



CONVEYOR SEALED CUP PAD PRINTER  
**OPERATION INSTRUCTION**  
**SP2-41010C**  
**SP2-41210C**



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LC industrial company Limited 20-1

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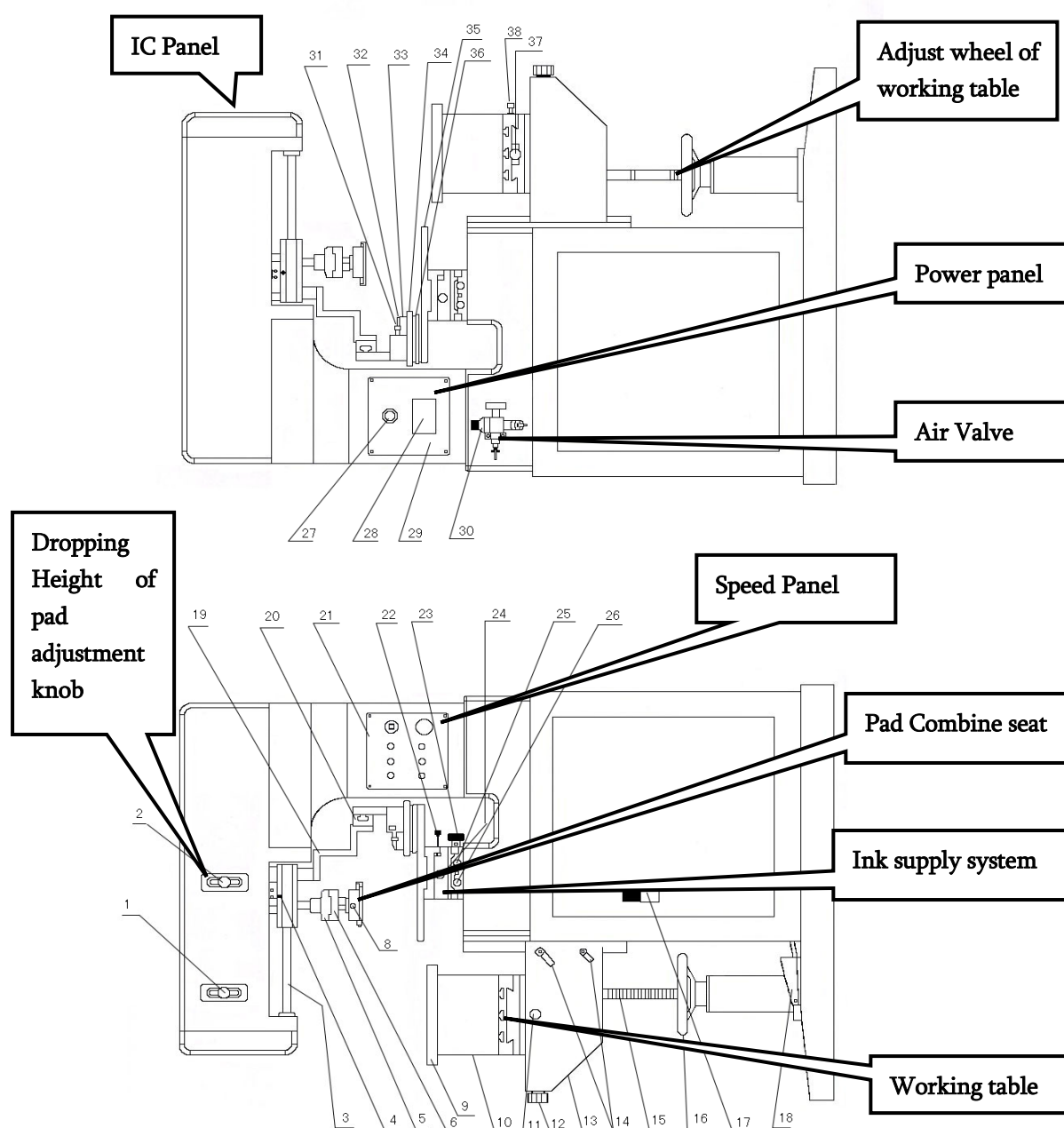
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## Preface

LC industrial 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.



In order to protect the rights and interests of our customers, every printer has been checked and tested strictly

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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!

## **1. 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 area |
|------------|------------------------|--|------------|
| SP2-41010C | 90mm                   | Pneumatic 2-colour pad printer With conveyer | 100×250 mm |
| SP2-41210C | 90mm                   | Pneumatic 2-colour pad printer with conveyer | 100×300 mm |

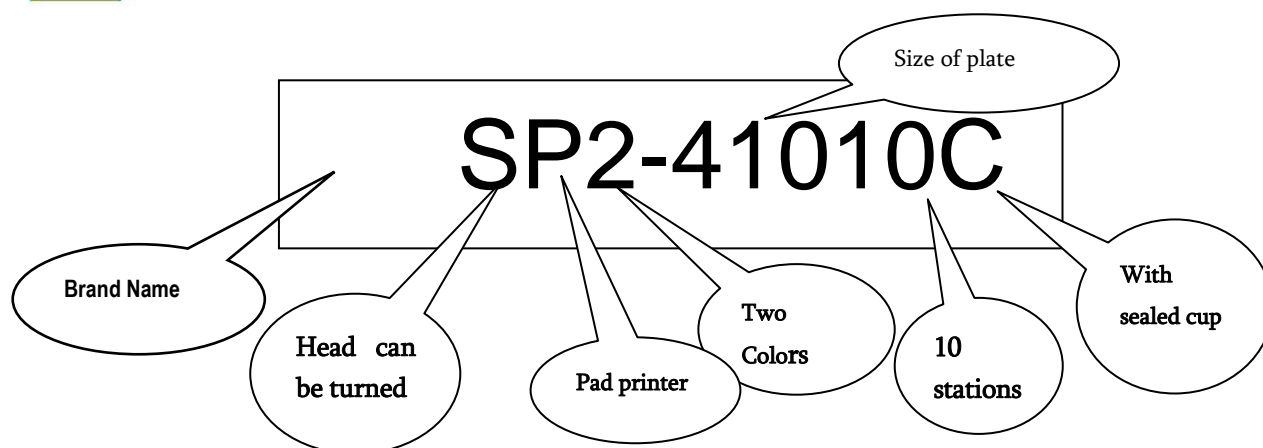
Standard plate type installed on sealed cup pad printer is 10mm thickness steel plate, We will make pad printer installing 0.25mm thickness steel plate when you make the demand to our sales representative. Thick steel plate remove ink more clean than thin steel plate but thin steel plate is more easily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

