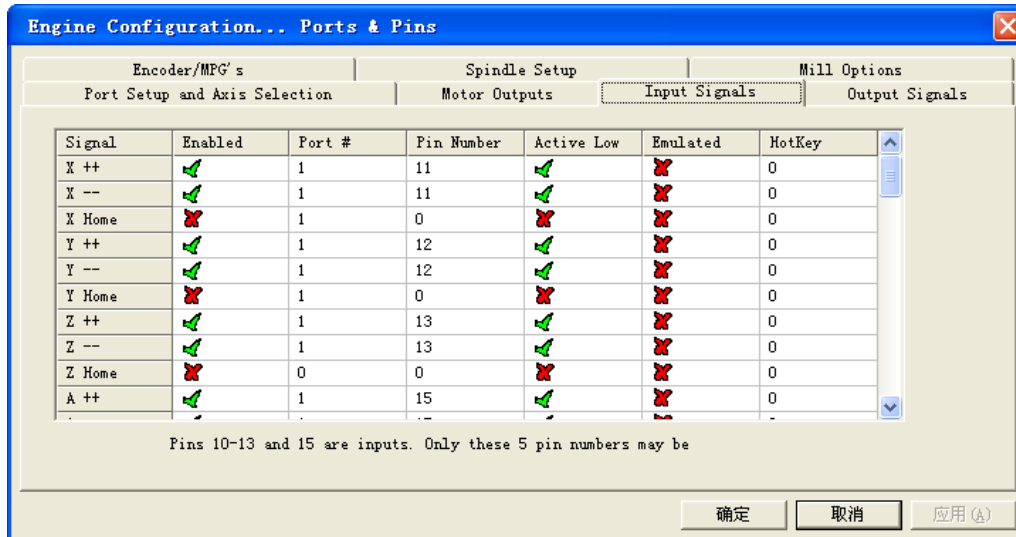
Pic.3



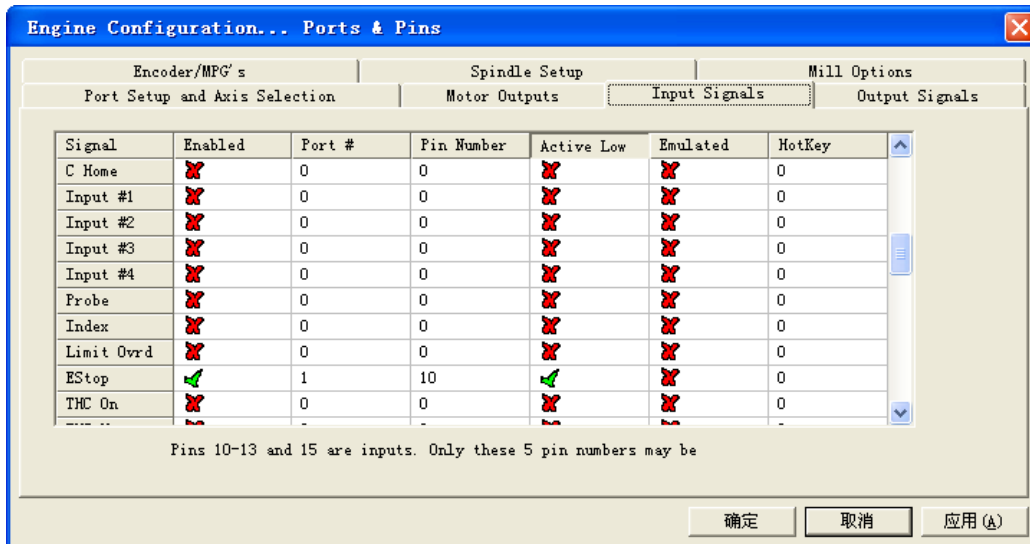
Pic.4



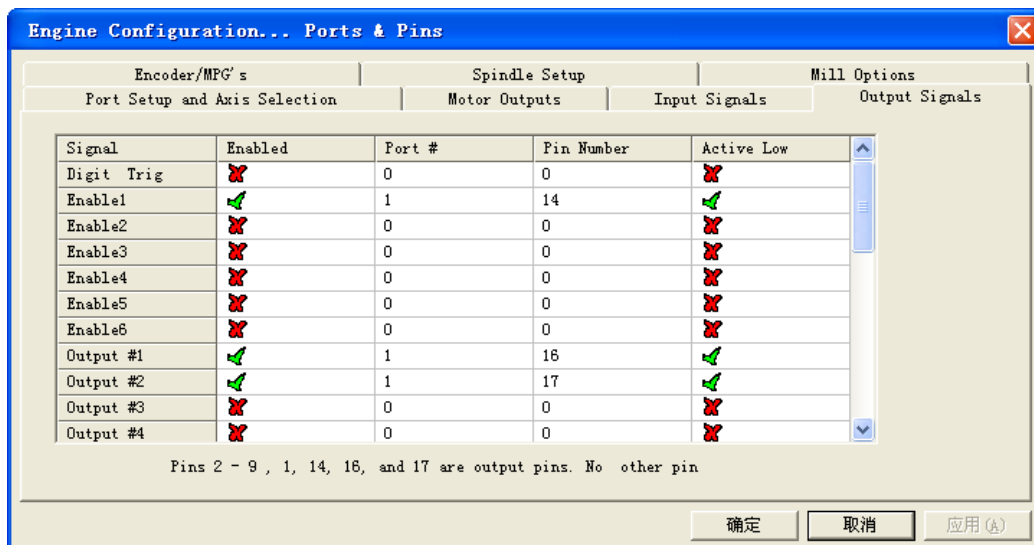
Pic.5



Pic.6

