

# Luxury Template Cutting & Milling machine

operation manual

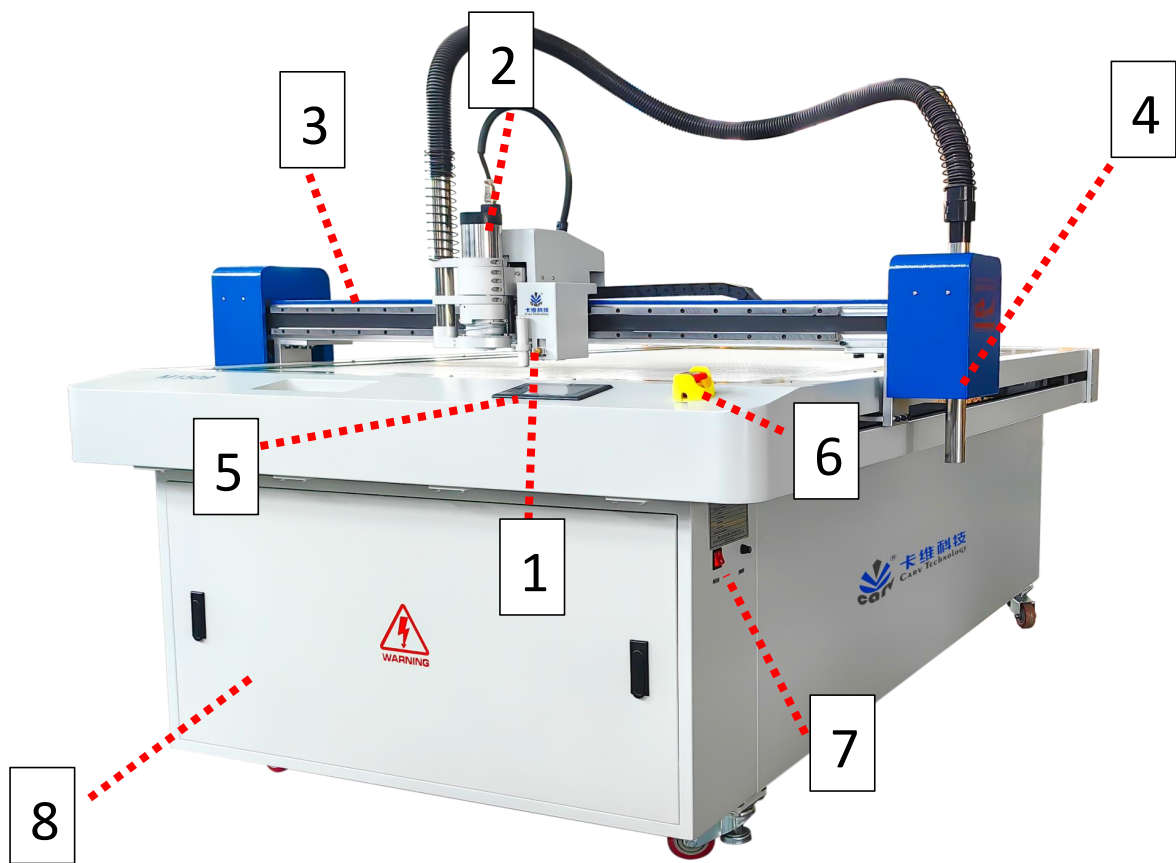


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[Before use, please read this manual carefully to avoid operational errors]

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# Chapter 1 Description of the structure of the Machine

## Product diagram



|                      |                        |                               |
|----------------------|------------------------|-------------------------------|
| 1.Knife 、 pen holder | 2.Milling cutter motor | 3. Y beam                     |
| 4.Cutting table top  | 5.touch screen         | 6.emergency power stop button |
| 7.power switch, fuse | 8.Electric control box |                               |

## Chapter 2 Accessories packing list

- Air suction air pump: 2
- Vacuum cleaner: 1
- Gas pump pipe joints: 2
- Trachea steel clasp: 4
- Screw accessory package: 1 bag (packing and shipping machine only)
- felt pad: 2 pieces
- Cutter sleeve: 1 (M series only)
- Pen core and pen sleeve: 1 (M series only)
- Oil pen sleeve: 1
- Gift milling cutter: 3 (3.175 for two / 4 for one, with corresponding chuck)
- Oil pen: 1 (with corresponding spring spring)
- Power cord; 1 (16A)
- Allen key: 1 set
- Open wrench: 2
- Product description: 1 copy
- Vacuum cleaner tube
- Vacuum cleaner pipe joint: 2
- Encryption dog: 1
- Software CD: 1
- Plastic surgery : 1
- Cooling pump: 1
- Data transmission line: 1

## Chapter 3 Installation and adjustment

### 3.1 Preparations before using

#### **【Area of equipment occupation (long/ wide/ high)】**

1509 long 230cm \* wide 160cm \* High 110cm

1809 long 260cm \* wide 160cm \* High 110cm

1512 long 230cm \* wide 190cm \* High 110cm

(other specific models are referred to separately)

#### **【electricity and requirements】**

Single-phase AC 220V ( $\pm 20$ ) standard ground wire access

16A three-hole socket(total power:4400W).

