CNCUSB Controller

User Manual

Introduction

1.1

CNC motion controller is a device connect computer with motor driver. It can

work with your laptop or desktop which have USB port connection. This is a complete (hardware / software) project, no need any additional softwares. The control card is compatible with most motor drives, it is the replacement of the drive board of the prarallel port.

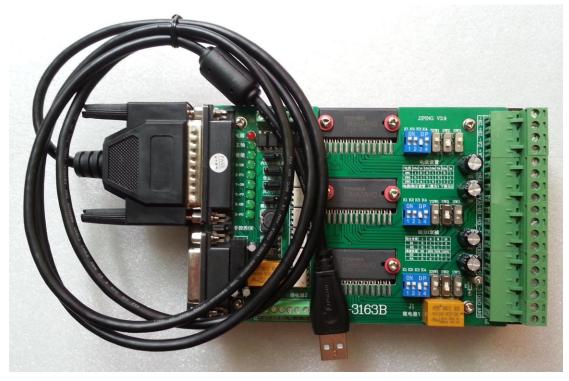
1.2 Computer System Requirements
Bottommost (lowest) configuration:
1 GHz or faster CPU processor
512MB of memory
500 MB of free disk space
DirectX 9 graphics device with WDDM 1.0 or higher driver
USB 2.0 port
. NET Framework 3.5 SP1

Recommend configuration: 2 GHz or faster CPU 2GB RAM 500 MB free disk space DirectX 9 graphics device with WDDM 1.0 or higher driver USB 2.0 port .NET Framework 3.5 SP1

Hardware:



How to connect:



USB 25 pins functions:

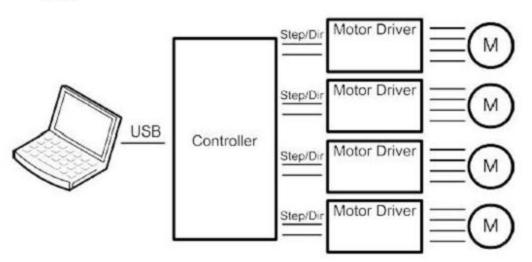
Function	DB25pins	Remark
X axis (step pin)	2	
Xaxis (dir pin)	3	
Y axis (step pin)	4	
Y axis (dir pin)	5	
Z axis(step pin)	6	
Zaxis (dir pin)	7	
A axis (step pin)	8	
A axis(dir pin)	9	
External input interface (optoe	lectronic isolation)	
IN10	10	External emergency button
IN11	11	X axis limit switch
IN12	12	Y axis limit switch
IN13	13	Z axis limit switch
$X \ Y \ Z \ A$ axis Enabled	14	Enable
IN15	15	Tool setting*
No usage of other pins		

* this function is choosable, if there was, drive board will available

Spec&functions 2.1 Run Windows XP, Vista or Windows 7 (32 bit or 64bit) with USB2.0 Andvanced Interpolation algorithm High-performance IO buffer Provide, Start, Stop, Pause, Continue Support standard RS274/NGC G-code (EMC2 compatible) Support anvanced G-codes - G40, G41, G42 (tool radius compensation) Support anvanced G-codes - G43, G49 (Tool length encoding) Support anvanced G-codes - G54, G59.3 (coordinate system) support SolidCAM, MasterCAM, ArtCAM, Vectric, ... creat G code support 3-axis, 4-axis. Load DXF file Load directly PLT/HPGL file Load directly picture file Load directly drill file Load directly GERBER file Advanced tool change function export G-code export DXF export CSV

export NC

安装



2.2

One point of USB card connect controller box by parallel port; Another point connect computer USB port. Four-axis controller card instruction:

2.3

Support 4th axis machine

Can switch 3 modes: Normal XYZ, thermal cutting XYUV, rotating

XYZA,

Provided for each axis 25 kHZ pulse signal 12 us minimum pulse width All axis limit Can be accessed by external port, such as hand remote controller; 3 digital outputs (spindle / cutting liquid / mist)

- 3. Software
- 3.1 Installation
 - System need to insall:
 - DirectX 9c for .NET
 - Microsoft .NET 3.5 SP1 Framework
 - Controll software

