



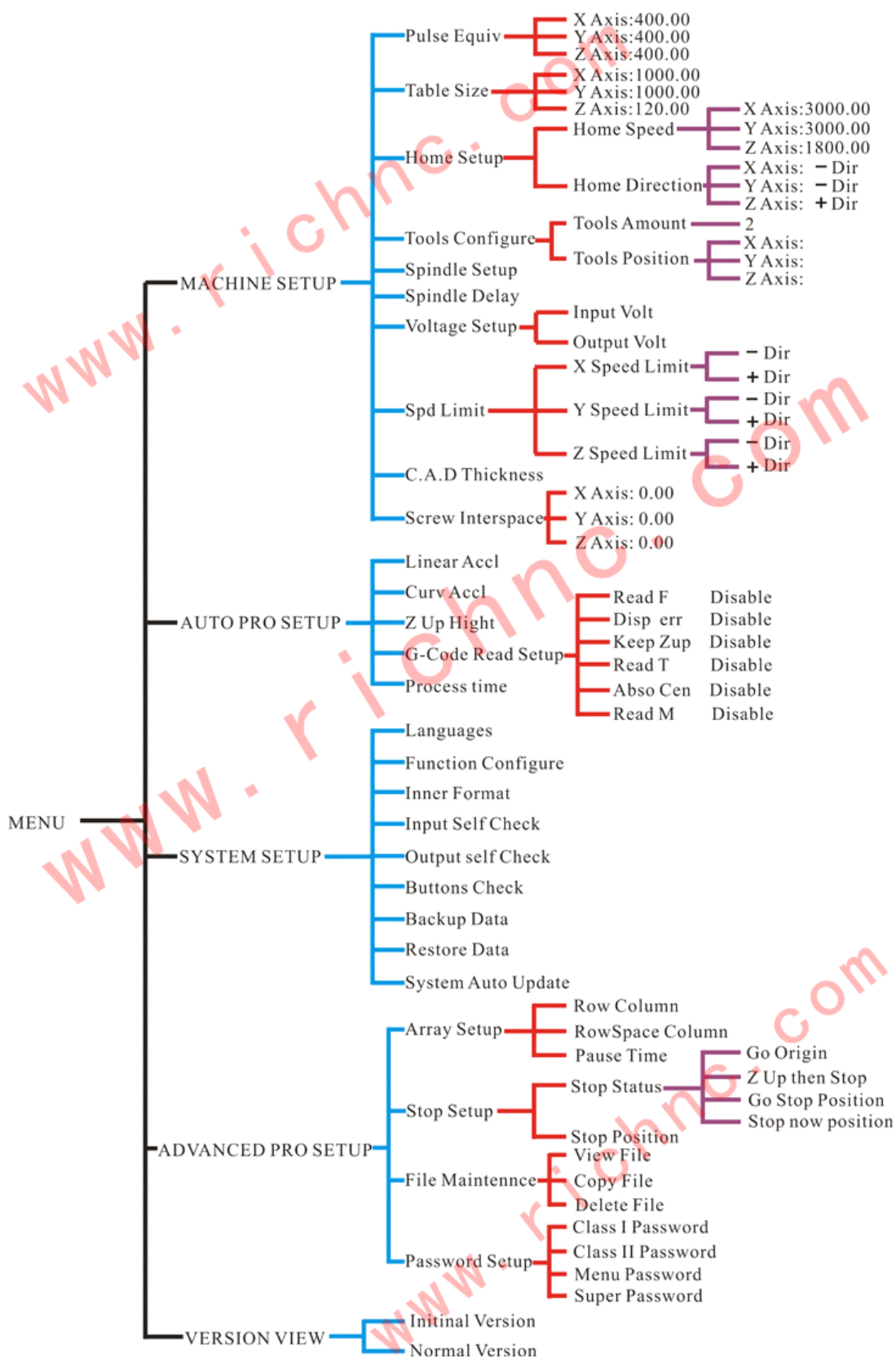
**RZNC-ATC Series**

# **CNC Controller Handle**

## **RZNC-ATC(D) Users Guide**

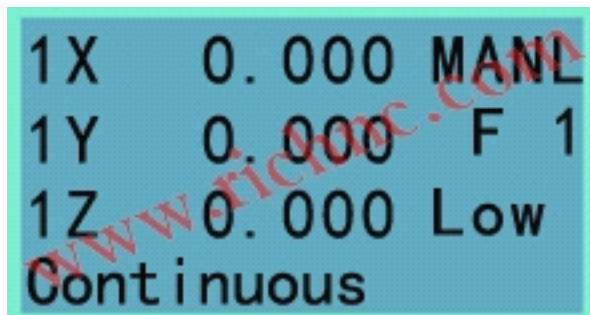
**Fax:+86-10-57130422**  
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**[Http://www.richnc.com](http://www.richnc.com)**  
**E-mail:richnc@hotmail.com**

# Functions Tree View



## RZNC-ATC(D) Specifications

T1 working screen will show your as F1(as view 1)



View 1

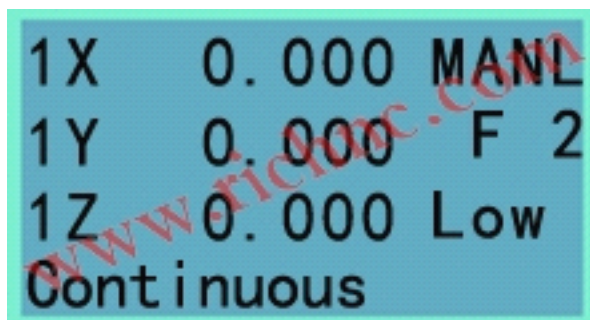
\*\*\*\*\*

### Remark:

We can press the "ON/OFF" key + "Z+" key to changed T1 state to T2 state

\*\*\*\*\*

T2 working screen will show your as F2(as view 2)



View 2

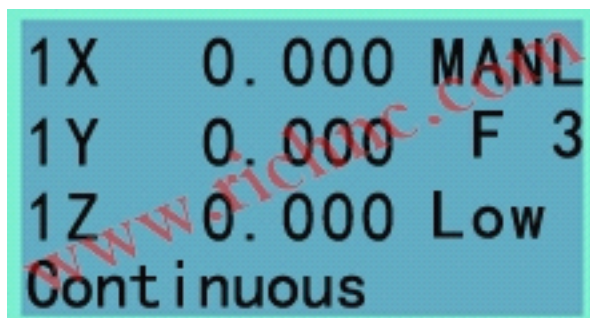
\*\*\*\*\*

### Remark:

We can press the "ON/OFF" key + "Z+" key to changed T2 state to T2 and T1 state

\*\*\*\*\*

T1 and T2 working together screen will show your as F3(as view 3)



View 3

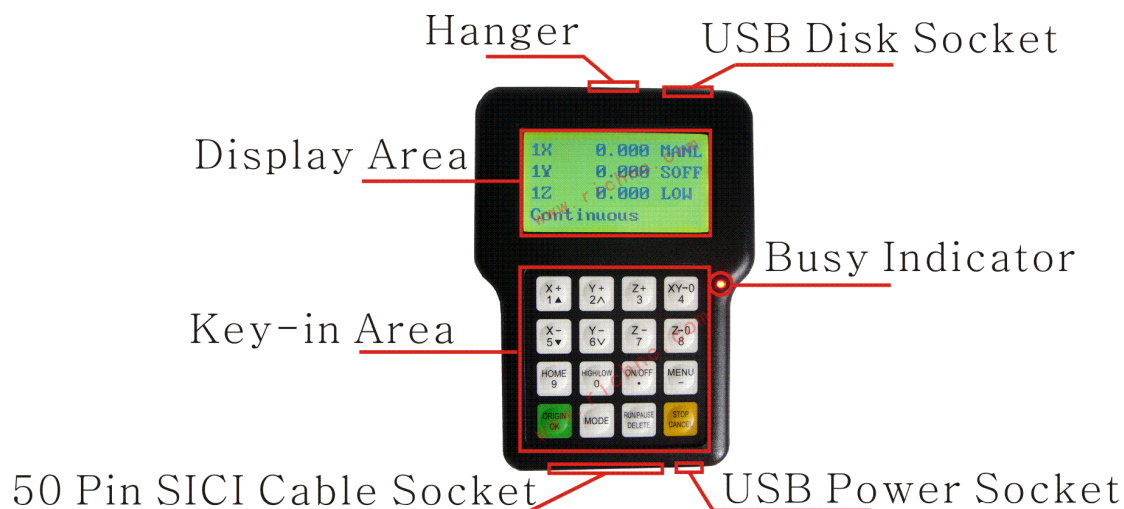
\*\*\*\*\*

### Remark:

We can press the "ON/OFF" key + "Z-" key to changed T1 and T2 state to T2 state

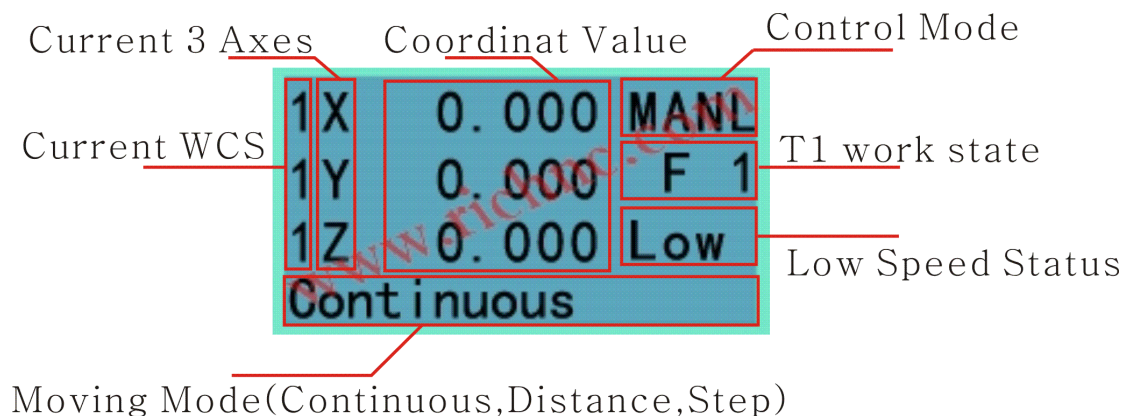
\*\*\*\*\*

## Know Me From Handle

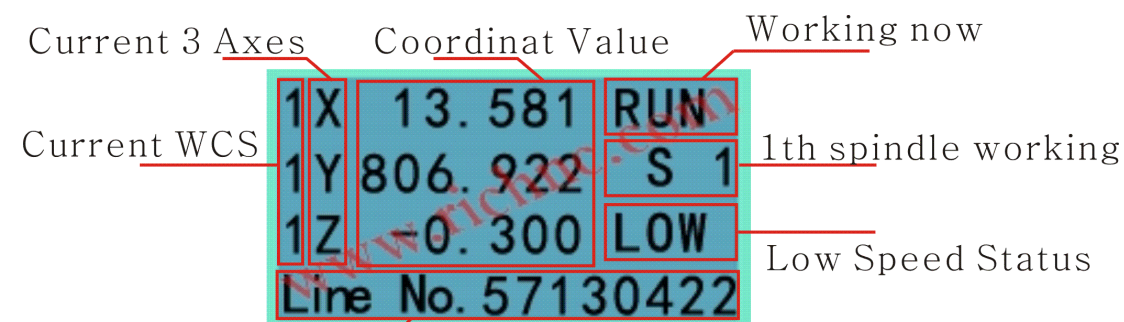


## Know Me From Display Area

**I am not working!!**



**I am not working now!!**



Current Work Status(Line No,Speed,Rate,Time and so on)

If have any matter tell me please , i will solve for you!!!

My mob is :13581 806922 ,Do not forgot +86, Because i am in China.Calling cost is so expensive, ok, Email to me: [richnc@hotmail.com](mailto:richnc@hotmail.com) Skype: [wwwrichnc.com](http://www.richnc.com)

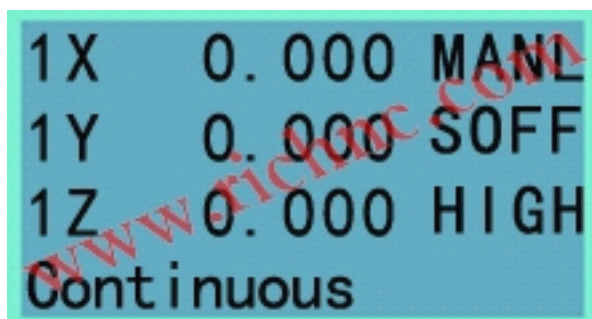
## How to Setup the Tools

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home" (as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will show "manual state screen" (as View 2)



View 2

\*\*\*\*\*

### Remark:

Because we have not the correct "Pulse Equivalent" parameters now, so we press the "DELETE" key first time.

If we had the correct "Pulse Equivalent" parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

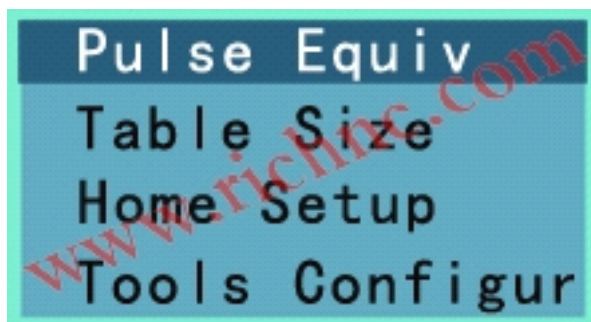
\*\*\*\*\*

3. Press the "Menu" key, we will enter into the "menu function" (as View 3)



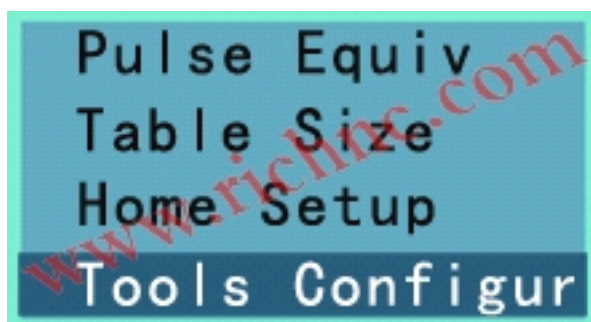
View 3

4. Select the "Machine Setup" and press the "OK" key, we will enter in the "Machine Setup function" (as View 4)



View 4

5. Press the "X+" key to moving the cursor, Select the "Tools Configure", then press the "OK" key, we will enter in the "Tools Configure Setup function" (as View 5)



View 5

6. Select the "Tools Amount" press the "OK" key, we will enter in the "Tools Amount Setup function" (as View 6)



View 6

7. Normal the default parameter is 1, so we must change the "Tools Amount" (as view 7)



View 7

\*\*\*\*\*

**Remark:** Because it is RZNC-ATC(D), so we must setup the "Tools Amount" as 2

\*\*\*\*\*

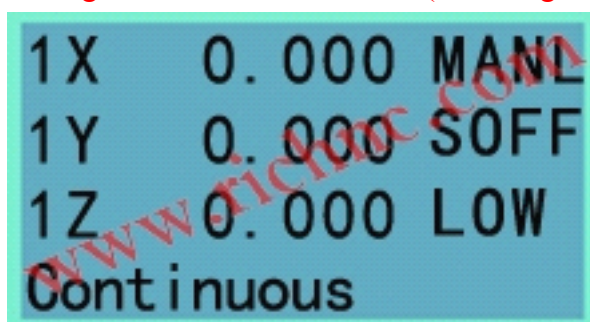
8. Press the "2" key we will setup there be 2 Tools on this machine(as view 8)



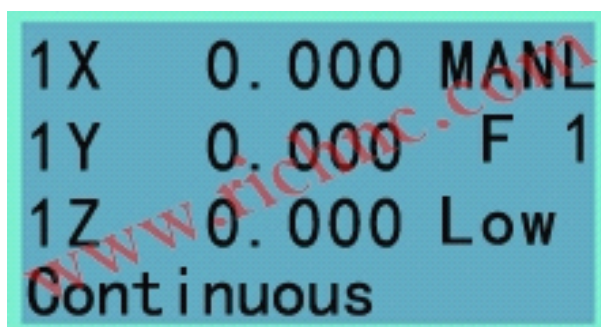
View 8

\*\*\*\*\*

Remark: After we finished "Tools Amount" as 2, the RZNC-ATC(D) function will be open, we can contrast images to found the difference(as view group 8)



View 8-1



View 8-2

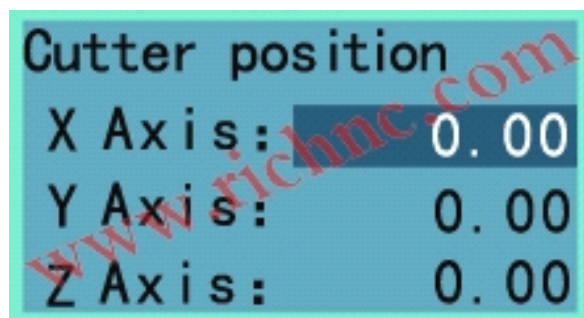
\*\*\*\*\*

9. Press the "OK" key to saved this changed and cancel the "Tools Amount Setup function" for next parameter setup(as View 9)



View 9

10. Press the "OK" key, we will enter in the "Tools Position Setup function" (as View 10)



View 10

\*\*\*\*\*

#### Remark:

We must know what it means about the "Cutter Position Setup" Because it is very important for RZNC-ATC(D), so we must setup the "Cutter Position" be careful

X Axis: means that the coordinate value distance from T2 working start point to T1 working start point.(this coordinate value with the T1 working start point as reference point)

$$T1-T2=X \text{ Axis value}$$

Y Axis: means that the coordinate value distance from T2 working start point to T1 working start point.(this coordinate value with the T1 working start point as reference point)

$$T1-T2=Y \text{ Axis value}$$

Z Axis: means that the coordinate value distance from T2 working start point to T1 working start point.(this coordinate value with the T1 working start point as reference point),

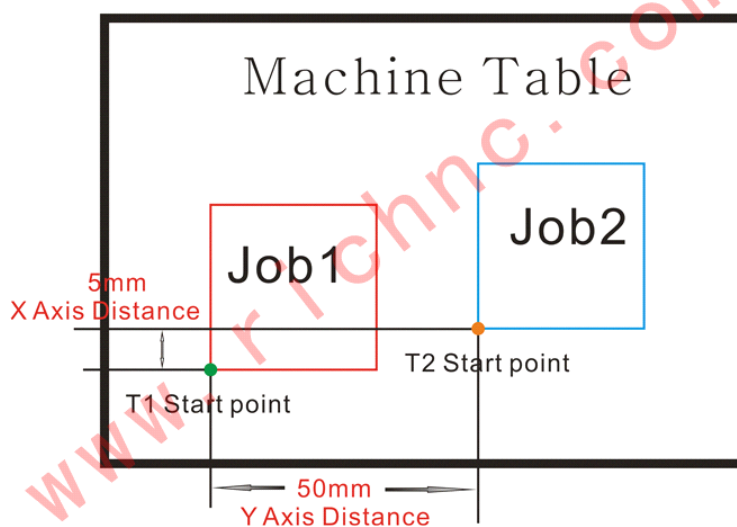
$$T1-T2=Z \text{ Axis value}$$

!!!!!!!=====This value(the Z Axis value must not enter, the controller will auto got this value from you working operation=====!!!!!!!