220V access line diameter required 4 square millimeter line

#### **【computer configuration】**

desktop office computer

Running memory for more than 4 GB

System (windows XP/windows 7/windows 8/windows 10)

Connecting the external network to keep the network normal

#### **【equipment debugging test material】**

5 thick plates of Pvc1.5mm

Template paste special tape

And all kinds of other template making accessories

## 3.2 Installation and adjustment

### 3.2.1 Equipment unpacking and assembling

Check outside package and accessories. (a total of 4 pieces, wooden cases \* 1, cartons \* 3)

### 3.2.2 Milling Cutter installation and adjustment

Install the tools properly (ensure that the milling cutters exposed sucker 2mm), through the operation panel [setting] into [AutoMill] adjust cutting depth. (the specific parameter value refers to the actual knife adjustment)  
figure 1

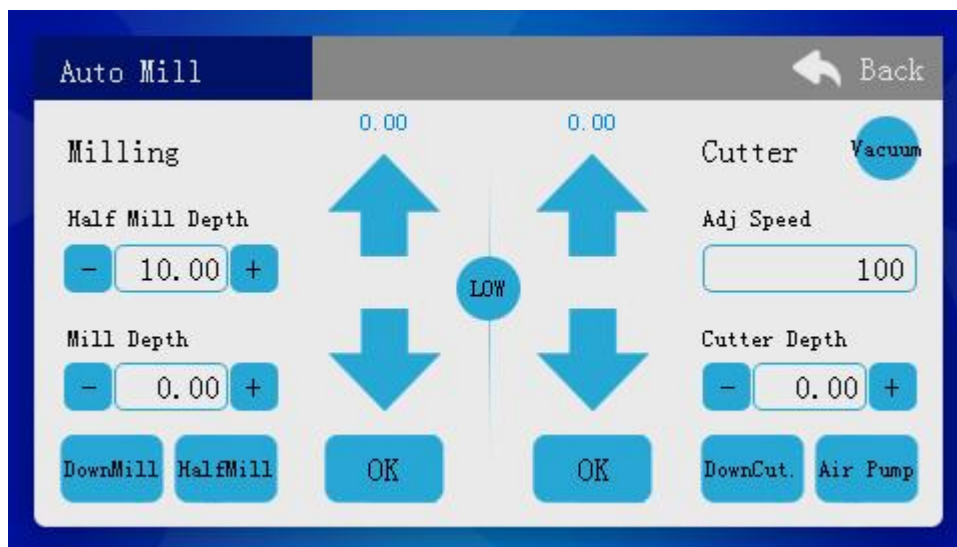


figure 1

### 3.2.3 Adjustment of offset accuracy of knife and pen

1. Through the operation screen [setting] into [Cut Test] , select "File 10 \* 10" internal storage file for knife and pen offset test. (through the "knife and pen settings" interface, select milling cutter, pen, cutter offset test ) figure 2

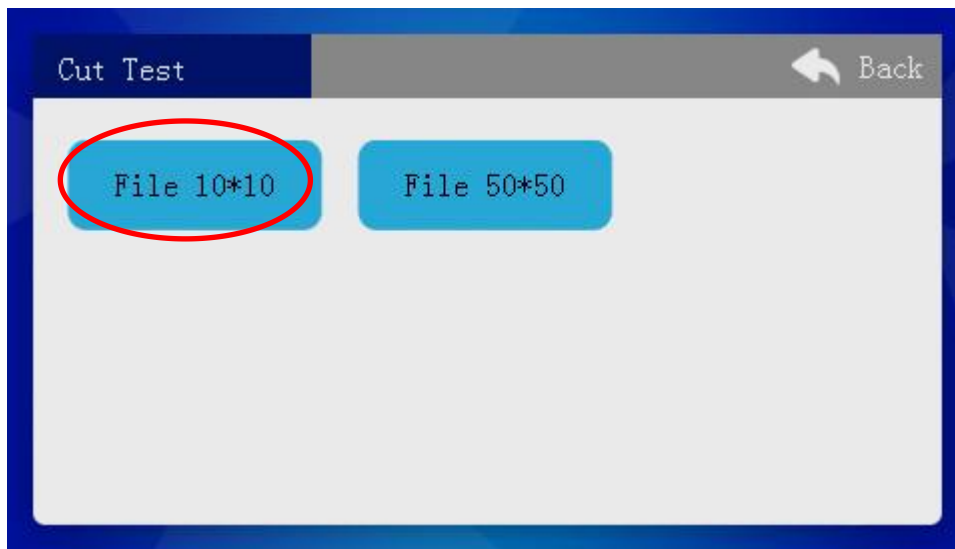


figure 2

2. Check the offset size of the test graphic "10 \* 10" knife and pen, and enter [setting]-[MacSet]-[Mac Pare] to debug X and Y offset parameters. (parameter values can be positive or negative) figure 3

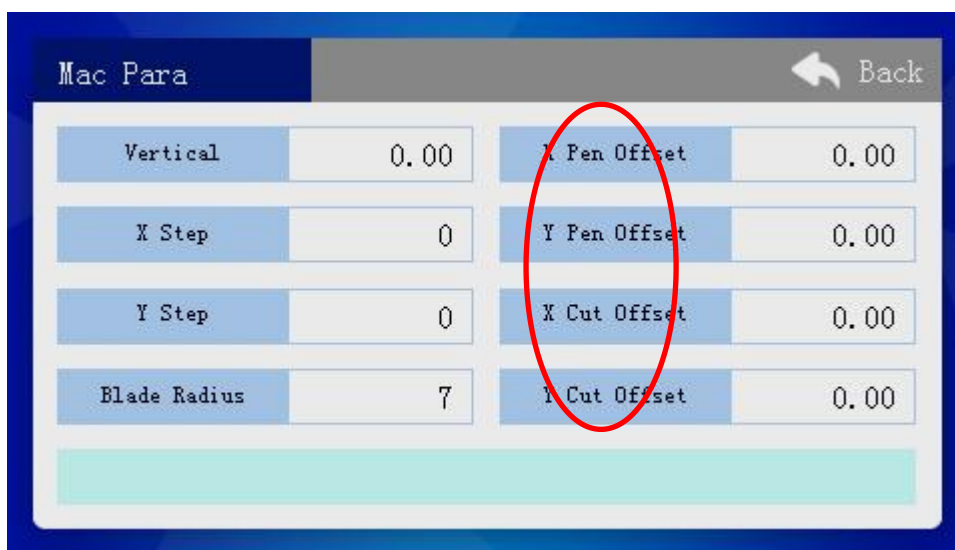


figure 3

### 3.2.4 X, Y Direction and diagonal size error adjustment

1. Select the "accuracy 50 \* 50" internal storage file for testing by operating touch screen [setting] into [test Cut]. Figure 4

