



User Manual



Model: RJMC

Website: www.rjruk.com

Ningbo RUK Technology Co., Ltd

Flatbed CNC Cutting Machine --MC Series

Preface

Thanks for using our products MC series, and it's our glory to be your supplier. What you purchased is flatbed CNC cutting machine which is independently R&D by RUK technology, the equipment is mainly used in mould board for apparel, packaging printing, advertising, crafts etc.

Manual include installations, operations, safety precautions, simple troubleshooting. In order to make you acquainted with this machine, better and safely use it, please read this manual carefully before you use this machine at the first time.

Please also do keep this manual well in order to find solutions of some troubleshooting you meet later.

Warm Reminder:

1. This manual is edited by Ningbo RUK Technology Co., Ltd., hereinafter referred to RUK Technology.
2. This manual only for customers to understand the operation of the equipment and answers your questions.
3. If manual content is different from the purchased RUK Flatbed CNC cutting machine ,RUK reserves the final interpretation.
4. This manual applies for modal of MC1512, MC1509, MC1209, in case of discrepancies with the machine after reading, the machine shall prevail.
- 5 If you have any questions when using RUK flatbed CNC cutting machine, please contact with service@rjruk.com , skype: ruk.cutter

Contents

1	Cutting Machine Installation Operations	3
1-1	transporting precautions	3
1-2	environmental requirements for placement	3
1-3	inspection items when out of box	3
1-4	exterior structure description	4
1-5	assembly process	5
1-5-1	cutting table installation	5
1-5-2	operation platform description	5
1-5-3	chassis connection plate interface	6
1-6	basic wire connection and precautions	7
1-7	pen & knife sheath installation	7
1-7-1	knife installation	8
1-7-2	pen installation	8
2	Cutting Machine Operation and Settings	8
2-1	turn on/off	9
2-2	operation interface or platform	9
2-3	basic test operation	10
2-3-1	tool settings	10
2-3-2	pen and knife test functions	10
2-4	functional keys on operation platform	11
3	Basic Maintain Instructions	12
4	Frequently Asked Questions and Solutions for Solutions	13

1st Part Cutting Machine Installation

1-1 Transporting precautions

1-1-1 We unified use the international standard wooden crates for packaging

1-1-2 This equipment is precision machinery, should prevent from a strong vibration and colliding during transporting

1-1-3 Loading and unloading is required by forklift, it is prohibited if not as required

1-1-4 It is a precision machinery, must be handled with care and placed in accordance with instructions showed on outsider packaging

1-1-5 The device can not be placed in water or wet place to avoid electricity leakage when power is connecting

1-1-6 The operator should wear protective gloves to avoid scratching when dismantling packaging

1-2 Environmental requirement for placement

We should choose a right place which meet below conditions before installation.

1-2-1 This device should be placed on a flat, dry ground, avoid to put somewhere surrounding corrosive gases, liquids, water droplets, vapor, oily dust, flammable, explosive gas, floating dust and metal mote.

1-2-2 Temperature of location should be in the range of 5 °C -40 °C.

1-2-3 Humidity of location should be in the range of 1% -75%.

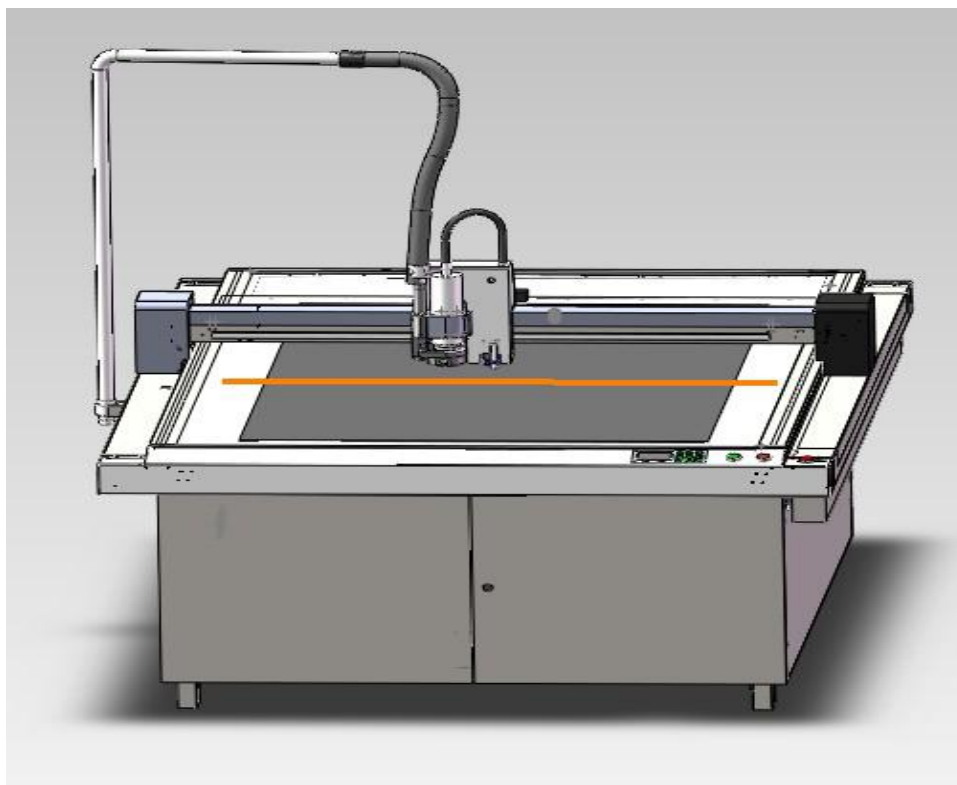
1-2-4 Location placement should be no heat source, electrostatic, strong magnetic, so as not to interfere with data transmission and reception.

1-2-5 It should not be placed in the exposure environment, no strong direct sunlight.

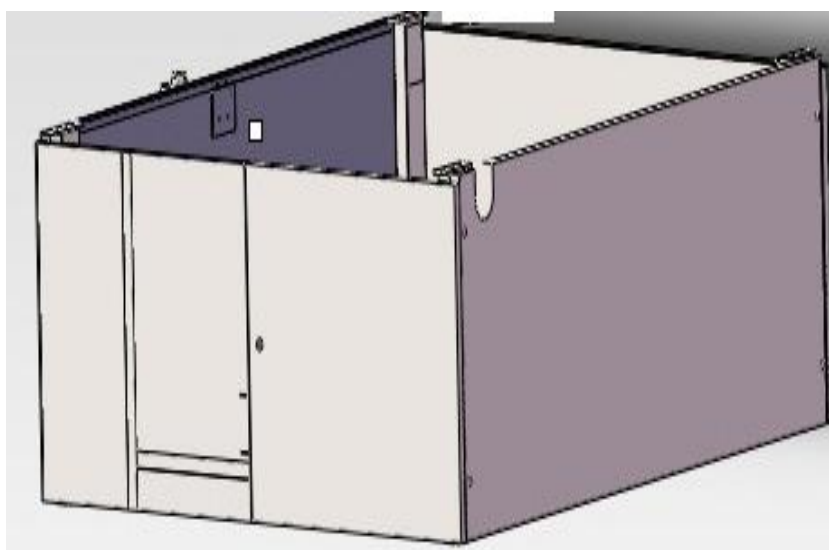
1-3 Inspection items when out of box

please first check if components are complete according to the list after taking apart the exterior packaging.

A: cutting table C: feet frame D: operation platform Shown in figure 1-1



A



B



Figure 1-1

1-4 Exterior structure

Machine consists of below 6 parts:

Feet Frame + Cutting Table + Electrical box + Driving + Tool Head + Operation Platform

◆ Feet Frame : Responsible for fixing the whole table, otherwise affect the stability of running machine ,so must place in a flat ground.

◆ Cutting table: It is platform to put and cut material, so it is essential to keep in horizontal level. If it is not flat placed, cutting sample will come out uneven (some part is cut too deep, while some part is not cut through), therefore will shorten the working-life of the fibrous board. We uses multiple-level adjusting system here, and can adjust the cutting plane at any time as required.

◆ Electrical box : A core part of the whole cutting machine, we independently R&D the embedded numerical control system.The separate model of the electrical control box and cut is more stable and higher cutting accuracy than the traditional model of the electrical control box and cut..

◆ Driving: Operative part of the cutting machine, searching for stability , wear-resisting, reliability. We used imported linear guide and synchronous belt, which ensure high precision,stability and quieter in fast cutting.

◆ Tool head: Tool head has a cutting tool and a pen,standards-degree cutting tool design agency directly affects the quality of the cut samples.The designed tools is more dexterous and light.Standard dual-tool head , it is very simple to put/take of the pen and knife .

◆Operation platform: It is machine's manipulation platform, its simple and beautiful settings make your operation more convenient.

1-5 Assembly process instruction

1-5-1. feet frame installation

Place below-figured various components on flat ground, use the special screws (for feet frame fixing) from the accessory box to fix as below shown

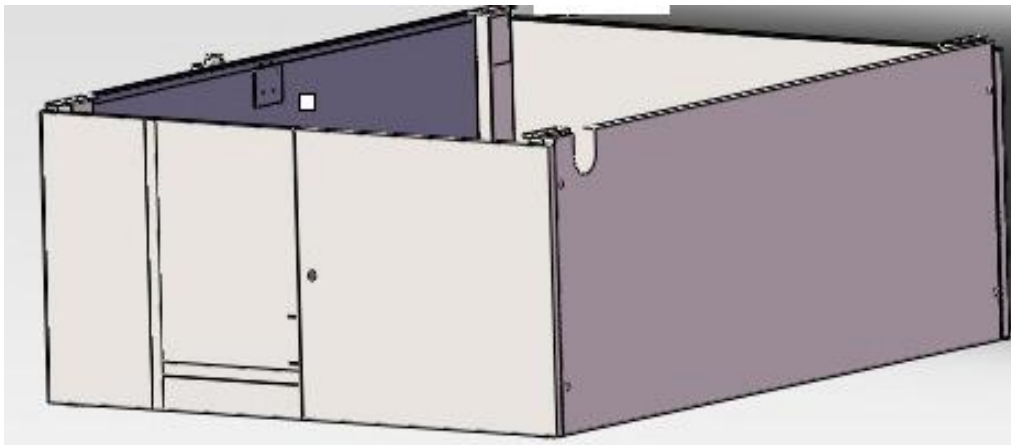


Figure 1-2 feet frame installation

1-5-2. cutting table installation

put the cutting table on the fixed feet frame, then use the special screws (for table fixing) to fix tightly shown in figure 1-3

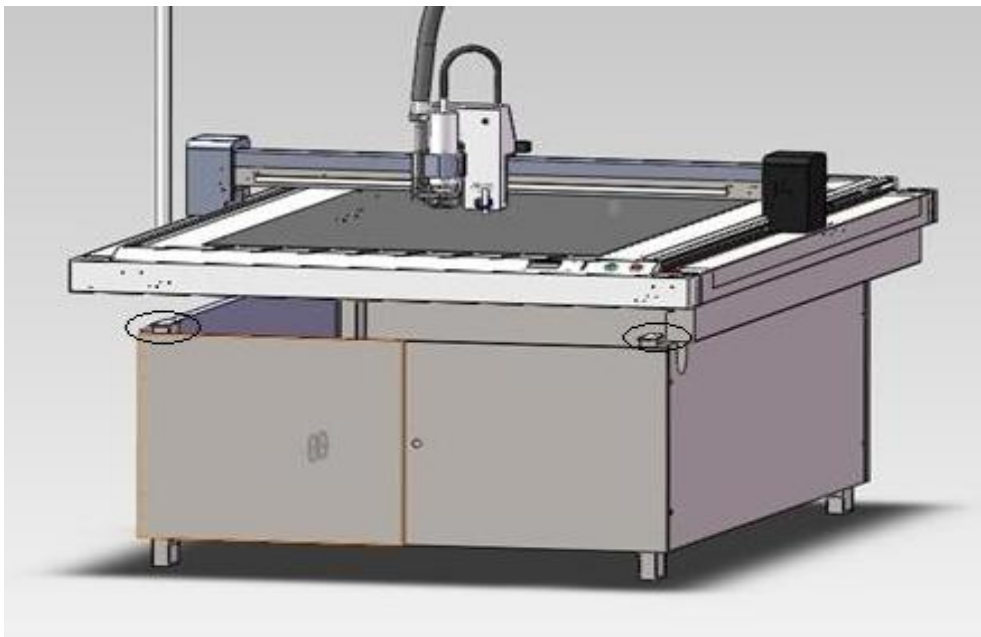


Figure 1-3 cutting table installation

Notice: After finishing installation of cutting table, please adjust the adjustable seat shown in figure 1-3 to keep same level with ground .

1-5-3. operation platform

connection plate interface on the side of electrical box figure 1-4:

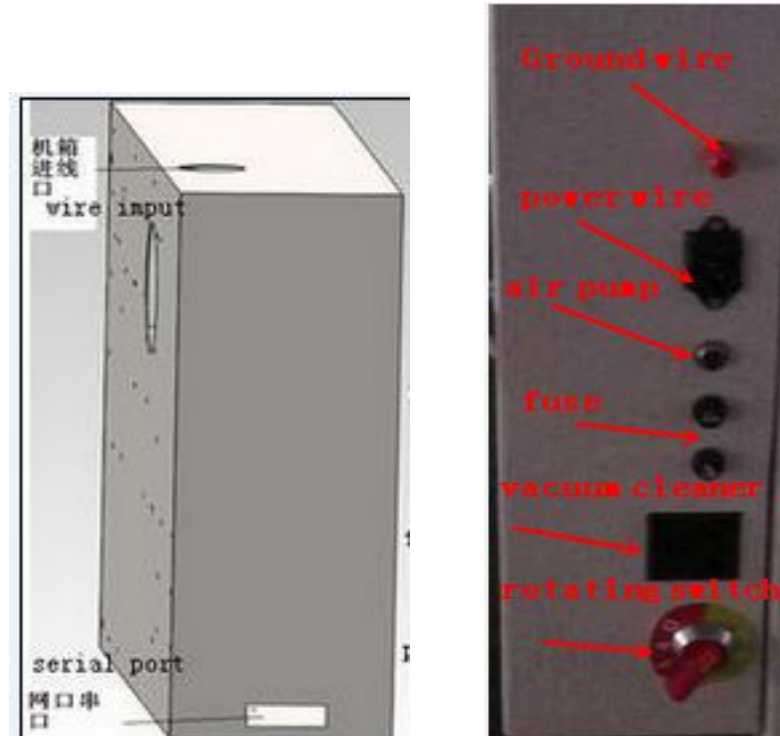


Figure 1-4 wire connection interface



figure 1—5 operation platform show

Emergency stop button: (red mushroom head button) safety protection button in emergency situation

Start button: (the red button) on/off

Adsorption button: (the green flat head button) button for vacuum adsorption

1-6 Basic wire connection and precautions

Serial port: get serial cable from the accessories box, connect one into serial port of the chassis, another

end to computer, then tighten screws on the serial cable.

Warning: (220V is standard in China, and we can adjust to meet local requirements)

▲Connecting the power wire, the machine's power rotary switch must be in power-down state

▲Need to shut down cutting machine and computer power when connecting the serial cable.

▲In order to ensure the accuracy of information transmission, we suggest to use serial wire within 5 m

▲Power Specifications: 220V +10% ,50HZ, 2kW , require to install ground wire to avoid electric shock, leakage and signal interference.

▲ Be sure that the power voltage is 220V +10%, if greater volatility in the supply voltage, it is recommended to install the regulator device.

▲ It should be avoided to use the same power supply circuit with other high-power machine to promise stability.

1-7 pen & knife sheath installation

After finishing the installation of the whole machine structure, please follow below steps to set and debug the equipment.

1-7-1 pen installation

The pen holder is located on the other side of the knife holder , and can move up and down . Put the refill into the pen sheath and tighten the lid, then put the pen sheath into the holder as shown in Figure

1-6

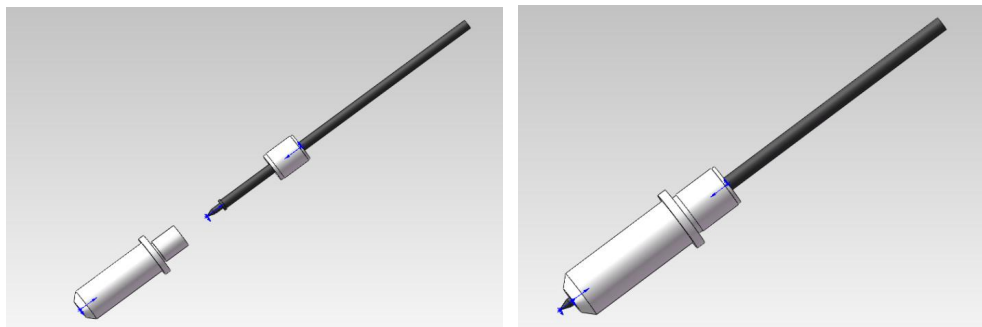




Figure 1-6

Put the pen holder on the left side of whole cutting head, make the pen tip 3mm from paper or table, then fix with a flat-blade screwdriver, as shown on Figure 1-7

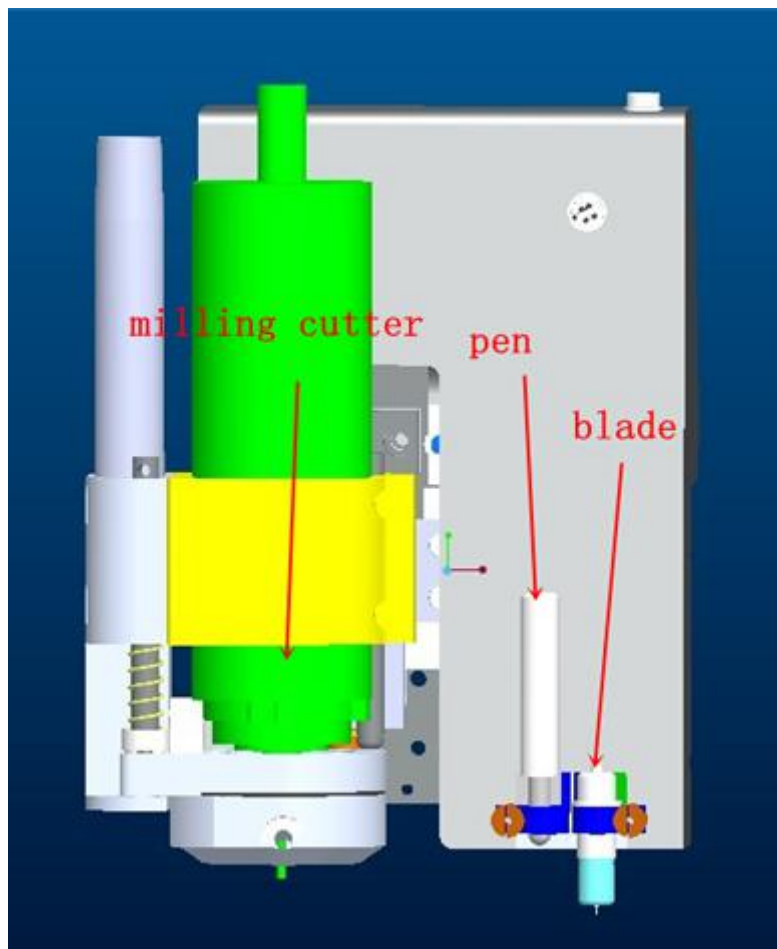


Figure 1-7

Open the dust-vacuum pressure hovering, put the milling-cutter into the cutter motor chuck to make sure 2mm above anti-hit module, then clamp separated by 14 & 17 wrench, finally make the dust-vacuum back to the placement.

1-7-2 knife installation

Get the knife sheath from the accessories box, Unscrew the knife cover, then put blade into the sheath as shown **figure 1-8**, make blade exposed around 2mm, and be sure it is free to rotate in sheath.

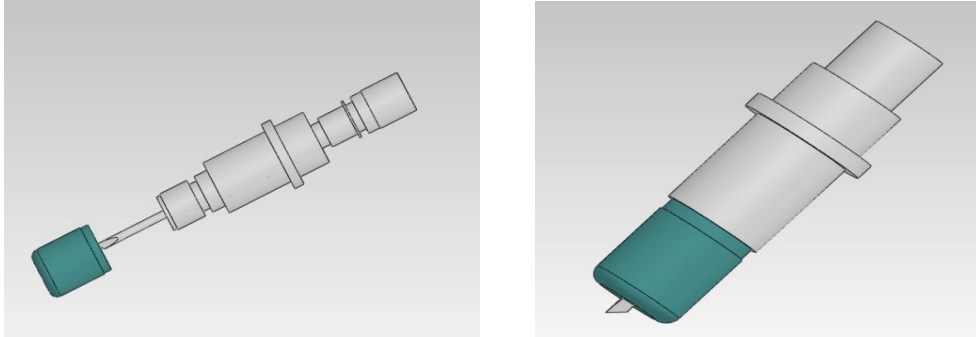


Figure 1-8

2nd Cutting Machine Operation and Settings

2-1 Turn on/off operation instructions

◆ Turn on

Hit the red rotary power switch to the ON position on electrical box → clockwise rotate emergency button → press on/off(red) → about 10 second later → press reset, cutter head will come to initial origin position to be still, that means cutting machine initialization completes, you can carry out other operations.

◆ Turn off

Press " on/off" → press the red emergency stop button → hit the red rotary power switch to the OFF position on chassis → the machine will be power-off.

2-2 Button on display board



- ◆ “Air pump”: The button to control pump, this switch has three states: regular suction state, no suction state, automatic suction state. Default automatic suction state if you do not press the button (suction starts automatically after finishing paper transmission).
- ◆ “Reset” :When Screen display “Online”, Press this Key, cutting machine act resetting via software, let the cutter head back to the initial origin position.
- ◆ “OK” : it is function settings button, through a variety of settings, you can adjust the speed of the cutting machine, offset, tools, etc.. In Normal standby interface, press this button to enter following options: Parameter, Speed, Mode, Test.
- ◆ “F1” : Press the button, machine will act repeated cutting of a previous full-page file under standby interface.
- ◆ “Cancel” : When the machine is running, press this button once to pause, continuous double-click to cancel the running. When the machine is both not under running or in the normal standby interface, press this button to return to the previous interface.

2-3 Basic Operation

1) **Parameter**: press button of parameter setting to enter following interface; **Vert Set, Xstep Mend, Ystep Mend, XCut P(Offset), YCut P(Offset), Turn cut R**

- **Vert Set**: Adjust Samples symmetry.
- **XStep Mend**: pattern X direction size correction.
- **YStep Mend**: pattern Y direction size correction.
- **XCut P (offset)**: drawing and blade cutting coincidence’s correction for X direction.
- **YCut P (offset)**: drawing and blade cutting coincidence’s correction for Y direction.
- **XCUT2 P(offset)**: drawing and milling cutting coincidence’s correction for X direction.
- **YCUT2 P(offset)**: drawing and milling cutting coincidence’s correction for Y direction.
- **Turn Cut R**: No-use Function on this machine
- **language**: to choose language for English or Chinese

2) “**Speed**”: settings for parameters and the cutting sample lines generated by software , select this feature to enter the following options:

- Cut Speed**: control the knife speed during the cutting,
- Pen Speed**: control the pen speed during the drawing

--**Cut Acc:** Adjust the time which the cut' s finish the action.

--**Pen Acc :** Adjust the time which the pen' s finish the action;

--**Move Speed:** Adjust the move speed;

-- **Move Acc :** Adjust the time which the moving finish the action;

--**Cut2 speed:** Adjust the milling cutting speed.

--**Cut2 Acc:** Adjust the time which the milling's finish the action.

--**Decel Length:** improve effect of curve drawing and cutting

Notice: Should not adjust the acceleration too large, too large acceleration may damage the mechanical structure of the cutting machine;

3) “ **Mode**” select this feature to enter the following options: **Cut Mode, Cut Deep, Model No**

---**Cut Deep:** It is cutting depth when it is in full cut.

