



## SEALED CUP PAD PRINTER

# OPERATION INSTRUCTION

## One color pad printer

**P1-408C**

**P1-410C**

**P1-412C**



Published by LC Printing Machine

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LC industrial company Limited

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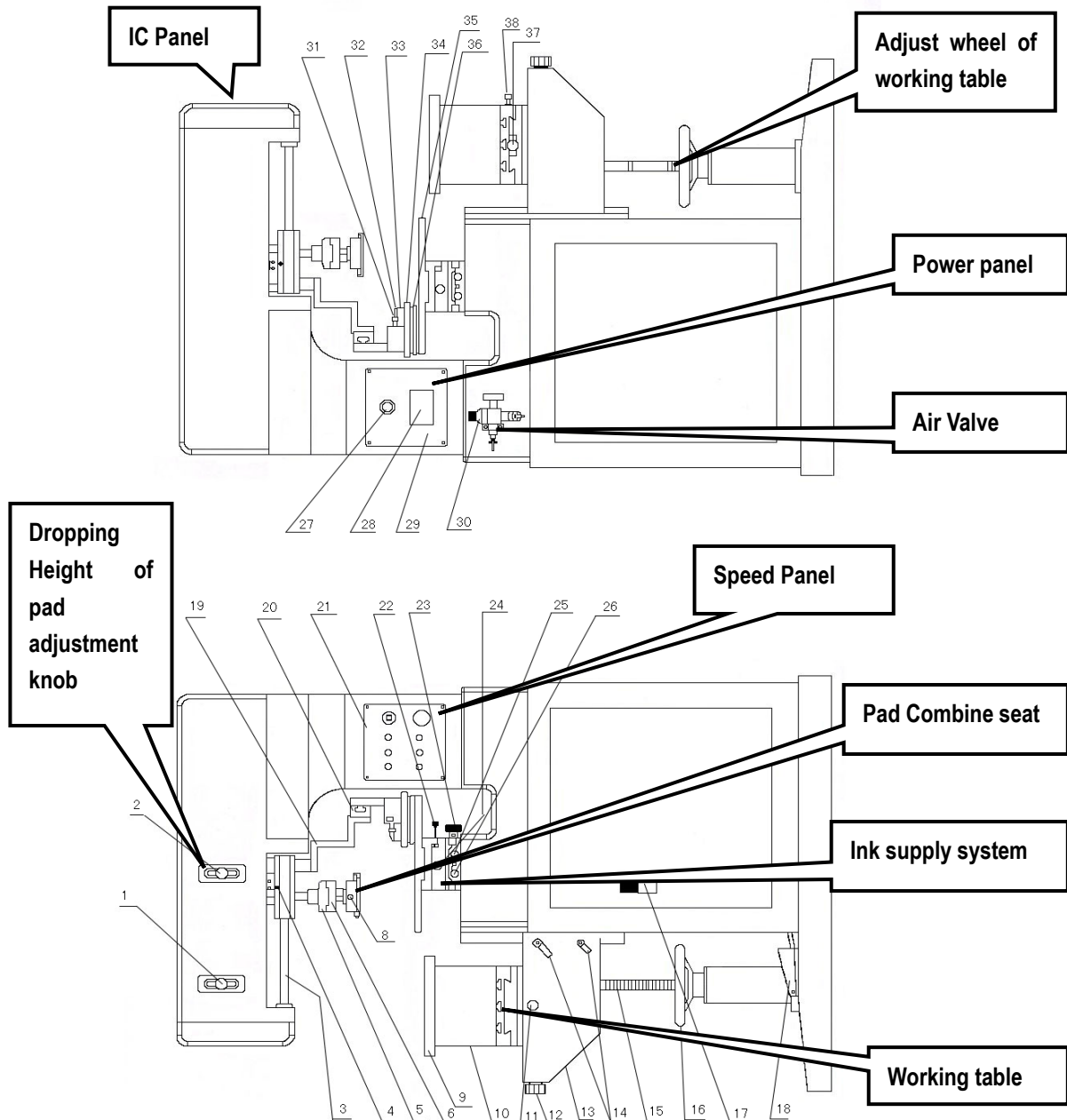
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# Preface



## (Machine Structure Drawing)

LC Printing Machine limited published a series of new type pad printing machines, which adopt the full automation control system, and has more stable and reliable operation. The automation program is much more flexible, which simplifies the operation procedure components of the machine are made of coin alloy, which is light and sturdy, and is in compatible with the Europe and Japan made pneumatic organs , also with the famous brand hardened shaft and bushing, to extend the service life of mechanical parts, also, with our exclusive---the super long slide stroke and machine-turning design, you can print large size substrate easily and adjust the machine conveniently.

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In order to protect the rights and interests of our customers, every printer has been checked and tested strictly before being dispatched from the factory, and we try our best to provide our customers with the perfect after sales service

Our goal is to provide our customers with first class products and services, which are of the first class technology and quality!

### ***Name of parts:***

1. Knob for adjusting the vertical stroke length of printing
2. Knob for adjusting the vertical stroke length of dipping ink.
3. Slide shaft.
4. lube nipple port
5. Interval plate
6. Transverse slide      7. Fixture of printing pad      8. Setscrew      9. Shuttle
10. Pedestal of shuttle      11. Setscrew for fixing the shuttle after adjusting its position in front-back direction
12. Inching knob for adjusting the position of worktable in front-back direction
13. Mounting plate for lifting the worktable      14. Spanner wrench for locking the height of the mounting plate
15. Lifting screw      16. Hand wheel for lifting      17. Door to interior structure
18. Footswitch      19. Bracing Frame of ink cup      20. Transverse slide of ink cup
21. Operation panel of pneumatic system      22. Knob for adjusting the angle of plate
23. Knob for adjusting the position of plate in front-back direction
24. Setscrew for fixing the plate after adjusting its position in front-back direction
25. Inching knob for adjusting the position of the first plate on the right in left-right direction
26. Inching knob for adjusting the position of the second plate on the right in left-right direction
27. Fuse      28. Power switch      29. Operation panel of electric circuit      30. Moisture filter
31. Setscrew of the bolt      32. Cover of ink cup      33. Ink container      34. Ring for fixing the ink container
35. Steel ring      36. Pad printing plate      37. Inching knob for adjusting the position of shuttle in left-right direction
38. Setscrew for fixing the shuttle after adjusting its position in left-right direction.

## ***2. Models and plate size of pad printers***

Model	Diameter of sealed cup	Description	Plate size
P1-408C	90mm	Pneumatic 1-colour pad printer	100×200 mm
P1-410C	90mm	Pneumatic 1-colour pad printer	100×250 mm
P1-412C	90mm	Pneumatic 1-colour pad printer	100×300 mm

Standard plate type installed on sealed cup pad printer is 10mm thickness steel plate, We will make pad printer installing 0.25mm thickness steel plate when you make the demand to our sales representative. Thick steel plate remove ink more clean than thin steel plate but thin steel plate is more easily to install and remove from machine.