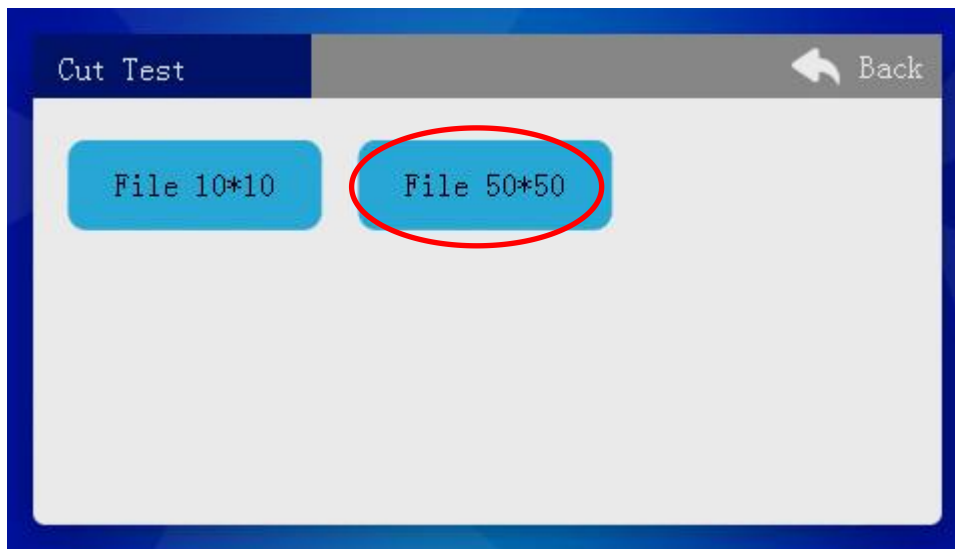


figure 4

2. Check the size of the test graph "50 x 50". The X, Y direction size and the error between the left and right diagonal lines of the square are measured by high precision steel ruler. Through the operation of touch screen [setting] into [MacSet]-[Mac Para] debug X, Y step size correction parameters and verticality parameters. (parameter values can be positive or negative) figure 5

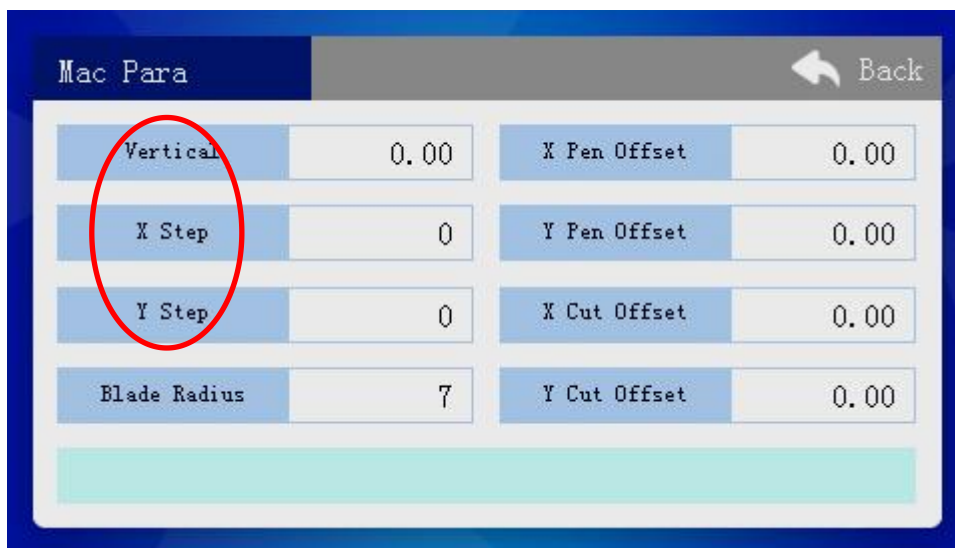


figure 5



## Chapter 4 Touch screen instructions

The new upgrade of the Carv X-speed template milling and cutting machine, using the 4.5-inch HMI human-machine interface touch screen as the input and the operation, and all use international brands, thousands of industrial companies prove quality, and the stability and the high reliability of the industrial application are ensured, and the sensitivity and the operability are both taken into account.

### 4.1 Startup interface

After the device is powered on, after initialization, the first interface entered is

[Startup Interface], Figure



figure 6

★ After booting, you need to click on the screen to reset the machine before it can work properly. Figure 7



figure 7

## 4.2 Home page

[home page] is the default page to enter after reset, and is also the most important standby ready interface: figure 8



figure 8

[Home] There are 3 big buttons below.

Settings; you can switch to other pages, the machine state will automatically switch offline, can not cut online.

Reset; click button machine reset to default original starting point.

Repeat; cut the last working PLT document again.

[home] there are two small buttons on the right.

Air Pump; manually turn on or off the suction pump.

Vacuum; manually turn on or off the suction tube.

Online: only when the computer is online can the computer send data to the template machine.