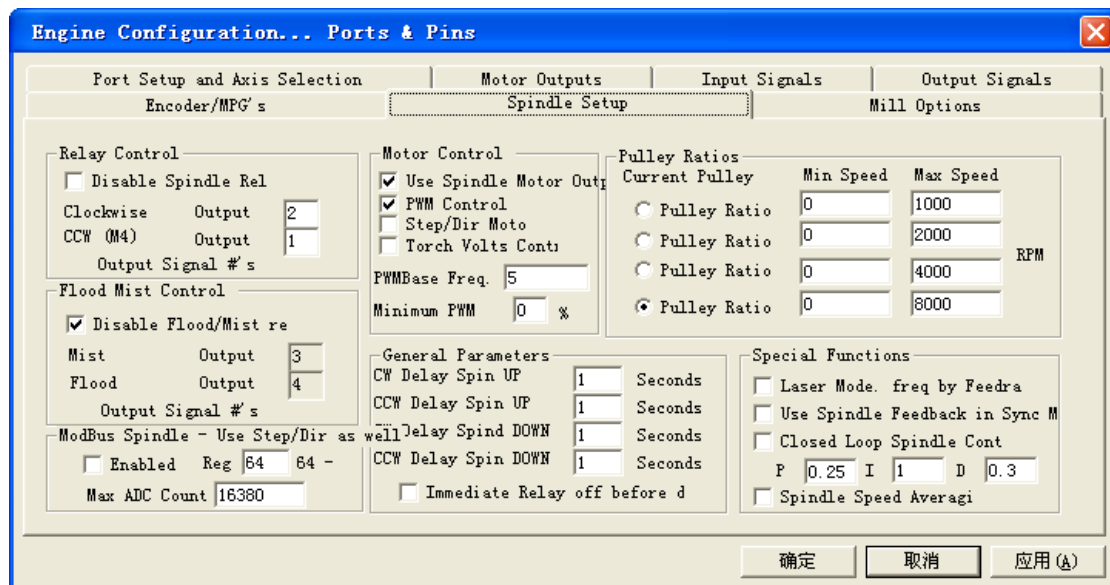


Pic.7

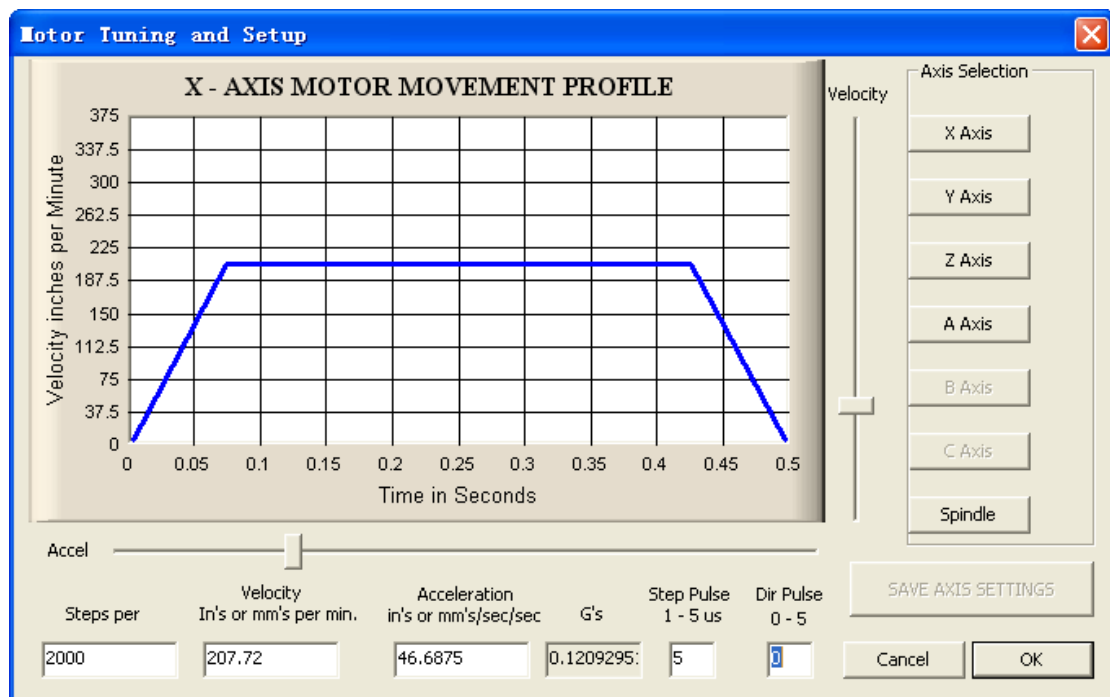


Pic.8

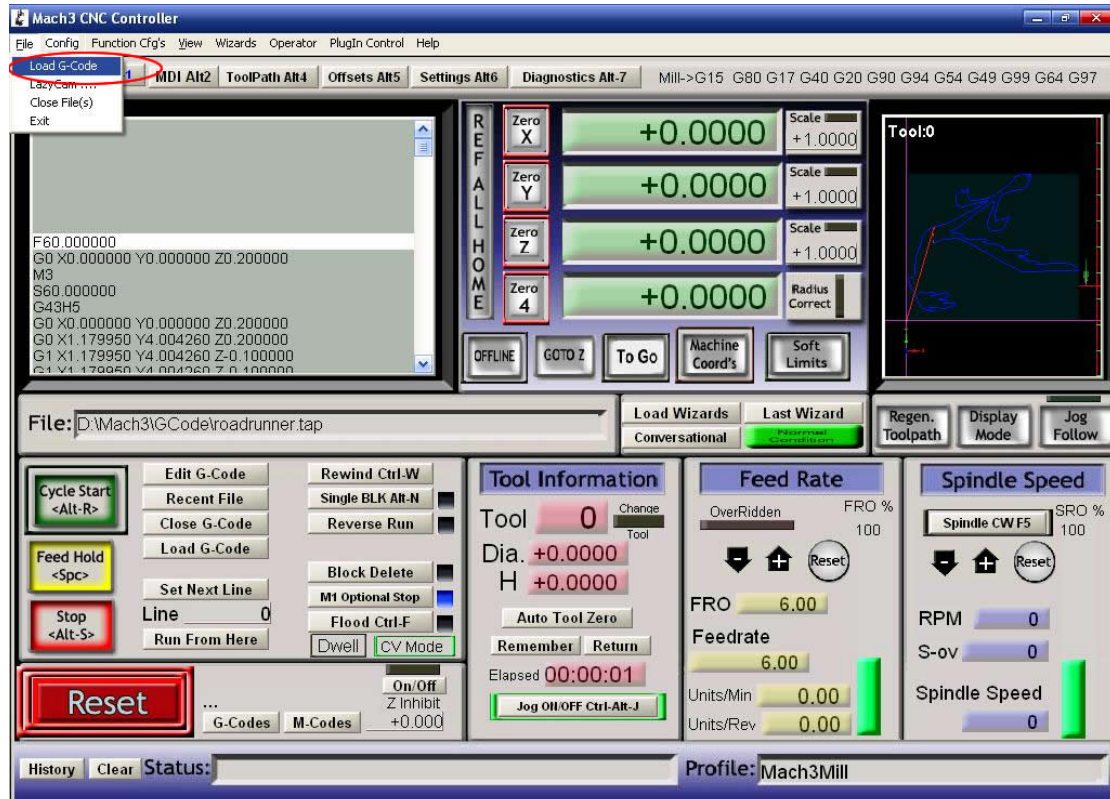
(Please note: some of computer has opposite "Active low" and "Active high", if it is with your computer, please change above three "Active Low" to "Active High".)