Model explain:

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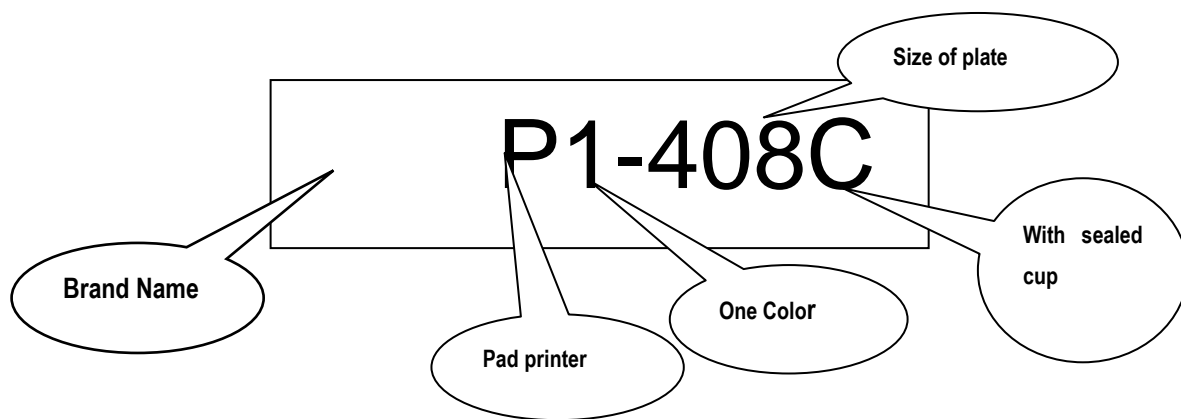
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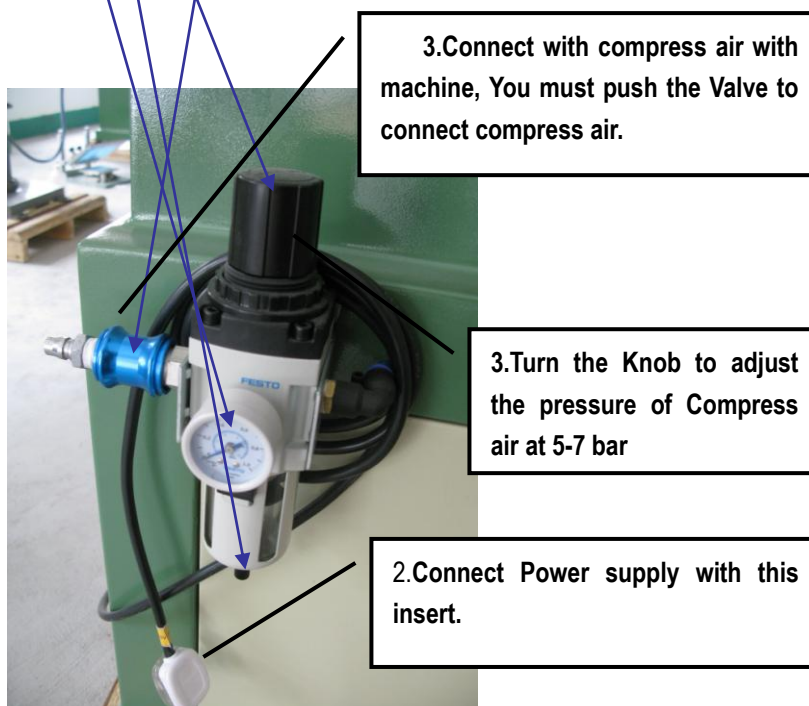
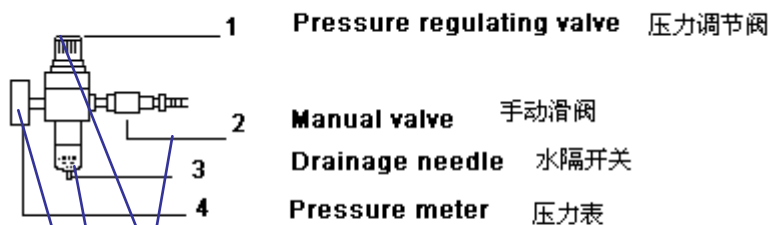
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**20-3**

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### 3. Installation, adjusting and usage



consumption of compressed air is 0.43/CYCLE.

#### 3. Adjusting the pressure meter.

This printing machine is appropriate to be installed in a clean, slow airflow. Ash-free workshop, where the temperature should be kept at about 25°C (the printing ink is easy to volatilize if the temperature is too high) to ensure the accuracy, the printer should not be rammed fiercely in the course of transport.

#### 1. Leveling the machine.

There are level adjusting screws distributed over the four footpads of machine, when adjusting, put the provided footpads on the ground first, which should be aimed at the screws. Turn the screw nut and then revolve the screws one by one in order to level the machine, finally, tighten the screw nut to prevent the screw from coming loose.

#### 2. Power supply.

The machine applies both 220v and 240v electrical source, the



When the machine is working, the pressure of compressed air inbreathed usually should be adjusted to 5 BAR. of you find the index is on the high side, push the pressure regulating valve upwards, and then revolve it anticlockwise to the standard pressure, while on the contrary, revolve it reversely, after adjusting press the valve downwards is order to fix it within the confines of standard pressure.

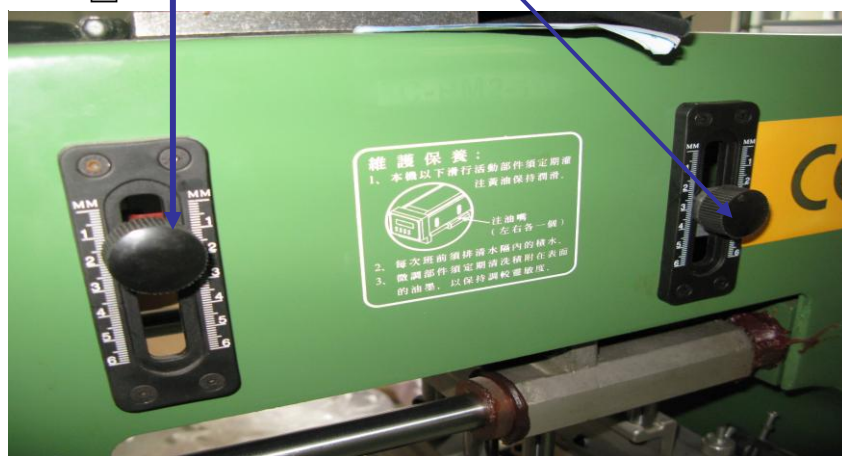
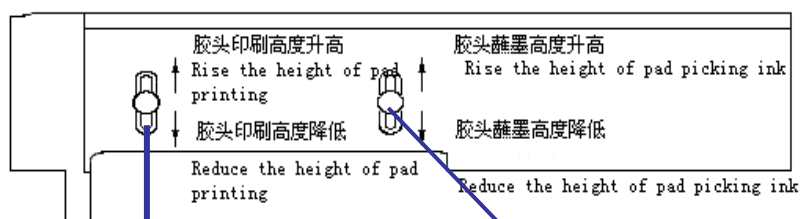
#### 4. Testing each mechanical part:

Whether each mechanical part is operating normally is important to the print quality and service life of the machine, so checking and testing all the components of the printer before printing is a matter of importance.



- 1> Connect the machine to the electrical source, and turn on the power switch, see if the counter on the IC panel displays "000000", if it displays other numbers, then the machine can not be started, you should check the electric circuit.
- 2> Press the key "Table" (refer to drawing 5) to see whether the pad moves smoothly in front-back direction, and if there are some odd sounds.
- 3> Press the key "Table" (refer to drawing 5) to see if the pad moves normally in vertical direction, and if the height of pad needs to be adjusted.
- 4> Press the "setting" (refer to drawing 5) to see if the shuttle or conveyor moves normally, and then enter the automatic printing mode. To see if the slide speed of shuttle or conveyor is consistent with the lifting seed of pad, and if there are any odd sounds.

#### 5. Adjusting the vertical stroke length of pad (see drawing 3)



Making rubber pad to contact with plate:

1. Adjust the pad seat;
2. Adjust the Knob B.

Making rubber pad to contact with plate:

1. adjust the pad seat;
2. adjust the Knob A;
3. Adjust the height of working table

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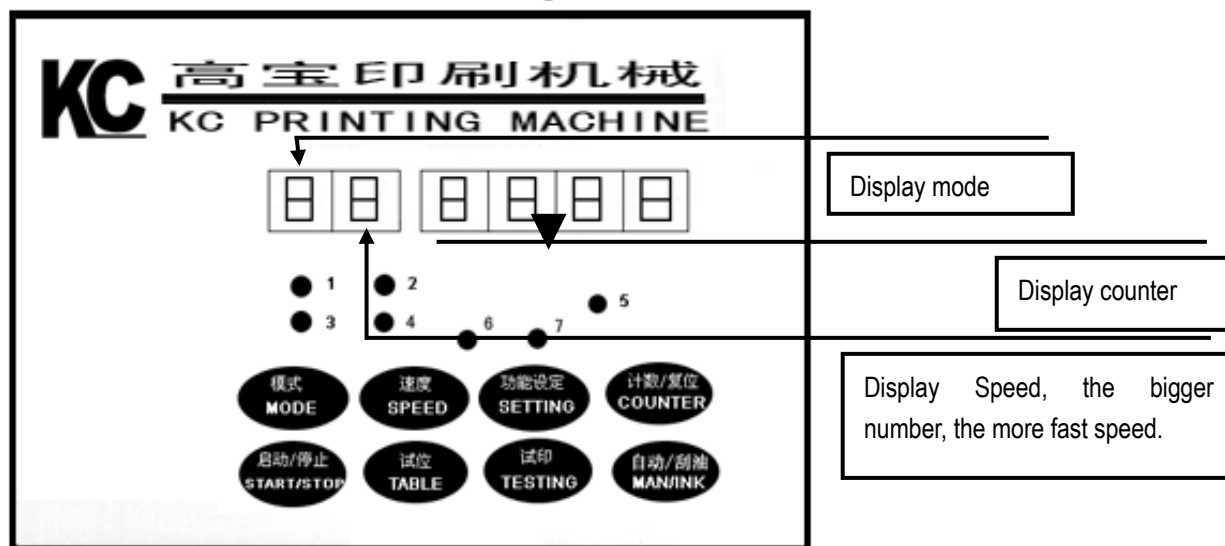
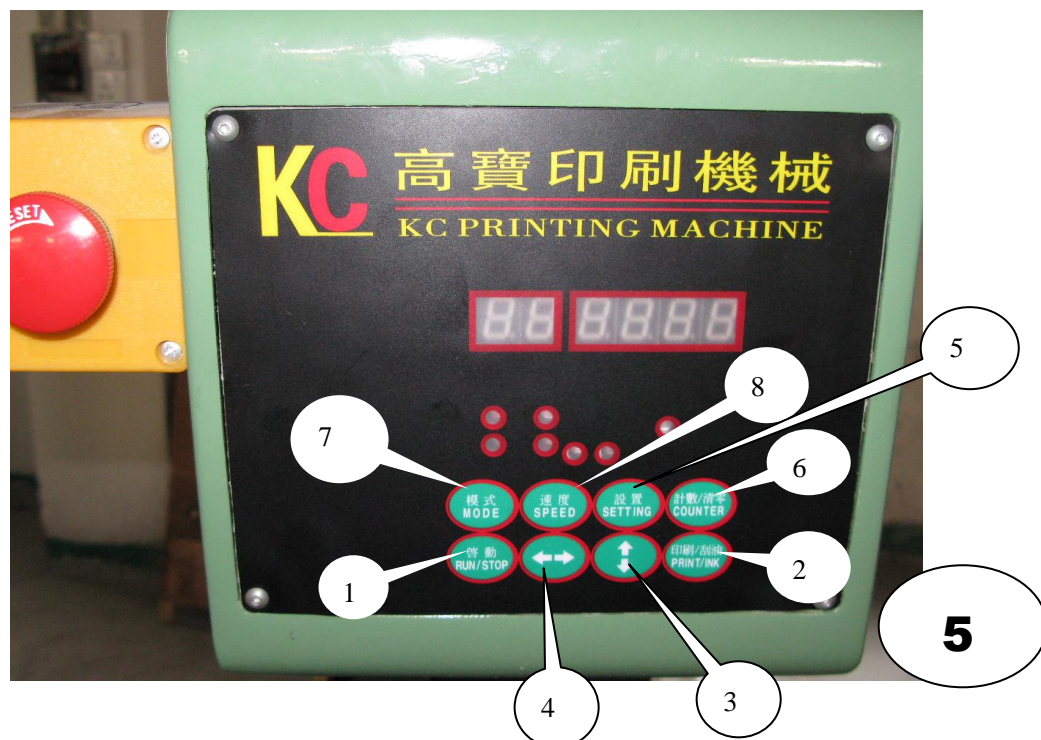
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20-5

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#### 4. Drawings and instructions of each key part

- IC panel (Drawing 5)



#### Functions of the keys:

1. "Start/Stop":  
Press this key at any time to start or stop the ongoing operation.
2. "Auto/Ink":  
Switching between the fully automatic printing mode and automatic ink-scraping mode. Press it once, the fully





automatic ink-scraping mode (Indication light “5” lights up) changes to the automatic ink-scraping mode (Indication light “5” quenches), or vice versa, and needn’t to stop the machine. With the indication light “5” lights up, this indicates the fully automatic printing mode. With indication light “5” quenches, which indicates the automatic ink-scraping mode. This key also has an intellectual function that while the machine has stopped, press this key until the indicator of “Speed” gets dim, then stop pressing, and the pad will begin running downwards and upwards nonstop. You can press the key “Start/Stop” to quit this mode, and the indicator will return to its former brightness.

3. **“Test”:**

In the state of stop, press it every time, the pad will run one stroke in vertical direction.

4. **“Table”:**

In the state of stop, press it every time, the pad will run forward and backward once.

5. **“Setting”:**

In the state of stop, press it every time, the last digit of the counter will display a half “0”, then the machine enters the “Setting” mode, meanwhile, the shuttle or conveyor transports one work-piece, and then press it one more time, the worktable will transport one more work-piece; you can manipulate other keys to continue the setting. While the printing position and printing quality is satisfactory after setting, then press this key for more than 2 seconds and stop pressing it till the counter reset, then the worktable will return to its original position. After the machine entering the “Setting” mode, the counter stops counting and keeps its former number unchanged, and after quitting the “Setting” mode, the machine will begin running according to the mode and speed that have been set in advance.

6. **“Counter”:**

No matter in which mode, press this key once, the brightness of the counter will reduce by 50%, which means pausing the counting, and press it again, the brightness will restore, which means begin counting. In the state of stop, press this key for about 2~3 seconds till the counter reset.

7. **“Mode”:**

“0”: dipping ink once, printing once.

**This mode is standard mode of One color pad printer, under this mode, The pad will pick up ink one time and print one time. Pad printer run under auto-one color pad printing state.**

“1”: dipping ink once, printing once, and the conveyor transports one work-piece.

**One color pad printer will not work under this mode, So, Please do not enter into the mode, If you enter into the mode, Please shut off the power beside the pad printer and turn on it again. Then set other mode.**

“2”: dipping ink once, printing once, and the conveyor transports two work-pieces.

**One color pad printer will not work under this mode, So, Please do not enter into the mode, If you enter into the mode, Please shut off the power beside the pad printer and turn on it again. Then set other mode.**

“3”: dipping ink once, printing twice, and the worktable of 2-colour pad printer shuttles.

**Under this mode, One color pad printer will pick up ink one time and print two times, This mode will help you find overprint precision . If you think the speed of print the second time, Please adjust it:**

**Press the key: **SPEED** till the LED of Speed display become dark, Then press the key of **“SETTING”** to more big number. The bigger number, the more fast speed. Then start the machine.**



“4”: dipping ink once, printing 4 times, and the worktable of 4-colour pad printer shuttles.

Under this mode, One colour pad printer will pick up ink one time and print four times, this mode will help you find overprint precision , If you think the speed between one time and time. Press the key: **SPEED** till the LED of Speed display become dark, Then press the key of “**SETTING**” to more big number. The bigger number, the more fast speed. Then start the machine.

“5”: dipping ink twice, printing once, and the conveyor transports 1 work-pieces.

One colour pad printer will not work under this mode, So, Please do not enter into the mode, If you enter into the mode, Please shut off the power beside the pad printer and turn on it again. Then set other mode.

“6”: dipping ink twice, printing once, and the conveyor transports 2 work-pieces.

One colour pad printer will not work under this mode, So, Please do not enter into the mode, If you enter into the mode, Please shut off the power beside the pad printer and turn on it again. Then set other mode.

“7”: dipping ink twice, printing twice, and the worktable of 2-colour pad printer shuttles.

Under this mode, One colour pad printer will pick up ink two time and print two times, this mode will help you get more thick ink film , If you think the speed between one time and time. Press the key: **SPEED** till the LED of Speed display become dark, Then press the key of “**SETTING**” to more big number. The bigger number, the more fast speed. Then start the machine.

“8”: dipping ink twice, printing 4 times, and the worktable of 4-colour pad printer shuttles.

Under this mode, One colour pad printer will pick up ink two time and print four times, this mode will help you get more thick ink film , If you think the speed between one time and time. Press the key: **SPEED** till the LED of Speed display become dark, Then press the key of “**SETTING**” to more big number. The bigger number, the more fast speed. Then start the machine.

“9”: dipping ink once, printing once, the pad just stop there after printing.

This mode is Semi-auto mode of One colour pad printer, under this mode, The pad will pick up ink one time and print one time. When you press the foot switch, the machine will print one time.

Dull “1”: dipping ink once, printing 3 times, and the worktable of 3-colour pad printer shuttles.

Under this mode, The pad will pick up ink one time and print three times.

Dull “2”: dipping ink twice, printing 3 times, and the worktable of 3-colour pad printer shuttles.

Under this mode, The pad will pick up ink two time and print three times.

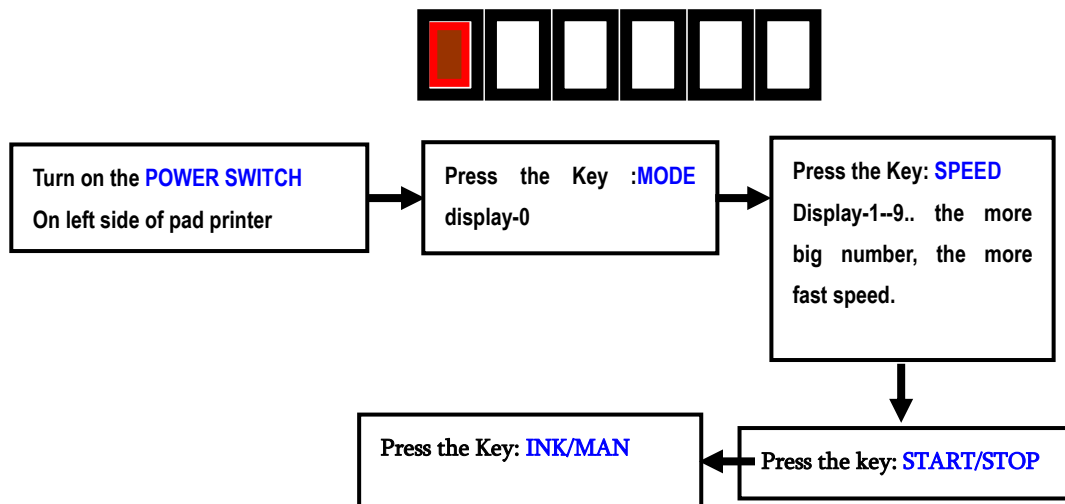
8. “**Speed**”: From level 0~9, from slow to fast. (In the state of shuttling, press this key till the indication digit gets dim, and then stop pressing. While, press the key “Setting” at the same time, you can set the “internal delay level” from 0~9, which is about 6~0 seconds, in order to make the shuttle keep pace with the pad.)

Important notice.

We suggest you operate one colour pad printer under the mode: 0 and 9.

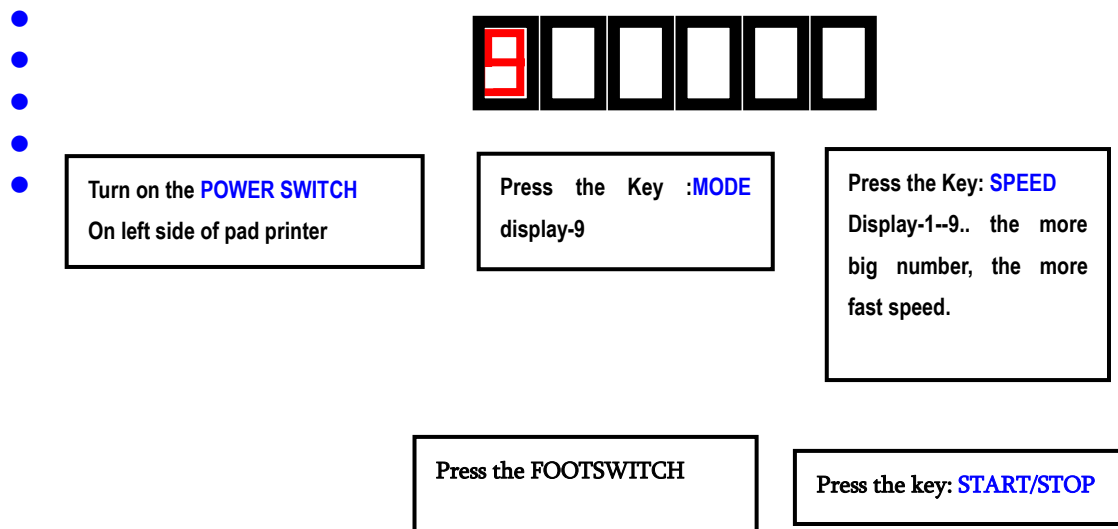
0- Full-automatically operation mode;





#### 9- Semi-automatically operation Mode.

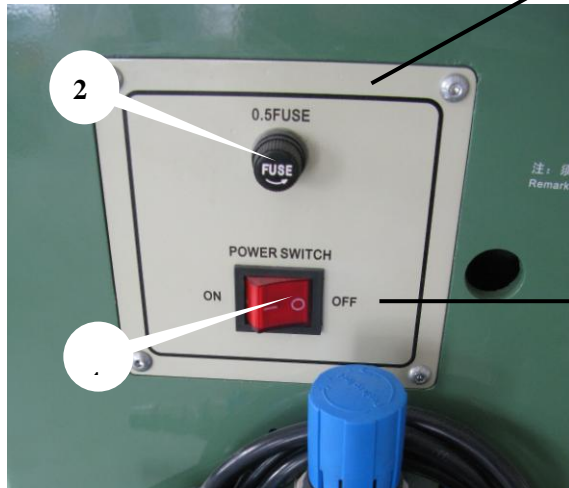
Semi-automatically operation mode drive with footswitch. Some operator perhaps are not proficient with machine. The machine will print when you press the foot switch installed under the machine.



- One colour pad printer not need adjust the speed of internal delay under mode 0 and 9.
- You must shut off power and re-start power and exit these mode after pressing: **MAN/INK**.
- 

*After checking all the processes above and there is nothing wrong, then you can begin printing.*

## ● Power supply panel



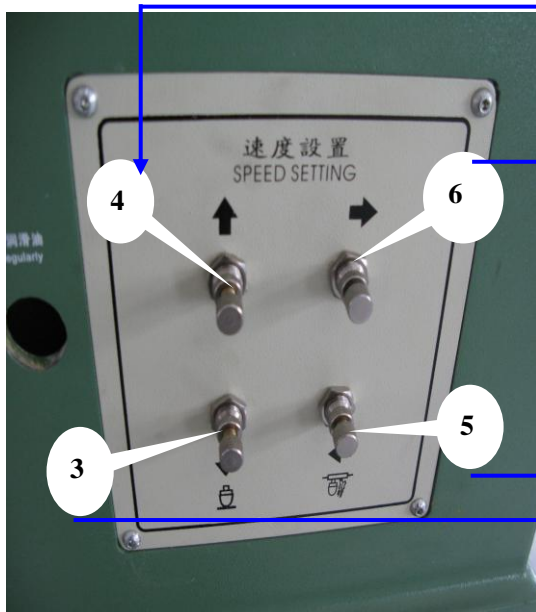
### 1. Power switch

When you connect power line with machine, Please press the switch to open the power. Then the indicator on the IC panel will be turn on

### 2. Fuse

When you find the indicator is not light after turn on the power switch, Please check the fuse, Please confirm the fuse is good before you check other parts.

## ● Speed Panel



4. Adjust the speed of rubber pad from Down to up

6. Adjust the speed of rubber pad from working table to plate

5. Adjust the speed of rubber pad from plate to working table

3. Adjust the speed of rubber pad from up to down

These adjustment screws installed on the cylinder, so they adjust only the rubber pad moving speed, The machine speed must be adjusted through the speed setting on IC panel.