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### ★ Important tips:

**To cut online, touch screens must be on the home page, stay in other interfaces, data can not transfer to cut.**

## 4.3 parameter setting



figure 9

After entering the [Setting] interface, it automatically switches offline to prevent personal safety caused by automatic cutting after the computer sends the data when the parameters are modified.

There are seven large buttons and only one button in the upper right corner:

[Home], click to switch to the home page, machine status automatically switched to online.

There are 6 buttons juxtaposed below, each of which is

MacSet, where the most important parameters for machine operation are set

User Set, parameters related to user habits

Manual, can be used to test whether the hardware functions of the cutting and milling machine are normal or not.

Test Cut, with 10 \* 10 and 50 \* 50 file output, which is generally used to calibrate the accuracy of the machine.

AutoMill, cutters and milling cutters provide stupid alignment cut, what you see is what you get.

Help, mainly provides card maintenance after sale official number, as well as the current version number.

4.3.1 Machine Set



figure 10

1. M/c parameters

Enter this page to require a password, the password is 123456,  
Mainly related to some parameters of machine accuracy, it has been calibrated when  
leaving factory, non-professionals are not allowed to adjust at will, figure

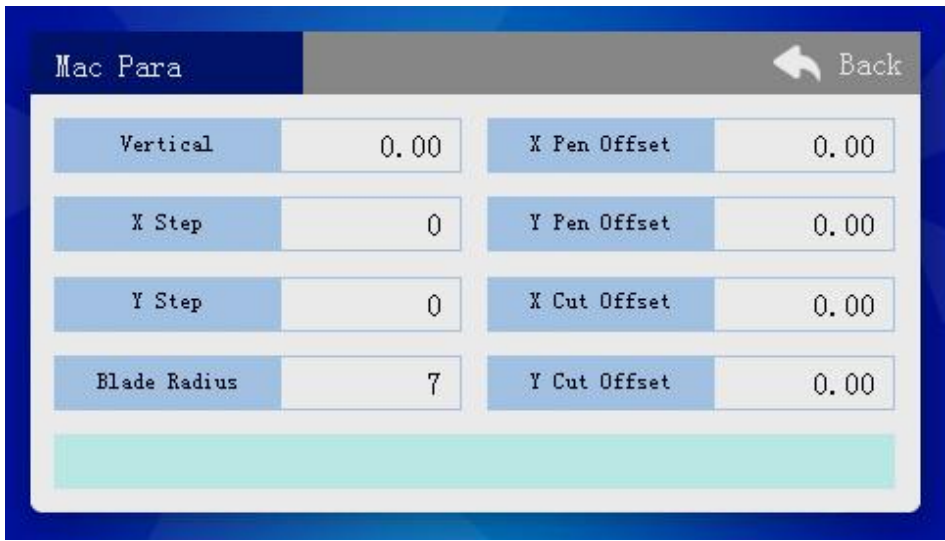


figure 11

1. **Vertical:** adjusts the verticality of a machine with positive or negative values
2. **X Step, Y Step:** accuracy calibration with positive negative value.1 value is 1 wire, if X deviation is 2 mm, enter 200 to correct
3. **Blade Radius:** Tool compensation for cutters at right angles
4. **X Pen Offset, Y pen Offset, X Cut Offset, Y Cut Offset:** cutter and pen coincidence, based on milling cutter, there is a positive and negative value. 1 value is 1 mm, there are two decimal places, if the difference between milling cutter and pen coincidence is 3.52 mm, then enter 3.52 to compensate .

## 2. SP Set

The setting of the knife pen is mainly based on the instructions of the upper computer software SP and the knife pen, and can be adjusted according to the actual needs, as shown in Fig.12.

Click on the selection box directly and switch between 6 tools.

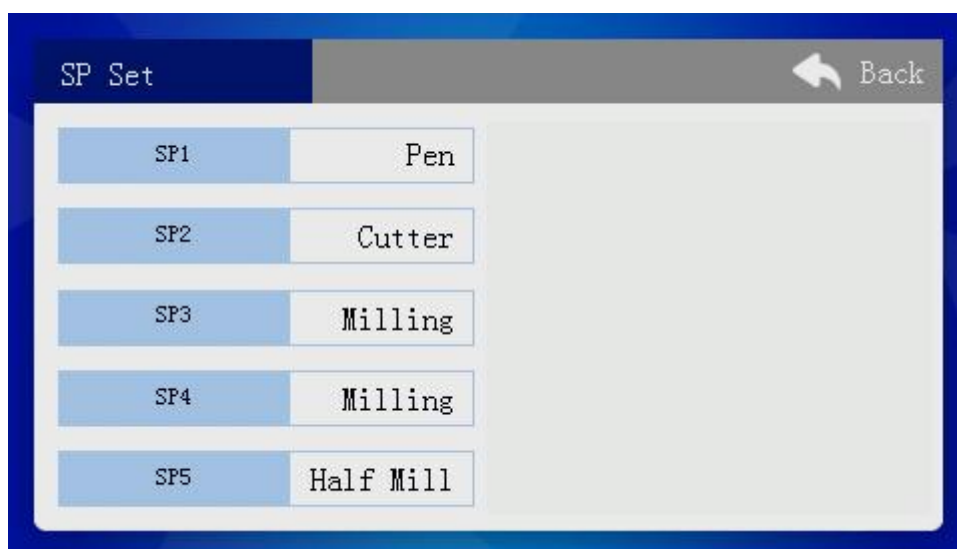
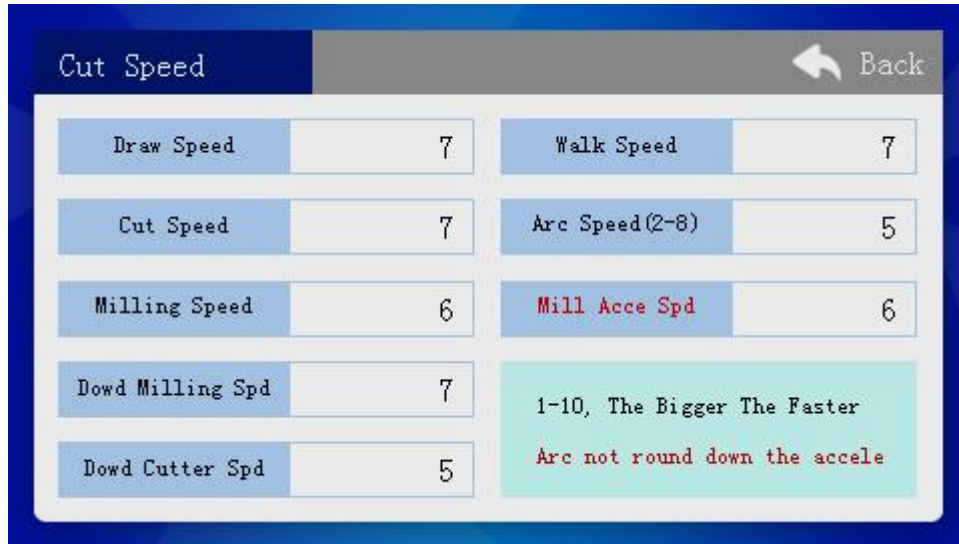