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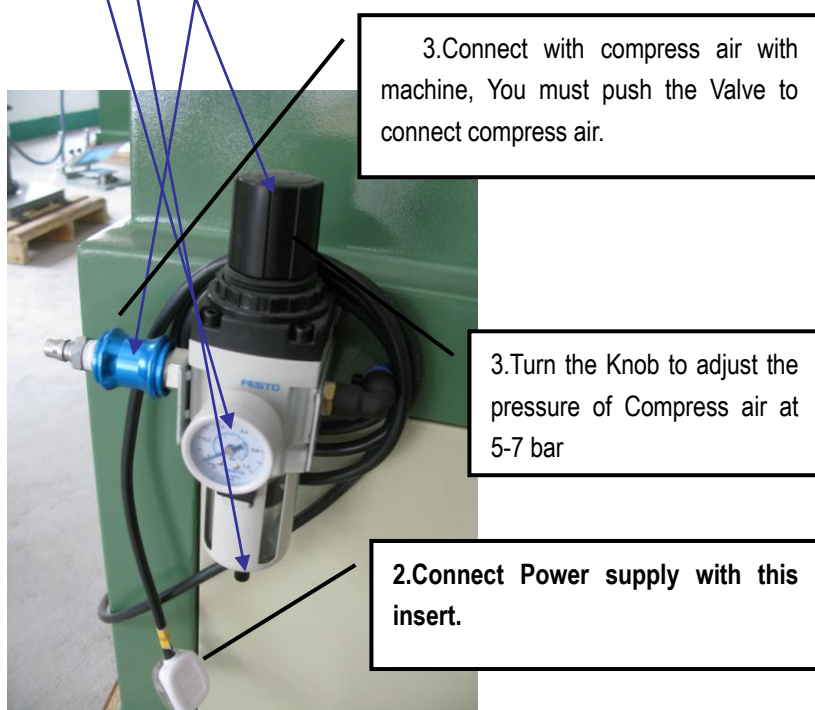
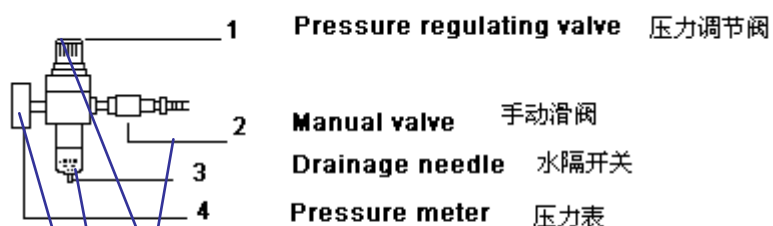
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### 3. Installation, adjusting and usage

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 consumption of compressed air is 0.43/CYCLE.

#### 3. Adjusting the pressure meter.

When the machine is working, the pressure of compressed air inbreathed usually should be adjusted to 5 BAR. If 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.

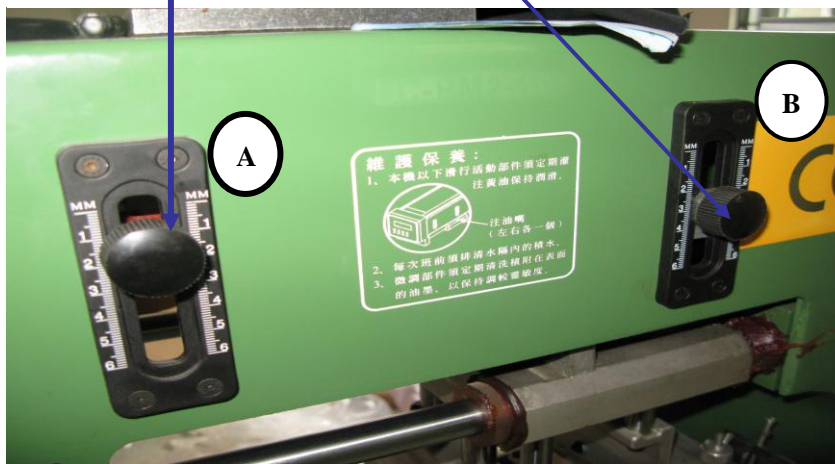
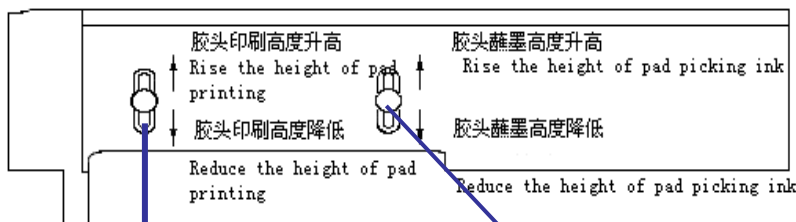
#### 4. Testing each mechanical part:

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.



1.Adjust the level of machine



Making rubber pad to contact with plate:

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

Making rubber pad to contact with table:

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

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)