---**Half Deep:** It is cutting depth when it is in half cut.

---**Cut2 Deep:** It is milling cutting depth when it is in full cut

---**Cut2 Half:** It is milling cutting depth when it is in half cut.

---**Cut2 Com:** The vibration(oscillation) value when deep cut down at first time

---**Cut2 Mend:**The value is about set cut2, can look for the video.

---**Cut Mode:** Test function before machine leave factory, do not open in normal use.

---**Model No:** Change machine model . (forbidden to change)

--- **Cut up :** the function of the blade up or not when in working.

4) “ **Test**” select this feature to enter the following options **Accuracy , Plane , Tool Test**

---**Accuracy:** Inspect the pen/knife XY step correction, vertical effects of the parameters.

--- **Plane:** It is used to check the cutting plane flatness(it is in right level).

---(**Tool**) **Test:** To test the function of Move、Cut、Pen、half cut 、X Move、Y Move 、set cut2.

3rd part **Basic Maintain Instructions**

This equipment is a mechanical and electrical product in precision, need to be carefully maintained, to prevent unnecessary failure due to not well maintenance, correct operation. Correct maintenance can prolong the useful life. Detailed requirement as following:

- 1、 Give a good environment for the cutting machine ,do not be placed under strong light and should avoid direct sunlight, otherwise the surface of cutting table will crack or arch leading to the uneven table , which will impact the cutting performance and using life.
- 2、 strictly prohibited to place heavy objects (5kg or more objects) on the cutting table , as well as human trample and sleep,
- 3、 Do not heavily press the track of both side of cutting table and moving track, otherwise you will hear card sound when running machine.
- 4、 The power connecting machine must be installed to the ground wire to prevent static interference, and may destroy machine and interface.
- 5、 Power specification: AC220V+10%, 50/60hz, 2000w, must be installed to ground wire to prevent static interference.
- 6、 Cutting material is recommended craft, white cardboard etc in high quality, weight between 100 grams to 400 grams to extend the cutting knife life
- 7、 Suitable cutting material is PVC in 0.5mm-4mm to prolong blade's working time.
- 8、 the computer systems and software should be maintenance, optimization, antivirus on a regular basis, instable computer system will also affect machine' correct running.

4th Frequently asked Questions and Solutions

No.	malfunction phenomenon	malfunction Cause	Solution
1	Machine can not start after pressing power switch/emergency stop switch /red button	Power socket no power	Change socket, be sure it is with power
		Machine 6A fuse broken	Change a new fuse
2	Screen show a connection error or alarm after turning on machine	Wire of screen not well connect	Connect again
		Wire of screen broken	Change a new wire
3	Pump can not work	Pump plug loose, relay wire controlling pump not well connect	Make pump plugs tightly to socket
		Pump is broken	Get pump to other power socket, please contact us if still can't work
4	knife holder hit the table and made big sound when resetting or cutting	knife holder is put too deep/ knife deep set too big	Adjust the head height, reduce knife depth
		Cutting table is not horizontal	Make sure cutting table is horizontal
5	Knife can not cut through the paper	exposed part of blade is too short	tip exposed need 0.2mm longer than paper thickness
		pen/knife no. is set wrongly	reset pen/knife no correctly reference to manual
		Knife holder not tighten or blade wear	change a new blade and tighten the holder
6	cutting paper pattern is through some part, while some part is not	knife drop is not enough, cutting table is in not horizontal	deepen knife pressure, generally 0.4, adjust the table level if some part still not cut through
7	machine did not do any corresponding action when need to cut paper pattern	Signal line is poor connected	Check the signal wire
8	Edge of cutting modal is not smooth	check if blade can not rotate freely in the sheath	Change a new blade to be sure its rotation freely
		Cutting speed is too high	Reduce the cutting speed
9	Machine make a big noisy then Scarification doodles in cutting	cutting speed is too high , and cause motor out of control	reduce its cutting speed
10	knife will take away the cutting paper in cutting	size of cutting sample is too small	Cover balance holes with paper to strength the suction power
		connect of machine and pump is not well ,and cause leakage	Get good connection