figure 12

### 3. Cut Speed

To adjust the speed flexibly, as shown in figure 13



The screenshot shows a control interface titled 'Cut Speed' with a 'Back' button. It contains several adjustable parameters:

| Parameter        | Value |
|------------------|-------|
| Draw Speed       | 7     |
| Walk Speed       | 7     |
| Cut Speed        | 7     |
| Arc Speed(2-8)   | 5     |
| Milling Speed    | 6     |
| Mill Acce Spd    | 6     |
| Dowd Milling Spd | 7     |
| Dowd Cutter Spd  | 5     |

Additional text in the interface:

- 1-10, The Bigger The Faster
- Arc not round down the accele

figure 13

The speed can be adjusted to a range of 1-10. It is recommended that the maximum be adjusted to 8, and a slight jitter may occur at any higher speed.

If the milling cutter arc is cut out with waves, the acceleration of the milling cutter can be properly reduced, and the corner arc is slower and more smooth.

### 4. Net IP

The IP address of the cutting milling machine, by default, is 192.168.0.68, as shown in figure 14

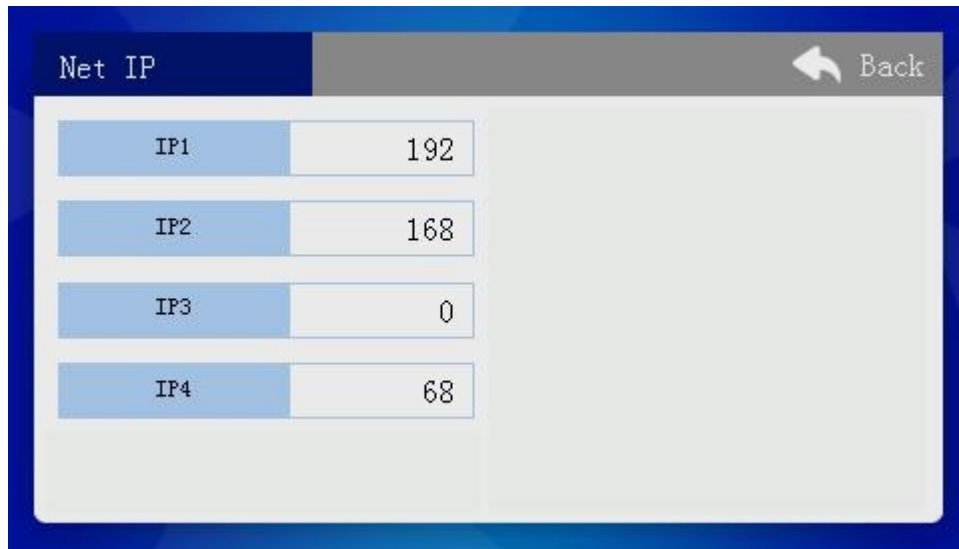


figure 14

You can flexibly change network segments assigned according to the current network environment or router default DHCP, see for more details

### **Network Port setting method of X Series New template Machine V1.2**

### **X Series New template Machine Router Network Port setting method V1.2**

The above-mentioned documents can be consulted for the after-sales acquisition of the card。

## 5. program Setting

It is the important parameter of the machine ,and it has been calibrated when leaving the factory. Generally, no modification is required .

Password is required when entered, improper setting of parameters will affect the use of the machine.