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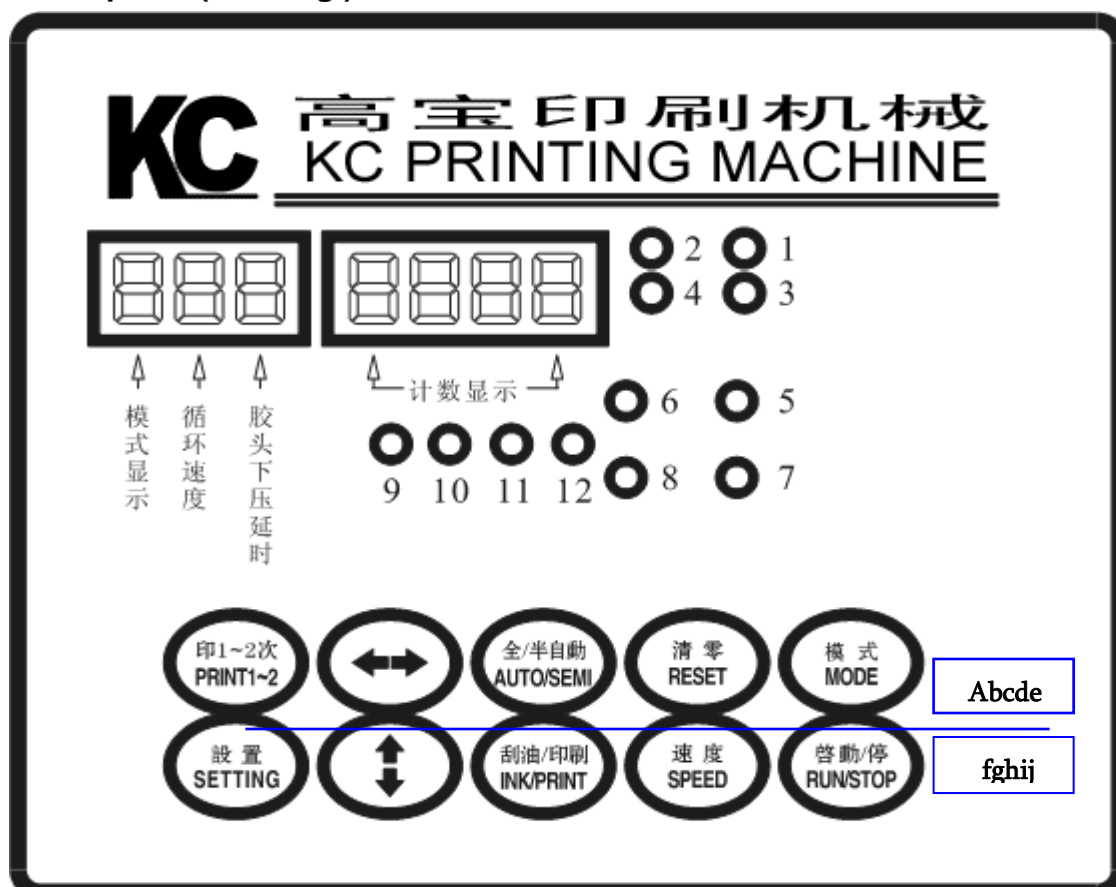
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## Drawings and instructions of each key part

- IC panel (Drawing )

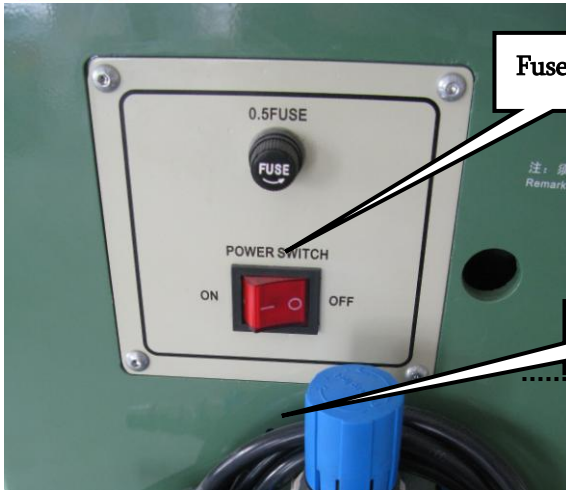




### *Functions of the keys: Instructions of the keys:*

- a) **PRINT1~2**: when the machine is running, press this key, the machine will enter the mode of “Dipping ink twice and printing once”; if press it again, the machine will enter the mode of “Dipping ink once and printing once”.
- b) **← →**: this key is also called “Table”, when the machine stops running, press this key once, the sliding carriage of pad will slide forwards or backwards once.
- c) **AUTO/SEMI**: press this key, the indication light(11)<See Drawing5> will light up, which indicates that the machine has entered the “Semi-automatic running mode”; when the indication light(11) quenches, which indicates that the machine has entered the “Fully automatic running mode”.
- d) **RESET**: press this key to reset the counter.
- e) **MODE**: press this key to switch from mode “1” to mode “5”; press this key each time, the indication digit will add one. All the indication digits are as following:
  - i. 1>--Dipping ink once or twice, printing once, and the conveyor will not revolve.
  - ii. 2>--Dipping ink once or twice, printing once, and the conveyor will convey ahead one workpiece.
  - iii. 3>--Dipping ink once or twice, printing twice, and the conveyor will convey ahead one workpiece.
  - iv. 4>--Dipping ink once or twice, printing three times, and the conveyor will convey ahead one workpiece.
  - v. 5>--Dipping ink once or twice, printing twice, and the conveyor will convey ahead two workpieces.
- f) **SETTING**: when the machine stops, press this key every time, the shuttle will move to the next printing position, and the indication light(12)lights up, which indicates that the machine has entered the “Setting mode”; Then you can manipulate other keys to adjust all the 2 or 4 or 6 printing positions until the print quality is satisfactory.
- g) **↑↓**: this key is also called “Test”, when the machine stops running, press this key once, the pad run one stroke in vertical direction. This key also has an intellectual function that when the machine stops running, if press this key for 20 seconds and then stop pressing, the pad will begin running downwards and upwards nonstop. You can press the key “RUN/STOP” to quit this mode.
- h) **INK/PRINT**: press this key to switch between the “fully automatic printing mode” and “automatic scraping ink mode”; if the indication light(10) lights up, which indicates the “automatic scraping ink mode”, and if the indication light(10) quenches, which indicates the “fully automatic printing mode”.
- i) **SPEED**: press this key to adjust the printing speed of the machine form level “0” to level “9”, which is from slow to fast. (If press this key for more than 3 seconds, the indication digit of the “Delay before the down stroke of pad”<See drawing 5> will begin twinkling, then you can press this key to adjust the delay before the down stroke of pad, and the indication digit will display form level “0” to level “9”, which is from slow to fast.
- j) **RUN/STOP**: press this key at any time to start or stop the ongoing operation of the machine.

#### ● Power panel

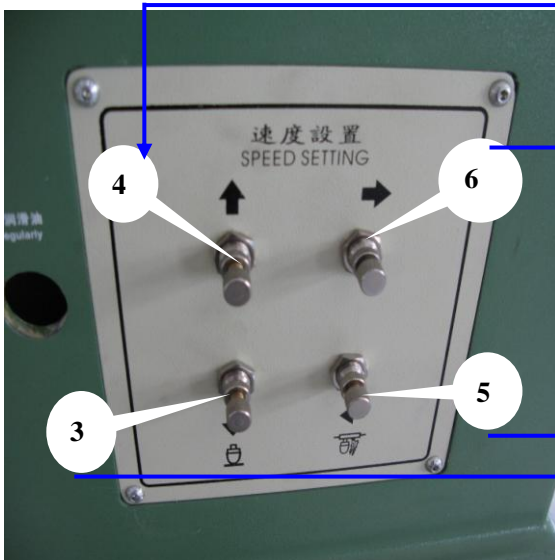


Fuse

Power switch

After connecting with power supply, press this button. The light on Panel will be turned on.

### ● Speed Panel



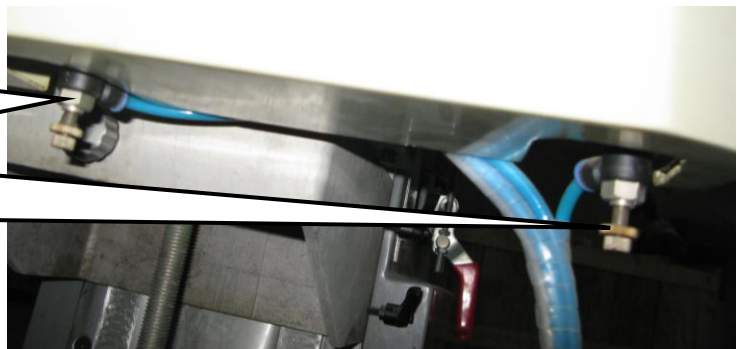
4. Adjust the speed of rubber pad from Down to up

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

Speed adjustment screw of working table movement



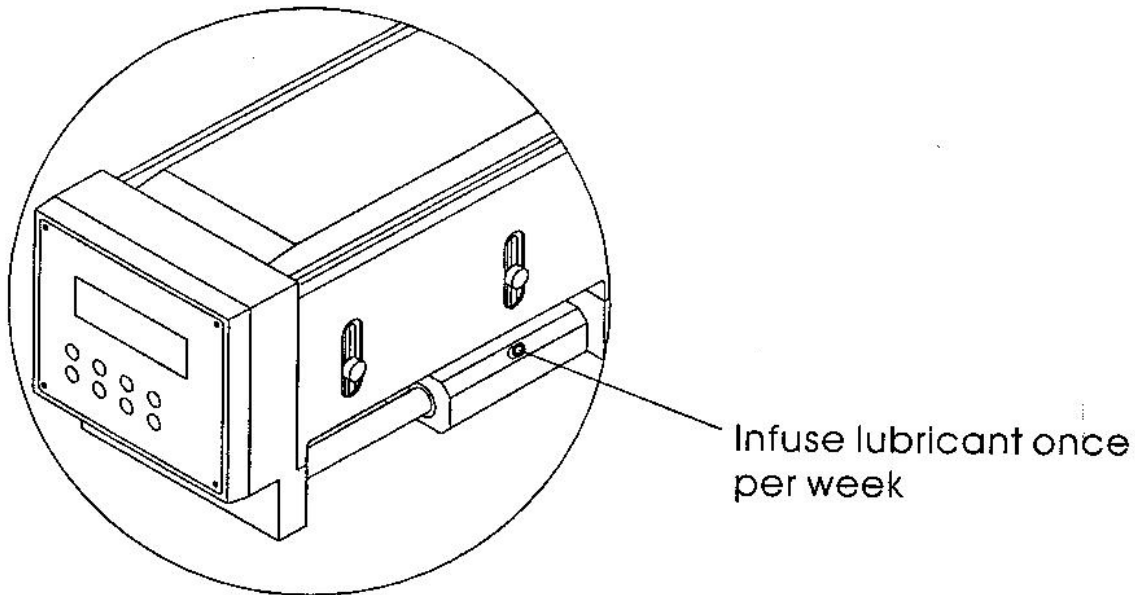




IN6

## 6. Maintenance

- 1> keep the cleanness of the surface of machine.
- 2> wipe the slide parts and infuse lubricant to them weekly.
- 3> drain the contaminative water accumulated in the filter frequently in order to prevent the water from flowing into the inner pneumatic system.
- 5> after the printing work, remember to wash the pad, plate and ink roller.



## 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.

Some customer ask LC company to take a printing test. Sealed cup with ink maybe installed on the machine, Please adding thinner for 10 minutes then start the machine.

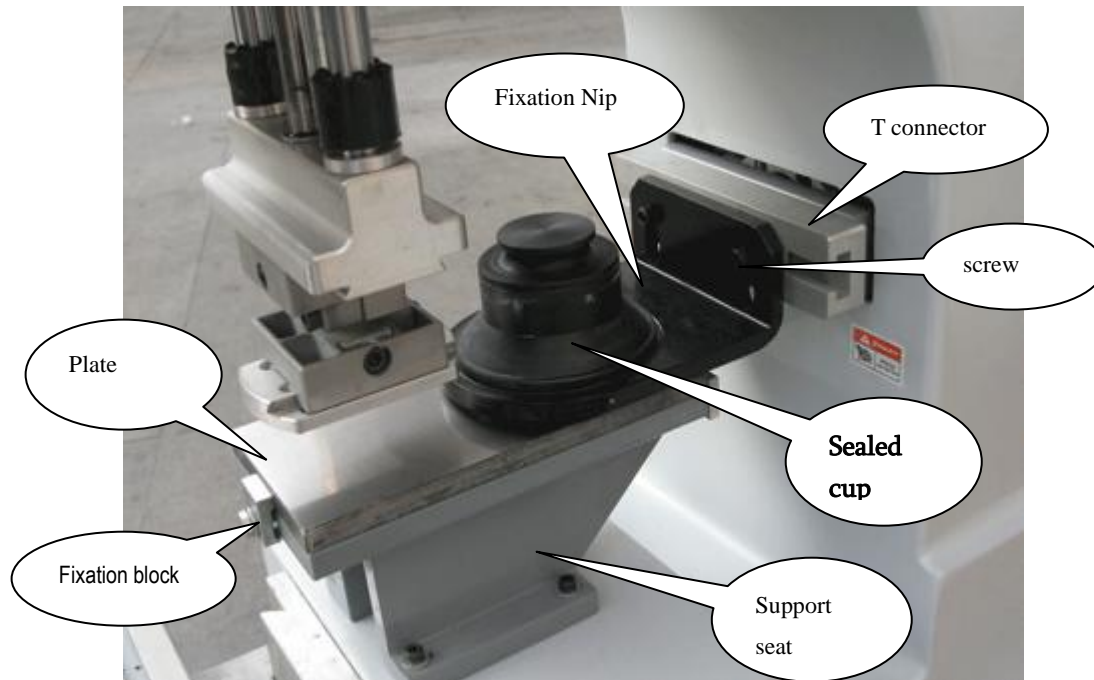
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There is magnetic axis inside sealed cup, so it will be absorbed on the steel plate when they contact each other. Please be careful that make sealed cup to close steel plate. LC brand sealed cup pad printer install steel ring, some customers like using 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.

Some sealed cup pad printer maybe have a different structure.

#### 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.

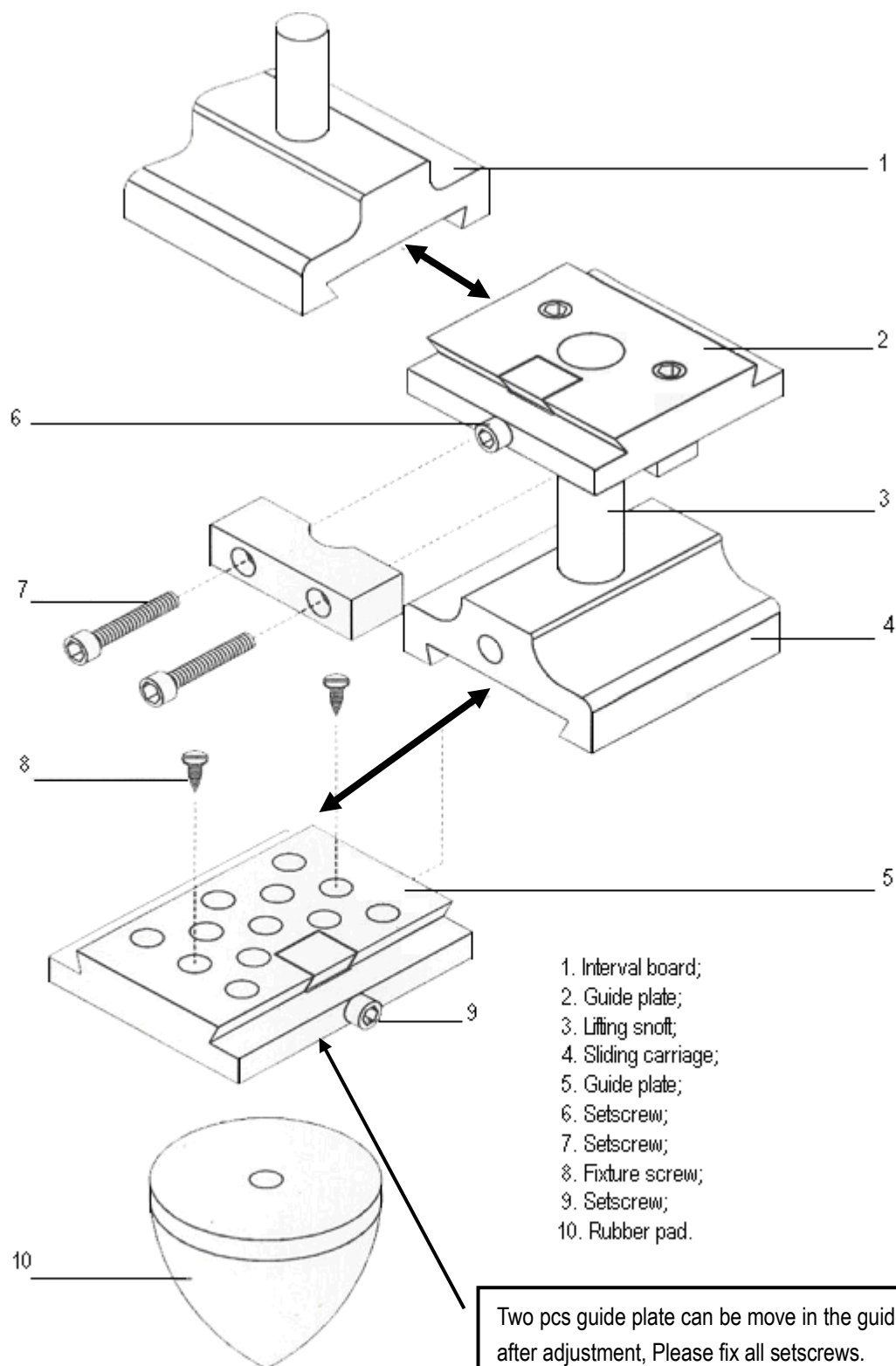
After installing sealed cup and steel plate, first move sealed cup , the commonly state is you can move freely

## 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.

Multi-colour pad printer need more rubber pads. Please keep per rubber pad have a same shape, hardness.

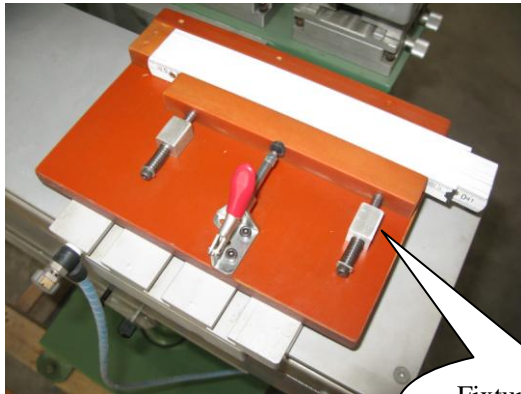
- Please loose up the screw of 9 and remove the guide plate.
- Please take a screwdriver to install rubber pad to guide plate. There are some screws in the tool box
- Install guide plate with rubber pad onto the seat
- Adjust the position so that it can cover the design on plate
- Fix the screw of 9.
- Please see the drawing below



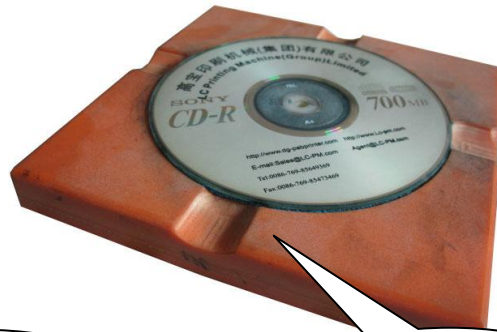


## 6) Installing fixture

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 setscrews with machine, Please fix the fixture with these screws. Before you fix the fixture, first test the printing position, fix it.

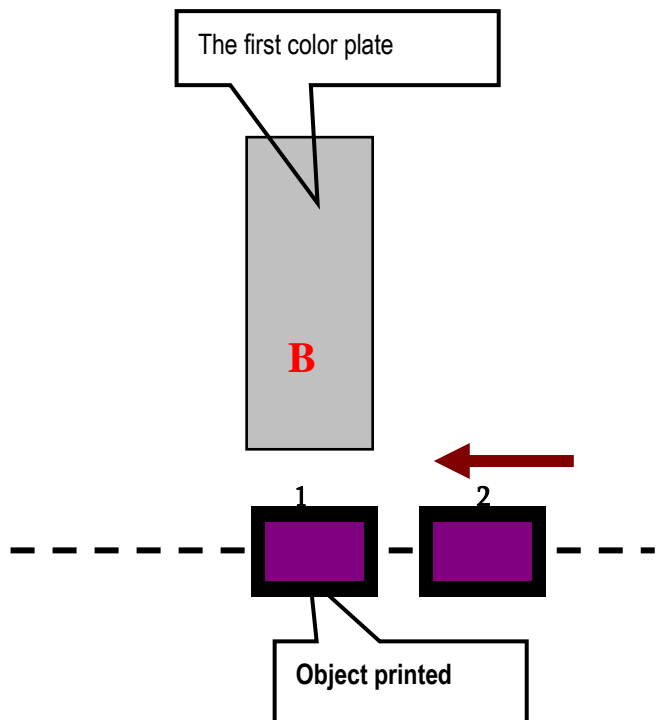
Precision position printed need to adjust the working table:

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

Two colors sealed cup pad printer have 10 stations on working table, you must adjust the position one by one. Please follow the below process.

### 1# First adjust the first color:

- Please arrange the printing Sequence.
- Please install the first plate and sealed cup on pad printer,
- Install fixture on working table and put product on the fixture.
- According to the customer requirements or samples provided by customer, , print B to correct position on product. Fix the fixture after adjusting.
- Start the machine and make the station of working table move a step, adjust the fixture to print same position of product, fix the fixture after adjusting. Till 10 pcs station all printed on correct position.

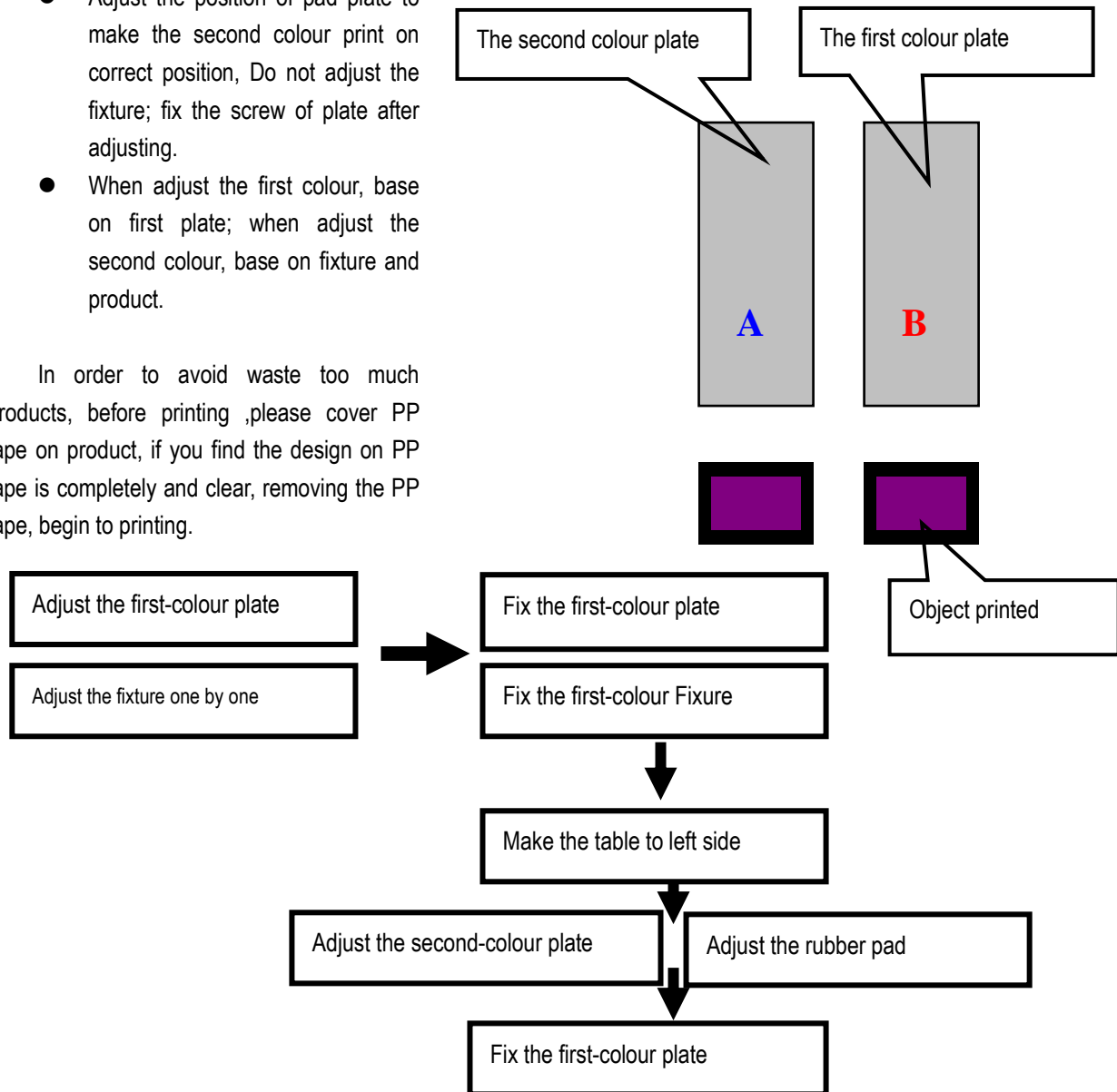




## 2# adjust the second colour:

- Install the second colour plate and sealed cup
- Adjust the position of pad plate to make the second colour print on correct position, Do not adjust the fixture; fix the screw of plate after adjusting.
- When adjust the first colour, base on first plate; when adjust the second colour, base on fixture and product.

In order to avoid waste too much products, before printing ,please cover PP tape on product, if you find the design on PP tape is completely and clear, removing the PP tape, begin to printing.



## The adjustment method:

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 may be change in the printing works.



Fixture on working

## 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;

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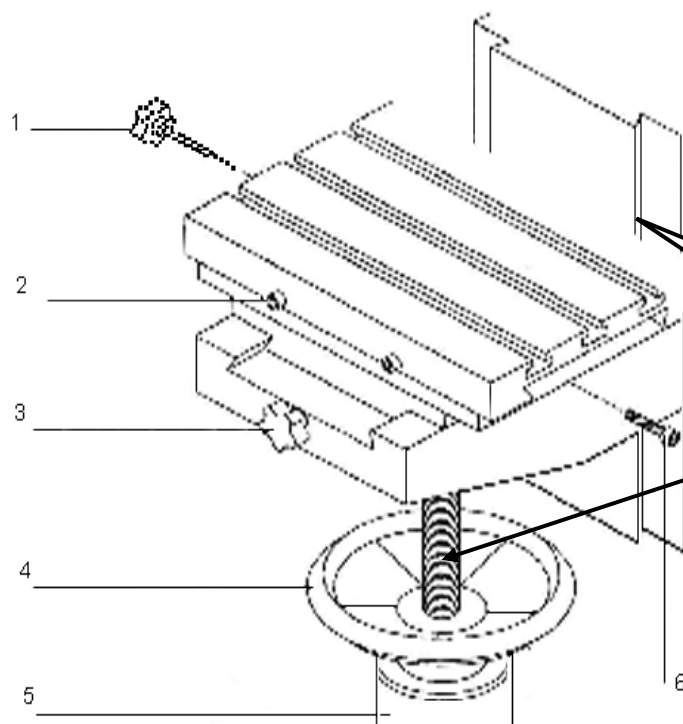
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- Please clean the rubber pad when you find the colour shallow.



Please adding some lubricating oil for regular date

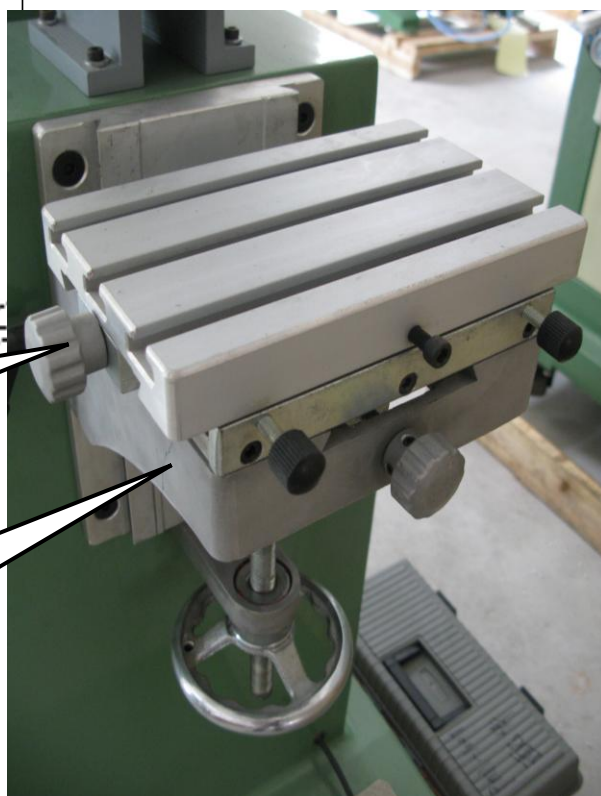
| worktable of pad printers with conveyer |                    |                                 |
|---|--------------------|---------------------------------|
| no                                      | name of parts      | functions                       |
| 1                                       | 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.

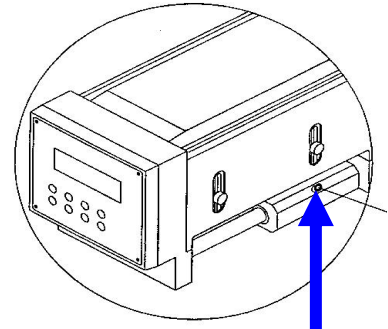


## 8. Maintain

- 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.

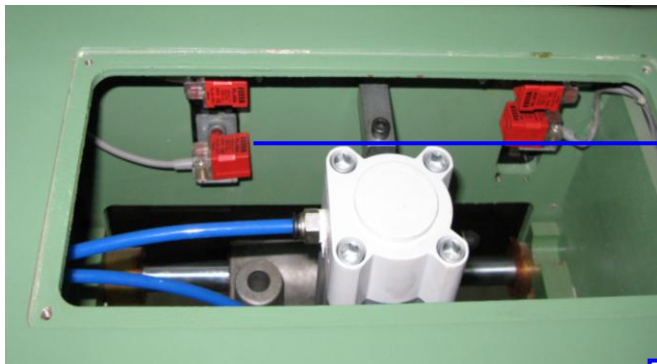


2. Please adding some lubricating oil for regular date



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,



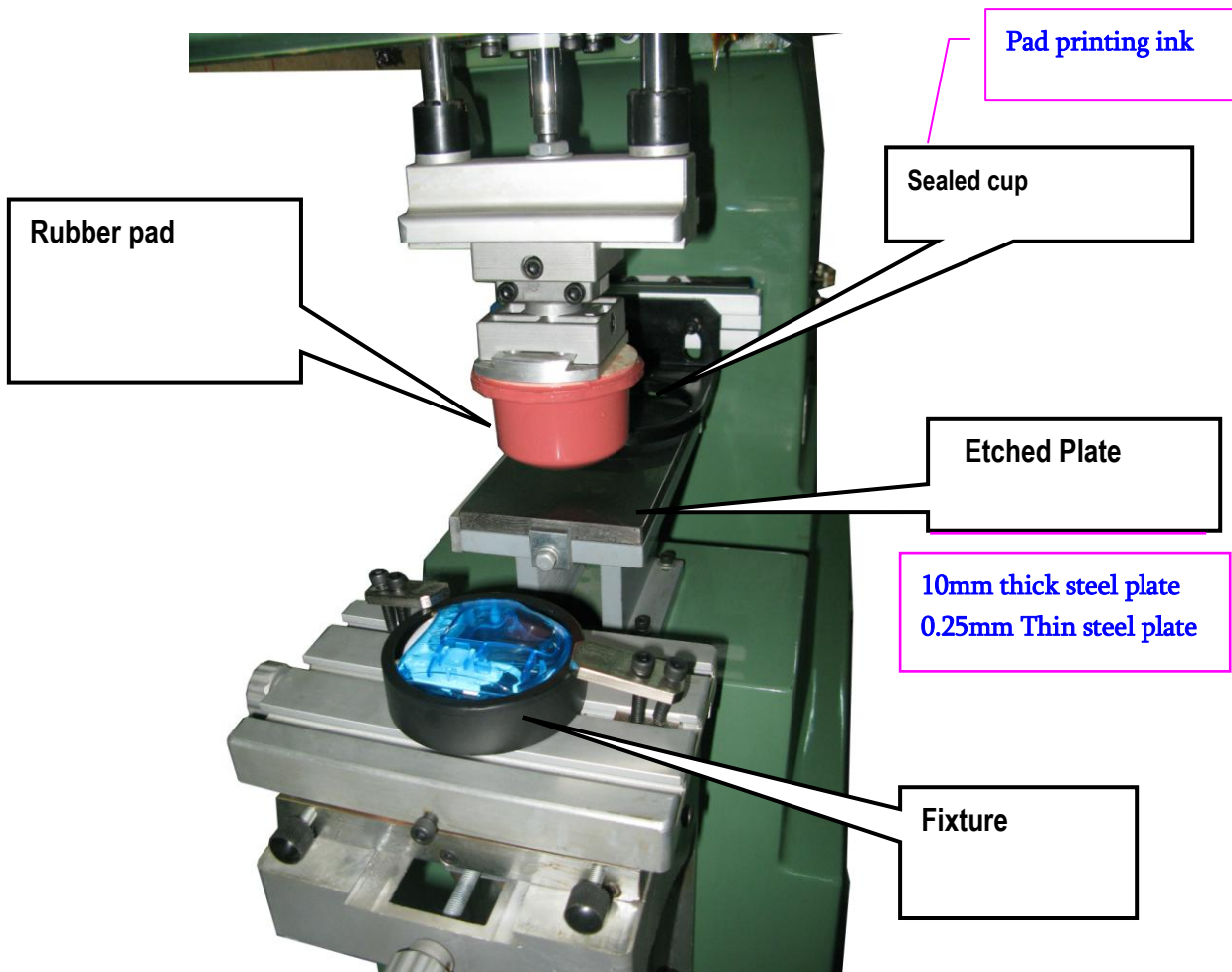
Clean-drying compress air will belong the usage life of Magnetic valve. Compress air, drying machine and air store tin ordered together suggested .

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



## 9. Printing Factors

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;

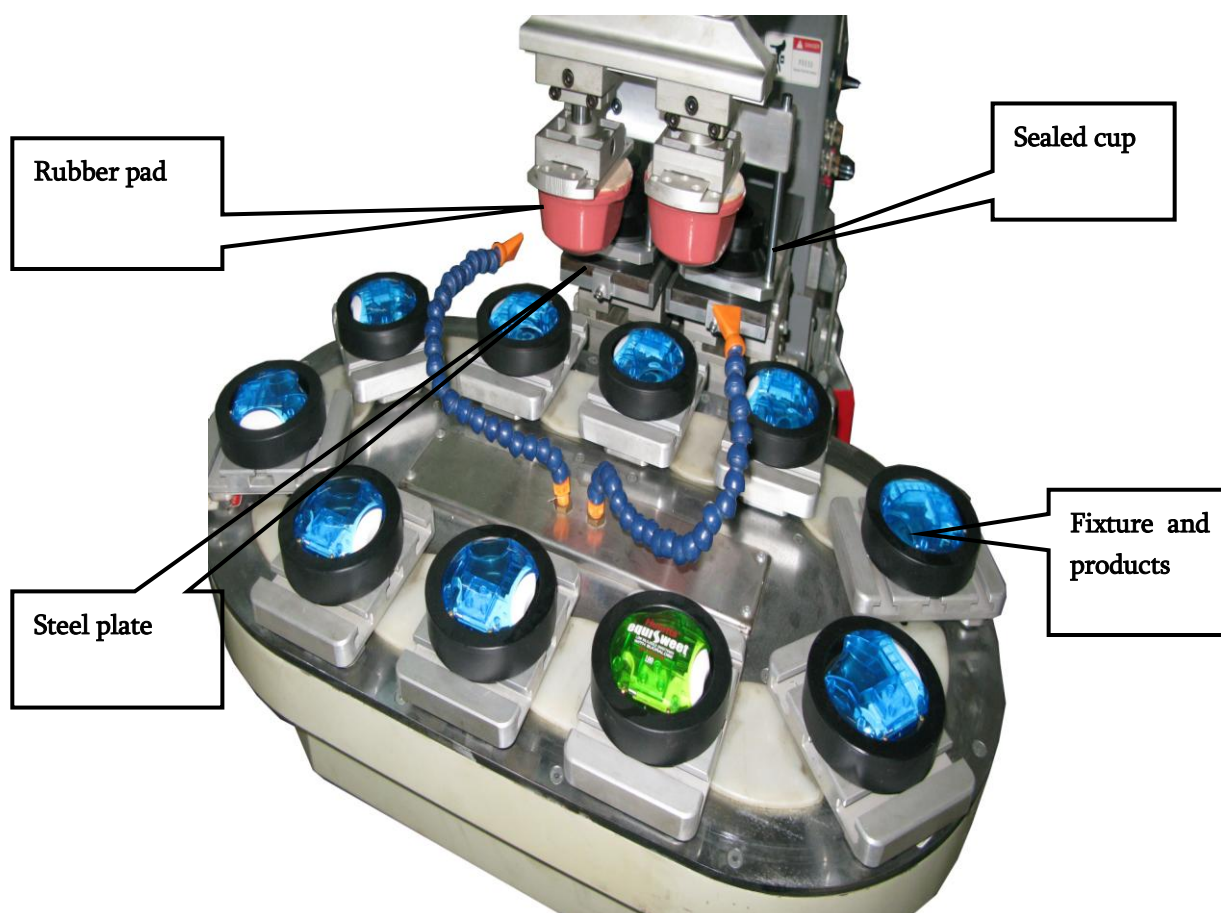


One colour sealed cup pad printer

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.



Two colours sealed cup pad printer with conveyor

## 11. Pneumatic controlling design

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