\*\*\*\*\*

For Example(as view group 11):

## RZNC-ATC(D) Tools Position

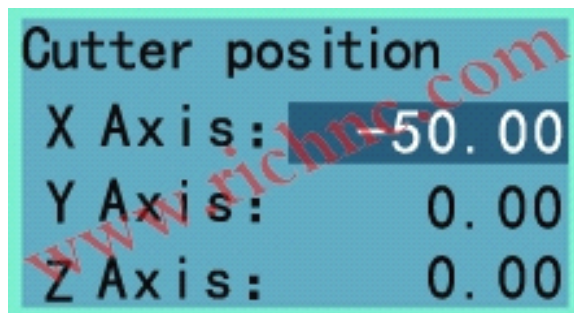


View 11

On this working ,we will setup the "Cutter Position" as follows

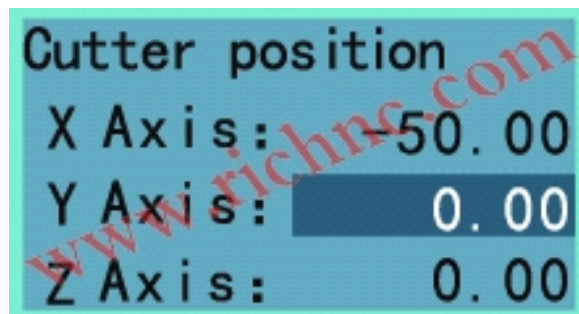
$$X \text{ Axis value}=T1-T2=0-50=-50$$

Enter the "-50" into X Axis, (as view 11-1)



View 11-1

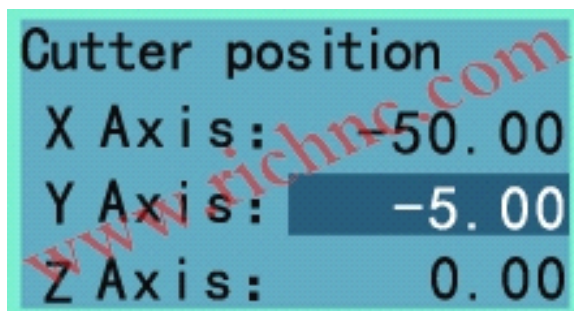
Press the "OK" key to saved and next step(as view 11-2)



View 11-2

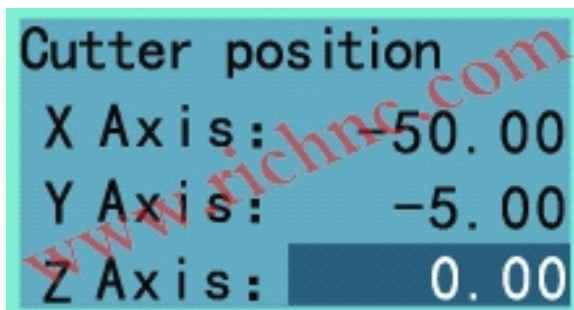
Y Axis value= $T1-T2=0-5=-5$

Enter the "-5" into Y Axis, (as view 11-3)



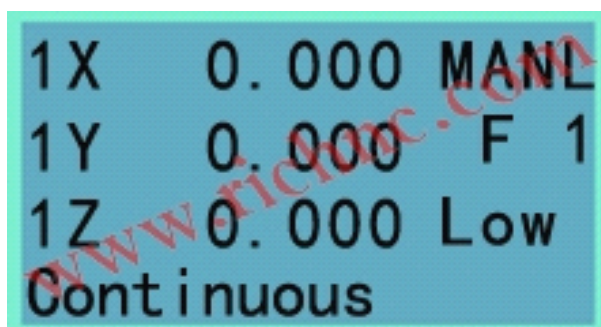
View 11-3

Press the "OK" key to saved and next step(as view 11-4)



View 11-4

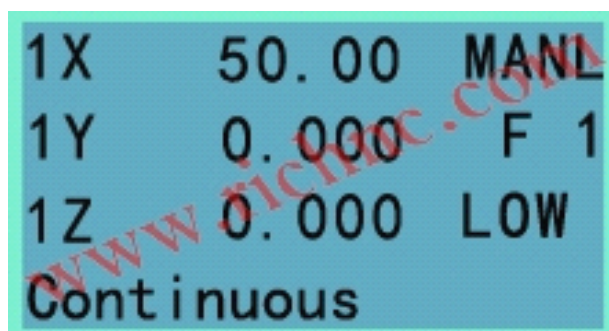
Press the "OK" key to saved and cancel the "Tools Position Setup function" and press the "CANCEL" key to return the "Manual state screen" (as view 11-5)



1X	0.000	MANL
1Y	0.000	F 1
1Z	0.000	Low
Continuous		

View 11-5

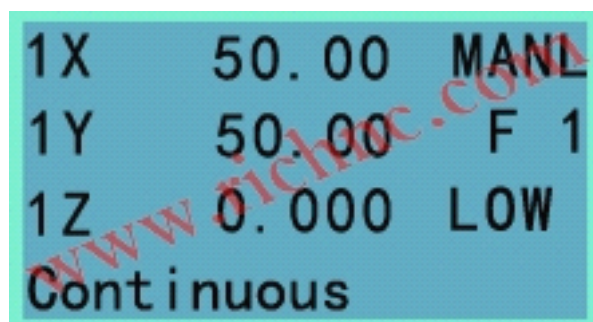
Make the "T1" working start position, press the "X+" make 1X coordinate value to 50mm(as view 11-6)



1X	50.00	MANL
1Y	0.000	F 1
1Z	0.000	LOW
Continuous		

View 11-6

Make the "T1" working start position, press the "Y+" make 1Y coordinate value to 50mm(as view 11-7)

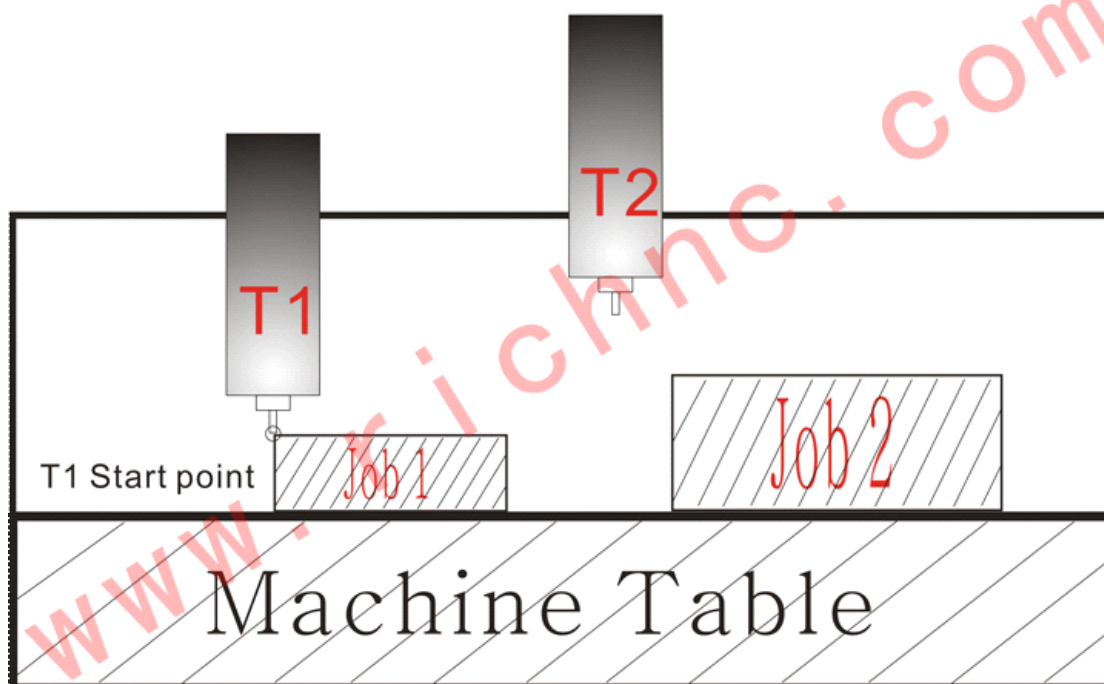


1X	50.00	MANL
1Y	50.00	F 1
1Z	0.000	LOW
Continuous		

View 11-7

Make the "T1" working start position, press the "Z-" till the T1 closed the Job1 surface(as view 11-7) then 1Z coordinate value to -50mm(as view 11-8)

## RZNC-ATC(D) Tools Position



View 11-7

```

1X    50.00  MANL
1Y    50.00  F 1
1Z   -50.00  LOW
Continuous
  
```

View 11-8

Make sure the "T1" working start position(as view 11-9)

press the "XY->0" key, make this point as the T1 work start point "0" point(X Y direction starting point).

Press the "Z->0" key, make this point as the T1 work start point "0" point(Z direction starting point).

```

1X    0.000  MANL
1Y    0.000  F 1
1Z    0.000  Low
Continuous
  
```

View 11-9

Press the "ON/OFF" key + "Z+" key we will got the "T2 working screen",this time the Z2 will must be return the "Z2 Home position",so the Z2 coordinate is "50.00"(as view 11-10)

```

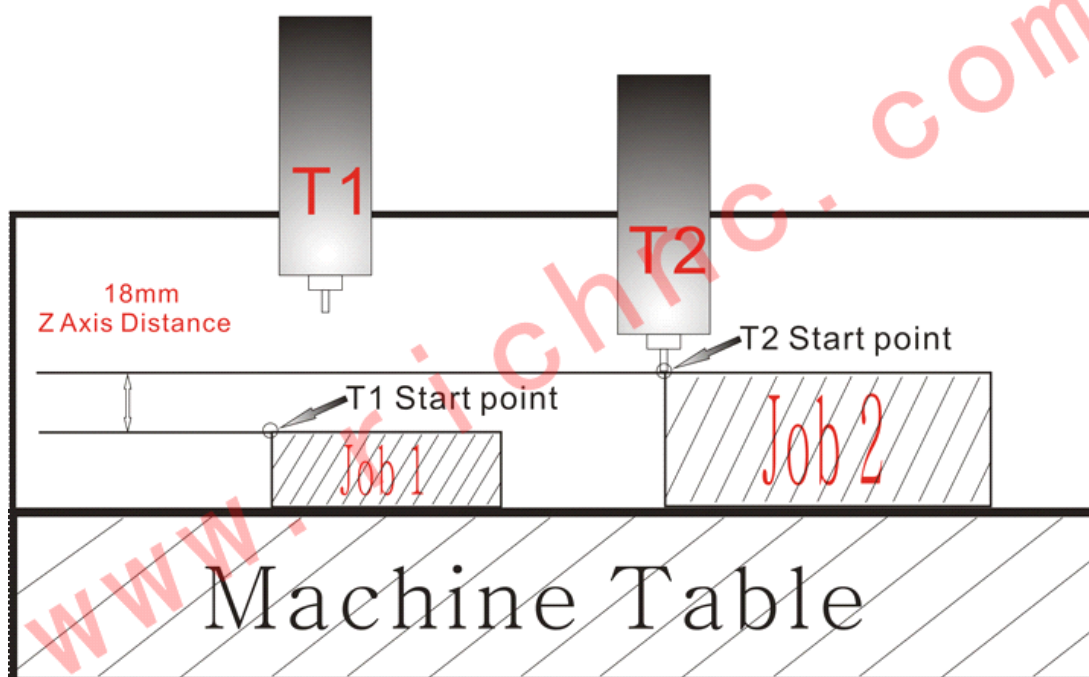
1X    0.000  MANL
1Y    0.000  F 2
1Z    50.00  LOW
Continuous

```

View 11-10

Make the "T2" working start position, press the "Z-" till the T2 closed the Job2 surface(as view 11-11 then 1Z coordinate value to 18mm(as view 11-12)

## RZNC-ATC(D) Tools Position



View 11-11

```

1X    50.00  MANL
1Y     5.00  F 2
1Z    18.00  LOW
Continuous

```

View 11-12

Make sure the "T2" working start position(as view 11-13)

press the "XY->0" key, make this point as the T2 work start point "0" point(X Y direction starting point).

Press the "Z->0" key, make this point as the T2 work start point "0" point(Z direction starting point).

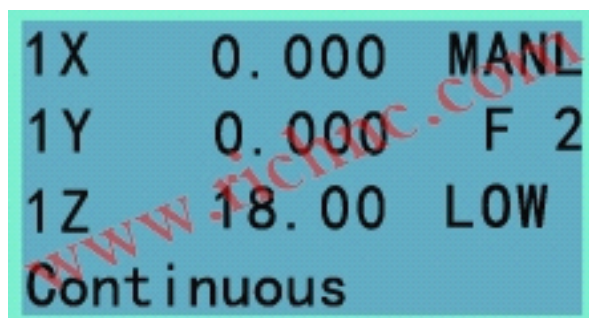
\*\*\*\*\*

Remark: this time the "1Z" coordinate value will be made to "0", still as 18 when the "T2 working screen"(as view 11-13).

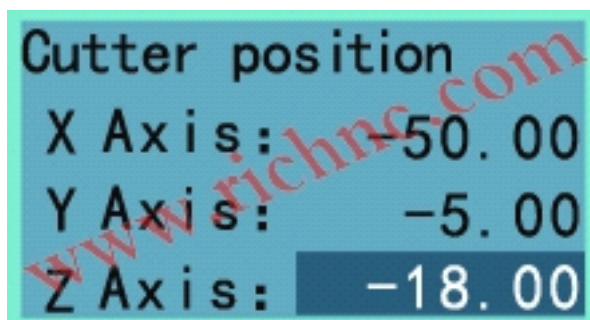
but the controller had saved this coordinate value as the parameter, we can check this parameters on the "Tools position setup function"(as view 11-14)

Z Axis value =  $T1 - T2 = 0 - 18 = -18$  (this means the T2 Z work start point up T1 work start point 18mm)

\*\*\*\*\*



View 11-13



View 11-14

\*\*\*\*\*

As above operations, we had finished the RZNC-ATC(D) "Tools Position Setup"

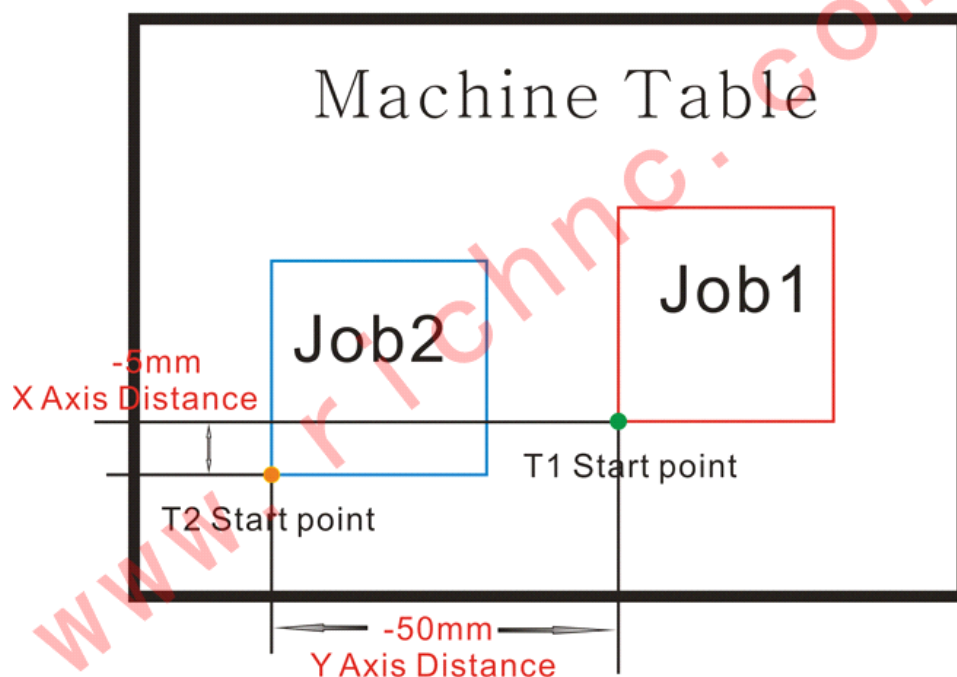
After finished the "Tools Position Setup" we must setup the "Spindle setup"

After finished "Tools Position Setup" and "Spindle setup", Then we must return to F1 screen (because the T1 is comparison of T2, all of T2 working coordinate value depend on the T1) and running any Two Tools Change job.

\*\*\*\*\*

For Example(as view group 12):

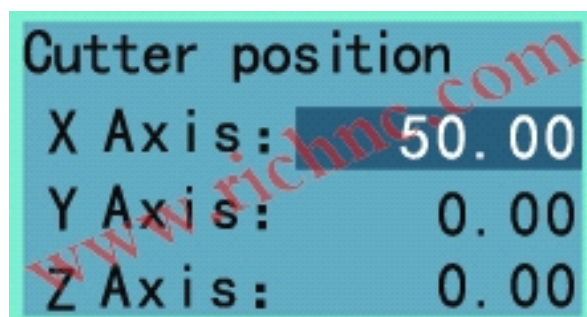
## RZNC-ATC(D) Tools Position



This working ,we will setup the "Cutter Position"

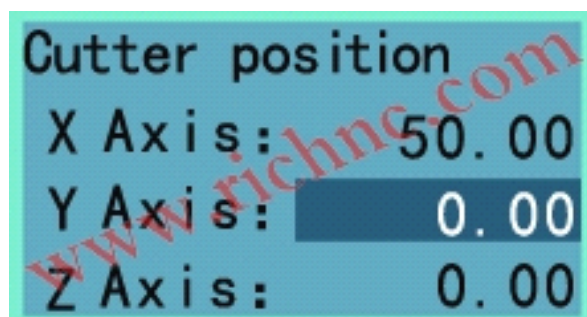
$$X \text{ Axis value} = T1 - T2 = 0 - (-50) = 50$$

Enter the "50" into X Axis, (as view 12-1)



View 12-1

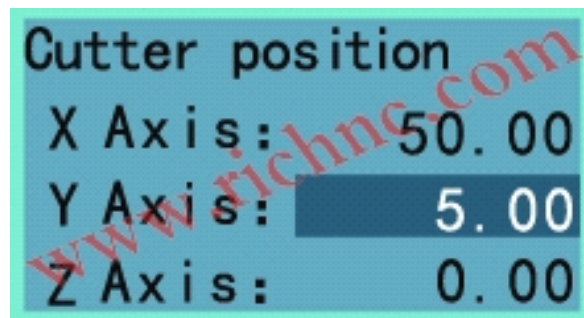
Press the "OK" key to saved and next step(as view 12-2)



View 12-2

$$Y \text{ Axis value} = T1 - T2 = 0 - (-5) = 5$$

Enter the "5" into Y Axis, (as view 12-3)



View 12-3

Other as the same as the picture group 11.

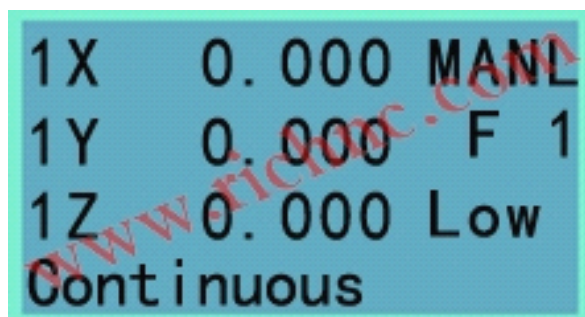
## How to Setup the Spindle

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home"(as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will showing "Manual state screen"(as View 2)



View 2

\*\*\*\*\*

### Remark:

Because we have not the correct "Pulse Equivalent" parameters now, so we press the "DELETE" key first time.

If we had the correct "Pulse Equivalent" parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

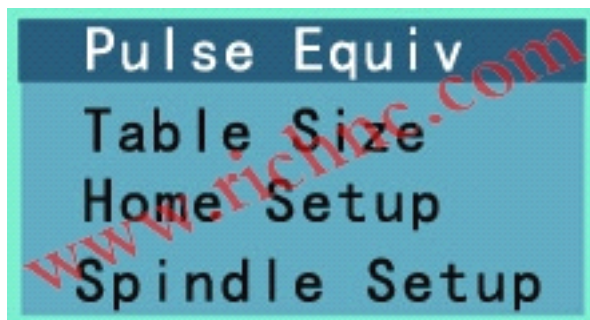
\*\*\*\*\*

3. Press the "Menu" key, we will enter into the "menu function"(as View 3)



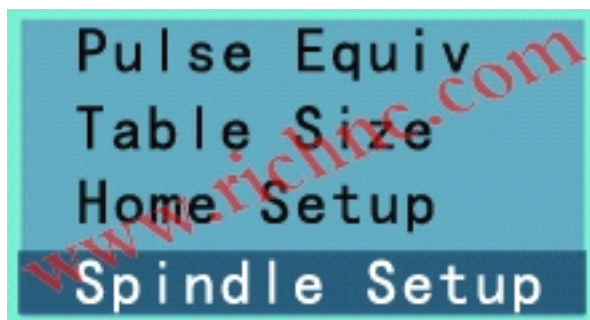
View 3

4. Select the "Machine Setup" and press the "OK" key, we will enter in the "Machine Setup function" (as View 4)



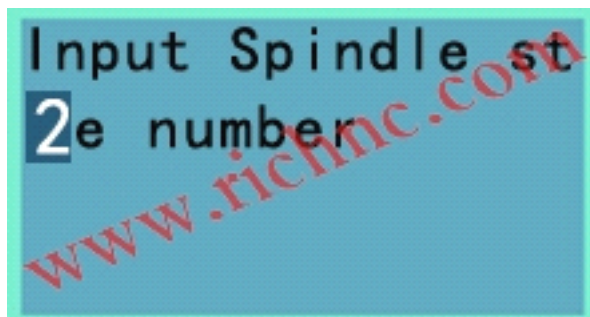
View 4

5. Press the "X+" key to moving the cursor,Select the "Spindle Setup",then press the "OK" key,we will enter in the "Spindle Setup function" (as View 5)



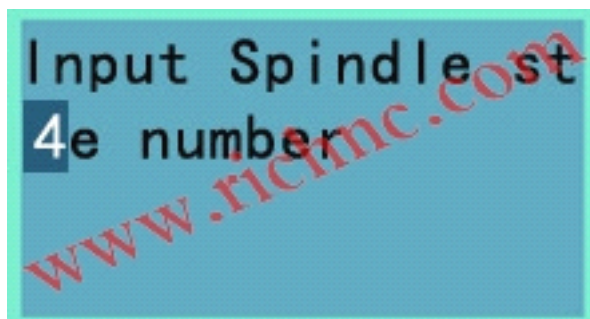
View 5

6.The DSP will show you this screen(as view 6)



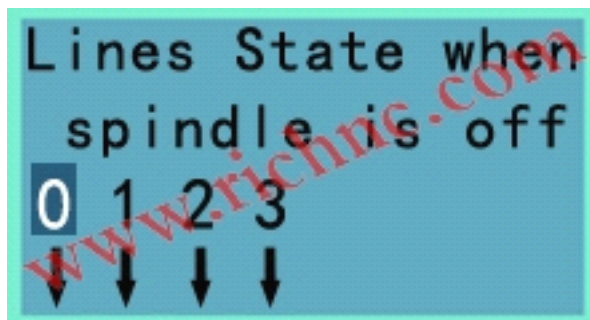
View 6

7.Press the "4" key to change the number of states, after then press "OK" key to saved and next step(as view 7)



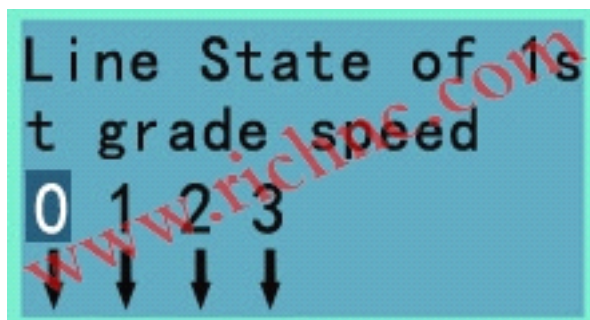
View 7

8.The DSP will show you this screen(as view 8)



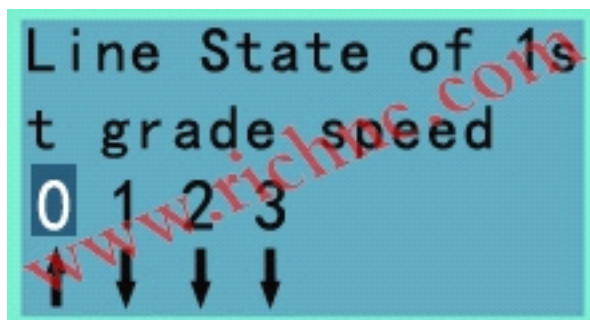
View 8

9. Setup the state when the spindle is off, press the "OK" key to save and next step(as view 9)



View 9

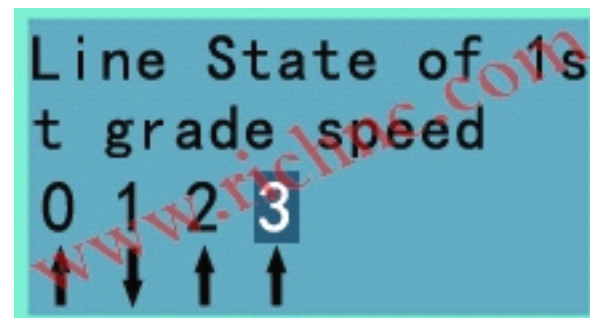
10. Setup the state of 1st grade speed as F1 function, Press the "Y+" key to make the 0 arrow from "Down" to "Up" press the "OK" key to save and next step(as view 9)



View 9

\*\*\*\*\*

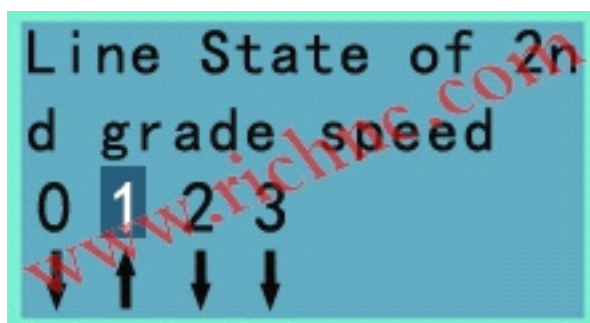
Remark: if you need open the Dust Catcher or Air Cylinder when Spindle is starting. Connect the S2(connect board J7) with Dust Catcher's relay. S3 with Air Cylinder's relay. Setup as view



\*\*\*\*\*

11. Setup the state of 2nd grade speed as F2 function, Press the "Y+" key to make the 1 arrow

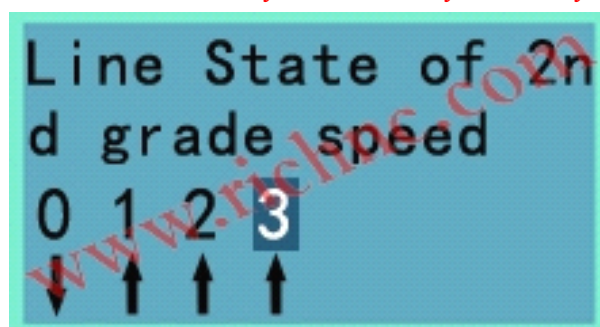
from "Down" to "Up"press the "OK" key to save and next step(as view 11)



View 11

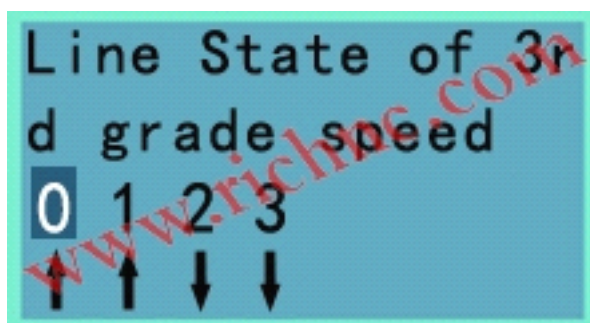
\*\*\*\*\*

Remark: if you need open the Dust Catcher or Air Cylinder when Spindle is starting. Connect the S2(connect board J7) with Dust Catcher's relay. S3 with Air Cylinder's relay. Setup as view



\*\*\*\*\*

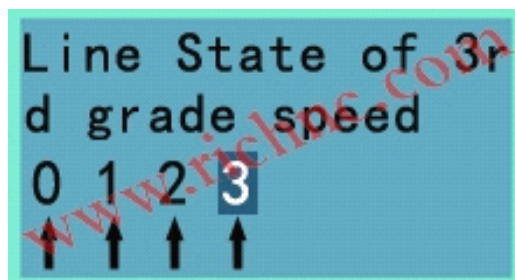
12. Setup the state of 3rd grade speed as F3 function, Press the "Y+" key to make the 1 arrow from "Down" to "Up"press the "OK" key to save and next step(as view 12)



View 12

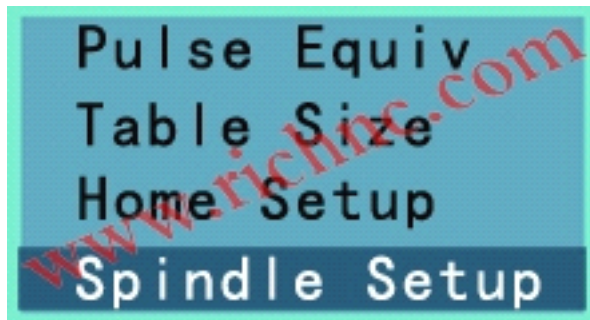
\*\*\*\*\*

Remark: if you need open the Dust Catcher or Air Cylinder when Spindle is starting. Connect the S2(connect board J7) with Dust Catcher's relay. S3 with Air Cylinder's relay. Setup as view



\*\*\*\*\*

13. Press the "OK" key to saved and cancel the "Spindle Setup Function" (as view 13)



View 13

\*\*\*\*\*

As above operations, we had finished the RZNC-ATC(D) "Spindle setup"

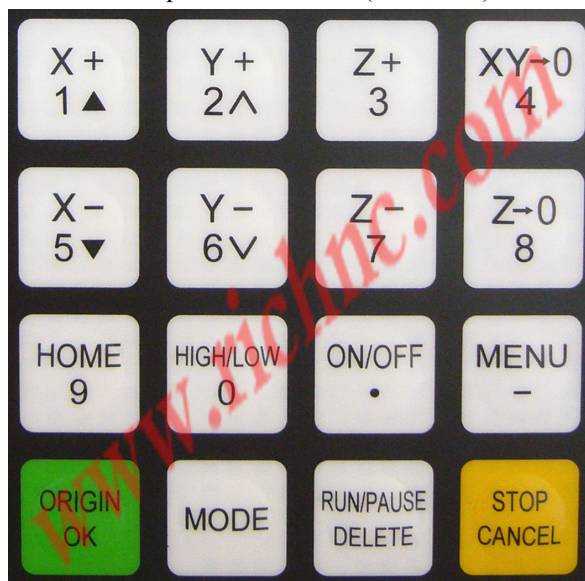
After finished the "Spindle setup" we must setup the "Tools Position Setup"

After finished "Tools Position Setup" and "Spindle setup", Then we must return to F1 screen(because the T1 is comparison of T2,all of T2 working coordinate value depend on the T1) and running any Two Tools Change job.

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# Press-key Instruction






Press-key on CNC Controller handle panel as follows: (as View 1)



View 1






## Function Instrucion

Button	Function Instrucion
X+ 1 ▲	[The X axis is direction] [Cursor upward in Menu] [ Input number 1]
Y+ 2 ^	[The Y axis is direction] [input number 2] [Page up in Menu] [Accelerate the process speed] [Opposite the property selecting in level signal setup]
Z+ 3	[The Z axis is direction] [ Rise spindle speed when working] [Input number 3]
XY→ 0 4	[Set to X and Y axes as working origin] [ Input number 4]
X- 5 ▼	[The X axis is opposite direction] [Cursor downward in Menu] [Input number 5]
Y- 6 v	[The Y axis is opposite direction] [input number 6] [Page down in Menu] [Slowdown the process speed] [Opposite the property selecting in level signal setup]
Z- 7	[The Z axis is opposite direction] [Reduce spindle speed when working] [Input number 7]
Z→ 0 8	[Set to Z axIs as working origin] [ Input number 8]
HOME 9	[All of Axes go to machine origin] [Input number 9]
HIGH/LOW 0	[Select high or low moving speed on manual state] [Input number 0]
ON/OFF .	[Spindle start or stop] [Input decimal point]












	[Menu setup entrance] [Minus input] [Many process states checking]
	[All of axes go to working origin] [Confirm of inputting/operating]
	[Select continue/step/distance moving mode on manual state]
	[Select the job file] [Pause the processing job] [Delete the number] [Cursor Tab]
	[Setup High/low speed parameters] [Break all of working] [Cancel and Exits current operating]

## Compound Buttons Instrucion

There are some compound buttons for special applications. The operating mode is: press the first button and holding then press the second button, release the two buttons at same time. Their functions are as following:

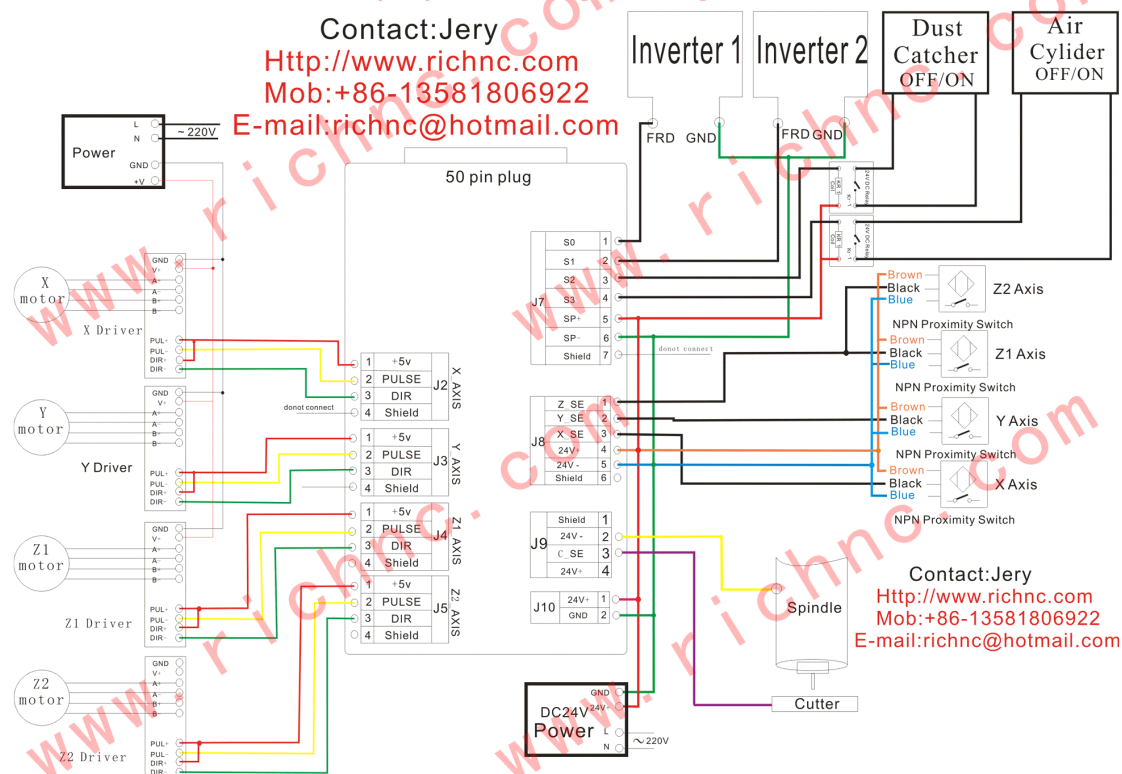
1. " " and "Number" button, Setup difference working coordinates(9 differences);
2. " " and " " button, C.A.D function(auto check and got the new tools high);
3. " " and " " button, Select the another model if you Controller is

Multi-Functions ;

4. " " and "Number" button, Continue to remember-point working;
5. " " and " " button, Enter into the advanced process;
6. " " and " " button, Redo the last job(if using the U flash,make sure plug it in)
7. " " and " " button, Rise spindle speed when working;
8. " " and " " button, Reduce spindle speed when working;
9. " " and " " button, Got the help information;

# How to Connect with my machine

## RZNC-ATC(D) Wiring Diagram



Can not view clearly.

You can download the High Definition Wiring Diagram.

[Just click here is ok!!](#)

So easy?

Yes, of course !

This is my products style:so easy,so useful,so cheaper,so functions!!!

Wow, my friend, you machine had able to moving!!!!

Do not forgot view my company web [www.richnc.com](http://www.richnc.com) not matter what is your need, there must be one model RICHNC product suit your!!!

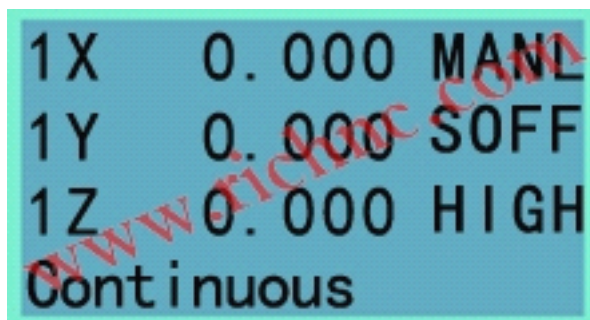
# Setup Equivalent Pulse

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home" (as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will show "manual state screen" (as View 2)



View 2

\*\*\*\*\*

## Remark:

Because we have not the correct "Pulse Equivalent" parameters now, so we press the "DELETE" key first time.

If we had the correct "Pulse Equivalent" parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

\*\*\*\*\*

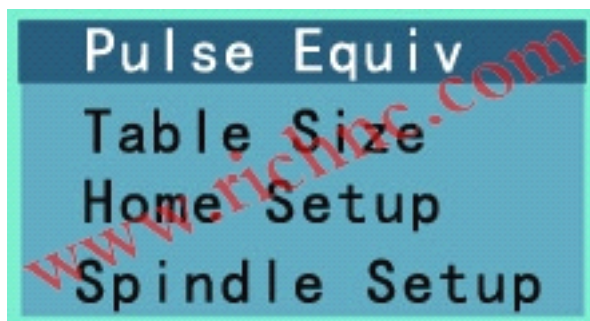
3. Press the "Menu" key, we will enter into the "menu function" (as View 3)



View 3

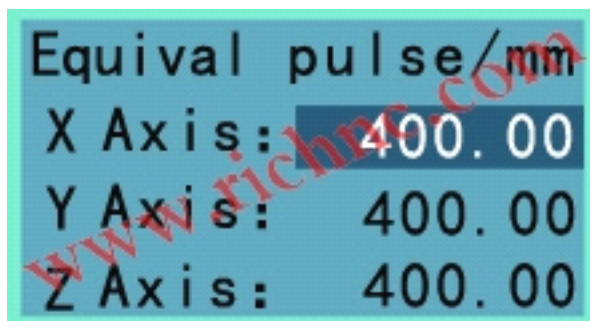
4. Select the "Machine Setup" and press the "OK" key, we will enter in the "Machine Setup"

function" (as View 4)



View 4

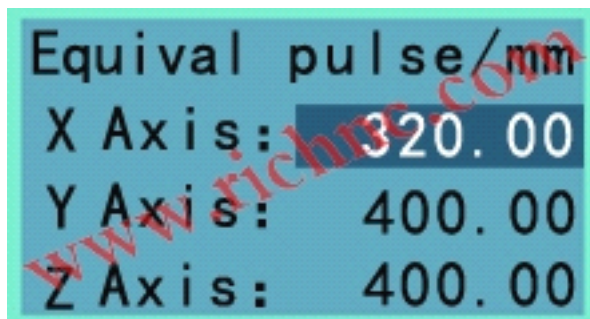
5. Select the "Pulse Equivalent" press the "OK" key, we will enter in the "Pulse Equivalent Setup function" (as View 5)



View 5

6. Please make sure the "X Axis" pulse is "400", if not, please change to "400".

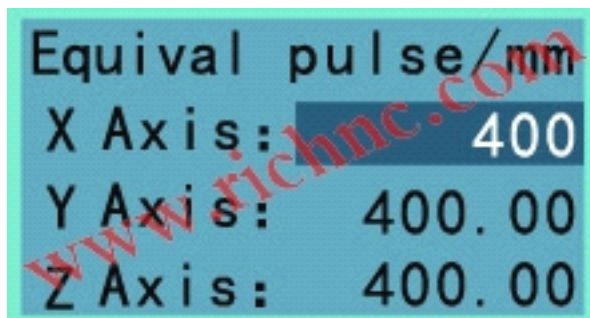
For example: the "X Axis" pulse is not "400" (as View 6-1)



View 6-1

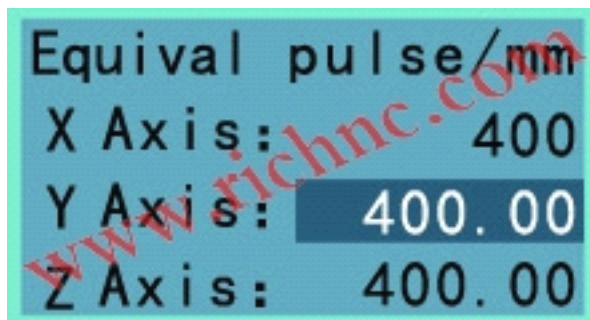
Press the "4" key and "0" "0" keys we will Input "400" (as View 6-2)

If have mistake we can press "DELETE" key to delete the wrong number.



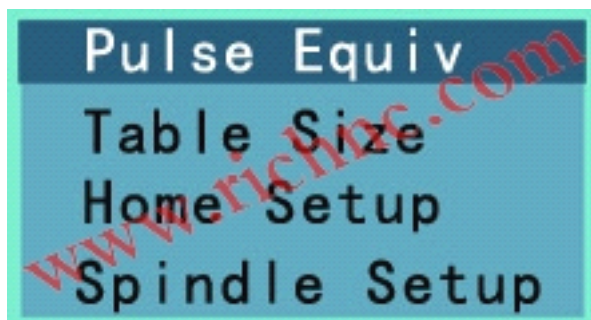
View 6-2

press the "ok" to save and next (as View 6-3)



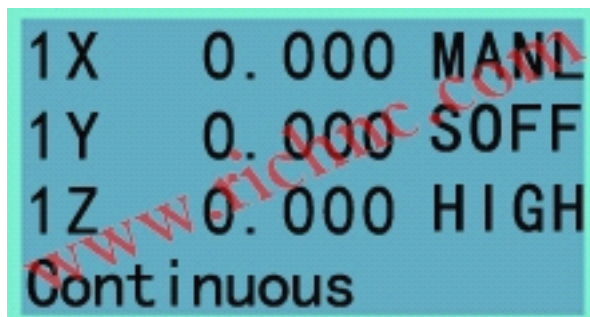
View 6-3

press the "OK" key to save this parameter and cancel the "Pulse Equivalet Setup function" (as View 6-4)



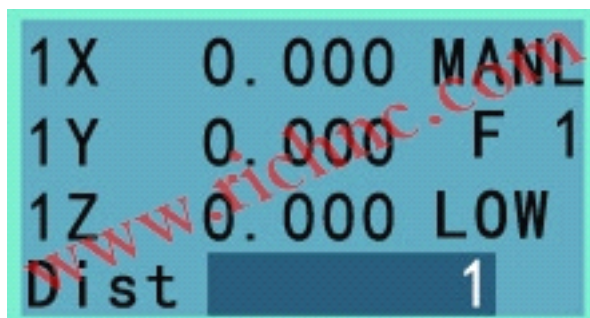
View 6-4

7. Press the "CANCEL" key until return the "manual state screen"(as View 7)



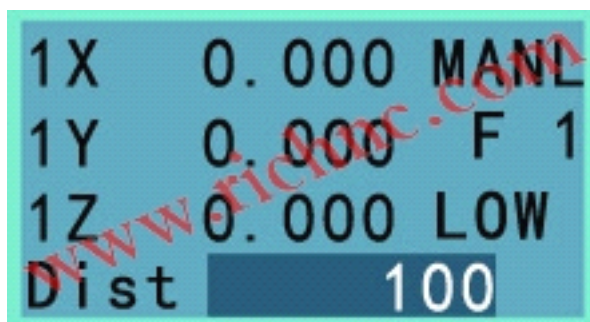
View 7

8. Press the "MODE" key two times , the controller will show you this (as View 8)



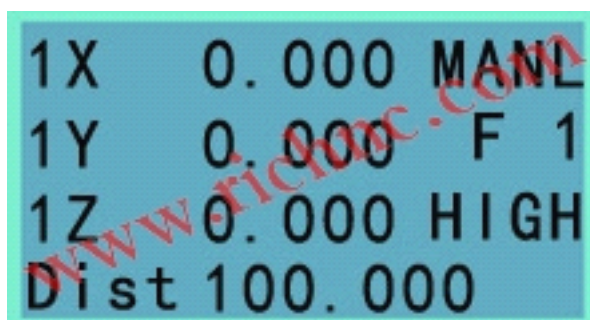
View 8

9. Change the distance number from "1" to "100",input "100" (as View 9)



View 9

10. Press the "OK" key to save the parameter (as View 10)



View 10

Now, we will measure the moving distance on machine and we will calculate the current pulse equivalent.

11. Press the "x+" key one time, just one time, the X axis will move.

Pls get the distance from machine origin to now with ruler.

For example the distance which you measured is 50mm.

12. The formula used to calculate the X Equiv pulse. its value is not exact value.

$$(50 \times 400) / 100 = 200$$

Then we got the X axis pulse Equivalent, it is around 200 pulse/mm.

13. Press the "Menu" key enter into the "Machine Setup function" then into the "Pulse Equivalent Setup function" as above steps(1-6) to change the X axis Equiv pulse from "400" to "200" (as View 11).



View 11

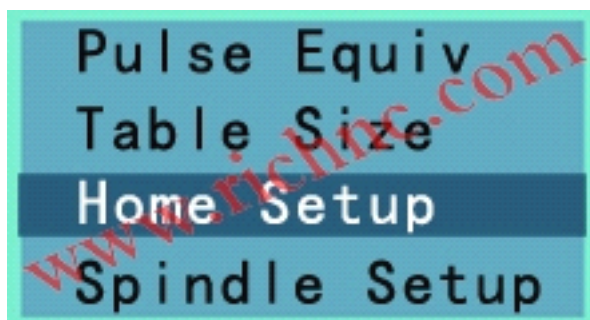
14. You could get the Y axis and Z axis pulse Equivalent by this way.

**Remark:**

**Please execute "Goto Home" when power on very time!!!!**

# Setup the Home Function

1. Finished the "Pulse Equivalent Setup" we return the the "Machine Setup Function" (as View 1)



View 1

2. Select the "Home Setup" press the "OK" key, we will enter in the "Machine Home Setup function" (as View 2)



View 2

3. Select the "Home Speed" press the "OK" key, we will enter in the "Home Speed setup function" (as View 6)



View 3

4. If you know your machine speed parameters, and you want to change the X Axis "Home Speed Parameter", press the "Delete" Key, and enter the needed parameter (as view 4)

\*\*\*\*\*

## Remark:

The Home Speed parameters must be suitable for your machine drive and motor. If this parameter is more than your machine's bearing capacity, it may damage your machine.

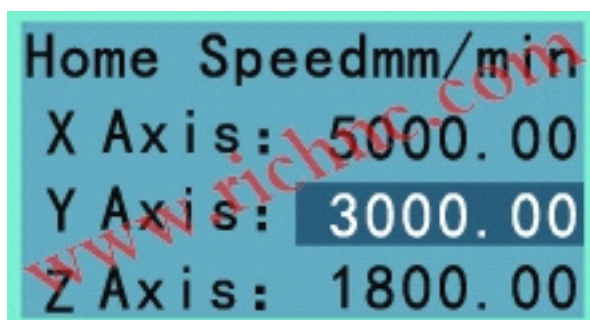
So please be careful!!!!!!

\*\*\*\*\*



View 4

5. Change the Y and Z Axis "[Home Speed Parameter](#)", (as view 5)



View 5

6. After finished the "[Home Speed Parameter](#)", press the "OK" key for saved and cancel the "[Home Speed setup function](#)", we will return the "[Machine Home Setup function](#)" (as View 6)

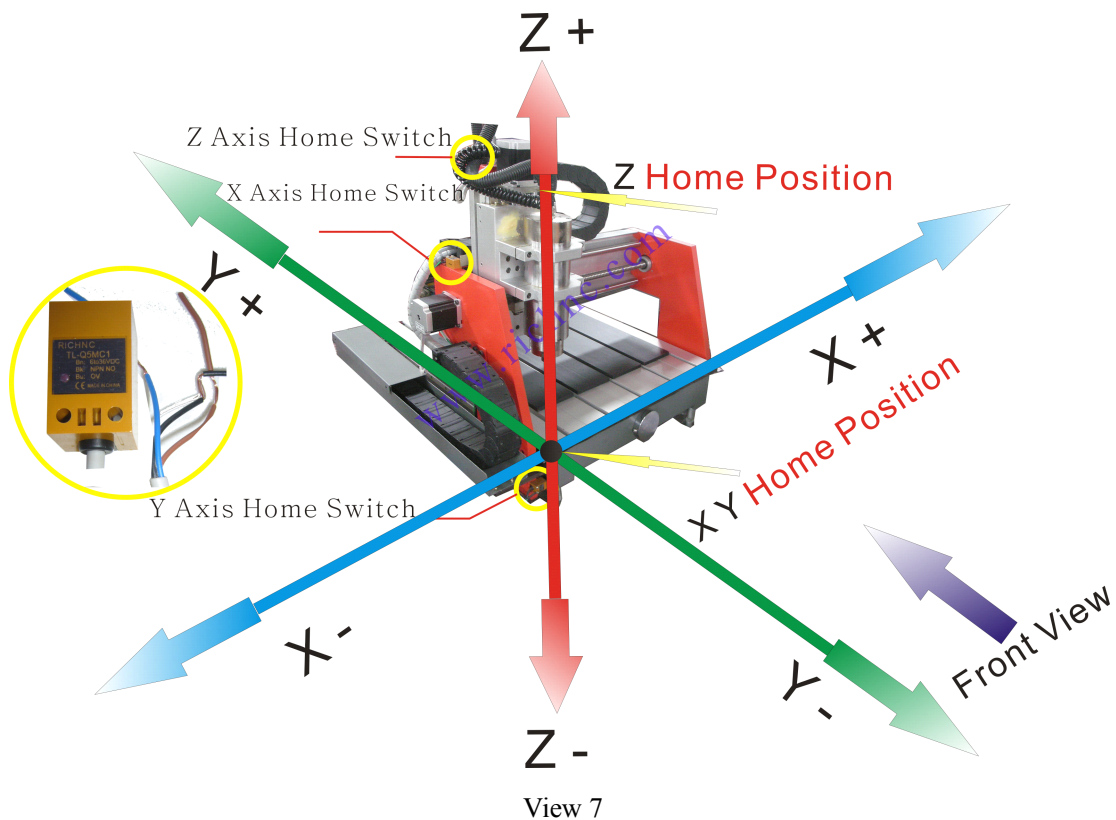


View 6

7. Let us know about the "[Home Direction](#)" Before setup the "[Home Direction](#)"

We must know the "[Home Direction](#)" depend on where the "Home Switch".

Home Switch is one device's name of the switch. Proximity Switch, Touch switch and so on, all of this can be used as the Home Switch. (as view 7)



For example as the View 7:

Press the "X+" key, the spindle moving to right and press the "X-" key, backward.as the view 10,  
Press the "Y+" key, the spindle moving to front and press the "Y-" key, backward.as the view 10,  
Press the "Z-" key, the spindle moving to Down and press the "Z+" key, backward.as the view 10,  
(if any direct is wrong, please changed the motor dir as the same as View 10)

**X Axis:** Because the X axis home switch at the left of machine(X direction contains two direction Left and Right), then the X axis "Home Direction" must be left of machine.

So the X axis "Home Direction" is "-Dir"

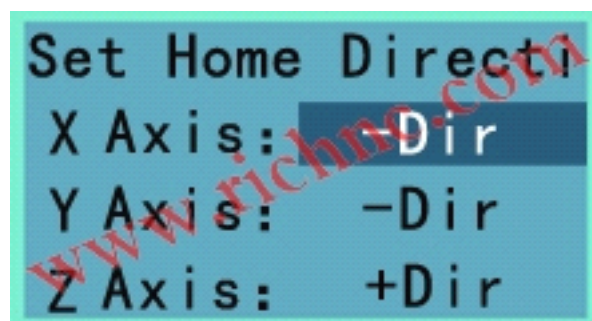
**Y Axis:** Because the Y axis home switch at the Bottom of machine(Y direction contains two direction Front and Back), then the Y axis "Home Direction" must be Bottom of machine.

So the Y axis "Home Direction" is "-Dir"

**Z Axis:** Because the Z axis home switch at the Top of machine(Z direction contains two direction Up and Down), then the Z axis "Home Direction" must be Top of machine.

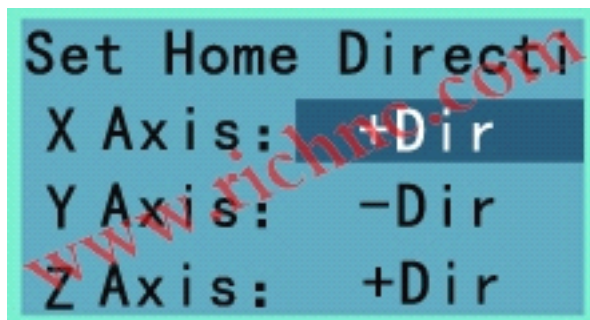
So the Z axis "Home Direction" is "+Dir"

8. Setup the Home Direction (as view 8)



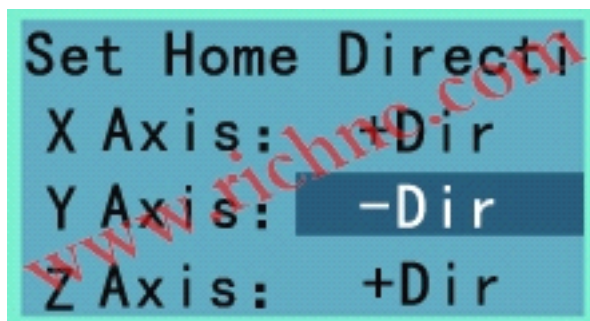
View 8

9.If the X Axis home direction is wrong, press the "Y+ " or "Y-" key to change the direction from "-Dir" to "+Dir" (as view 9)



View 9

10.Press the "OK" key to saved this changed and next step(as view 10)



View 10

\*\*\*\*\*

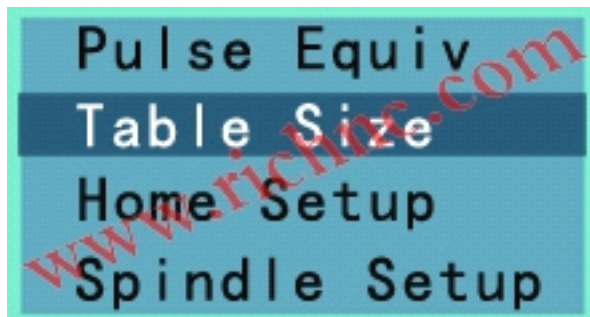
**Remark:**

Different machines will setup different "Home Direction", there just make as an example for explain "Home Direction". So setup the "Home Direction" as your really machine.

\*\*\*\*\*

# Setup the Machine Size

1. Finished the "Home Setup" and press the "Cancel" key, we will enter in the "Machine Setup function" (as View 1)



View 1

2. Select the "Table Size" press the "OK" key, we will enter in the "Machine Size Setup function" (as View 2)



View 2

3. Please make sure the "X Axis" Distance is correct as the same as your machine X Axis "Effective Distance Travelled", Press the "OK" key saved and next step (setup the Y Axis size).

\*\*\*\*\*

## Remark:

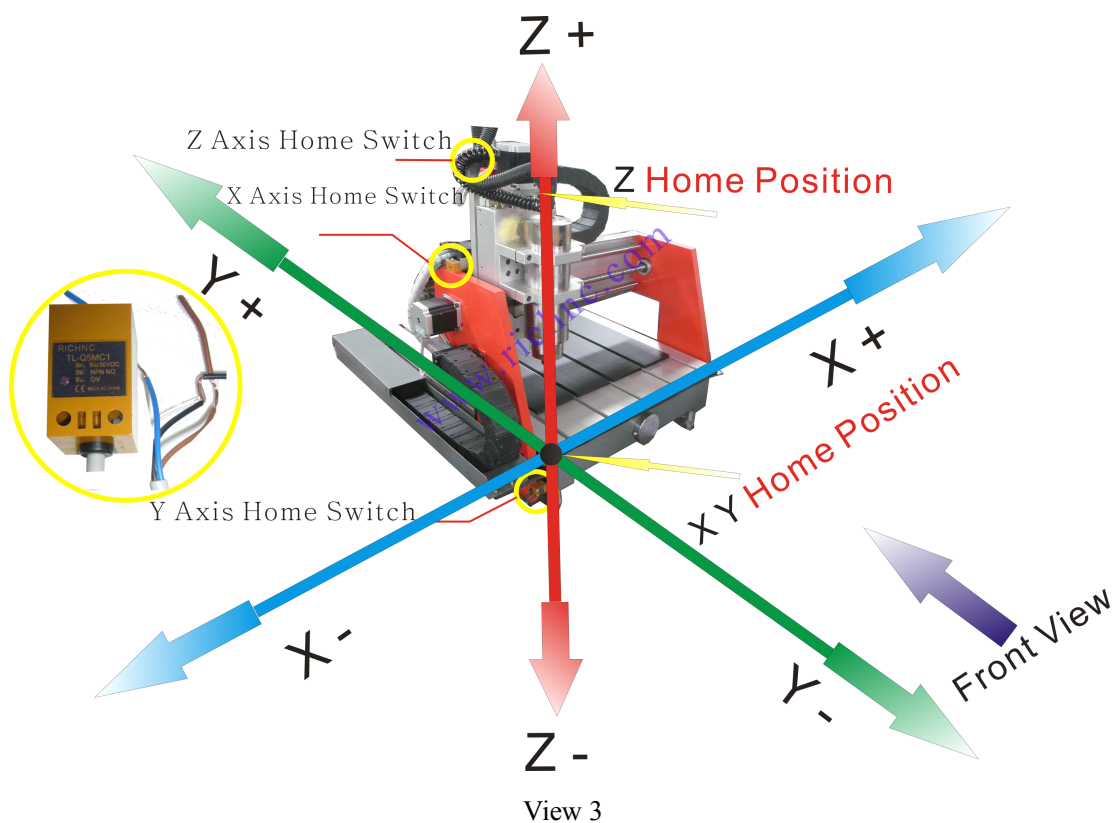
The "Machine Size" parameters must be make sure it is correct. no matter X Axis, Y Axis or Z Axis. if any one is wrong, your machine will be broken your machine.

X Axis "Effective Distance Travelled" means your Spindle (X Axis direction) able moving distance from X Axis Home position to the X Axis other side through the X Axis ball screw rotation.

Y Axis "Effective Distance Travelled" means your Spindle (Y Axis direction) able moving distance from Y Axis Home position to the Y Axis other side through the Y Axis ball screw rotation.

Z Axis "Effective Distance Travelled" means your Spindle tool (Z Axis direction) able down distance from Z Axis Home position to the Z Axis other side (machine table surface) through the Z Axis ball screw rotation.

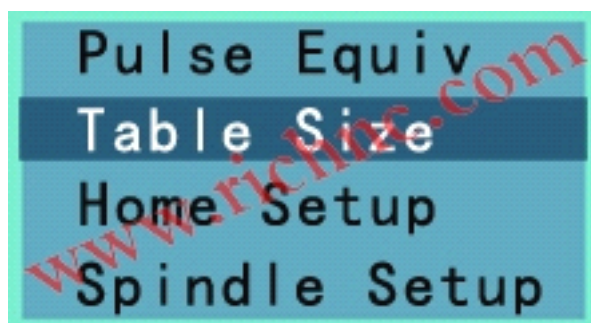
You can got this probably value for reference by measuring tool. Meter stick or something. (as view 3)



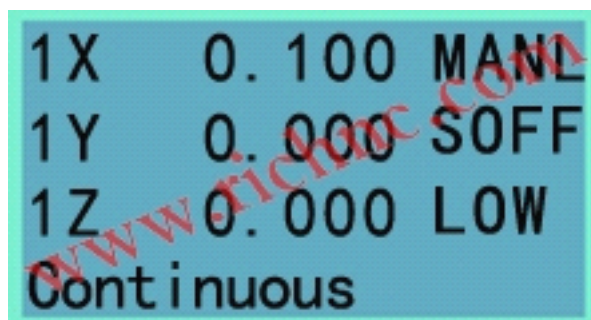
\*\*\*\*\*

4. Please setup the Y Axis and Z Axis machine size, after finished the Z Axis setup, then Press the "OK" key saved and cancel "Machine Size Setup function".

5. We will return the View 1 screen After Press the "OK" key saved and cancel.



6. Press the "Cancel" Key two times we will return the "manual state screen" (as View 6)



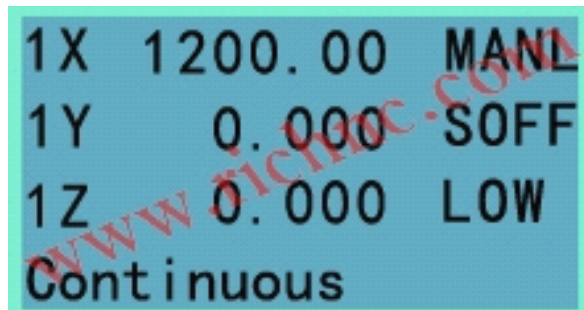
View 6

7. Test the Machine setup, Verify whether it is right or not.

Now, we must test the machine size is correct or not (must be do this test, if not your machine will

be wrong work).

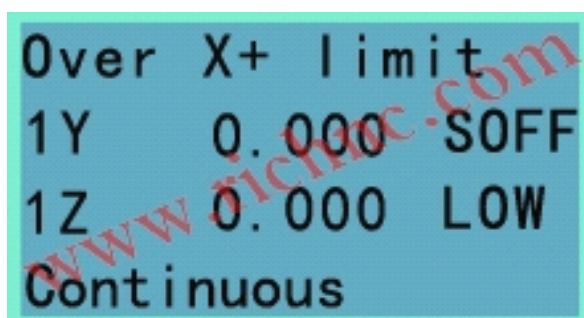
Press the "Home" Key(you must make sure you machine able execute Goto Home function) ,after finished "Goto Home" functions,Press the "X+" key till closest the other side(less than your X Axis machine size 1200.00mm), The controller will show your this X axis coordinate value is 1200.00(as view 7)



View 7

8.Test the controller of machine about the size protection function

This time the machine X Axis had closest the end of X+ direction(end of the X Axis [Effective Distance Travelled](#)),1200.00mm ,if you want more than 1200.00mm ,i am sorry, the controller will show your warning"[Over X+ limit](#)" and stop the "X+" moving for protect your machine. (as view 8)



View 8

9.If your controller show your moving distance is "1200.00", and your machine X Axis size is 1200.00mm, that means your got correct machine X Axis size.

If your controller show your moving distance is not "1200.00", but your got your machine X Axis size is 1200.00 with measuring tool.that means your "[Pulse Equivalent](#)" is wrong, Please read the "[Pulse Equivalent Setup.pdf](#)"(click here will got the manual) for got your correct parameters.

10.Got the correct machine size Y and Z Axis as the same as X Axis.

### Remark:

**Please execute "Goto Home" function when power on very time!!!!**

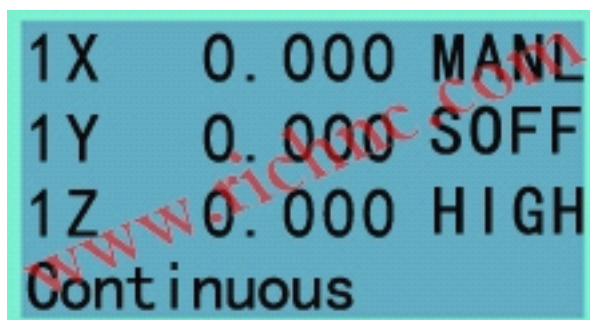
# Manual Speed Setup

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home"(as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will showing "manual state screen". (this state is High-speed manual mode) (as View 2)



View 2

\*\*\*\*\*

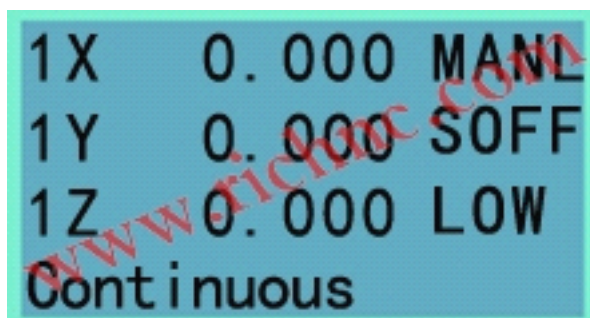
## Remark:

If we had the correct parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

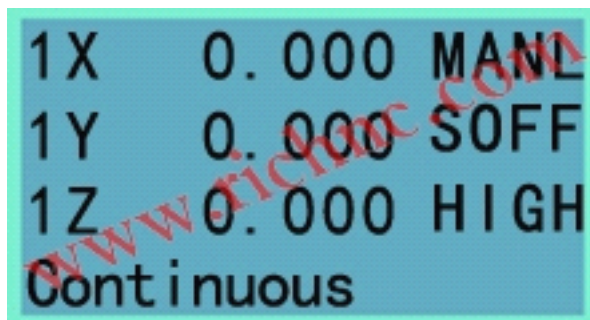
If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

\*\*\*\*\*

3. Press the "High/Low" key, the system will be in another manual operation mode (this state is Low-speed manual continuous mode) (as View group 3)



View 3-1 Low-speed manual continuous mode

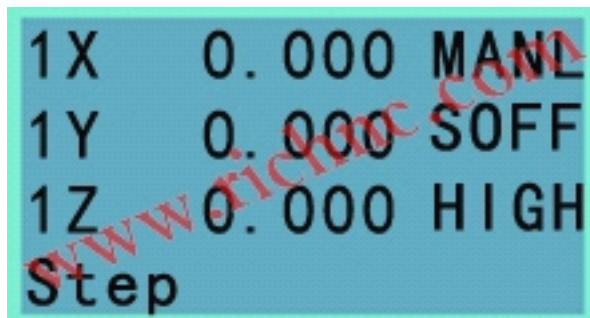


```

1X    0.000  MANL
1Y    0.000  SOFF
1Z    0.000  HIGH
Continuous

```

View 3-2 High-speed manual continuous mode

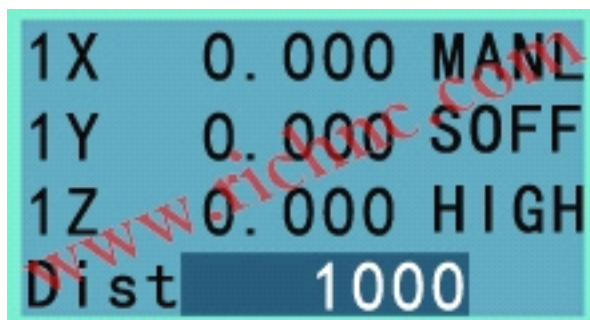


```

1X    0.000  MANL
1Y    0.000  SOFF
1Z    0.000  HIGH
Step

```

View 3-2 High-speed manual step mode



```

1X    0.000  MANL
1Y    0.000  SOFF
1Z    0.000  HIGH
Dist  1000

```

View 3-2 High-speed manual Distance mode

\*\*\*\*\*  
 "Manual Low-speed" include 3 parts: "continuous mode","Distance mode","step mode"

"Manual High-speed" include 3 parts: "continuous mode","Distance mode","step mode"

\*\*\*\*\*

4.Press the "Cancel" key, the system will be in "manual Low-speed setup"(as View 4)



```

Low sped, mm/min
X Axis: 1200.00
Y Axis: 1200.00
Z Axis: 600.00

```

View 4

5. Press the "Delete" key to move the cursor (as View 5)



View 5

6. Enter your need parameter (Manual Low-speed), for example it is 3000mm/Min (as View 6)



View 6

7. Press the "OK" key for changed and saved the "X axis manual Low-speed to 3000mm/Min" then next (as View 7)



View 7

8. We can changed the "Y Axis and Z Axis" manual Low-speed by this way (as View 8)



View 8

\*\*\*\*\*

"Manual Low-speed" means if you press the "X+/- or Y+/- ", they will moving with the speed 3000mm/Min. Press the "Z+/- ", the Z Axis will moving with the speed 1200mm/Min when the system as "Low-speed manual continuous mode"

\*\*\*\*\*

9. We will setup the "Low grid" manual Low-speed (as View 9)



X Axis: 4500.00  
Y Axis: 3000.00  
Z Axis: 1200.00  
Low grid 0.100

View 9

10. Press the "Delete" key to move the cursor(as View 10)



X Axis: 3000.00  
Y Axis: 3000.00  
Z Axis: 1200.00  
Low grid 0.100

View 10

11. Enter parameter(Low grid),for example 0.2mm one step (as View 11)



X Axis: 3000.00  
Y Axis: 3000.00  
Z Axis: 1200.00  
Low grid 0.2

View 11

12. Press the "OK" key for changed and saved the "Low grid 0.2mm one step" then next (as View 12)

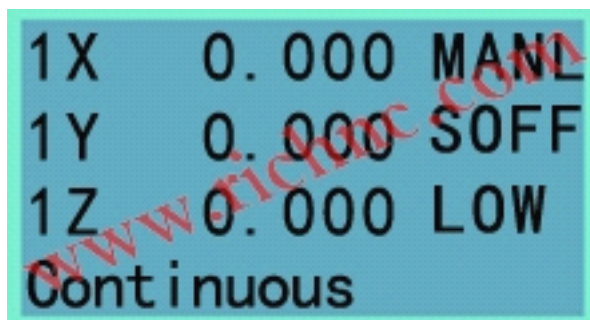


X Axis: 3000.00  
Y Axis: 3000.00  
Z Axis: 1200.00  
Low grid 0.200

## View 12

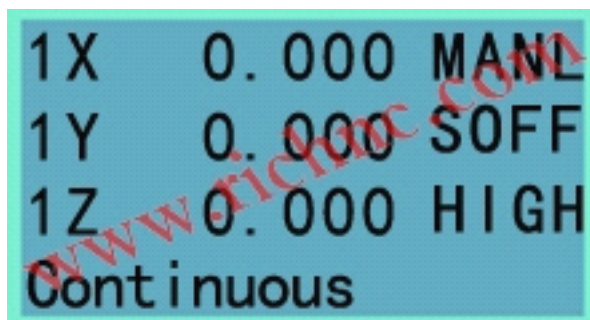
\*\*\*\*\*  
"Low grid" means if you press the "X+/-","Y+/-","Z+/-" once time, they will just moving 0.02mm once time when the system as "Low-speed manual step mode"  
\*\*\*\*\*

13. Finished the "Manual Low-speed" setup, we will return the main screen(as View 13)



## View 13

14. Press the "High/Low" key, the system will be in another manual operation mode(this state is High-speed manual continuous mode) (as View 14)



## View 14

15. We can setup the "Manual High-speed" as above way.

Please use caution parameter setting function, make sure it is safe for change this parameters.

If have any question please contact the [richnc@hotmail.com](mailto:richnc@hotmail.com) first.

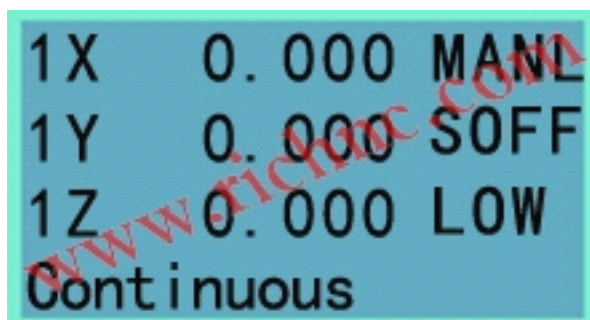
# How to running a job

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home"(as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will showing "manual state screen". (this state is Low-speed manual mode) (as View 2)



View 2

\*\*\*\*\*

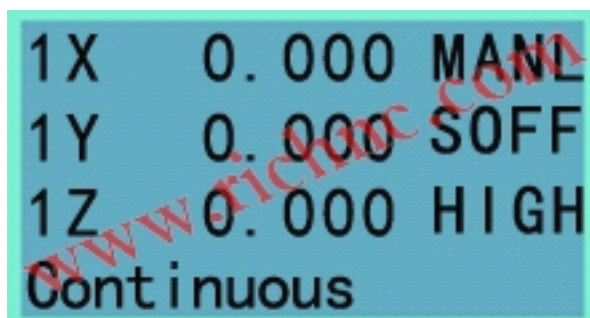
## Remark:

If we had the correct parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

\*\*\*\*\*

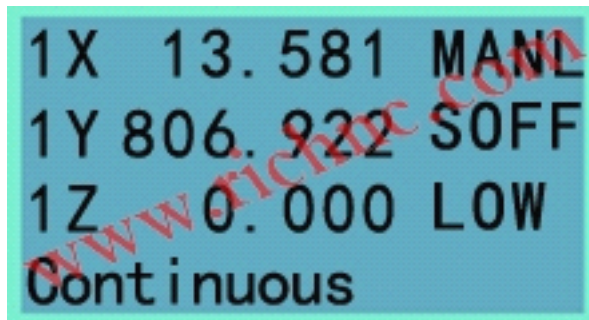
3. Press the "High/Low" key, the system will be in another manual operation mode (this state is High-speed manual continuous mode) (as View 3)



View 3

4. Press the "X+/X-" and "Y+/Y-" move the spindle close to the corner of the

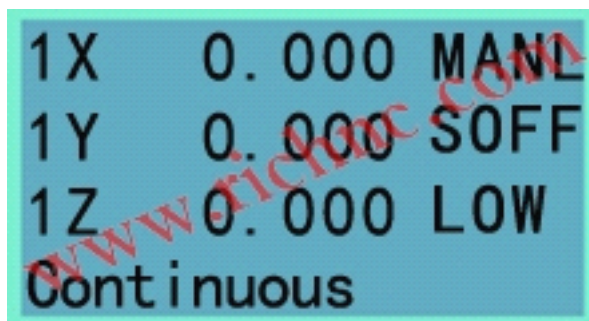
material (as View 4)



```
1X 13.581 MANL
1Y 806.922 SOFF
1Z 0.000 LOW
Continuous
```

View 4

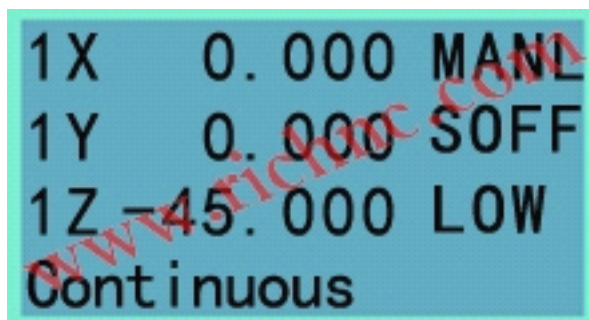
5. Press the "4" key, make the "X and Y axes working origin", building the "working start X Y point" (as View 5)



```
1X 0.000 MANL
1Y 0.000 SOFF
1Z 0.000 LOW
Continuous
```

View 5

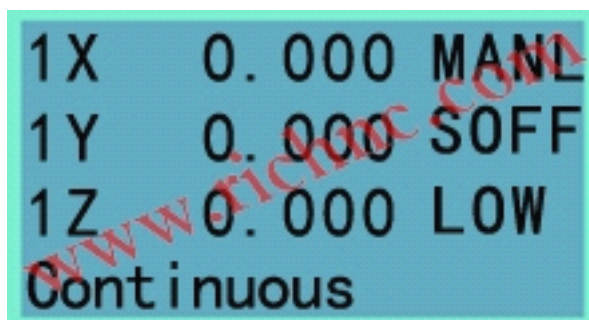
6. Press the "Z+/Z-" move the tool close to the surface of the material (as View 6)



```
1X 0.000 MANL
1Y 0.000 SOFF
1Z -45.000 LOW
Continuous
```

View 6

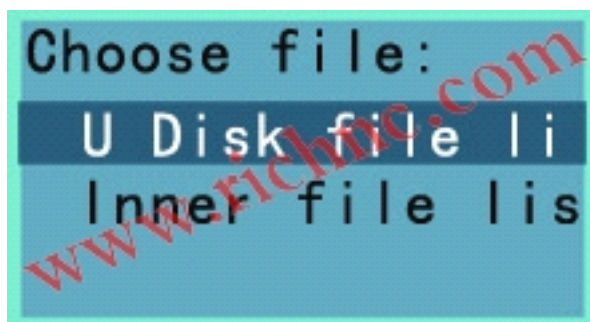
7. Press the "8" key, make the "Z axis working origin" building the "working start Z point" (as View 7)



```
1X 0.000 MANL
1Y 0.000 SOFF
1Z 0.000 LOW
Continuous
```

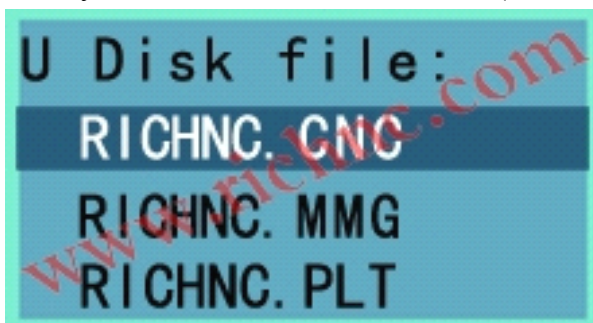
View 7

8. After found the working origin, put the U flash into the controller. Press the "RUN" key, the controller will show your (as View 8)



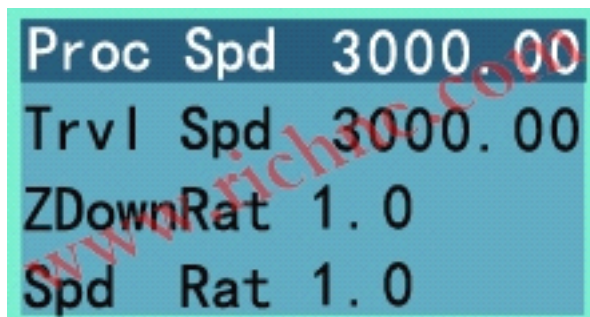
View 8

9. Press the "OK" key, we will view the U flash files (as View 9)



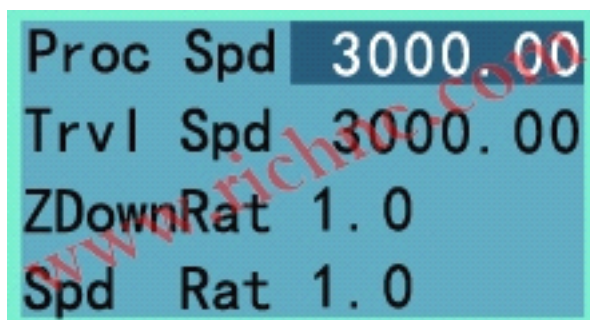
View 9

10. Press the "X+/X-" key to select the job file, we choice the "RICHNC.CNC" file and press the "OK" key, The controller will show your this job parameters: **Processing speed, Travel speed, Z down Rate, Speed Rate, Spindle Grade, Pulse Equivalent, Z up distance** (as View 10)



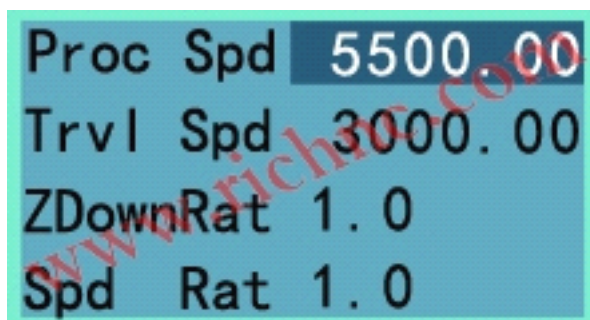
View 10

11. Press the "DELETE" key move the cursor to numbers (as view 11)



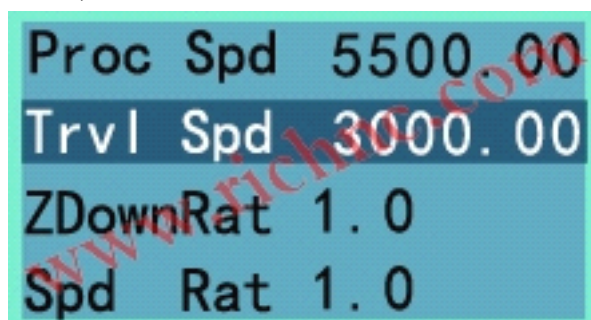
View 11

12. Press the number key to change the processing speed, we change the processing speed to 7000mm/Min (as view 12)



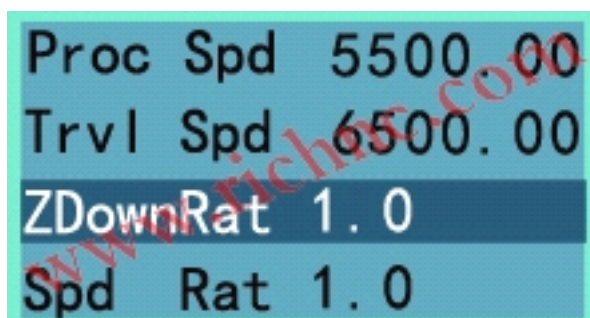
View 12

13. Press the "OK" key to saving the processing speed to "7000mm/Min" and go to next parameter(as view 13)



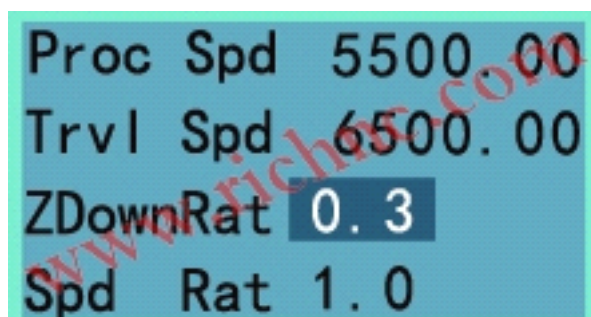
View 13

14. As above method, we can change the Travel speed to 6500.00(as view 14)



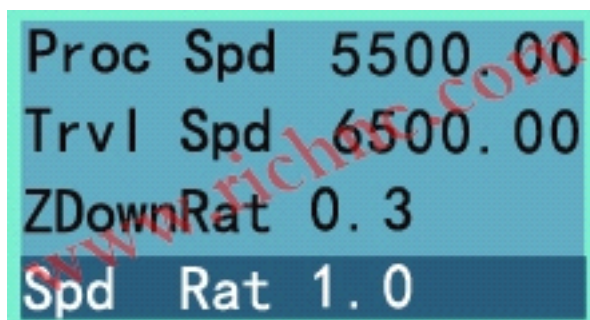
View 14

15. Normal we need to slowly the Z Down speed ,so we must change the Z Down Rate(as view 15)



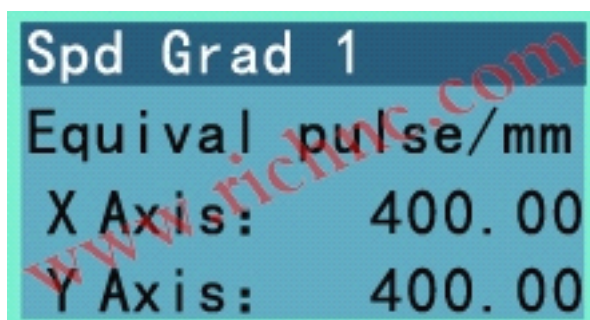
View 15

16. Press the "OK" key for save the Z Down Rate and next(as view 16)



View 16

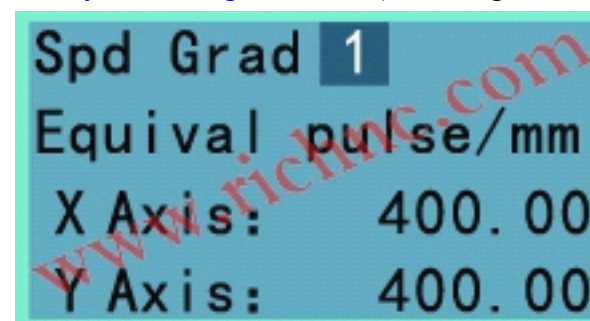
17. Normal we need not to change the Speed Rate, so we press the "OK" key to next (as view 17)



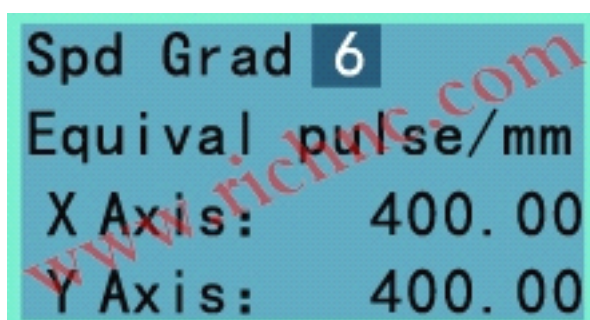
View 17

18. We can select the spindle speed if we had setup the spindle speed function on "Machine setup"

For example: we had setup the multi speed states, so select the 20000rpm, the 6 state. Press the "Delete" key to moving the cursor (as view ground 18)

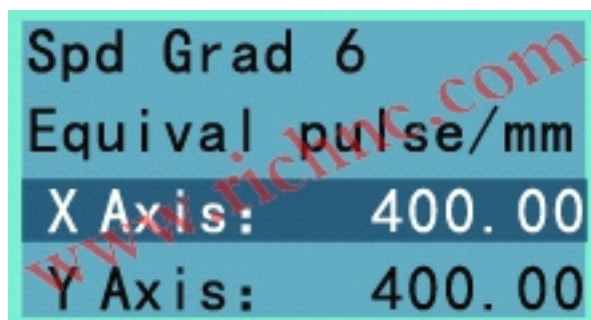


View 18-1



View 18-2

19. Press the "OK" key to next (as view 19)



View 19

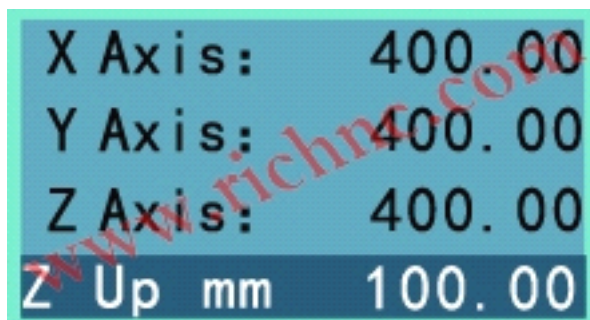
\*\*\*\*\*

**Remark:**

We just only able change the pulse Equivalent on the "Machine setup", can not now

\*\*\*\*\*

20.Moving the cursor to found the "Z Up mm", normal this parameter had be setup in processing file,so we need not to change it now(as view 20)



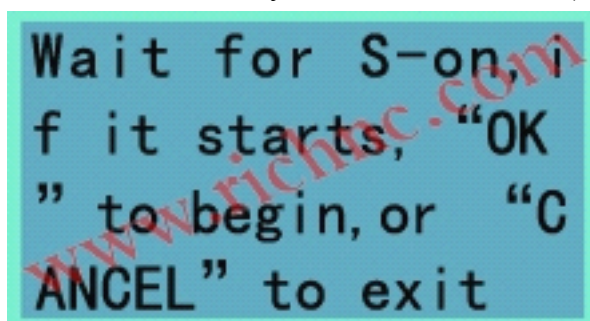
View 20

21.Press the "OK" key ,the RZNC controller will checking the file(as view 21)



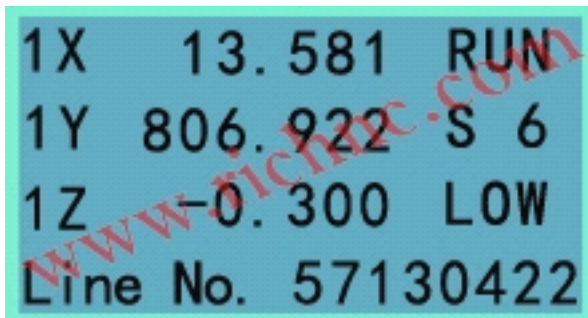
View 21

22.The RZNC controller will show you some informations(as view 22)



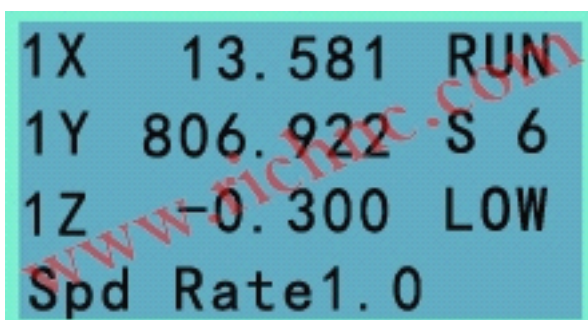
View 22

23. We will wait the spindle got the enough speed and auto working. we can press the "OK" key, the RZNC controller will direct start working. (as view ground 23)



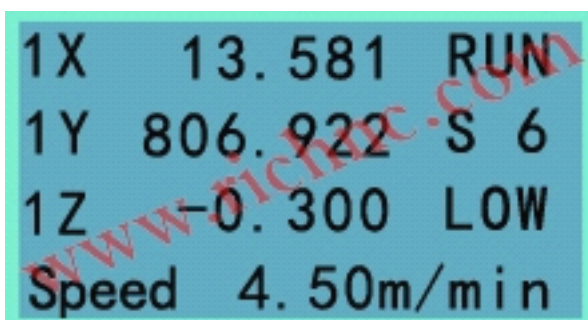
1X 13.581 RUN  
1Y 806.922 S 6  
1Z -0.300 LOW  
Line No. 57130422

View 23-1



1X 13.581 RUN  
1Y 806.922 S 6  
1Z -0.300 LOW  
Spd Rate 1.0

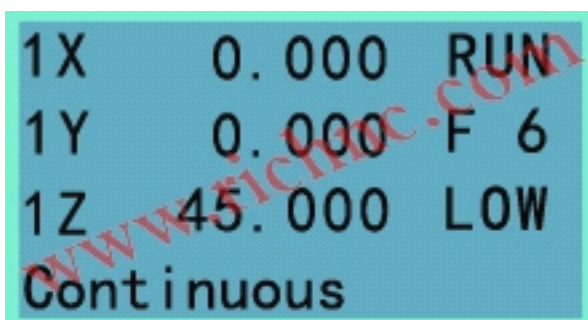
View 23-2



1X 13.581 RUN  
1Y 806.922 S 6  
1Z -0.300 LOW  
Speed 4.50m/min

View 23-3

24. The RZNC controller working now, we just wait he stop after finished this job (as view 24)



1X 0.000 RUN  
1Y 0.000 F 6  
1Z 45.000 LOW  
Continuous

View 24

Please use caution parameter setting function if it is safe. If have any question please contact the [richnc@hotmail.com](mailto:richnc@hotmail.com) first.

## Software Installation With PC

### 1. Computer Hardware Requirements:

CPU: PIII 450 and more;

O S: Win2000 or XP and more

2. Please [choose](#) and [download](#) the correct USBCAM Driver version which it suit your PC Windows system from [Http://www.richnc.com](http://www.richnc.com) ,uncompress and saved(e.g. Uncompress and saved it on D:\UsbCam ).

3.Plug the RZNC-05 Series(CNC Controller) in to your computer through the USB cable,wait a while until the computer appear "[found new hardware](#)" (as View 3-1);



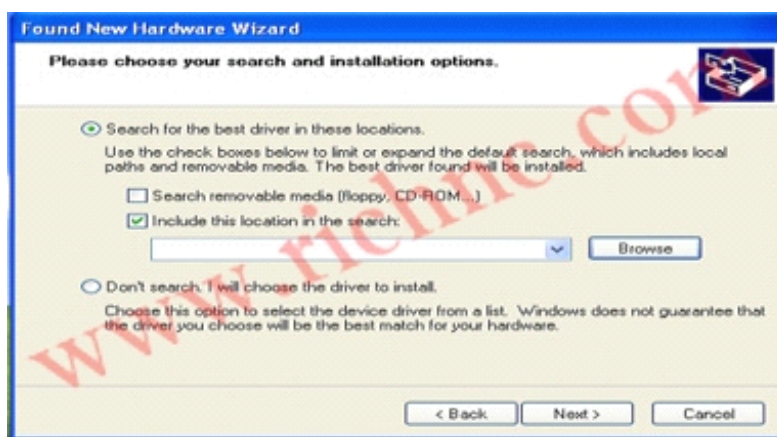
View 3-1

4. Click on the clue,It appears setup information, select the second item which is"[install from a list or special location](#)" ( as View 3-2);



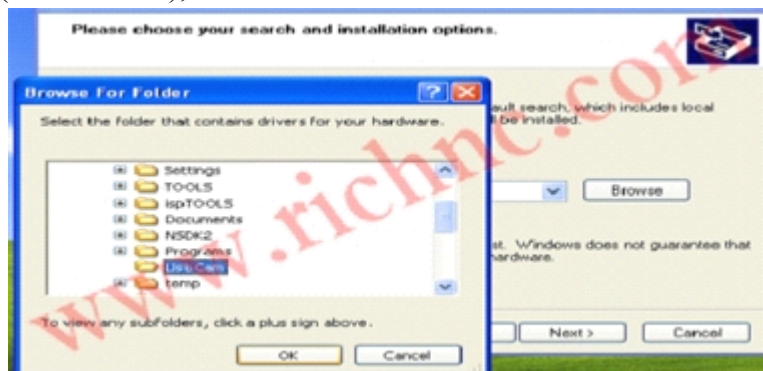
View 3-2

5. Click on "[Next](#)" button,Choose "[include this location in the search](#)" ( as View 3-3);



View 3-3

6. Click on "Browse" icon to find the location, please found and select the D:\UsbCam ( as View 3-4);



View 3-4

Remark:

If your found and select the correct file ,the "OK" will able to be clicked,

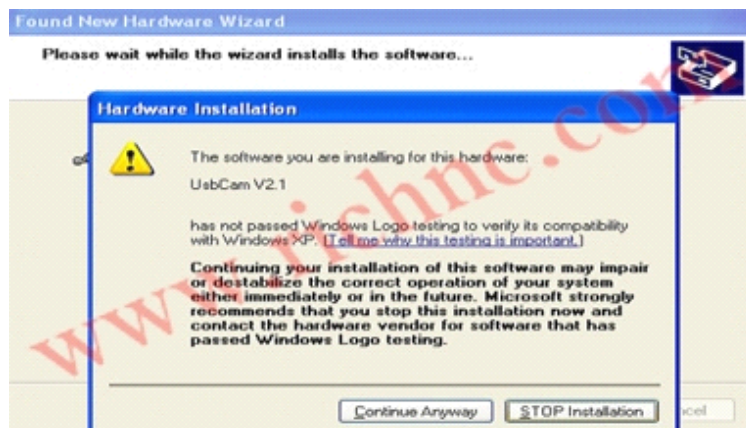
If your found and select the wrong file, the "OK" will unable to be clicked,please make sure the "UabCam" file Uncompress and exists.

7. Click on "OK" button to make sure the correct files (as View 3-5)



View 3-5

8. Click on "Next" button to install UsbCam,the system will show you some informations (as View 3-6)



View 3-6

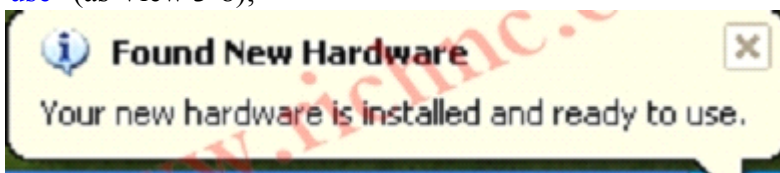
9. Please choose the "**Continue Anyway**" to continue installing. If all steps is correct the system will show your this informations (as View 3-7)



View 3-7

10. Please click on the "**Finish**" button to finish the UsbCam install.

11. Please wait a while until the computer appear "**your new hardware is installed and ready to use**" (as View 3-8);



View 3-8

12. The UsbCam Driver had installed, you can open the software for operations.

Good luck!

If have any questions please the frist contact the Mr.Jery-Jiang, thank you!!!

#### NOTICE:

Press the "DELETE" key when the DSP show you"go to home" connect with the PC.  
Press the "OK" key when the DSP show you"go to home" connect with the machine.

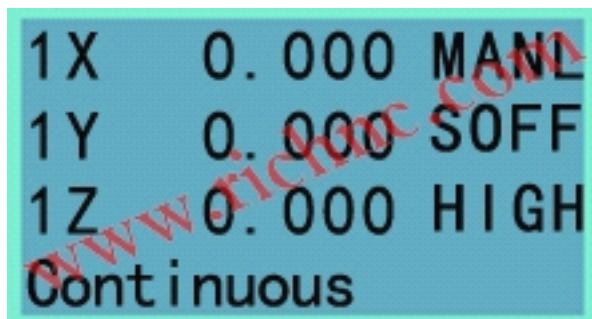
## How to Setup the Tools

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home" (as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will show "manual state screen" (as View 2)



View 2

\*\*\*\*\*

### Remark:

Because we have not the correct "Pulse Equivalent" parameters now, so we press the "DELETE" key first time.

If we had the correct "Pulse Equivalent" parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

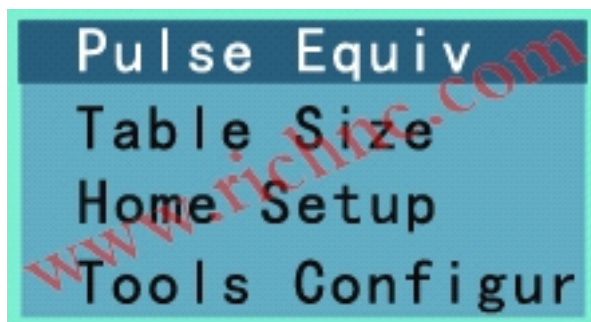
\*\*\*\*\*

3. Press the "Menu" key, we will enter into the "menu function" (as View 3)



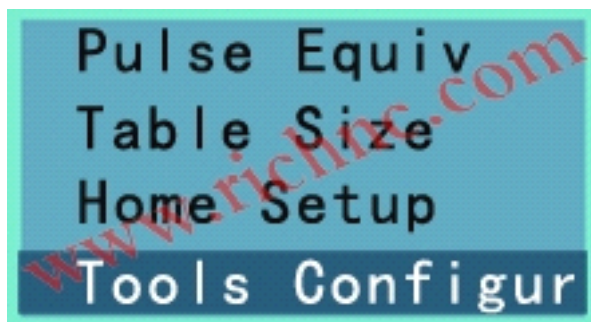
View 3

4. Select the "Machine Setup" and press the "OK" key, we will enter in the "Machine Setup function" (as View 4)



View 4

5. Press the "X+" key to moving the cursor, Select the "Tools Configure", then press the "OK" key, we will enter in the "Tools Configure Setup function" (as View 5)



View 5

6. Select the "Tools Amount" press the "OK" key, we will enter in the "Tools Amount Setup function" (as View 6)



View 6

7. Normal the default parameter is 1, so we must change the "Tools Amount" (as view 7)



View 7

\*\*\*\*\*

**Remark:** Because it is RZNC-ATC(D), so we must setup the "Tools Amount" as 2

\*\*\*\*\*

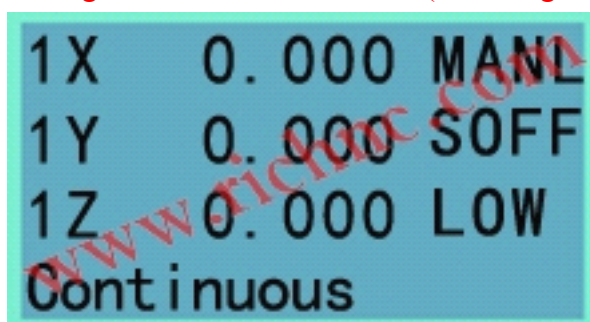
8. Press the "2" key we will setup there be 2 Tools on this machine(as view 8)



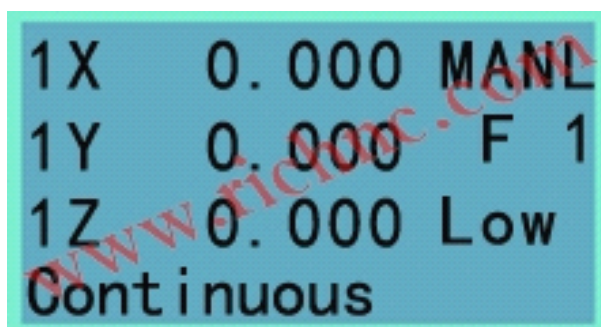
View 8

\*\*\*\*\*

Remark: After we finished "Tools Amount" as 2, the RZNC-ATC(D) function will be open, we can contrast images to found the difference(as view group 8)



View 8-1



View 8-2

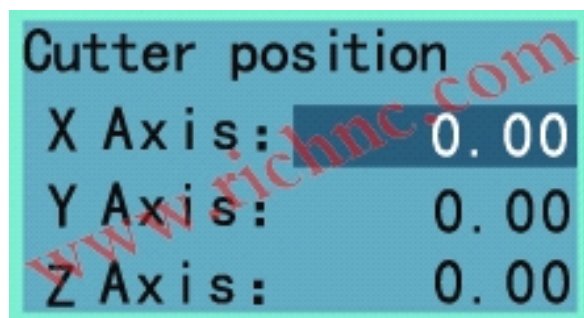
\*\*\*\*\*

9. Press the "OK" key to saved this changed and cancel the "Tools Amount Setup function" for next parameter setup(as View 9)



View 9

10. Press the "OK" key, we will enter in the "Tools Position Setup function" (as View 10)



View 10

\*\*\*\*\*

#### Remark:

We must know what it means about the "Cutter Position Setup" Because it is very important for RZNC-ATC(D), so we must setup the "Cutter Position" be careful

X Axis: means that the coordinate value distance from T2 working start point to T1 working start point.(this coordinate value with the T1 working start point as reference point)

$$T1-T2=X \text{ Axis value}$$

Y Axis: means that the coordinate value distance from T2 working start point to T1 working start point.(this coordinate value with the T1 working start point as reference point)

$$T1-T2=Y \text{ Axis value}$$

Z Axis: means that the coordinate value distance from T2 working start point to T1 working start point.(this coordinate value with the T1 working start point as reference point),

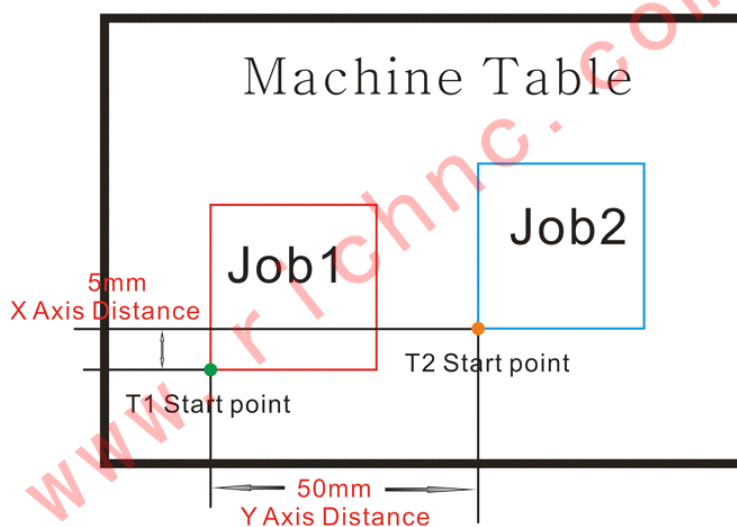
$$T1-T2=Z \text{ Axis value}$$

!!!!!!!=====This value(the Z Axis value must not enter, the controller will auto got this value from you working operation=====!!!!!!!

\*\*\*\*\*

For Example(as view group 11):

### RZNC-ATC(D) Tools Position

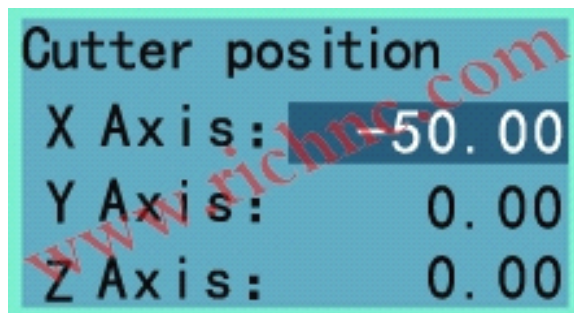


View 11

On this working ,we will setup the "Cutter Position" as follows

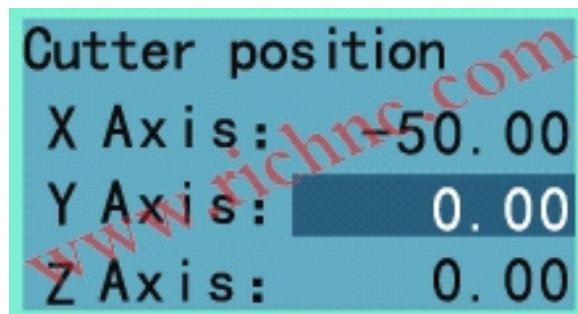
$$X \text{ Axis value}=T1-T2=0-50=-50$$

Enter the "-50" into X Axis, (as view 11-1)



View 11-1

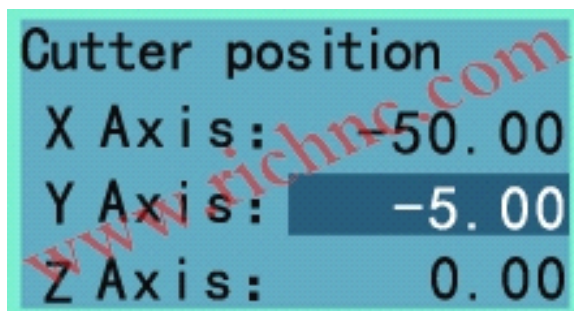
Press the "OK" key to saved and next step(as view 11-2)



View 11-2

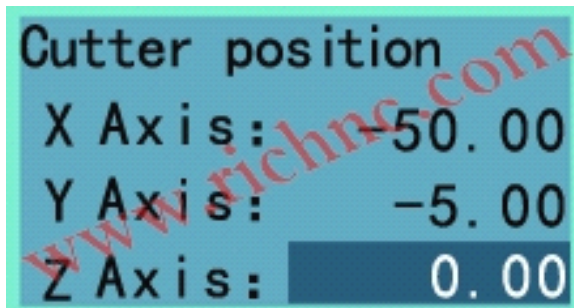
Y Axis value= $T1-T2=0-5=-5$

Enter the "-5" into Y Axis, (as view 11-3)



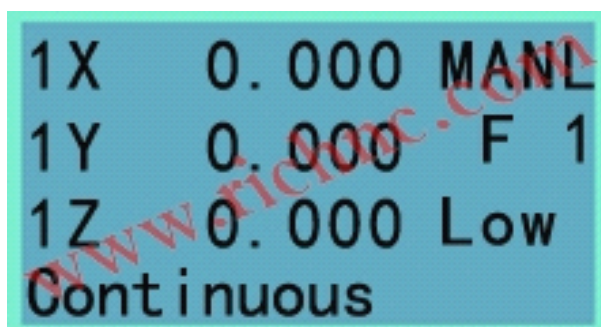
View 11-3

Press the "OK" key to saved and next step(as view 11-4)



View 11-4

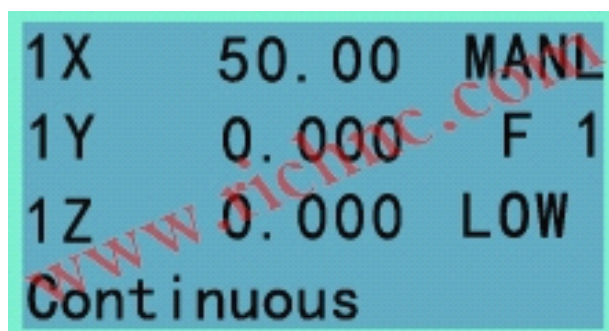
Press the "OK" key to saved and cancel the "Tools Position Setup function" and press the "CANCEL" key to return the "Manual state screen" (as view 11-5)



1X	0.000	MANL
1Y	0.000	F 1
1Z	0.000	Low
Continuous		

View 11-5

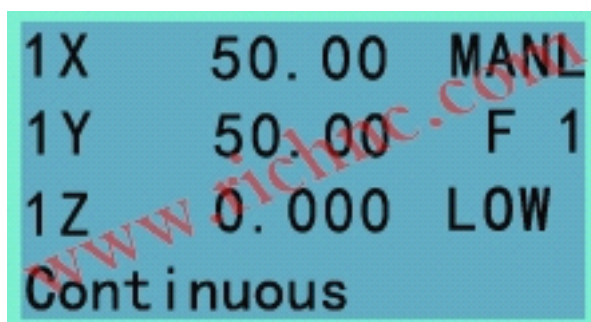
Make the "T1" working start position, press the "X+" make 1X coordinate value to 50mm(as view 11-6)



1X	50.00	MANL
1Y	0.000	F 1
1Z	0.000	LOW
Continuous		

View 11-6

Make the "T1" working start position, press the "Y+" make 1Y coordinate value to 50mm(as view 11-7)

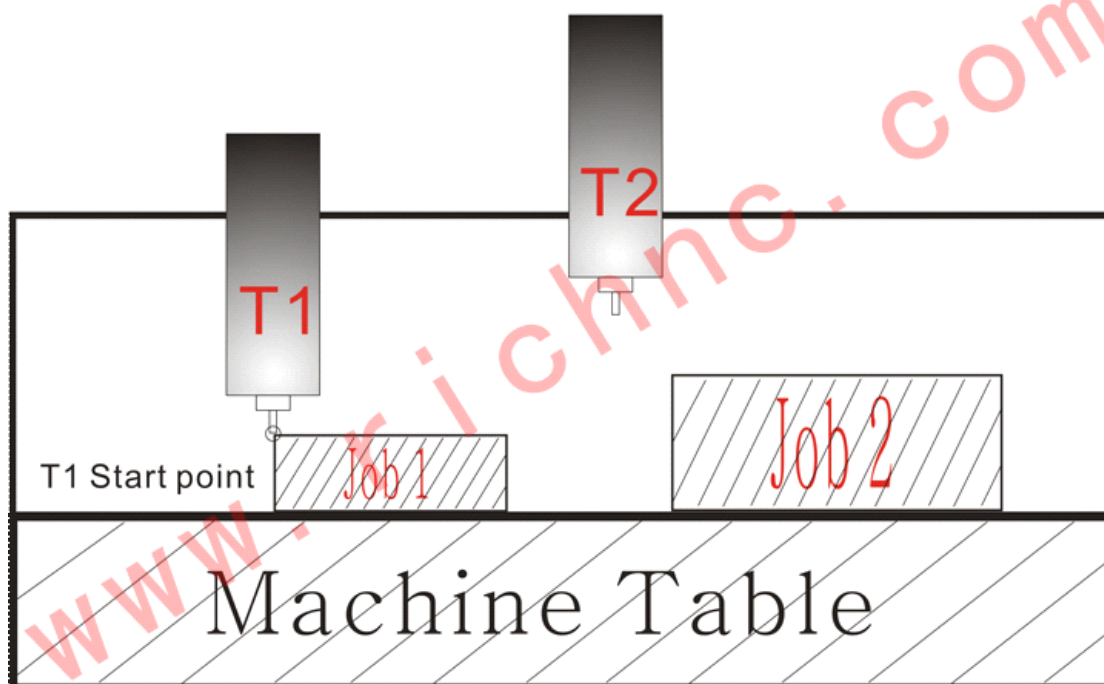


1X	50.00	MANL
1Y	50.00	F 1
1Z	0.000	LOW
Continuous		

View 11-7

Make the "T1" working start position, press the "Z-" till the T1 closed the Job1 surface(as view 11-7) then 1Z coordinate value to -50mm(as view 11-8)

## RZNC-ATC(D) Tools Position



View 11-7

```

1X    50.00  MANL
1Y    50.00  F 1
1Z   -50.00  LOW
Continuous
  
```

View 11-8

Make sure the "T1" working start position(as view 11-9)

press the "XY->0" key, make this point as the T1 work start point "0" point(X Y direction starting point).

Press the "Z->0" key, make this point as the T1 work start point "0" point(Z direction starting point).

```

1X    0.000  MANL
1Y    0.000  F 1
1Z    0.000  Low
Continuous
  
```

View 11-9

Press the "ON/OFF" key + "Z+" key we will got the "T2 working screen",this time the Z2 will must be return the "Z2 Home position",so the Z2 coordinate is "50.00"(as view 11-10)

```

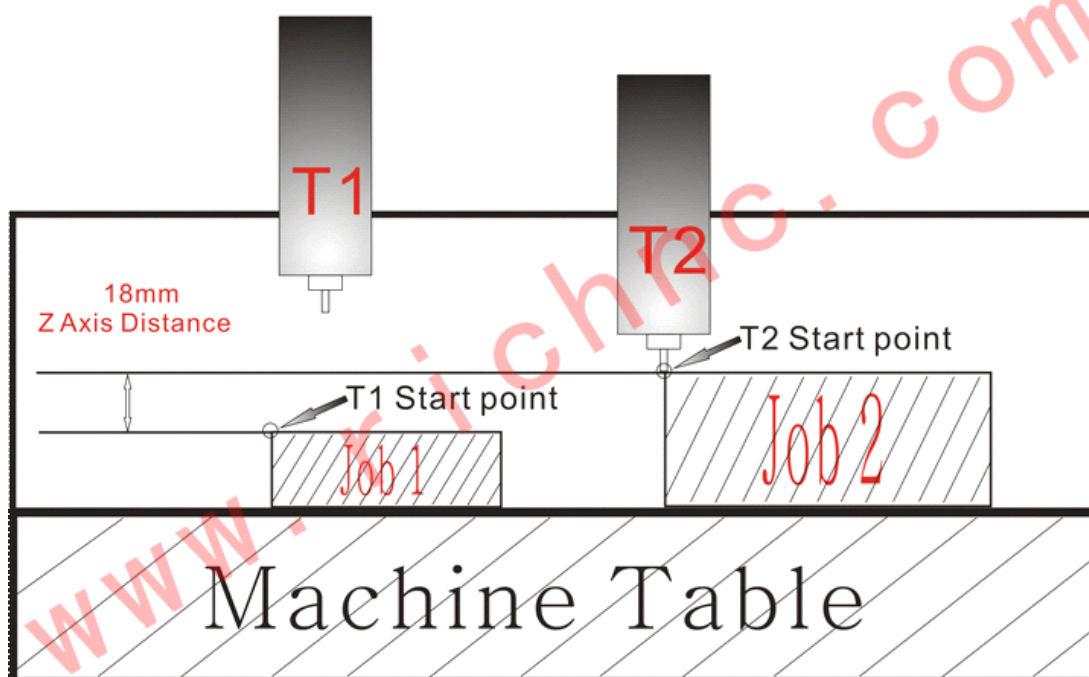
1X    0.000  MANL
1Y    0.000  F 2
1Z    50.00  LOW
Continuous

```

View 11-10

Make the "T2" working start position, press the "Z-" till the T2 closed the Job2 surface(as view 11-11 then 1Z coordinate value to 18mm(as view 11-12)

## RZNC-ATC(D) Tools Position



View 11-11

```

1X    50.00  MANL
1Y     5.00  F 2
1Z    18.00  LOW
Continuous

```

View 11-12

Make sure the "T2" working start position(as view 11-13)

press the "XY->0" key, make this point as the T2 work start point "0" point(X Y direction starting point).

Press the "Z->0" key, make this point as the T2 work start point "0" point(Z direction starting point).

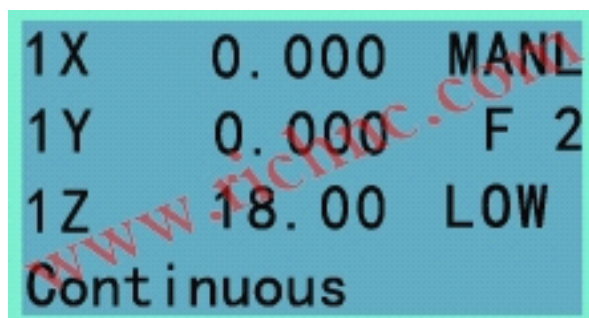
\*\*\*\*\*

Remark: this time the "1Z" coordinate value will be made to "0", still as 18 when the "T2 working screen"(as view 11-13).

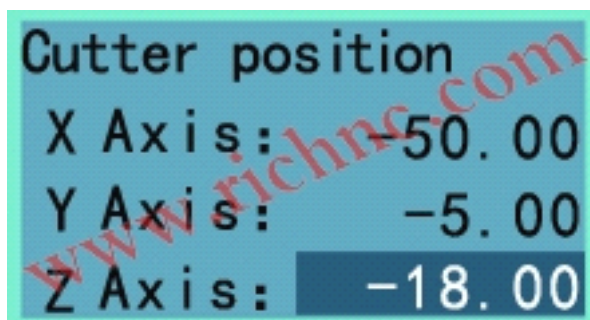
but the controller had saved this coordinate value as the parameter, we can check this parameters on the "Tools position setup function"(as view 11-14)

Z Axis value =  $T1 - T2 = 0 - 18 = -18$  (this means the T2 Z work start point up T1 work start point 18mm)

\*\*\*\*\*



View 11-13



View 11-14

\*\*\*\*\*

As above operations, we had finished the RZNC-ATC(D) "Tools Position Setup"

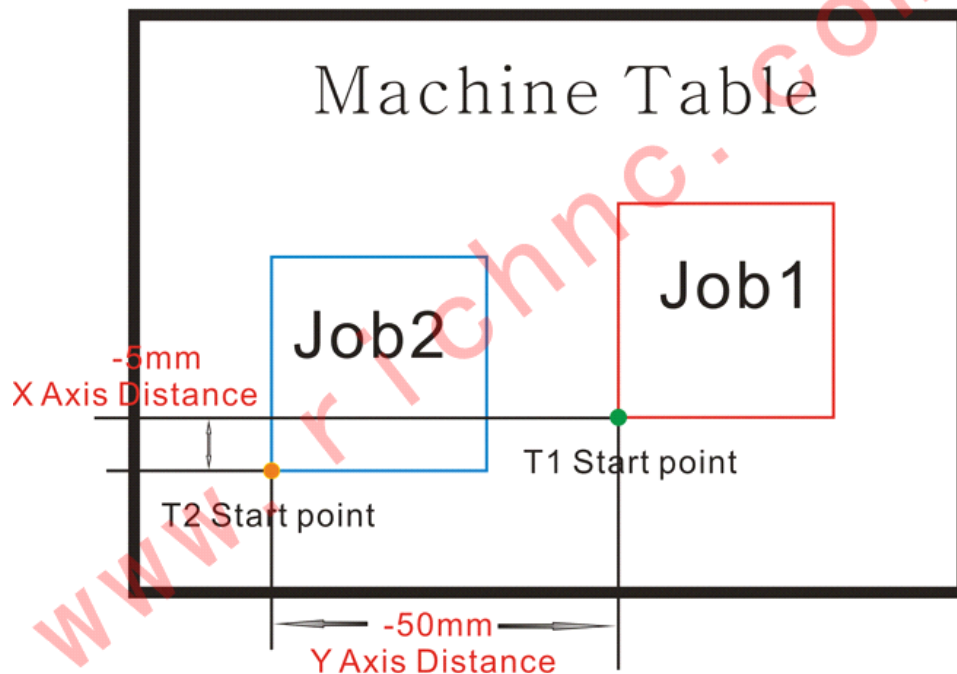
After finished the "Tools Position Setup" we must setup the "Spindle setup"

After finished "Tools Position Setup" and "Spindle setup", Then we must return to F1 screen (because the T1 is comparison of T2, all of T2 working coordinate value depend on the T1) and running any Two Tools Change job.

\*\*\*\*\*

For Example(as view group 12):

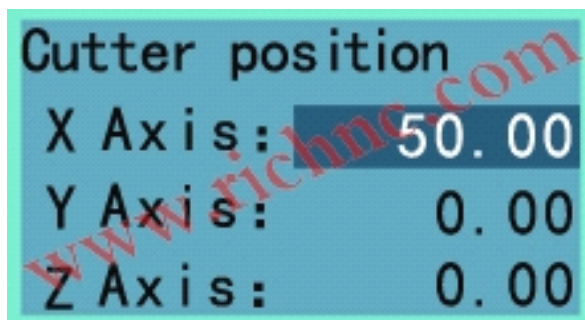
## RZNC-ATC(D) Tools Position



This working ,we will setup the "Cutter Position"

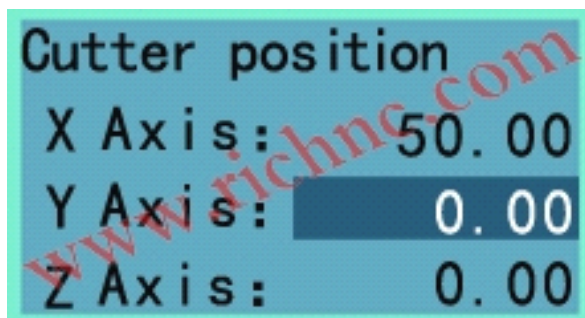
$$X \text{ Axis value} = T1 - T2 = 0 - (-50) = 50$$

Enter the "50" into X Axis, (as view 12-1)



View 12-1

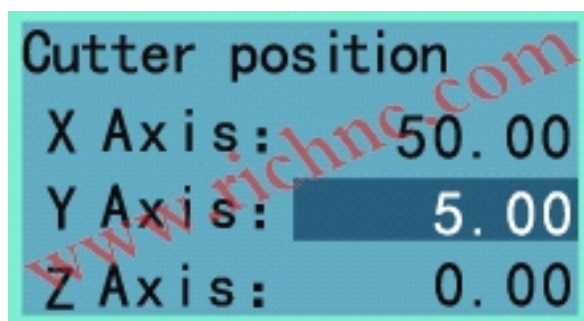
Press the "OK" key to saved and next step(as view 12-2)



View 12-2

$$Y \text{ Axis value} = T1 - T2 = 0 - (-5) = 5$$

Enter the "5" into Y Axis, (as view 12-3)



View 12-3

Other as the same as the picture group 11.

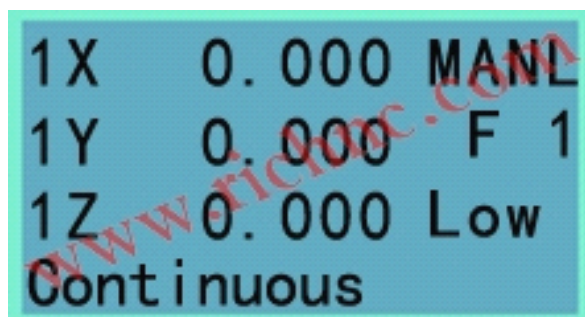
# How to Setup the Spindle

1. Connect the RZNC Controller with computer or machine, power on, the controller will show your "Goto Home"(as View 1)



View 1

2. Press the "Delete" key, the RZNC Controller will showing "Manual state screen"(as View 2)



View 2

\*\*\*\*\*

## Remark:

Because we have not the correct "Pulse Equivalent" parameters now, so we press the "DELETE" key first time.

If we had the correct "Pulse Equivalent" parameters, we must press the "OK" key when the controller show your "Goto Home" with machine (Connect with machine).

If we connect with the computer, we must press the "DELETE" key when the controller show you "Goto Home".

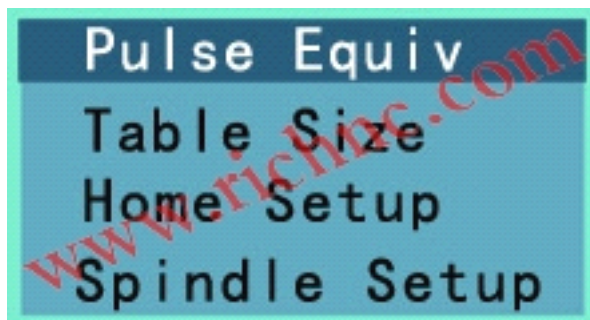
\*\*\*\*\*

3. Press the "Menu" key, we will enter into the "menu function"(as View 3)



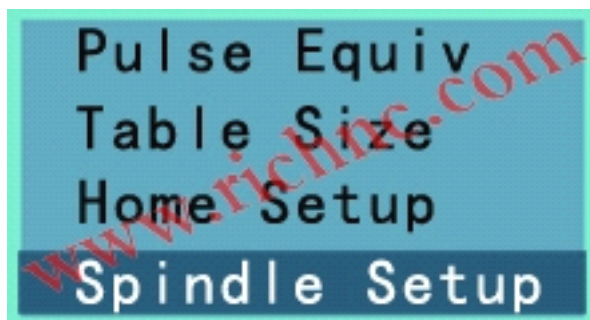
View 3

4. Select the "Machine Setup" and press the "OK" key, we will enter in the "Machine Setup function" (as View 4)



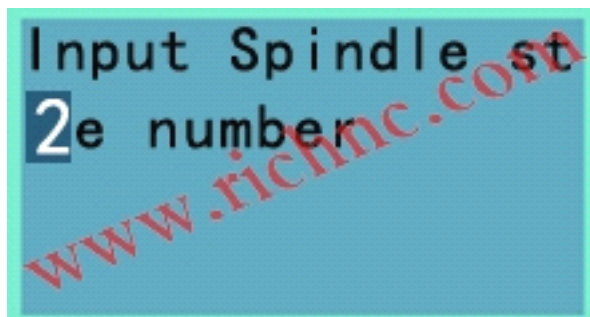
View 4

5. Press the "X+" key to moving the cursor,Select the "Spindle Setup",then press the "OK" key,we will enter in the "Spindle Setup function" (as View 5)



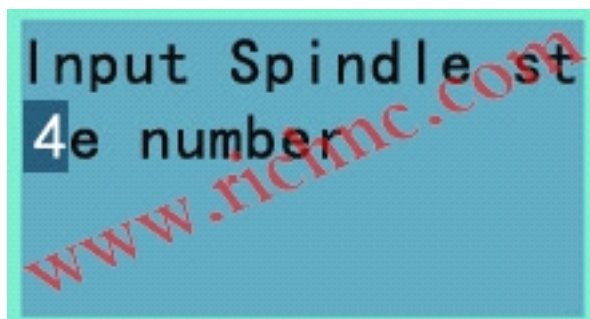
View 5

6.The DSP will show you this screen(as view 6)



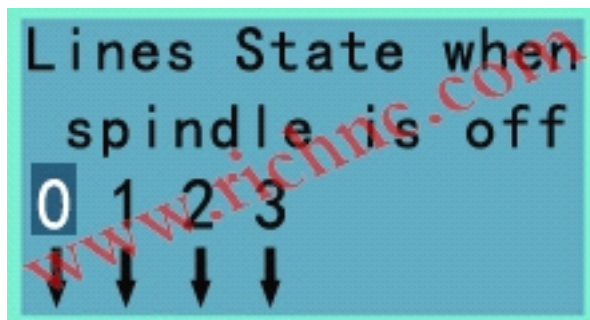
View 6

7.Press the "4" key to change the number of states, after then press "OK" key to saved and next step(as view 7)



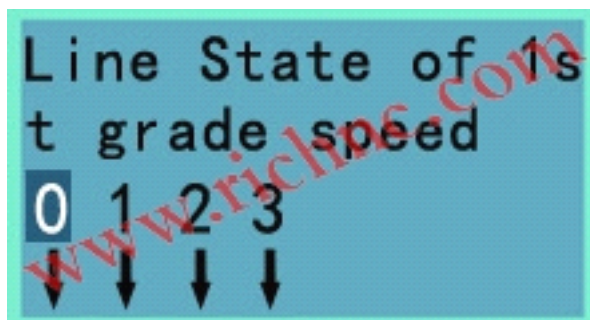
View 7

8.The DSP will show you this screen(as view 8)



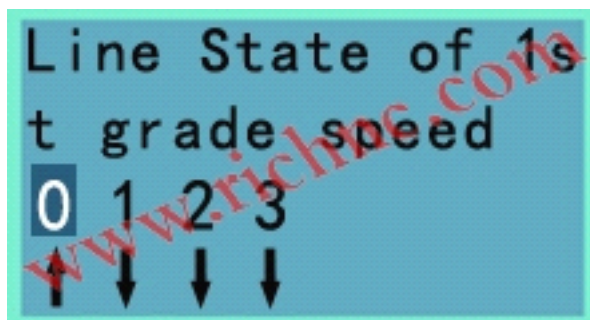
View 8

9. Setup the state when the spindle is off, press the "OK" key to save and next step(as view 9)



View 9

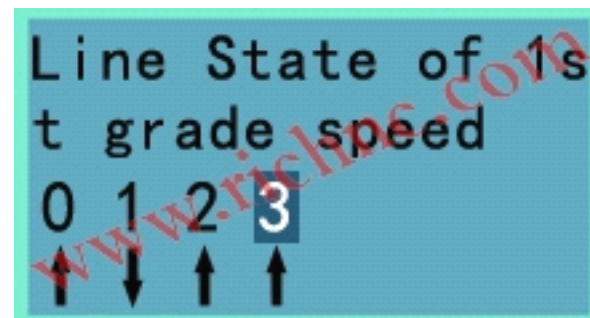
10. Setup the state of 1st grade speed as F1 function, Press the "Y+" key to make the 0 arrow from "Down" to "Up"press the "OK" key to save and next step(as view 9)



View 9

\*\*\*\*\*

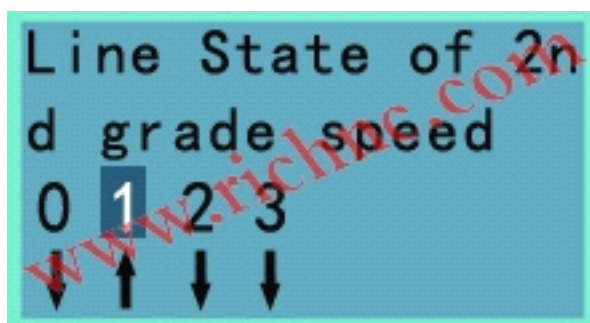
Remark: if you need open the Dust Catcher or Air Cylinder when Spindle is starting. Connect the S2(connect board J7) with Dust Catcher's relay. S3 with Air Cylinder's relay. Setup as view



\*\*\*\*\*

11. Setup the state of 2nd grade speed as F2 function, Press the "Y+" key to make the 1 arrow

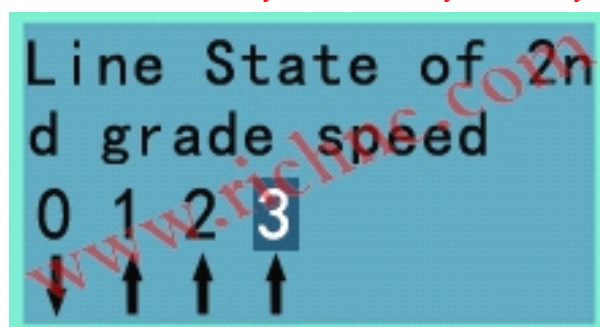
from "Down" to "Up"press the "OK" key to save and next step(as view 11)



View 11

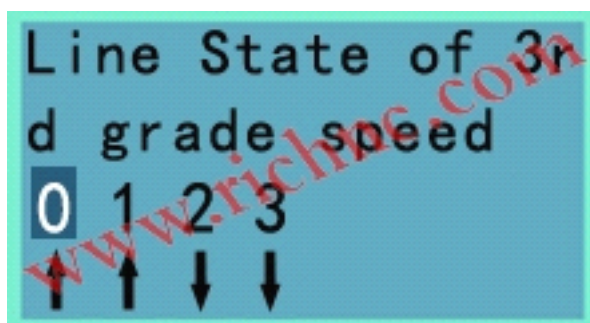
\*\*\*\*\*

Remark: if you need open the Dust Catcher or Air Cylinder when Spindle is starting. Connect the S2(connect board J7) with Dust Catcher's relay. S3 with Air Cylinder's relay. Setup as view



\*\*\*\*\*

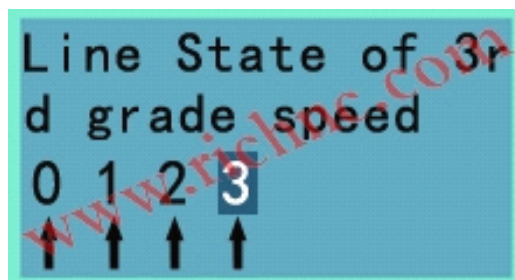
12. Setup the state of 3rd grade speed as F3 function, Press the "Y+" key to make the 1 arrow from "Down" to "Up"press the "OK" key to save and next step(as view 12)



View 12

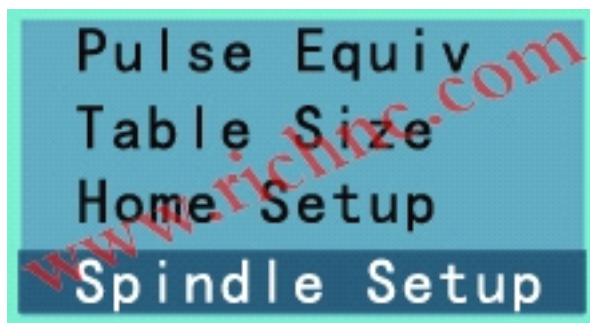
\*\*\*\*\*

Remark: if you need open the Dust Catcher or Air Cylinder when Spindle is starting. Connect the S2(connect board J7) with Dust Catcher's relay. S3 with Air Cylinder's relay. Setup as view



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13. Press the "OK" key to saved and cancel the "Spindle Setup Function" (as view 13)



View 13

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As above operations, we had finished the RZNC-ATC(D) "Spindle setup"

After finished the "Spindle setup" we must setup the "Tools Position Setup"

After finished "Tools Position Setup" and "Spindle setup", Then we must return to F1 screen(because the T1 is comparison of T2,all of T2 working coordinate value depend on the T1) and running any Two Tools Change job.

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