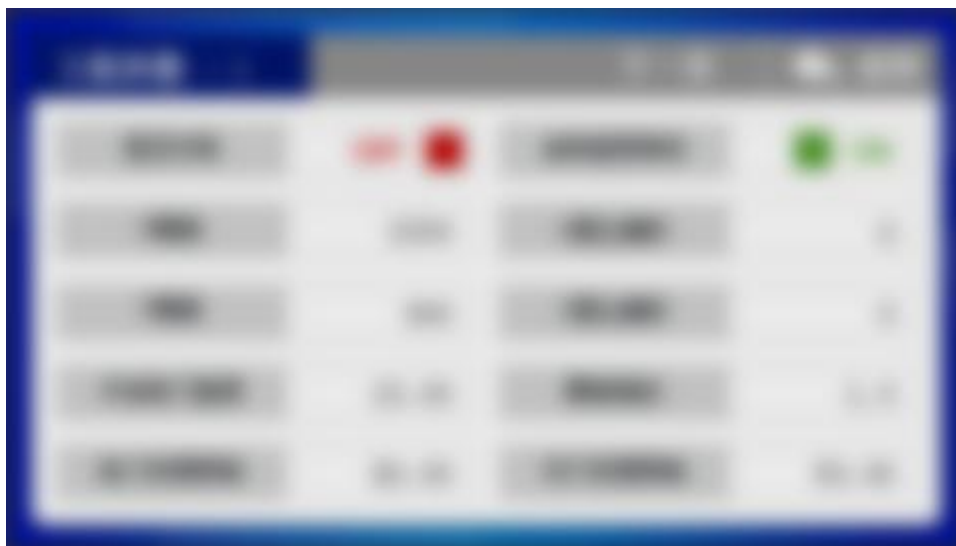


figure 15

### 4.3.2 User Setting

It is mainly a few parameters of the user's usage habit. As shown in figure 16



figure 16

**Origin Enable:** If it is turned on, each version will be retracted according to the setting of the retracting position.

**Reset Origin:** after the machine is turned on and reset, the rest position of the machine head can be set to the upper

left, the lower left, the upper right, and the lower right 4 positions.

**Language:** Chinese and English switching can be made



### 4.3.3 Manual setting

Testing of common tools, manual testing of XY shafts, etc., as shown in figure

17

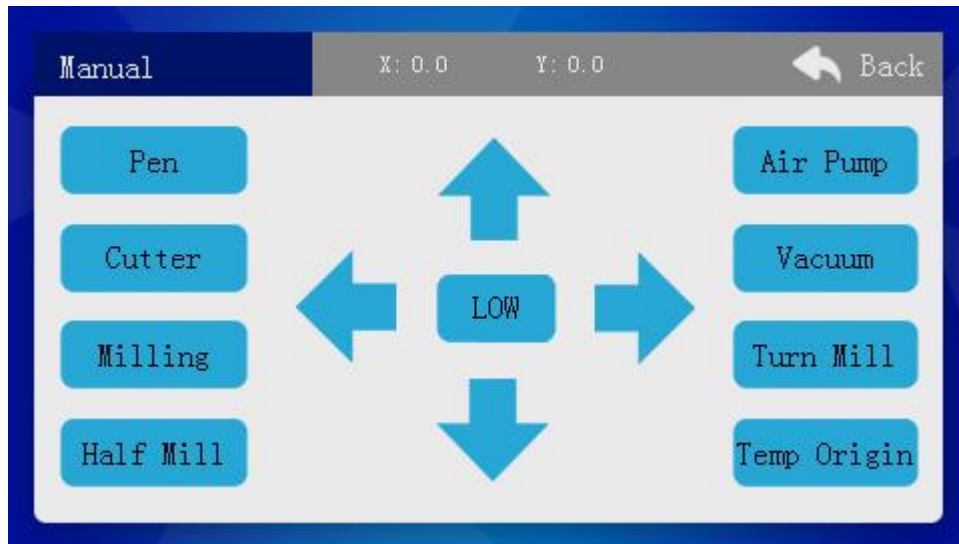


figure 17

**Temp Origin:** Move the XY axis to a position, and then click the temporary origin to cut it based on this origin.

**Low:** the XY axis moves too fast, you can click fine tuning to slow down the movement

### 4.3.4 Test Cut

Built-in two PLT files for precision calibration.