3.1.1 Install driver

First install --- NET35

	And the second sec		Manuf	
	欢使使用空装程序		net Frame	work
	清晰绿导相阅读并型解示 无能进取用。	可杀草中法指的所有衣服料	AN. DARSITAT	THE
	MICROSOFT	伙件补充程序许可	J条款	-
	MICROSOFT .	NET FRAMEWO	RK 3.5 SP1 F0	R -
	版Fage Down 提可查看更	多文本的等。		11年1月
	《 第已后间未并接受许多	This 中的基本(A)	has	Sector sector
MET Franswork 3.5 Setup MET Stanswork 3.5 Setup	C 就干额来许可办以中1	() 新載()		
	厂 相乐的安装体验信息》 关于2010年1月1日2月2日	H王統 Merosaft Corporation(5 構造	<u>b</u>	
	下藏女件大小	55 ME.		
	GitTRHA:	2 小时 38 分钟(36) 17 分钟(512 Mpri)	idex)	

Please wait a second untill software installation complete...

Then install DX9:

再安装 DX9



Then install the control software: CNCUSB_Setup



After installation, it needs Registration, otherwise can only run 25 rows Code.This software must work with controller card together.

1, Open CNC USB Controller, choose your language.

CNC USB Controller	
File View Program Machine Help	
	$\mathbb{P} \oplus \mathbb{O} \otimes \mathbb{Q} \otimes \mathbb{Q} \otimes \mathbb{R} = \mathbb{P} \oplus \mathbb{O} = \mathbb{R} \cdot \mathbb{R} \cdot \mathbb{R} \cdot$
Position State Program	
🔯 🗌 Offset 🛛 W 🔤 T 🔜 M	
Offset W T M X: 0.0000 X 0.0000	
бо <u>т</u> : 0.0000	
Z: 0.0000	
Z: 0.0000	
2 2 2	
8	en e
<u>Q</u>	
2	
3	
	· · · · · · · · · · · · · · · · · · ·
¢	
SPD: 0.00	
OWRD: 1250.00	

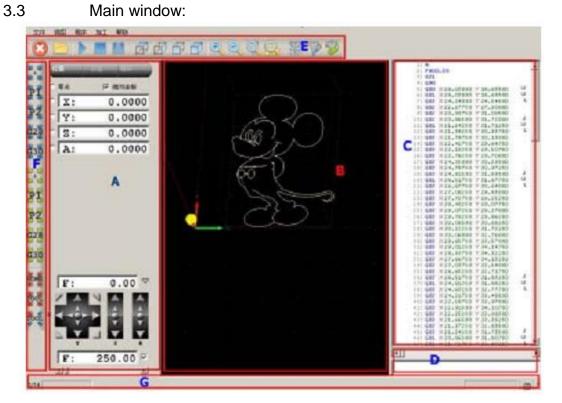
Click the red frame"/File---language---English," picture as belows:

CMC USB Controller			
ile View Program Machine	Help		
Open	/101	1 B B Q Q Q Q X 7 7 7 1 X X .	
Close	/102		
Recent Files	•		
Import G-Code	/111		
Import DXF	/112		
Import PLT/HPGL	/113		
Import NC Drill	/114		
Import Gerber	/115		
Import Image 2D	/116		
Import Image 3D	/117		
Import Text	/118		
Import Airfoil	/119		
G-Code Wizard	•		
Export Toolpath to GCode	/141		
Export Toolpath to DXF	/142		
Export Toolpath to CSV	/143		
Export Toolpath to Raw	/144		
Settings	/151		
Import Settings	/152	a contraction of the second	
Export Settings	/153	V English	
Language	•	Italiano	
Exit	/199	Gernan	
		French	
SPD: 0.	00	Dutch	
		Swedish	
OWRD: 1250.		Portugués Brasileiro	
(Turkish	
		Spanish Lithuanian	
X 4 JON A		Li thuani an Slovenščina	
Y Y		Slovensoina Kungarian	
	1	Dansk	
Y Z			
JOG: 1250.	00 🗢	· · · · · · · · · · · · · · · · · · ·	
(1)	<u>()</u>	简体中文	

Insert the USB card, click"help"---"activate", enter the register code, picture as belows:

	USB Contro 视图 程序		帮助																			
			帮助		/500	(\bullet)	\bigcirc		1 (), !	驟	9	5	6	ŢP.	- 4	<u>k</u> .					
				t CNC F	orum		-	<u>, 1</u>		<u> </u>	0, 8%	8	(P		urus	40.0	UŞ.					
	Position 8	tate		e Wiki																		
		W	_	e Refer																		
	X:			并可证 ·																		
2		_		F可证 .																		
	Y:	_		ř可证.	••																	
S C) z:		日志	 更新																		
3			松重9 关于		/550																	
B																						
R																						
3																						
2																						
3																						
2														Į.								
3														•								
P L																						
2																						
2	SPD:		0.00	1																		
	-																					
	OVRD:	125	0.00																			
х			8																			

For more convenient, you can save the setting steps, just need to click"File"—Load file (file name usually: XXXX.Setting.)