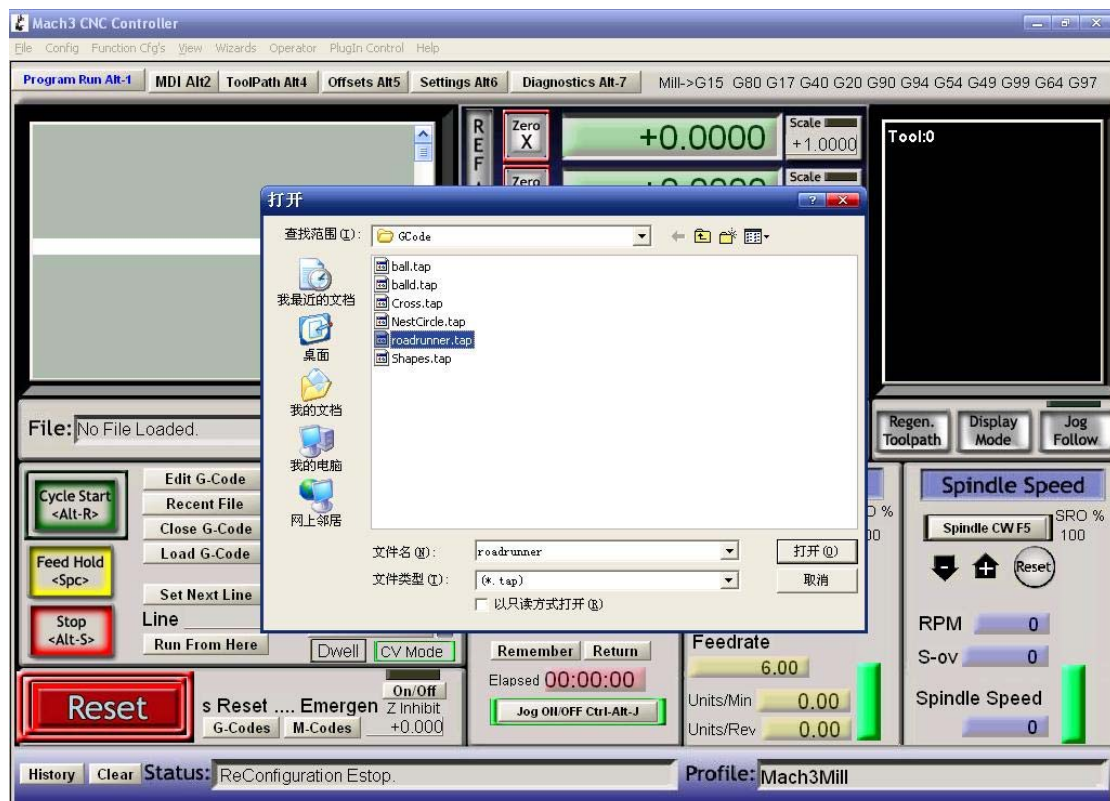
Pic.9



Pic.10



Pic.11



Pic.12