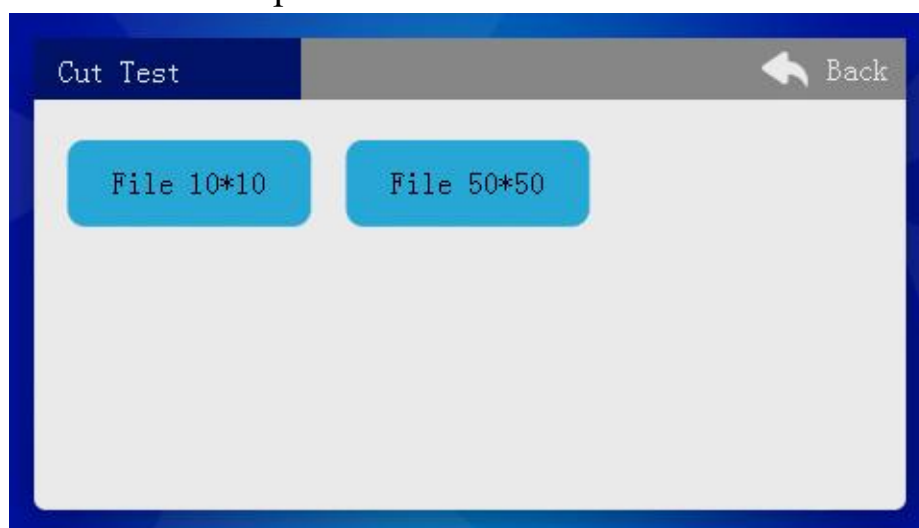


figure 18

### 4.3.5 AutoMill

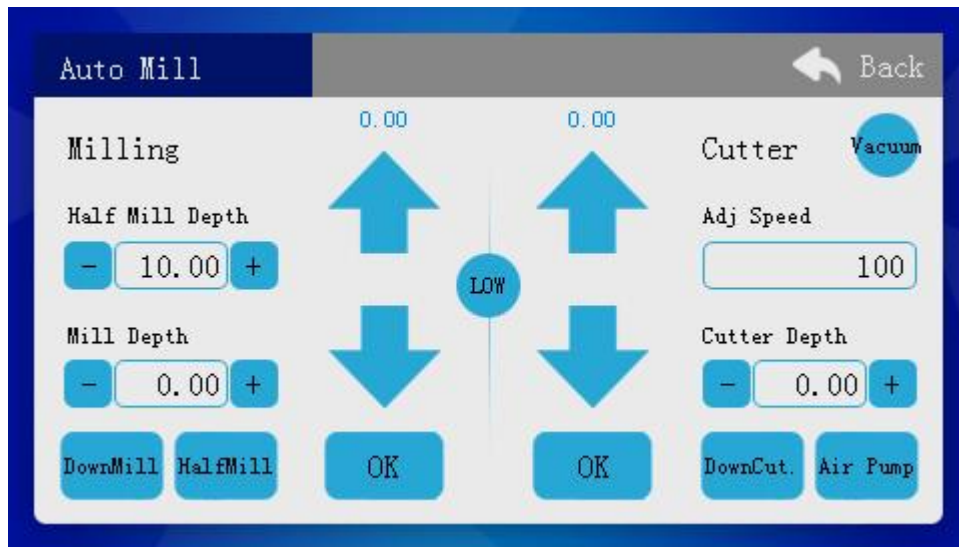


figure 19

#### Milling cutter pair:

Click the down arrow on the left, the milling cutter shaft will slowly drop, the milling cutter tip just cut through the PVC board position point to determine, the current depth is automatically saved to the milling cutter depth, the cutter completion, or input values in the milling cutter depth input box directly. Or press “—“ “+” to fine-tune.

#### Knife cutting and alignment:

Click the down arrow on the right side, the cutter axis will slowly descend, be careful not to turn the eccentric shaft over the head, click OK, the current depth is automatically saved to the cutter depth.

To complete the tool, or input values in the milling cutter depth input box directly. Or press “—“ “+” to fine-tune.

#### Cutting in operation

When the home page is online, the computer sends data, the machine cuts

automatically, and the touch screen automatically switches to the running interface, as shown in figure 21:

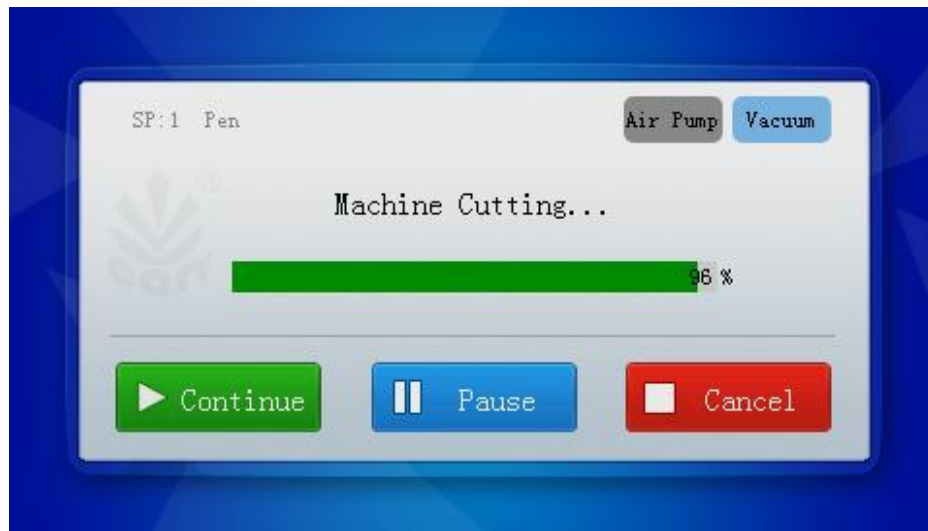


figure21

The three buttons below,

[continue], in the pause state, click this button to continue cutting。

[Pause], in the run state, click this button machine to pause, and the button can continue to cut.

[cancel], in the running state, click this button to pause, in the pause state, click this button to cancel the current work, return to the home page.

The suction button on the right side of the top can open and close the air pump and suction bucket during operation.

## Chapter 5 Matters attention

| order number | content of matters needing attention                                                                                                                                                                                                                                                                                                                        |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1            | Heavy objects and other objects, water, etc., are not allowed to be placed on the cutting table.                                                                                                                                                                                                                                                            |
| 2            | The machine must use a three-core ground plug to supply power with a well grounded power supply, which can effectively reduce the fault to the cutting machine. The plug shall be held by the plug and the plug can not be directly caught, and the plug can not be plugged and pulled in the hot line.。                                                    |
| 3            | The data transmission line does not support hot plug-in. When you disconnect the template machine from the computer, please disconnect the power supply between the template machine and the computer.                                                                                                                                                      |
| 4            | In order to protect your template machine and computer from other electrical interference, please power the template machine and computer separately; insert the vacuum pump into the special Jack above the template machine so that the cutting machine can control the vacuum pump. Do not plug the air pump and the vacuum cleaner backwards.           |
| 5            | The blade of the template machine is sharp. Don't touch it at will so as not to get hurt. Touch the milling cutter, the blade should be replaced again to avoid the cutting effect is not beautiful                                                                                                                                                         |
| 6            | Keep the surface of the template machine clean. The machine avoids contact with corrosive items such as acid and alkali.                                                                                                                                                                                                                                    |
| 7            | Do not install this product in dusty, high humidity and poor ventilation.                                                                                                                                                                                                                                                                                   |
| 8            | This machine adopts vacuum adsorption mode. In order to ensure good adsorption effect, when the template or paper is placed, it is necessary to keep the template or paper flat and not be wet. The table surface that is not covered by the template paper should be covered with paper to avoid air leakage in order to increase the adsorption capacity. |
| 9            | If there is an exception to the machine, use the cancel button or the emergency stop button to check that the machine is normal, and then restart the machine. If you have any questions, please contact the after-sales service staff                                                                                                                      |
| 10           | If there is an emergency such as movement obstruction, please cut off the power supply immediately and contact the supplier.                                                                                                                                                                                                                                |

|    |                                                                                                              |
|----|--------------------------------------------------------------------------------------------------------------|
| 11 | The template machine should avoid strong vibration, collision and extrusion in the working process.。         |
| 12 | When operating, do not put your hands on the working table and guideway. Pay attention to the safety of use. |