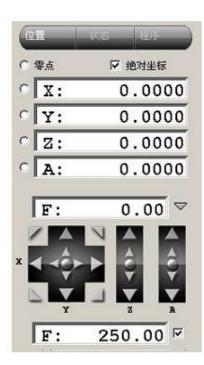


A – Position, status, code information board

- B process code
- $C \quad G\text{-}code$
- D manually G-code
- E Tool
- F common positioning tool
- G– status

Position operate"

3.3.1 Main functions:



Position

Clear button Current speed Move Speed adjust

6		asca duta
C	零点	17 绝对坐标
C	X:	0.0000
c	Y:	0.0000
C	Z:	0.0000
C	A:	4.2600

Purple background: + Direction limit trigger Red background: - Direction Limit Trigger Above the window position coordinate system shows the current position information.

Absolute coordinates marked "absolute coordinates" option. You can also enter the figure directly then press Enter,

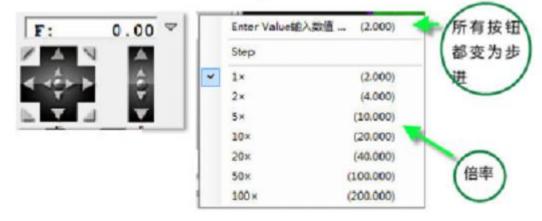
Of course, that means the position is the new figure. If you enter 0, the current axis position is cleared.

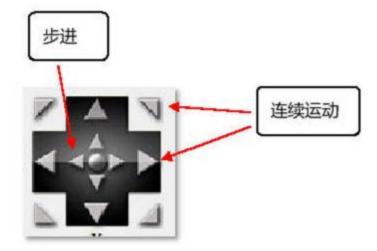
"Zero" button will clear all axis positions.

Speed F shows the 'unit / per minute.' Unit setting in the system parameters.

Jog key is moving the equipment to the desired position, the speed limited by the following slider as belows.

F value on the right drop-down button, when clicked, pop Stepping Options box, specify the stepping movement distance.





F speed value adjust by the sliding block:



Specify or entered manually.

Right hook - specified speed, ignoring F order of G code (generally on hook), After hook, the processing speed can be changed.

Do not hook – use accelerated speed of "General Settings" in speed of G code or system parameters.

The Select Default from the "General Settings" and "specified speed" item definition.

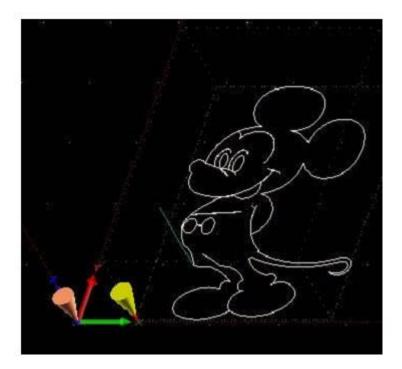
Speed Settings: System parameters "basic settings" default rate, "Axis Set 1" The maximum speed of each axis.

3.3.2 Status of board

单位平面	毫米 ×Y
 桓式	绝对坐标
进给速度	800.00 !
近30.22度 快速速度 进给速度(0)	250.00 !
快速速度(0)	250.00
冷却液 冷却雾	未知 未知
主轴	Stopped (150
轴	
×	0.000
Y Z	0.000
A	4.260
偏移量	
当前	1
X偏移量 Y偏移量	0.000
Z偏移量	0.000
A偏移量	0.000
刀具	
刀具	0 (0)
名称 刀具类型	未知
直径	0.000
Z刀具偏置	0.000
行数	172
G代码	96

Show: Current device status

3.3.4 Processing code window

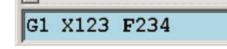


This window displays the device, tools, machining path 3D map. Orange Box - device processing capacity range Gray grid - machine worktable Axis arrow - display coordinate system origin Red axis - the origin of the coordinate system selected White Lines - machining feed path Green Line - blank path Red lines - selected path (on the right Select G-code line number) Yellow Cone - the current tool position Orange cones - analog display position • Dark green / gray cone - G28 and G30 Location • Dark green / gray - project scope and procedures for cutting range

Shortcuts:

Zoom / shrink: mouse wheelShift: Press the left mouse button and move3D perspective changes: Press the right mouse button and move

3.3.6 Manually G code input window G code text can be entered:



Devices such as input "G1 X123 F234" F-way speed of X axis will be moving

forward 123 units. Toolbar



3.3.7

Toolbar functions from left to right: Emergency Stop Open the code file Begin Stop Pause Top View Lateral view Front View 3D perspective Zoom Shrink Centered at the origin Show all

If software shows status below, it says the controller card comminication faile, or you pressed the emergnecy button.



Usuall positioning tool as belows:

• 终业并后期几于需点	-
• 将当前位置设为零点	
 将当前位置设为 PACK 1 	5ť
 将当前位置设为 PACK 2 	# 76
● 将当前位置设为 G28	₽Z
● 将当前位置设为 G30	228
 设备移动至零点 	
● 设备移动至 PACK 1	630
 设备移动至 PACK 2 	10 M
• 设备移动至 G28	
● 设备移动至 G30	PI
 回原点 	
 回对刀位 自动对刀 	E S
 在当前位置 对刀 	628
	630
	25.35
	201 105
	1001
	too!

Status bar

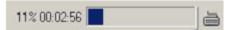
3.3.9

Left side display control card cache information

Right side picture shows in controlling status

13/14

When processing, it will shows the working condition



3.3.10 File menu



3.3.11 display menu

原点	•	绝对坐标	Alt+0
顶视图	F1	✔ 坐标系1(G54)	Alt+1
侧视图	F2	坐标系2(G55)	Alt+2
前视图	F3	坐标系3(G56)	Alt+3
等角视图	F4	坐标系4(G57)	Alt+4
放大	F5	坐标系5(G58)	Alt+5
~~~~ 缩小	F6	坐标系6 (G59)	Alt+6
显示刀具	F7	坐标系7(G59.1)	Alt+1
显示全部	F8	坐标系8(G59.2)	Alt+8
刀具中心	F9	坐标系8 (G59.3)	Alt+9
视图中心	F10		
更改视图	F11		
模拟	F12		
窗口			
显示	•		
材料			

#### Code menu

3.3.12

选择坐标系	•		
浙点	۲	选择下一个	Ctrl+下
- 平移	•	选择上一个	Ctrl+上
比例	10	选择全部	Ctrl+Tab
镜像	•	切换	Tab
绕 Z 釉旋转		清除所有断点	
设置速度	-		
复制 XYZ -> UVW			
XYZ <=转换=> UVW			
圆弧转换为小线段	-		
全部转换为小线段			
编辑G代码文件			
编辑DIF文件			
复制加工程序	Ctrl+C		
粘贴加工程序	Ctrl+V		

#### Device menu

# 3.3.13

紧急停止	Escape	
启动	Enter	
开始循环		
停止		
暂停	暂停	
断点		
冷却雾	Ctrl+M	
冷却液	Ctrl+F	
主轴		
移动到指定位置		
当前位置设置		
原点	Ctrl+Shift+H	
这里刀具长度	Ctrl+Shift+T	
刀具长度		
转换		
系统固件		

## Firmware

upgrade – control card upgrade

Control card must first enter the upgrade mode, after power on shorted external interface pin 7 and 10. Release, the red status light flash.

Authentication - Compare card firmware and software version are the same 3.3.14 MenuHelp

	帮助
	Google
103	G代码标准
	参考 NIST RS274NGC G代码
	参考 EMC2 G代码
	激活授权
	导入许可文件
	导出许可文件
	日志
	检查更新
	关于

4. system parameter setting

単位 で 毫米 で 英寸	ー釉 控制釉数	4
速度	1# 轴名	x
进给) [250.00 🛨	2# 轴名	Y 💌
快速速度 500.00 🛨	3# 轴名	Z 💌
限制全部 🔽 只限制进给速度 🔽	4# 轴名	A
颜色   快捷键   输入	/輸出.   校准设	

4.1 Baisc settings

Size unit: Metric or inch

Axis: check your machine 3 or 4 axis (this card the max 4 axis) Axis definition: X, Y, Z, A axis(rotary axis); but for cutting usually use: X Y U V.

Axis name:

X, Y, Z - common aixs A, B, C - rotary axis U, V, W – parallel axis (hot cutting machine)

The default rate

The default setting when the code runs (G-CODE F is not specified when) the feed and air speed, the unit is size

Units / per minute.

Feed - under the knife processing speed (G-CODE in general as G01)

Fast speed ----- Non under the knife movement speed (G0 0).

Speed limit: hook on the right side of the main interface F value is also selected (meaning software default)

After processing by hook on the main interface to set the F processing, ignoring F G code commands.

Limited to only feed rate: the hook under the knife only after the specified speed

Hook is not empty full speed under the knife away and the main interface F value at.

color Definition icon widget color

shortcust Define keyboard shortcuts

adjust Calibration platform, designated units are consistent with the actual movement distance

3. 			测试快捷
		设	
设置1		-	
一步	0		
x-	163, 37		
X+	163, 39		
¥-	163, 40		
¥+	163, 38		
z-	163, 34		
Z+	163, 33		1
A-	0		
A+	0		
A-B-	0		
A-B+	0		
A+B-	0		
A+B+	0		
C-D-	0	100	
c-p+	0		
C+D-	0		
C+D+	0		
设置2			
一步	161		
x-	0, 100		
X+	0, 102	-1	

#### 4.2 Miscellaneous

战委英雄	212 •	新信泉	0.5000	-
tr-uv 距离	500.00	速度公差	0.00	
显示分辨率	0.5000	超成制	150	-
把件诊断	Г	忧化枥限	250	-
(重启生效)		提示暂停		V
£肤 [		湖泛生新行手		Г
		就量速度		Г
		禁用螺旋指补		п
扩展接口 応用	<b>_</b>	1		
反向	Г			
3@	G			
暂停	0			
单独触发				
代码编编器		1.1.		

Select the device type:

XYZ - ordinary 3-axis engraving machine Hot wire - 4-axis thermal cutting Rotary - device has the rotation A axis

XY-UV distance: distance of both ends of thermal cutting

Display Resolution: setting in the middle of the main interface window, processing code icon window, plus small figure will increase the value of the computer Computation.

Hardware graphics acceleration: after on the hook, use graphics graphics acceleration. .

Skin: Select the software interface skin (restart to take effect)

Expansion ports:

Start: Not take effect until the hook is enabled Opposite: need to take the hook For the emergency stop button For Pause Jog: without self-locking switch must hook Other: Advance angle Advance angle used to calculate the speed, if the angle between the two movements is bigger than this value will not reduce speed. If the angle between the two movements is less than this value will reduce the walking speed. In G-code, use " ^L' " and "^{_} to display.

#### Optimization thresholds

Optimize the degree of optimization of the threshold setting. Program will attempt to delete the lines shorter than the specified length. Set this too low will cause the machine to shake, if set too big, the detail will be lost too.

Pause dialogPause pop-up dialogPause decelerationPause is enabled when decelerating, the proposedhook, avoid high-speed movement will be suspended inertial motion.

	x		Y		z		A	
轴	1.15150						X09	
步数/mm	100.000	+	100.000	*	100.000	÷	100.000	
反向	Γ				Г			
倒置脉冲								
加速度								
初始速度	100.00	÷	100.00		100.00	*	100.00	-
最大运行速度	0.00	÷	0.00		0.00	-	0.00	
加速度	15.000	÷	15.000		15.000		15.000	10.
反向间隙 ——								
反向间隙	0.0000	÷	0.0000	+	0.0000	÷	0.0000	
刀具位置 ——								
1#丌具	0.00	÷	0.00		0.00	-	0.00	-
2#刀具	0.00	÷	0.00	*	0.00	÷	0.00	

4.3 Axis setting 1

Pulses / step

Set the number of pulses per unit, this value is very important, please use the basic settings after setting the calibration function tests.

Trapezoidal screw pitch is generally 4MM, axis number of steps to be set to 400.

Ball screw pitch is generally 5MM, axes should be set to 320 the number of steps

Reverse

Set against the direction of movement

Level inverter

Some motor drives with a total of yin yang connection of different correlation.

Acceleration

Movement started from the initial velocity (units / min) and speed (units / second squared) to the maximum speed.

Acceleration value is smaller, the maximum speed from the initial speed to the longer time-consuming, the more stable the motor.

Maximum Speed

Please set up the machine movement is not lost step value. Be careful to set these parameters, serious adjustment.

Backlash Can be set for each axis hysteresis

Stops Set PACK1, PACK2 information. In manual homing useful tool.

4.4 Axis setting 2

限位 极限传感器	Г- Г+	Г-Г	i+ □- I	<b>+ □</b> -	F +
负限位	0.00	0.00	0.00	0.00	
正限位	0.00	0.00	0.00	0.00	-
软限制	Г	Г		Г	
回零	N				
启用	2				
顺序		☑	•		•
速度	0.00	0.00	0.00	0.00	÷
刀具路径	· - · ·	(	* • -	C + 💽 -	C +
当前位置设置	0.00	0.00	0.00	0.00	*
转到	0.00	÷ 0.00	0.00	0.00	

Limit

Limits for each axis hardware limit switch, hook hired

Limit -

Usually set to 0

Limit +

Effective working distance, the settings icon in the main interface window will work area

# Homing

This function is implemented with hardware limit switch. After execution, the one axial direction, that come into contact with the contact limit switch is a certain position, and then move a distance.

Y axis is homed when the - direction moves at a speed of 200, met - limit switch, the point defined as -10

Point, Y and then moved to 0:00.

That is the Y axis 0:00 from a real hard limit has 10 safe distance.

Note that with the relationship between different coordinate systems. Lower left corner of the main interface hired origin is in effect.

# 4.5 Output

M3, M4, M5 (主轴)	输出	Г
使用輸出引牌 开/关 1 ▼	1# 引脚输出反向 2# 引脚输出反向	Ē
使用输出引脚刀具路径 💌	3# 引脚输出反向	Ē
使用输出引脚速度	4# 引脚输出反向	Г
最小 300 + 最大 30000 +	5# 引脚输出反向	
暂停 □	6# 引脚反向输出	Г
延迟	7# 引脚反向输出	Г
武 开 0.0 世 关 0.0 世 反戦 开 0.0 世 关 0.0 世	启用电机反向	
₩7, ₩8, ₩9 (冷却液) 使用輸出引脚 冷却液 (₩8) 2 💌	- M62, M63 Pout Qval	Г
使用輸出引牌 冷却骤(M7) 3 💽	M64, M65 Pout Qval 使用输出引脚	
使电机 (8-停止) 使用输出引援		

M3,M4,M5 Spindle control command (control spindle function temporarily use)

Switch port Direction for the port Speed port

4.6 Limit

3制   换刀   刀。 ·般   杂项   轴设	見 │ 刀具长度 │ 材料 │ 参数 置 1/2 │ 釉设置 2/2 │ 輸出 ──限
-限位	
单输入	
反向控制1	
反向控制2	
反向控制3	
反向控制4	
反向控制5	
反向控制6	
反向控制7	
反向控制8	
反向控制移位	Г

Single Limit: hook after: each axis - + direction limit sharing a port that is restricted to the axis 2 position switch in parallel. Limit one point to the X with, limit 2 to Y, limit 3 to Z, limit 4 to A. Not hook: Limit 1 to X-, limit 2 to X +

Anti level: normally closed limit switch hook.

4.7 Jog key

空制 換刀	刀具   刀具长度   オ		I2C   手动	注释
一般 一杂项	轴设置 1/2   轴设置 2/2	输出   限位	TAU	输入
手动				
启用				
反向				
减速	<b>v</b>			
距离	0.0500			
最大速度	1500.00 🛨			
0				

External point switch Enable Hook This feature takes effect after Inverting No hook

Acceleration and deceleration After the acceleration and deceleration function hook effect Stepping Minimum step size, how many units to move once more

## Max speed

Move the fastest speed

Movement speed by the control card external speed potentiometer control, if not then press the top speed.

4.8 tool change



Tool change command (M6) execution triggered.

Location

ATC prior to move the location of the first definition, pay attention to the adequacy of the Z-axis height tool.

Z-axis first move

Just move the Z axis

Pause

Length of the knife

After execution of the knife tool change operation, see below see "the knife" Back before the tool change position

Automatic compensation

Maintaining spindle status

Status with the hook on the back spindle M3, M5 command and control, do not hook tool will automatically close when the spindle, but only after manual opening tool. Initial knife

The default knife.

Tool library settings

4.9 Tool bit

轴设置 2/2   輸出   限位   手动   輸入 刀具长度   材料   参数表   I2C   注释 ──
序号       □       二       名称       刀具类型
▲注 ————————————————————————————————————
直径 Z编移量 X编移量 0.0000 ➡ 0.0000 ➡ 0.0000 ➡
换刀 X Y Z

Need to cooperate with tool library

4.10 Tool setting

刀具长度 启用  ▼	11		
位置		速度	_
× 0.0000 <u>亡</u> 当前位置设置	Y 0.0000 王 刀具路径	0.00	「使用原料
			▼ 返回
1	1		□ 暂停
刀具传感器			
启用			
记录位置			

# Enable

Enable the feature on the hook

Position the knife speed

Equipment before moving to the XY position, then the Z-axis direction at a speed of a movement in that direction until the limit switch is hit.

Let position is usually the thickness of the knife block, increase the number of actual use to avoid carving does not penetrate.

Tool sensor

Tool usage.

4.11 Material

序号 [0 土] 名称	
āi:	
同志	
x尺寸 x位置	•
	<u>.</u>
	-
	-

# 4.12 parameter

一般 控制	杂项   換刀	轴设置 1/2   刀具	2   轴设置 2/2   输出   刀具长度   材料	限位 参数表	手动 I2C	输入 注释
业坐坐坐坐坐坐位位偏端标标标标标标标标量置移展系系系系系系系系系系系系系系系系系系系系系系系系系系系系系系系系系	- 628 - 630 692	1 2 3 4 5 6 7 8 9	0.0000 💼   A I 0.0000 💼   U	Y 0.0000 * 8 0.0000 * V 0.0000 *	C   0.0000   W	49 49 49
				复位	]	

Set coordinates with several common position.

Modified point update.

Reset to the default values.

#### 4.13 I2C extention

空制   換刀   刀具   刀具 183, 184, 185 (主轴)	长度   材料   参数表 I2C   注解 : 当前位委
「I2C S5 云 0 云 「	T 12C 54 - T
速度 最小 300 云 最大 20000 云	
<b>禁车</b> 25000 士	
117, 108, 109 (分和法)	and
leave T	

I2C control card provides external communication function, the external hardware support can achieve:

External coordinate display Spindle control Other controls.

Ask and answer

5.1 Firmware Upgrade

Each software update, you must also upgrade the firmware. The software will automatically detect.

You can also manually upgrade method for the control card, short external interface 7 feet and 10 feet, and then click the menu upgrade.

Upgrade mode with the usual mode of operation

Status lights flashing at different frequencies.

5.2 Axis zero and cleared

Zero refers to the axis to the current coordinate system 0. Can click the main window on the left toolbar icon.

Clear refers to the current position as 0, according to the location information at the top of the main window button clears all the axes, an axis can also be cleared individually.

С	零点
o	X:
o	Y:
c	z:
c	A:

5.3 Home position



The main window right side **FIF** icon, perform automatic back hardware origin, to be used in conjunction with limit switches.

5.4 Tool setting operation



Note:

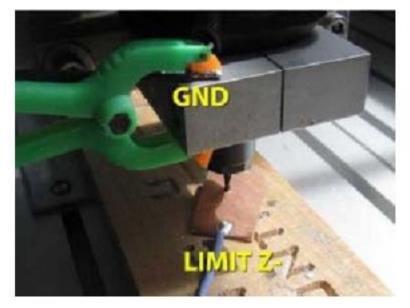
Insulated with a bottom of the PCB board or other flat conductor as a knife block, connected to the Z-axis - or + limit;

Spindle tool is connected to the ground terminal of the control card (GND).

Z axis slowly move down when touched when both, Z axis sensing trigger limit, then the location is right

Knife block thickness.

Z axis will move up four units of exhumation to a safe altitude.



5.5 Speed-related options and Precautions

Speed-related Key Points:

Maximum velocity for each axis

In the "axis setting 1";

G code specified velocity;

Basic settings in the "default rate" (G code does not specify movement speed);

Specifies the F value (the main window bottom left);

Empty process and feed rate;

The maximum pulse frequency control card 25kHZ.

Working speed:

Specified speed (the right side of the main window hook on the bottom left of the F value)

"Feed" or "Feed + empty away" by their own set of F-value work, processing time can be changed.

When not specified, "Feed + empty away" by G-code file F-value work; G F value is not set by the system based on the "default rate" work.

# END.

# Software updating...