## ● Foot switching



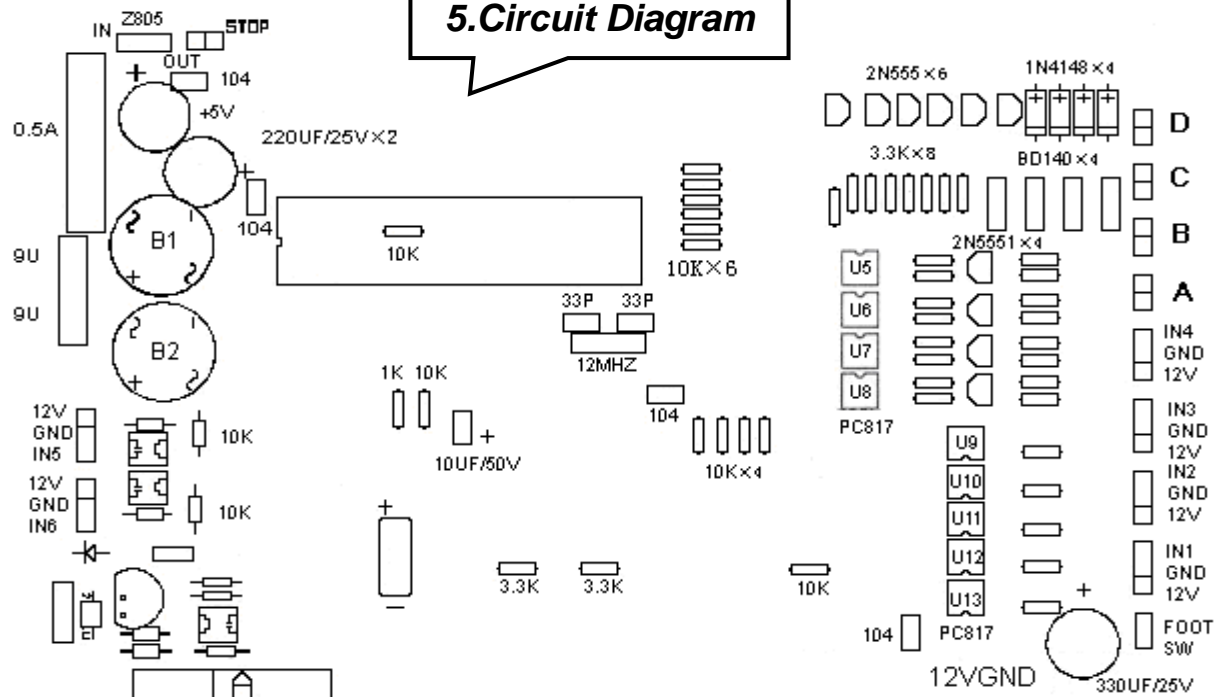
### Notice:

Please be careful of press the hand of operator when operating the machine with foot switching.

### Foot Switching:

Pad printer can be operated by Foot switching, Press one time by footer hand, the machine will be finish one printing circle. This mode must be running under semi-automatically setting.

## 5.Circuit Diagram





## Instructions:

D----connects to solenoid valve of the last two cylinders for sliding the shuttle. (The4 color pad printer with shuttle)

C----connects to solenoid valve for sliding the conveyor (pad printer with conveyor)/connects to solenoid valve of the first two cylinders for sliding the shuttle (the4-colour pad printer with shuttle)/connects to solenoid valve for sliding the shuttle (the 2-colour pad printer with shuttle)

B----connects to solenoid valve for lifting the pad

A----connects to solenoid valve sliding the sliding carriage.

### IN4

**GND** -----Connects to the proximity sensor for controlling the down stroke length of the pad in its forwards stroke.  
**12V**

### IN3

**GND** -----Connects to the proximity sensor for controlling the down stroke length of the pad in its forwards stroke.  
**12V**

### IN2

**GND** -----Connects to the proximity sensor for controlling the up stroke length of the pad in its forwards stroke.  
**12V**

### IN1

**GND** -----Connects to the proximity sensor for controlling the up stroke length of the pad in its forwards stroke.  
**12V**

FOOTSW-----connects to the foot switch.

12v

GND

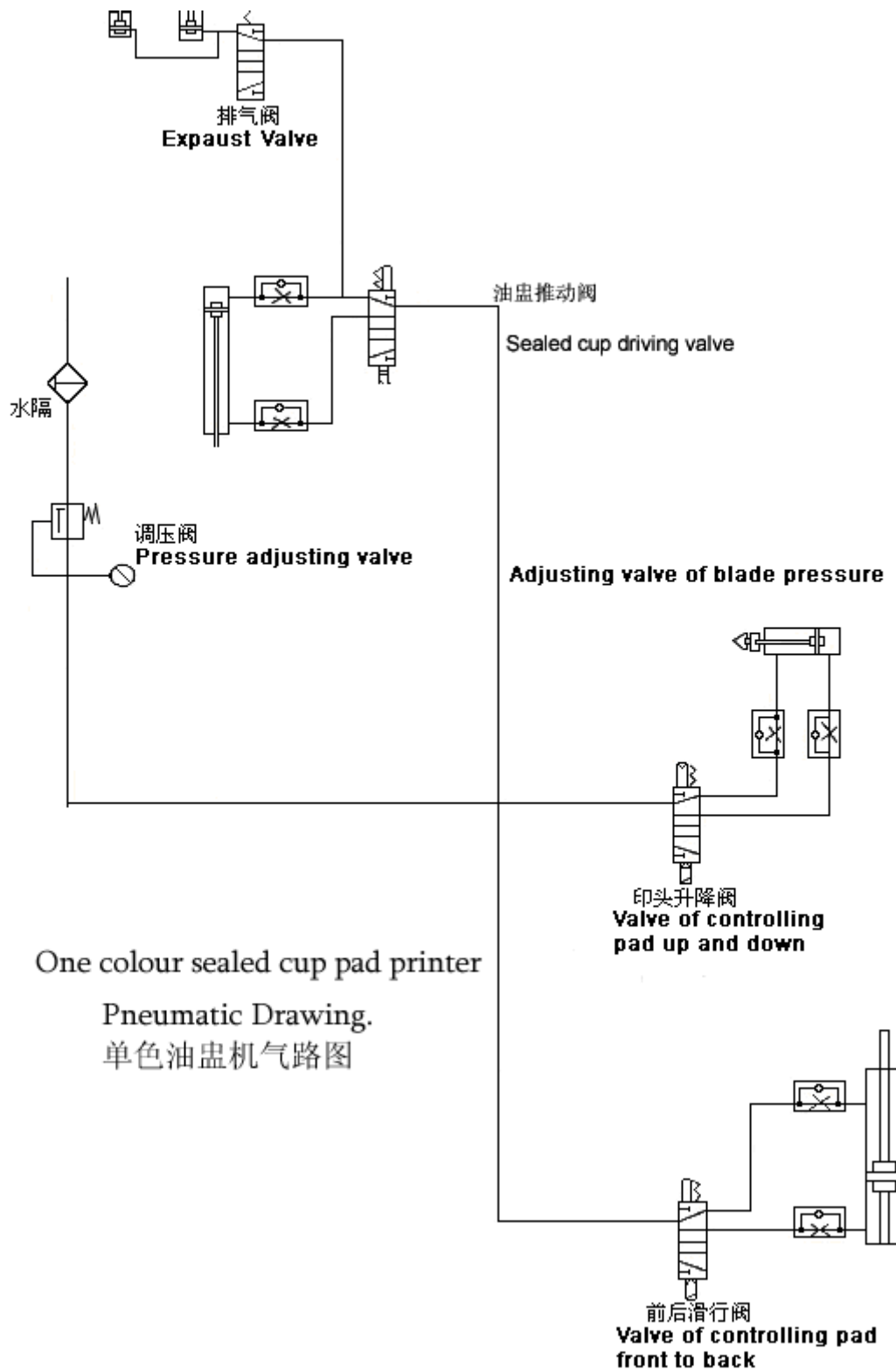
IN5-----Connects to the proximity sensor of the conveyor cylinder

12v

GND

IN6

## ***6.Pneumatic drawing***





## 7. Operation Process

### 1) Power connect.

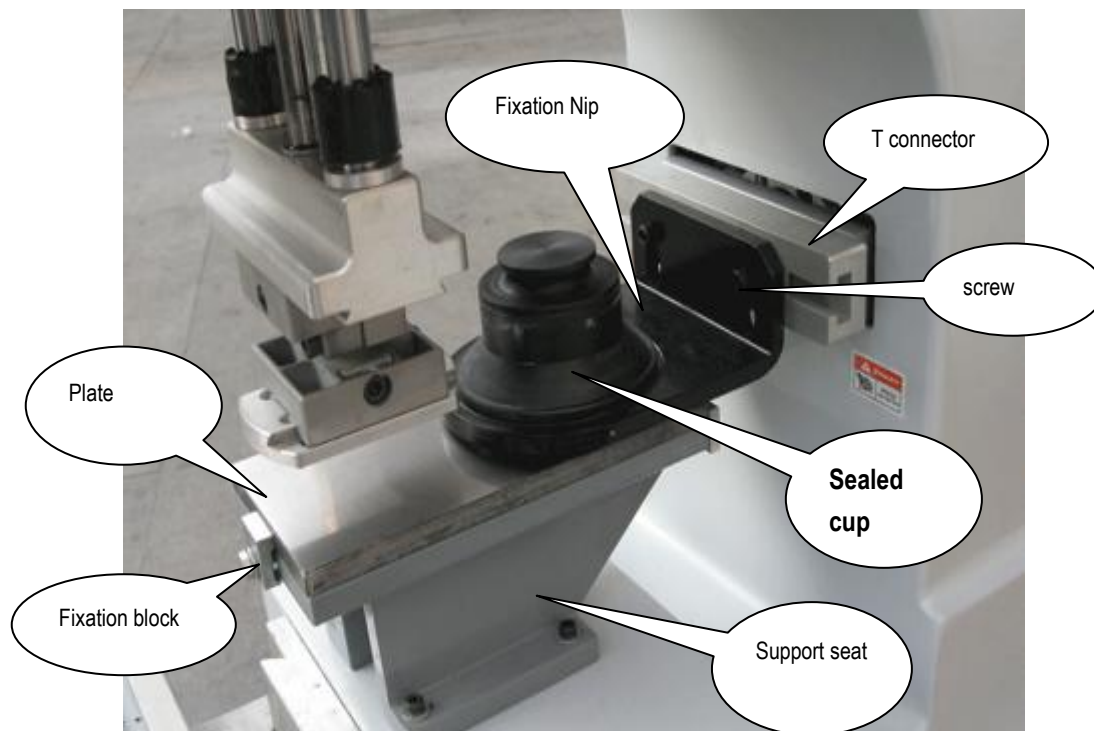
First connect power with machine. Please confirm locating Voltage ;

### 2) Air connecting:

Most of LC brand pad printer need compressor to provide air source, Please order one set compress air in your plant. Please keep your and anything from pad combine parts because it maybe move after connecting with compress air.

### 3) Installed plate and sealed cup:

Standard steel plate must be used with sealed cup pad printer. Steel plate and sealed cup is alone package to avoid hitting in the transport and put into tool box. After you receiving the machine, Please install steel plate and sealed cup onto pad printer.



There is magnetic axis inside sealed cup, so it will be absorbed on the steel plate when they contact each other. Please be careful that make sealed cup to close steel plate. LC brand sealed cup pad printer install steel ring, some customers like using ceramic ring. Please make a demand to our sale representative, we will change it for you. Please notice thick steel plate can use both ceramic ring and steel ring, but resin Polymer plate must use ceramic ring. According to our experience, The ink rest remains keep more little on steel plate than thin steel plate.

Please install sealed cup and steel plate according to the below step:





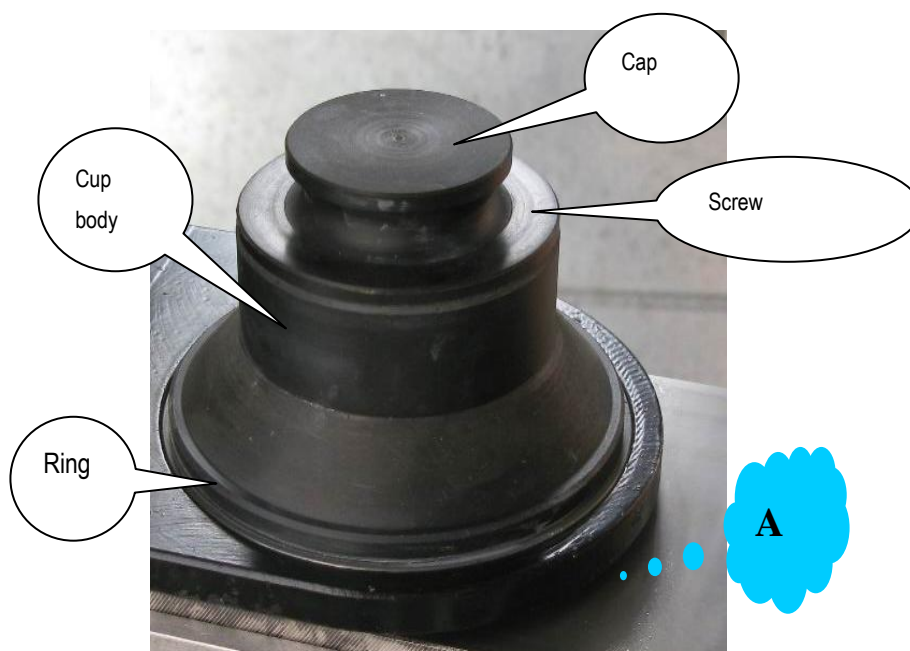
- First take out steel plate by left hand, take the sealed cup by right hand, slowly move sealed cup to close the side of steel plate, then push the sealed cup to the center of one end ;
- Loose the fixation screw, and take off cup fixing nip;
- Put steel plate with sealed cup onto plate support seat and fix the setscrew on the front end;
- Cover the cup nip onto sealed cup and move sealed cup with nip lightly to cup driving axis, fix the setscrew;
- Steel plate used by sealed cup and open ink tray pad printer, but size is more length, The plate-making process is same.

#### 4) Adding ink and thinner

Different base need different type ink and thinner, Please take a test before printing, Our sales representative will give you some advice when you make a enquire. Marabu ink is very famous brand in the world, Please order from your locating market. the price is more expensive, In china, LC printing machine will provide ALPHA, LOGO ink made in china to you. the price is more cheaper.

After you choose one type ink and thinner, Please mixing ink and thinner according to a percen:5:1 and adding into sealed cup( first open the cover of sealed cup) with ink adjustment blade .

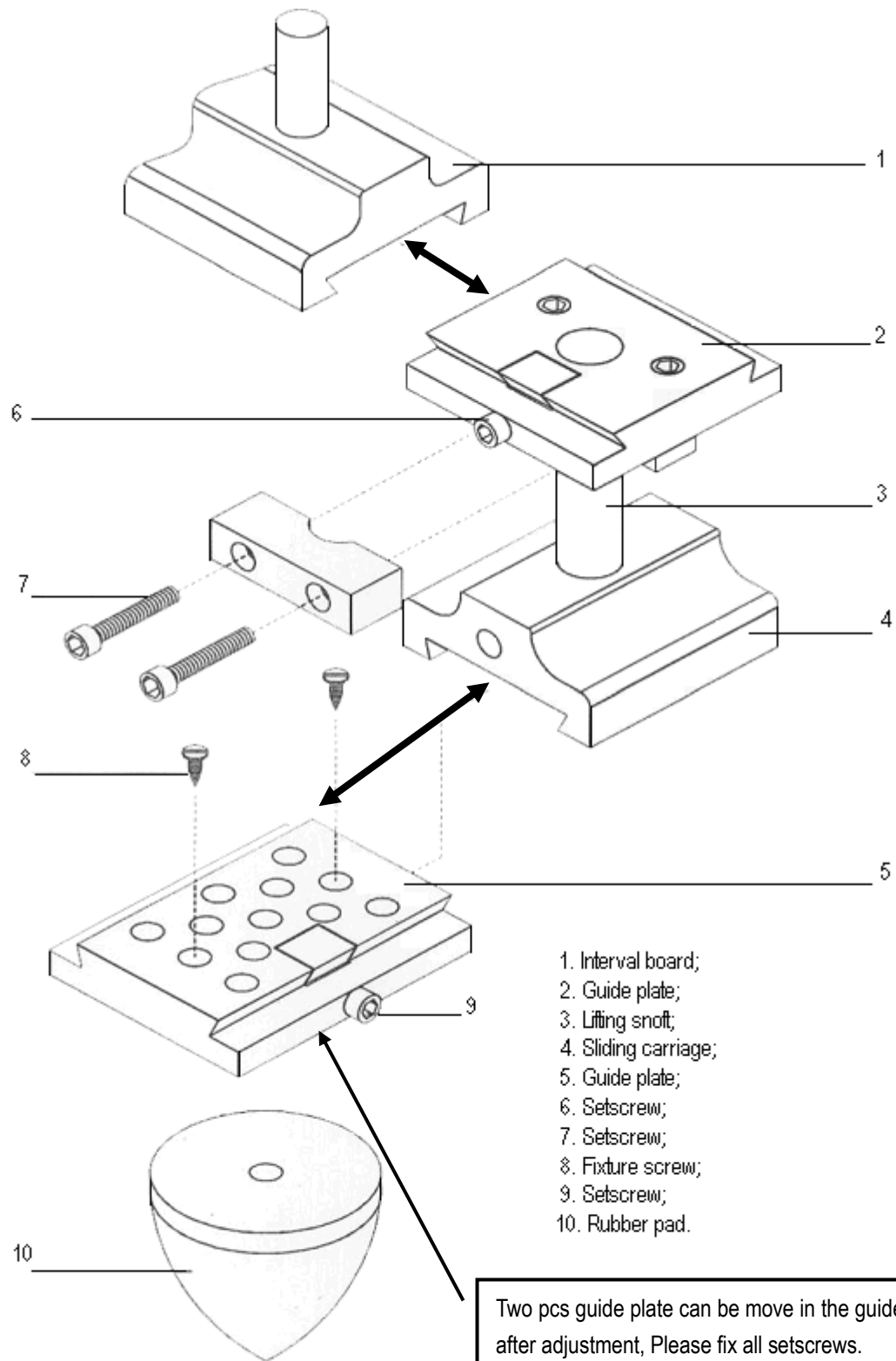
Please see the photo of sealed cup ,the cap can be open to add ink and thinner. When printing, ink and thinner move onto the surface of steel plate with sealed cup together. The solvent closed inside and do not volatilize to the air and avoid breath by operator. It will not hurt their health. The Viscosity of ink will not change to ensure printing quality stabilization.



After installing sealed cup and steel plate, first move sealed cup , the commonly state is you can move freely

#### 5) Installing rubber pad

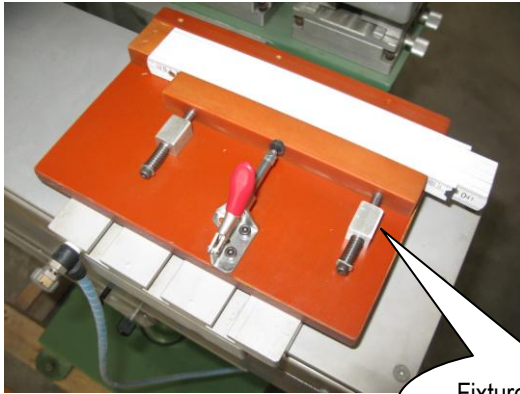
It is important to choose one suitable rubber pad. The rough principles the outline of printing design is similar with the cross section of rubber pad. The size of cross section can cover total design. First taking out the guide plate from pad seat, fix the screw through the hole with screwdriver , then installing it back to the pad seat. The guide plate can be adjusted along the front-back and left-right direction so that the rubber pad can cover all design.



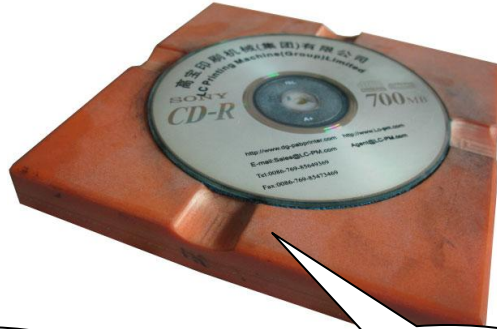


## 6) Installing fixture

It is very important to make fixture according to your objects to be printed. It have two functions: one is fasten the position, the other is overprinting the process of multi-colour pad printer. Some simply fixture made by resin putty, Precision fixture must be made by Lathe and milling machine



Fixture for ruler



Fixture for disk

Some customers adhere fixture onto the working table, we do not suggest do so, there are some set screws with machine, Please fix the fixture with these screws. Before you fix the fixture, first test the printing position, fix it.

Precision position printed need to adjust the working table:

Up-down, left-right, front-back, angle adjustment to the working table will guarantee the position onto the objects

### The adjustment method:



Fixture on working table

1: loose the setscrew; all movement parts must be loose through loose the setscrew;

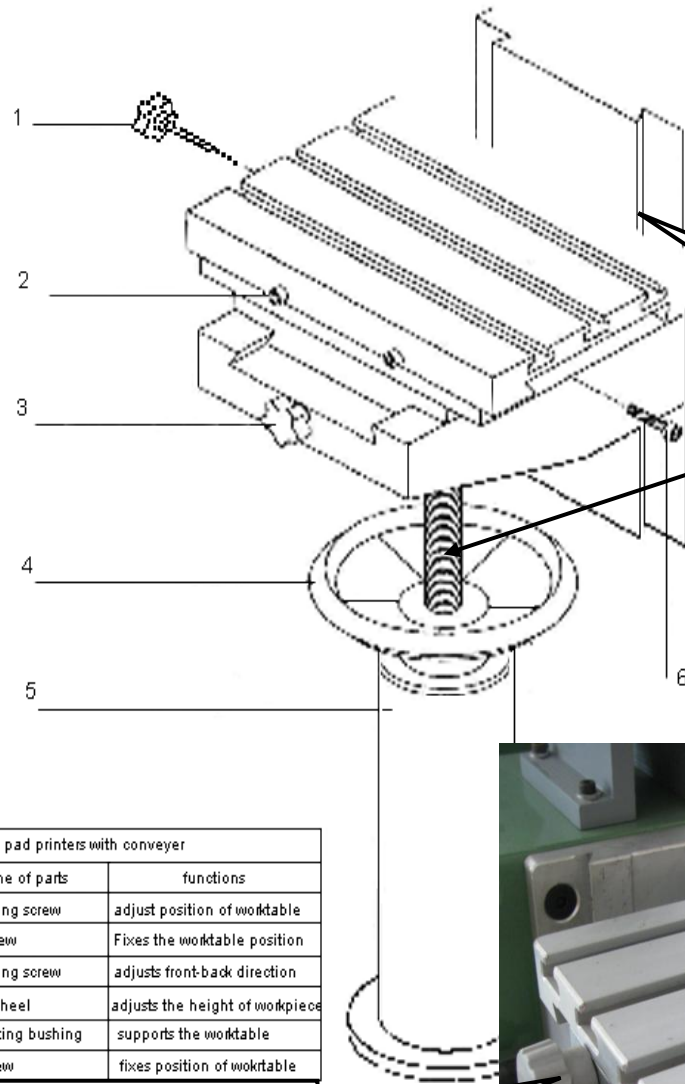
2: adjustment: Put one object on the fixture, and press the button" testing printing: and check the printing position. Then adjust the working table;

3; after adjustment, please remember fix these screw, or the printing

position maybe change in the printing works.

### Some advice on test printing;

- When testing ,Please paste PP Tape onto object and check the position and quality, after confirm ok, please remove PP tape to print.
- When printing, if you find printing quality is not good, Please take cloth with dipping in alcohol to clean;
- Please clean the rubber pad when you find the colour shallow.



Please adding some lubricating oil for regular date

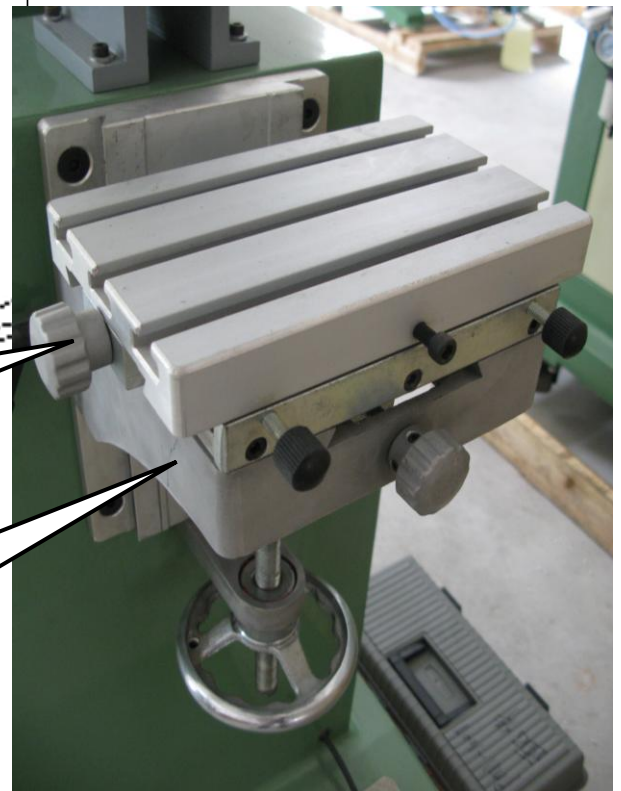
worktable of pad printers with conveyer		
no	name of parts	functions
1	Adjusting screw	adjust position of worktable
2	Setscrew	Fixes the worktable position
3	adjusting screw	adjusts front-back direction
4	handwheel	adjusts the height of workpiece
5	supporting bushing	supports the worktable
6	setscrew	fixes position of woktable

**Working table can be adjusted :**

Up-down position direction;  
Back-front position direction;  
Left-right position direction;  
Angle direction.

**Make pad to touch the products:**

Large-distance: working table up-down;  
Middle-distance: the pad stroke of up-down;  
Small-distance: pad seat.

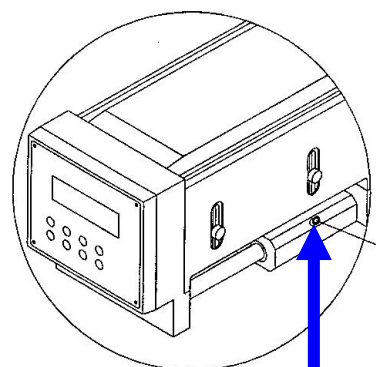


- Unless stop the machine, Please keep the machine running in the mode -f pad only move from front to back to avoid ink become drying.



## 8. Maintain

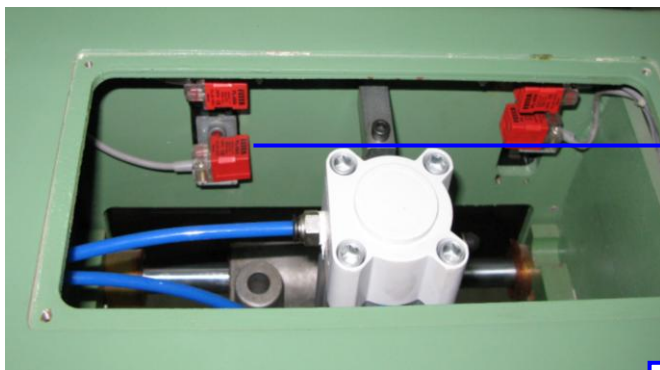
- keep the cleanness of the surface of machine.
- wipe the slide parts and infuse lubricant to them weekly.
- drain the contaminative water accumulated in the filter frequently in order to prevent the water from flowing into the inner pneumatic system.



2. Please adding some lubricating oil for regular date

1. Please adding some lubricating oil after removing the Plastics plate

- After the printing work, remember to wash the pad, plate and sealed cup.



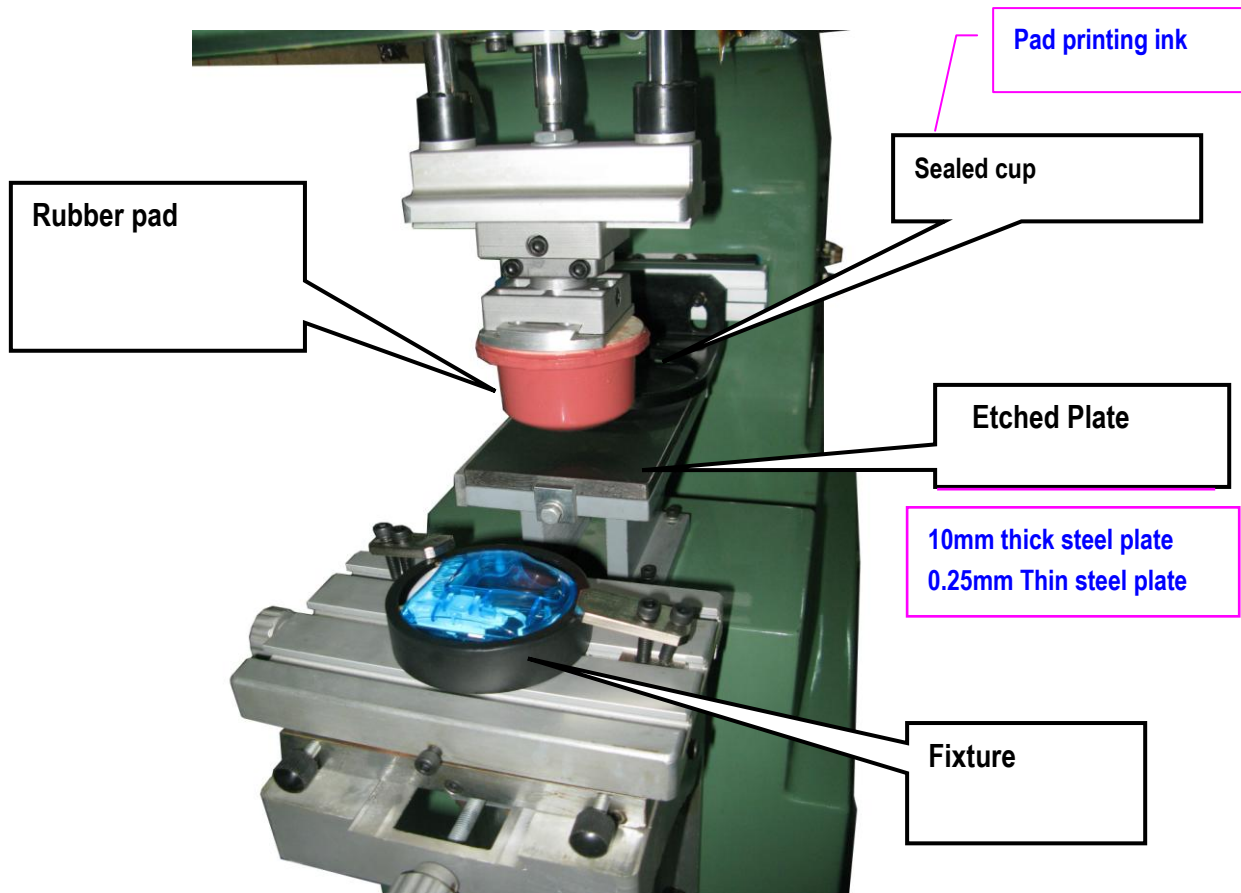
Four magnetic switch control the rubber pad movement, Please keep them clean,



Clean-drying compress air will belong the usage life of Magnetic valve. Compress air, drying machine and air store tin ordered together suggested .

Three magnetic valve control all cylinders: Please keep them clean, Please keep the plastics tube to connect well.

## 9. Printing Factors



Any printing task include below factors:

Pad plate- base on printing documents, you need make etched plate and onto pad printer, Please read<how to make pad plate > to know process of plate-making;

Printing ink- base on materials to be printed, different type ink to be choice. Pour some ink into sealed cup and have a test before printing;

Rubber pad- Rubber pad made by silicon rubber, commonly only 10-20 types rubber pad can print most of substrates;

Fixture- If you want to get precision printing , Fixture made with lathe machine. Some fixture made by butty.