## Chapter 6 Technical parameter

| Model No.                    | M1509 M1809 M1512 M1812      twin use machine                                                               |
|------------------------------|-------------------------------------------------------------------------------------------------------------|
|                              | P1509 P1809 P1512 P1812      single use machine                                                             |
| Number of pens / knives      | Pen: oily pen , ballpoint pen<br>knife: milling cutter , graver                                             |
| Effective working area       | 1500mmX900mm,1800mmX900mm,1500mmX1200mm,1800mmX1200mm                                                       |
| File memory function         | The last cutting pieces can be repeated.                                                                    |
| Material fixing mode         | Vacuum pump adsorption and fixation                                                                         |
| Mechanical accuracy          | 0.02mm                                                                                                      |
| Software precision           | HP-GL Simulation Mode: 3:0.02mm                                                                             |
| Maximum cutting speed        | 50-800mm/s                                                                                                  |
| Max. cut thickness           | ≤8mm                                                                                                        |
| cutting material             | Copper sheet paper, PET board, PVC board, sub-clay board<br>fiber bottom plate and polymer composites, etc. |
| Data communication interface | SD card / network port                                                                                      |
| Language of Use              | HP-GL, plt or DXF                                                                                           |
| Machining origin             | Freely designated                                                                                           |
| displacement accuracy        | ±0.1mm                                                                                                      |
| repeatability precision      | ±0.1mm                                                                                                      |
| voltage                      | 220V±10%, 50Hz                                                                                              |
| power                        | 3800-4400W                                                                                                  |
| Environmental requirements   | Temperature:-25 ℃ to 40 ℃<br>humidity: 35% to 75%RH (no condensation)                                       |
|                              |                                                                                                             |
|                              |                                                                                                             |

## Factory commissioning parameters

| Parameter term                         | parameter values |
|----------------------------------------|------------------|
| 垂直度：<br>Vertical degree                |                  |
| X 步长修正：<br>X step correction           |                  |
| Y 步长修正：<br>Y step correction           |                  |
| X 刀具补偿：<br>X cutting tool compensation |                  |
| Y 刀具补偿：<br>Y cutting tool compensation |                  |
| 转刀半径：<br>Rotary blade radius           |                  |
| X 铣刀补偿：<br>X cutter compensation       |                  |
| Y 铣刀补偿：<br>Y cutter compensation       |                  |
| 落刀刀压：<br>The cutting knife pressure    |                  |
| 落刀深度：<br>The cutting depth             |                  |

table2

Note: The above parameter values are only reference, and the final parameters shall be subject to the on-site commissioning. Please make relevant records (Table 1) (Table )

## Chapter 7 Common troubleshooting

| number | number                                                    | number                                                                                    | number                                               |
|--------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------|
| 1      | Turn on the power switch, the cutter does not reset       | Poor connection between cutting machine and power supply                                  | Check that the power supply is reliably connected    |
|        |                                                           | Power fuse burned                                                                         | Replace fuse                                         |
|        |                                                           |                                                                                           |                                                      |
| 2      | Turn on the power switch and break the fuse               | Fuse does not meet the requirements                                                       | Replace the fuse (6A)                                |
|        |                                                           |                                                                                           |                                                      |
| 3      | Boot is not working properly                              | The working voltage of the power supply is lower than 220V, which will not work properly. | Install a voltage regulator.                         |
|        |                                                           |                                                                                           |                                                      |
| 4      | The cutting machine does not move after the data is sent. | The communication cable is not connected or the contact is poor.                          | See if the communication cable is reliably connected |
|        |                                                           | Loss of data sent                                                                         | Retransmit data                                      |
|        |                                                           |                                                                                           |                                                      |
| 5      | The edge of the cut-out template is not smooth            | See if the knife is blunt                                                                 | Replace cutter                                       |
|        |                                                           | Check if the toolholder nut is too tight                                                  | See if the knife rotates flexibly                    |
|        |                                                           |                                                                                           |                                                      |
| 6      | The sample has regular deformation.                       | Data transfer error                                                                       | retransfer                                           |
|        |                                                           |                                                                                           |                                                      |
| 7      | The stroke line is too deep or unclear                    | The pen pressure is too large or too small                                                | Adjust pen pressure                                  |
|        |                                                           | The pen nut is screwed too tightly or too loose                                           | Adjusting pen nut                                    |
|        |                                                           | Pen core ink exhausted                                                                    | Replacement of pen core                              |
|        |                                                           |                                                                                           |                                                      |
| 8      | Can't cut through.                                        | The knife is too small.                                                                   | Adjust the knife pressure                            |
|        |                                                           | The knife has been blunt                                                                  | Replace the cutting knife                            |
|        |                                                           | The tip protrudes too short                                                               | Adjust the tip of the knife                          |

## Chapter 8 After-sales and service

**Ningbo carv Automation Technology Co., Ltd.**

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**Service Hotline: 400-660-1182**

Equipment maintenance:

Software maintenance :

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Complaint supervision:

Template technical advice: