



# Pad printer

## OPERATION INSTRUCTION

### **P2** Two colors open ink system Pad printer with shuttle



Published by LC Printing Technology

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**LC industrial company Limited 22-1**

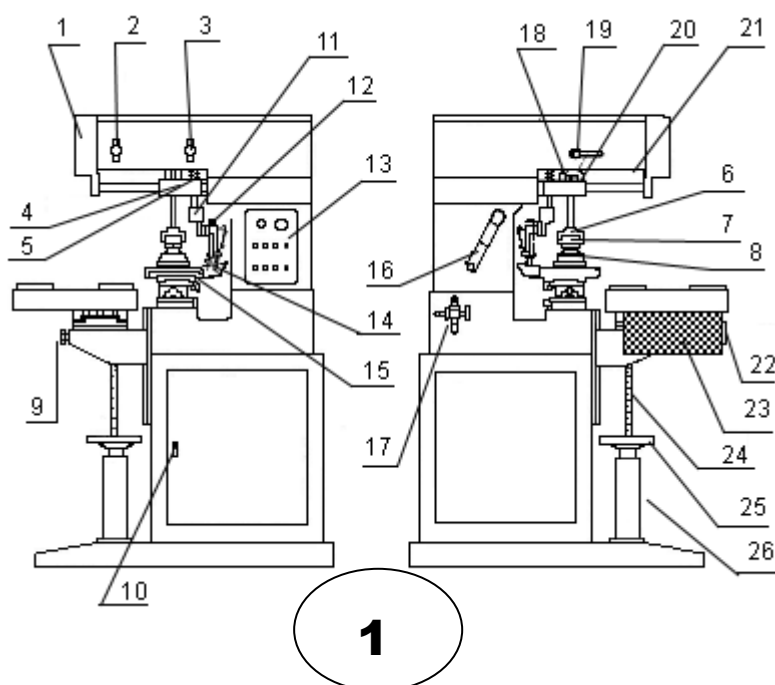
**Website:** [Http://www.lc-pm.com](http://www.lc-pm.com)

Online contact      Skype: yingsuhuakelven      QQ: 726986799      Whatapp: 0086-13592766499

Email: [sales@lcpadprinter.cn](mailto:sales@lcpadprinter.cn)

# Preface

LC Printing Technology 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 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

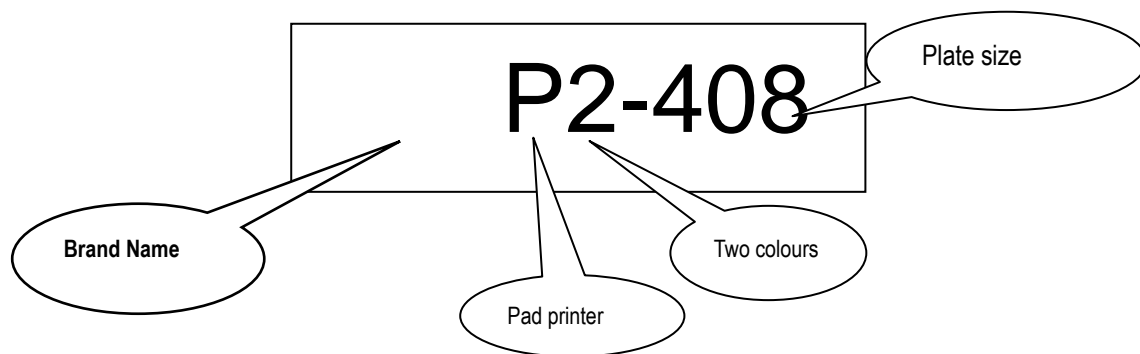
and services, which are of the first class technology and quality!

## 1. Name of parts:

1. IC panel    2...printing pressure adjusting knob.    3. ink dipping pressure adjusting knob.  
 4. lube nipple port    5. ink scraper resilience spring    6. interval board    7. transverse slide  
 8. pad fixture    9. worktable front-back direction adjusting knob    10. door to interior structure  
 11. ink scraper frame    12. ink scraper pressure adjusting knob    13. operation panel    14. ink roller  
 15. ink cup    16.machine-turning handle    17. moisture filter    18. switch for lifting the scraper  
 19. ink scraping stroke adjusting knob    20. touch part    21. switch for lowering the scraper  
 22 hot-blast temperature adjustment    23 hot-blast apparatus    24 lifting screw    25 lifting hand wheel  
 26 supporting bushing

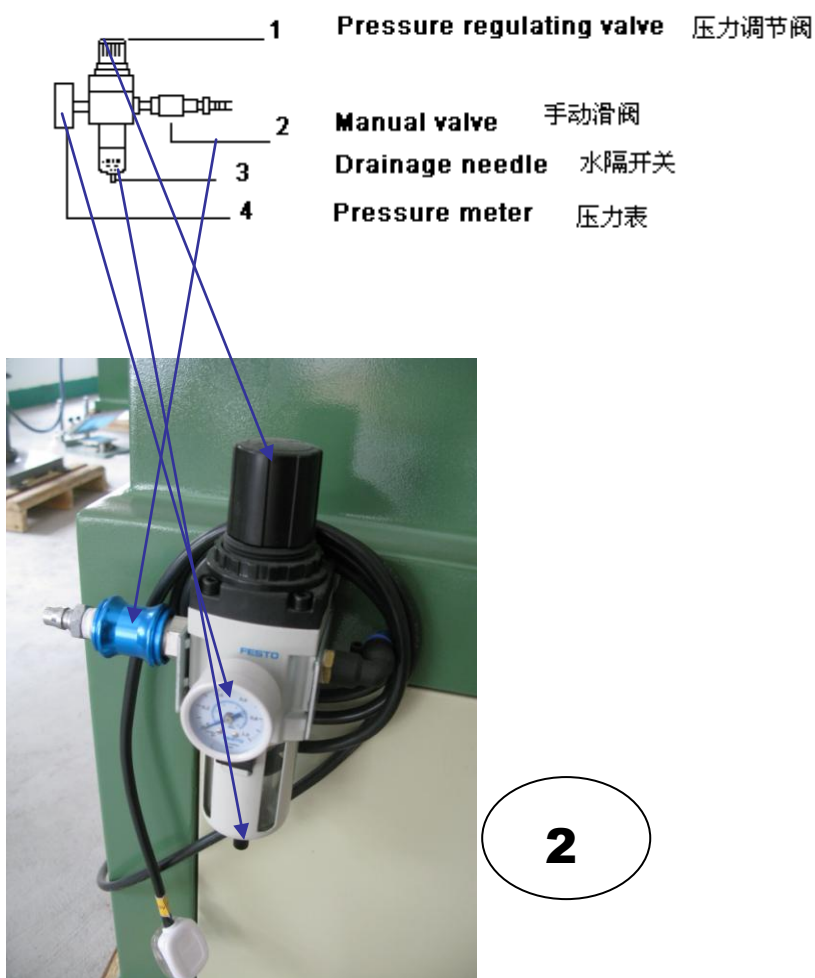
## 2. Models and plate size of pad printers

Model	Description	Standard Plate size
P2-404	Pneumatic 2-colour pad printer with shuttle	100*100 mm
P2-406	Pneumatic 2-colour pad printer with shuttle	100*150 mm
P2-408	Pneumatic 2-colour pad printer with shuttle	100*200 mm



### 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. **Drawing 3**

#### 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. 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 in order to fix it within the confines of standard pressure. **Drawing 2**

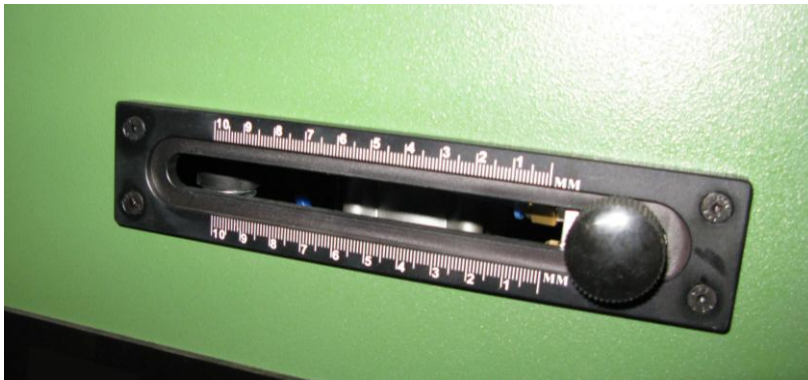
#### **4. Testing each mechanical part:**

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 speed of pad, and if there are any odd sounds.

#### **5. Adjusting the ink scraping stroke length**



The position of screw decide the position of blade dropping down to removing the ink, when printing more shorter design, Please adjust the position of the screw. Please notice that sealed cup pad printer have no this part. Different pad printer have different blade stroke. In the model of pad printer, 404- the third number is instead of stroke. Please keep the

blade can remove the ink covered on all design on plate.

#### **6. Adjusting the vertical stroke length of pad**

There are two screws beside another side of pad printer, adjust the position to decide the position of rubber pad drop down, Please Make rubber pad dropping down contact with plate or objects to be printed. Please remember, first installing rubber pad, then adjust the working table, then adjust the two screws.

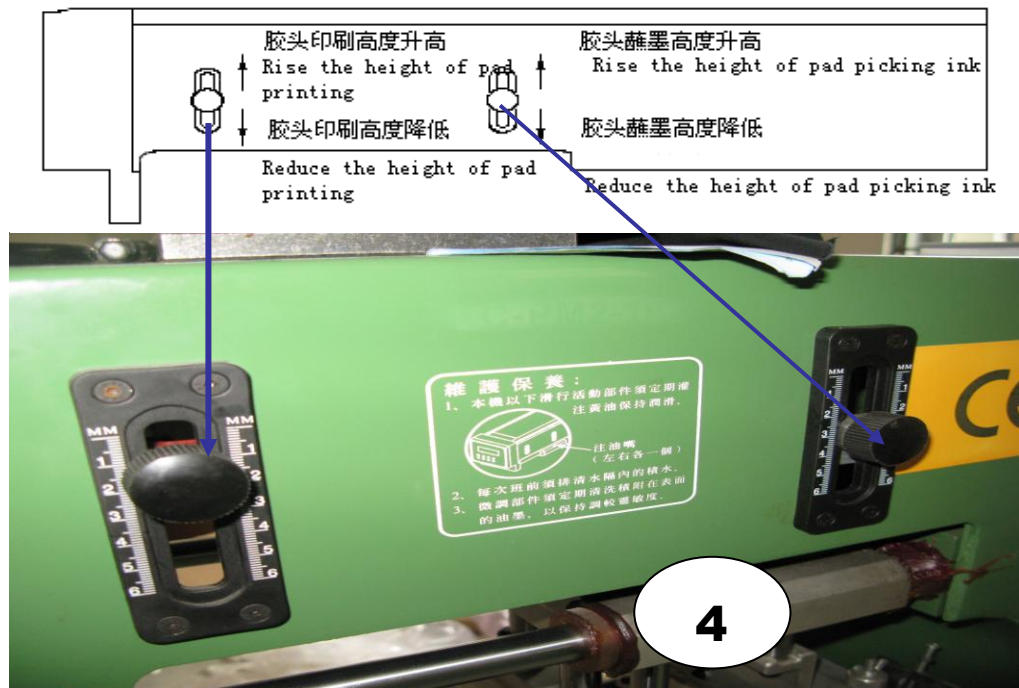
#### **7. Fixing the work-piece to the best position**

Fix the holding fixture of the work-piece to the "T" line of the worktable with the slide fixture(2), position change of the



work-piece can be realized through the following methods:

- A. if move the work-piece forward or backward, first, loosen the setscrew(8),and then turn the inching knob(5) turn it anticlockwise, the word piece moves backward, turn it clockwise, the work-piece moves forward until to the right

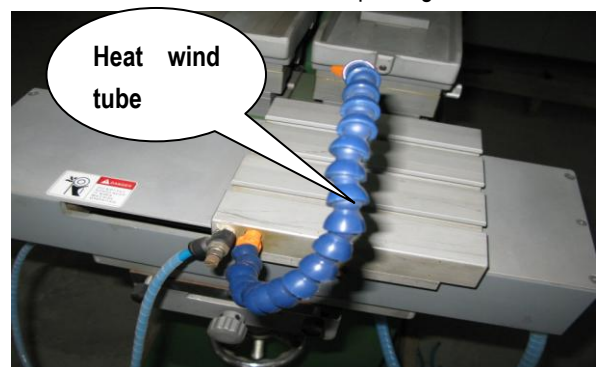


position, and tighten the setscrew(8)at last.

- B. If move the work-piece leftward of right  
 C. toward, first, loosen the setscrew(4) and then turn the inching knob(1)turn it anticlockwise, the work-piece moves rightward, turn it clockwise, the work-piece moves leftward until to the right position, and tighten the setscrew(8)at last.  
 D. If change the angle of work-piece, loosen the two knobs (3) at first, and then based on your needs, adjust the work-piece to the appropriate angle; finally, tighten the two knobs (3) at the same time.

## 8. Installing Heat wind tube.

In order to make the ink fast drying, two Multi-color pad printer install heat wind device, after printing one color, the ink will be blow with heat wind. Heat wind tube is into tool box , Please install it when you using pad printer.



## 4. IC Panel

### Functions of the keys: Drawing 5

1. **"Start/Stop"**: Press this key at any time to start or stop the running 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

**LC industrial company Limited 22-5**

Website: [Http://www.lc-pm.com](http://www.lc-pm.com)

Online contact Skype: yingsuhuakelven QQ: 726986799 Whatapp: 0086-13592766499

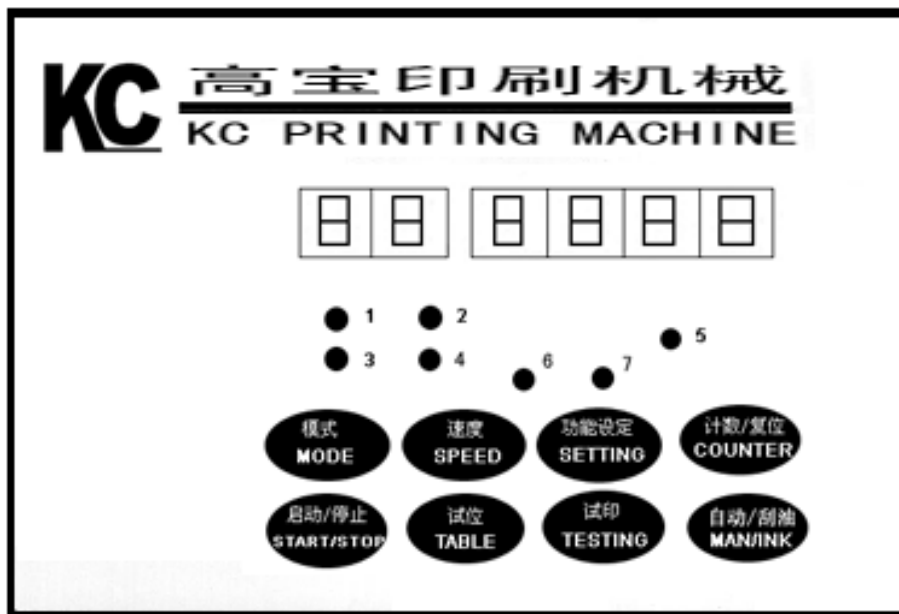
Email: [sales@lcpadprinter.cn](mailto:sales@lcpadprinter.cn)





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. The key is not action when machine running.
4. **"Table"**: in the state of stop, press it every time, the pad will run forward and backward once. The key is not action when machine running.



5. **"Setting"**: in the state of stop, press it every time, the last digit of the counter will display , then the machine

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Email: [sales@lcpadprinter.cn](mailto:sales@lcpadprinter.cn)



enters the "Setting" mode, meanwhile, the shuttle transports to left, right position . 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"**: Switching from "0"~"9"~dull "1"~ dull "2", press this key every time, the indication digit will add one, the indication digits are as following:

"0": dipping ink once, printing once. This mode is used for one colour pad printer. When you use two colours pad printer to print one colour, please set as this mode.

"1": dipping ink once, printing once, and the conveyor transports one workpiece.

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

"2": dipping ink once, printing once, and the conveyor transports two workpieces.

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

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

Two colours pad printer mainly used under the mode. If you contact with LC brand pad printer, please enter directly the mode. Under this mode, the machine will begin normal two colours pad printing process. The rubber pad first printing one colour, the shuttle working table move to left position and printing the second colour, then shuttle working table return to right side.

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

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

"5": dipping ink twice, printing once, and the conveyor transports 1 workpieces.

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

"6": dipping ink twice, printing once, and the conveyor transports 2 workpieces.

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

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

Perhaps you think the ink film is not enough thick, Please enter this mode, under this mode, the rubber pad will be pick up ink from plate two times and print two colours.

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

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

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

Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .



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

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

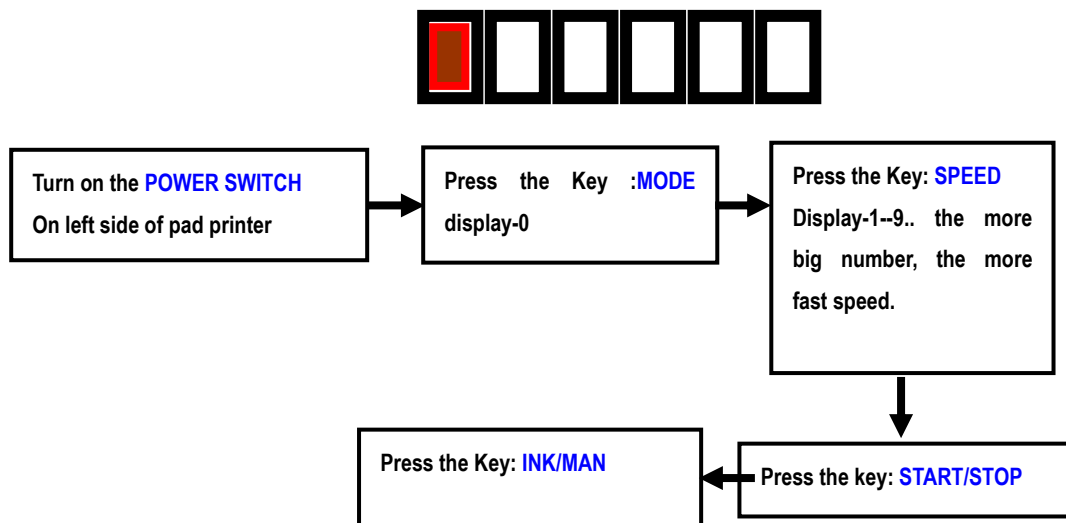
Two colours pad printer with shuttle have no this mode. When you into the mode, machine will not work, Please exit from mode .

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.)

So please notice below process:

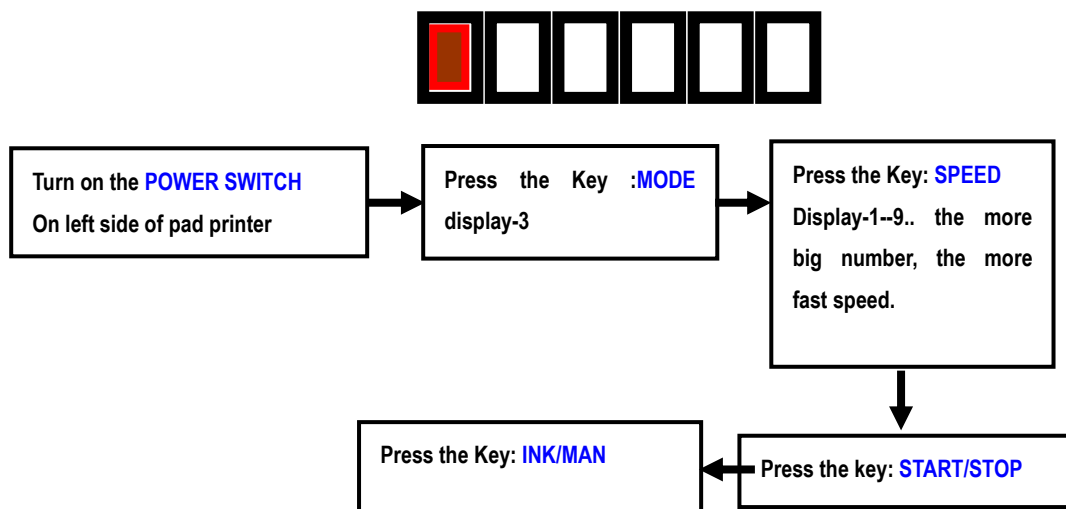
- 0- Print one colour with two colours pad printer with shuttle.

Press the **"MODE"** key. The indicator 1 display: 0". Then press **start/stop** key, Press **MAN/INK** key, the machine will print one colour and working table keep stillness.



- 3-Pick up ink one time and Print two colours with two colours pad printer with shuttle.

Press the **"MODE"** key. The indicator 1 display: 3". Then press **start/stop** key, Press **MAN/INK** key, the machine will print one colour and working table keep movement from left to right.

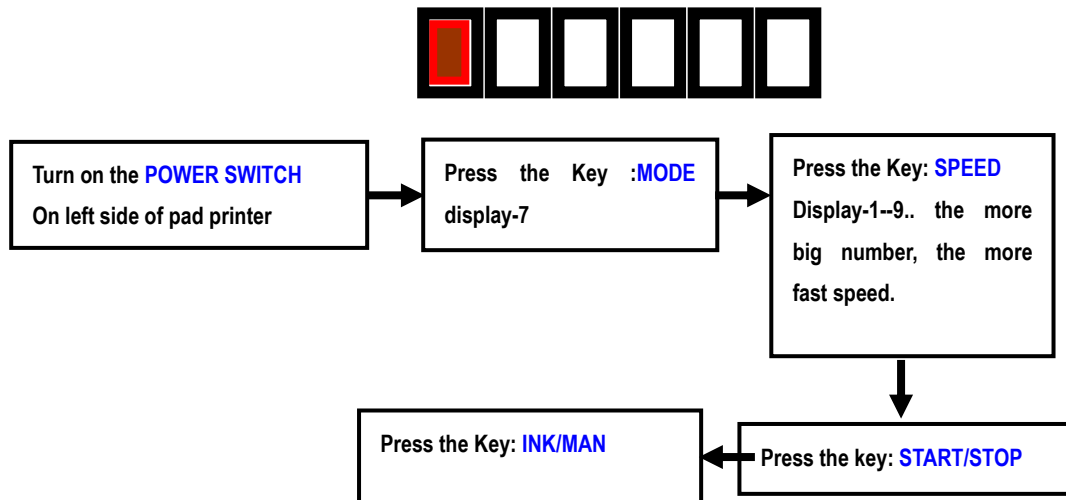




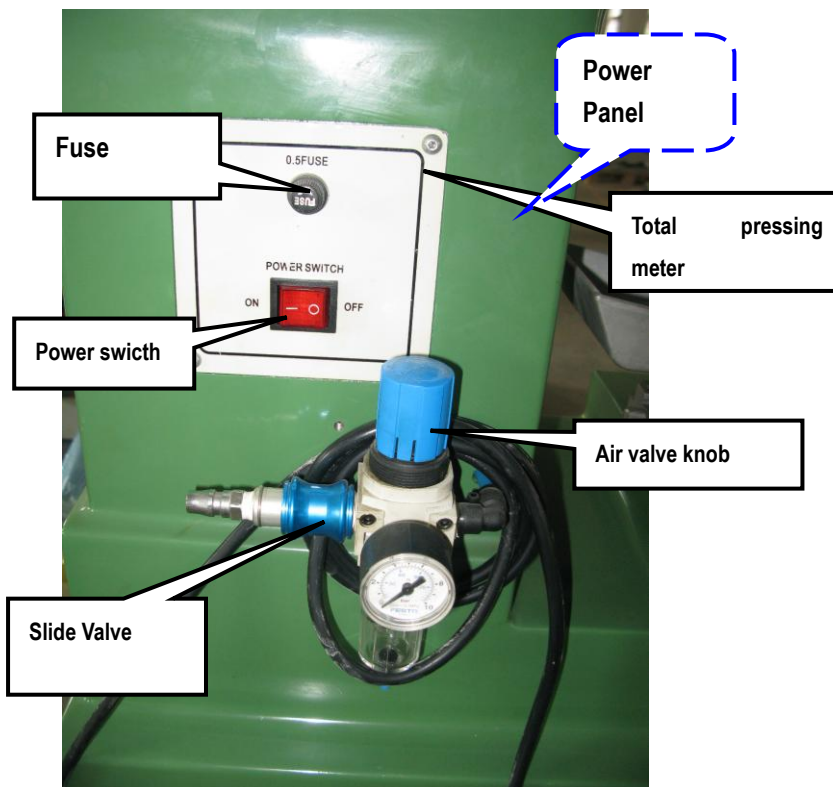


- 7-Pick up ink two times and Print two colours with two colours pad printer with shuttle.

Press the “**MODE**” key. The indicator 1 display: 7”. Then press **start/stop** key, Press **MAN/INK** key, the machine will print one colour and working table keep movement from left to right . under this mode, you will get more thicker ink film.



Important caution:



When print two colours, Maybe you find the rubber pad drop speed too slow when working table move to right side from left side. Please Press Stop/start Key. Then press the key : Speed, till the indicator of the second LED display become dark, the press the key of SETTING as more big number, The speed will be quicken.

When you shut off power, the mode will be removed, this machine have no memory function.

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Email: [sales@lcpadprinter.cn](mailto:sales@lcpadprinter.cn)



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

## 5. Operation Process of machine

### 1) Connecting power supply

220V/50HZ to machine; Some countries use one phase 110V Voltage, we will change the power supply according to your requirements, please confirm it before you ordering our machine.



### 2) Connecting with compress air.

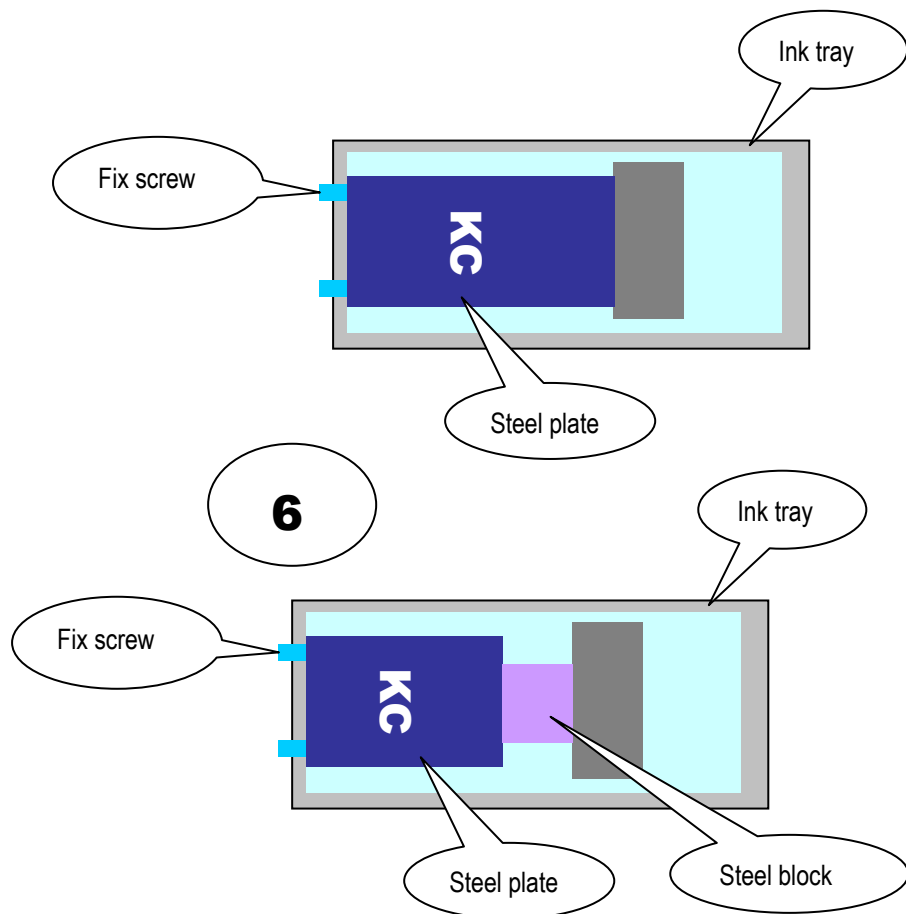
So one compressor must be installed in your printing room. Please ordering one set compressor before you ordering our machine. Of course, we will help you to order if you make demands to our sales representative

### 3) Installing pad plate.

Any printing document must be etched onto pad plate. Our inkwell pad printer use 10mm thickness steel plate. At the first order, if you provide printing document to our sales representative by email, we will make one pc free, we will give you a technology support on how to make steel plate by yourself, we will provide completely plate-making solution for you.

We suggest you use standard size steel plate, when you use more shorter size steel plate on pad printer, Please take a steel block and install in the inkwell.

LC ink tray pad printer present install 10mm thickness steel plate. Some customers order LC pad printer and change some part to install resin polymer plate.





#### 4) Install ink roller.

There are one set ink roller (4) in tool box, Please install it according to the drawing.

#### 5) Install blade doctor .



We send two pcs steel blades with machine freely, the length is 300mm, cut it according to the width of steel plate, make sure the blade cover the words on plate so that it can remove the ink when printing. Please make sure the blade parallel with plate, then fix the screw.

#### (6). Adding ink and thinner.

Different base materials substrate need different ink types, Marabu ink is famous ink brand in the world, LC printing Machine provide LOGO, ALPHA ink for you if you want to use more cheaper ink and thinner. We will give you some advice on how to choose ink , please enquire to our



sales representative. Any ink need testing before printing. First adding ink to the ink tray with ink adjustment blade, then pour some thinner according to the percent of 1:5, Start the machine at the key of **4 (on operation panel)** to make the blade and ink roller to coat ink, if the blade can not remove ink coated on the plate, Please adjust the pressure Knob on Speed Panel beside of pad printer to increase the pressure of blade a bit till the blade remove the ink completely.

It is important to make the blade removing the ink on the surface of steel plate completely.



Please caution: Per inktray only adding one colour ink.  
Ink adding need ink adjustment blade;



In order to save time, we suggest you order two additional ink-trays , when you change other printing task, please directly replace ink-tray;

## 7) Installing rubber pad. -

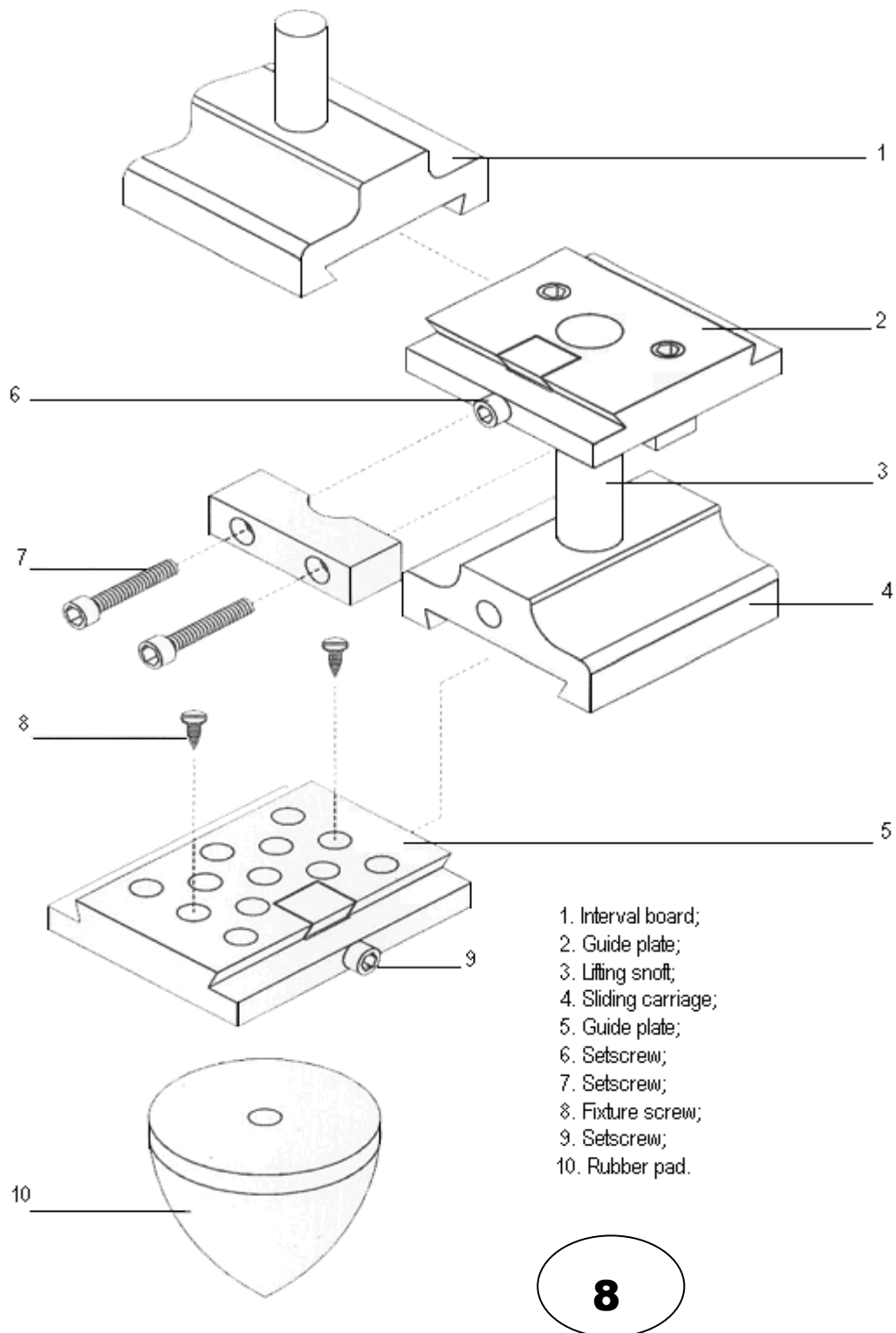
Please choose rubber pad according to the design size on the plate, Make sure the bottom size of rubber pad can cover completely the design one the pad plate. First loose the screw 9, (8-drawing) , take down the guide plate (50, use one screwdriver to fix the rubber pad. Then install the guide plate into the sliding carriage (4). Please move the position of rubber pad to contact with printing design, Fix all screws and keep the rubber pad not movement.

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Website: [Http://www.lc-pm.com](http://www.lc-pm.com)

Online contact Skype: yingsuhuakelven QQ: 726986799 Whatapp: 0086-13592766499

Email: [sales@lcpadprinter.cn](mailto:sales@lcpadprinter.cn)



## 8) Install fixture.

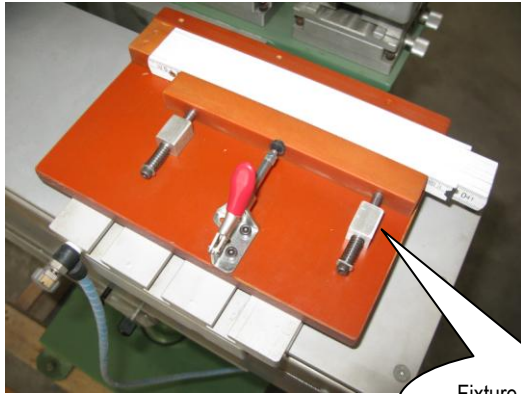
It is very important to make fixture according to your objects to be printed. Some fixtures made by unsaturated polyester putty, other precision fixture need to make with lathe machine and milling machine. At the first order, we will





suggest you sending some products you printed , we will make one only a little money.

There are T model trench on the working table. It used to fix the fixture when printing. Before



Fixture for ruler



Fixture for disk

printing ,please install the fixture onto the working table, adjust the position of rubber pad so that the rubber pad can print the words to a correct position, then fix the screw. Precision position adjustment need to use the micro-adjustment screw of working table.

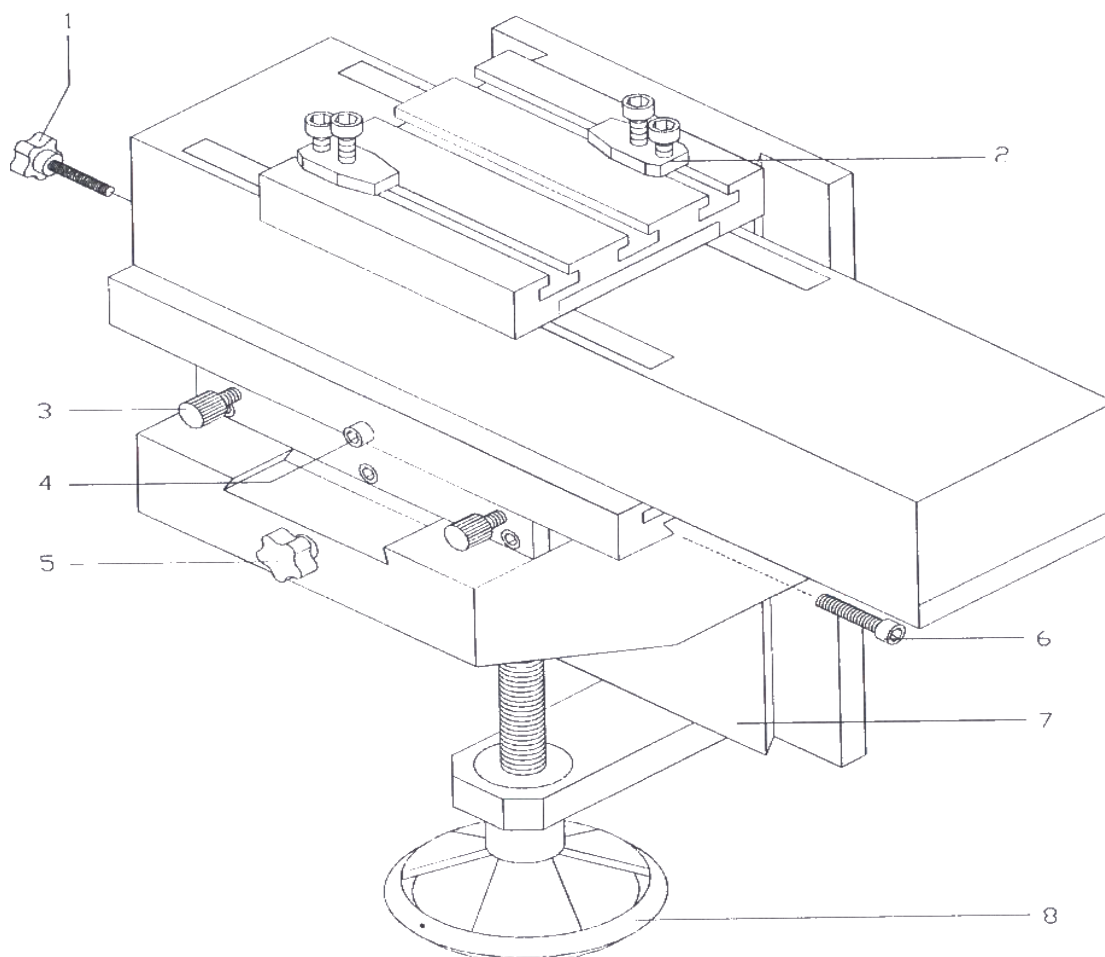
#### 9) Adjustment of the working table. (Drawing 10).

- Working table can be adjusted as up-down direction. Then turn the handle wheel (6);
- Working table can be adjusted as left-right direction. First loose the screw (4), then adjust the screw(1);
- Working table can be adjusted as front-back direction, First loose the screw(8), Then adjust the screw(5);
- Working table can be adjusted as angle direction by turning the screw (3).

#### 10) Test printing.

Some operator like cover PP plastics tape onto the products when testing printing because the printed drawing will be removed easily with Tina solvent or other solvent. After you adjust the position, printing quality , you begin to work.

1. Adjust the left-right direction of working table  
调整工作台左右位置
2. Fixation Screw of fixture  
夹具固定螺丝



3. Adjust the angle of working table 工作台角度调节螺丝
4. Fixation screw of left-right direction 工作台左右固定螺丝

- 5 Adjust the back-front position of working table 工作台前后调节螺丝
6. Fixation screw of front-back direction 工作台前后方向固定螺丝

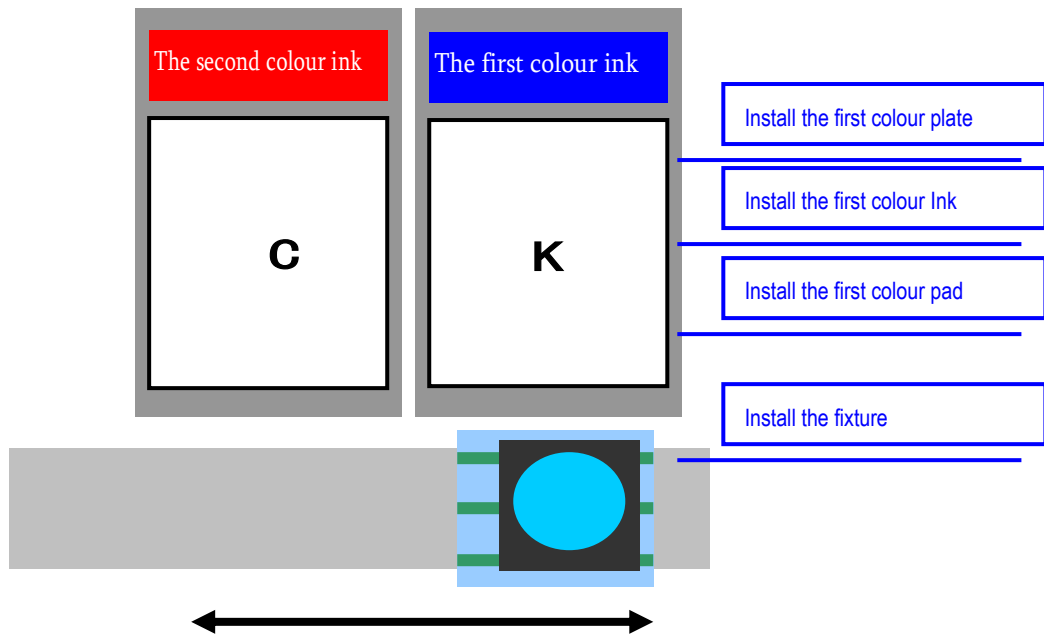
7. working table Guide Plate of up-down 工作台上下导向板
8. Adjustment handle wheel of working table 工作台上下调节手轮



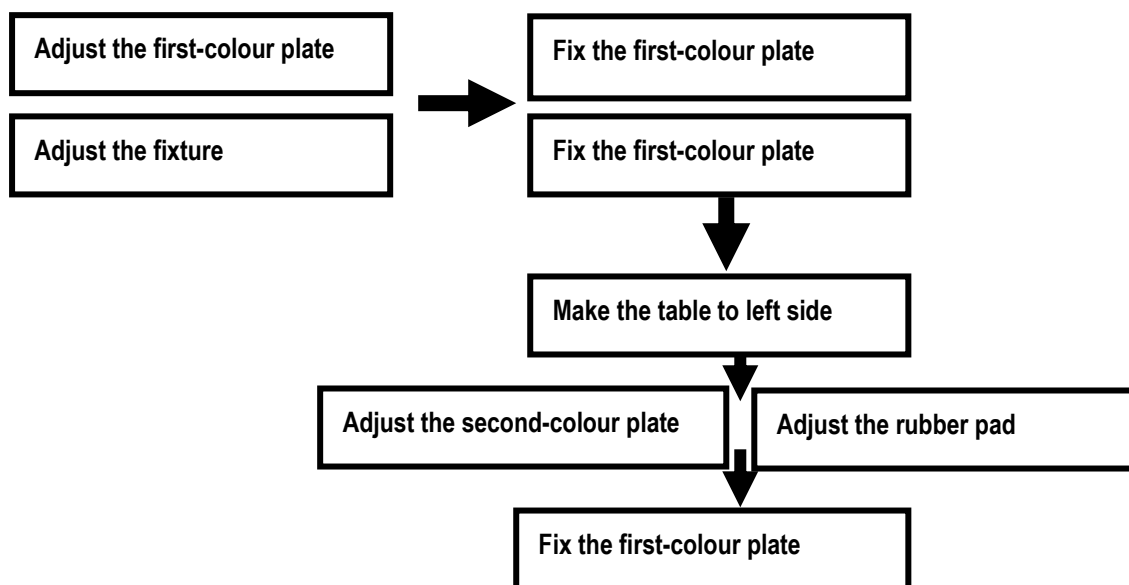
## How to adjust working table

### 11) Overprint Adjustment .

The most important task is how to finish overprint with Two colours pad printer with shuttle table. You must obey below process.

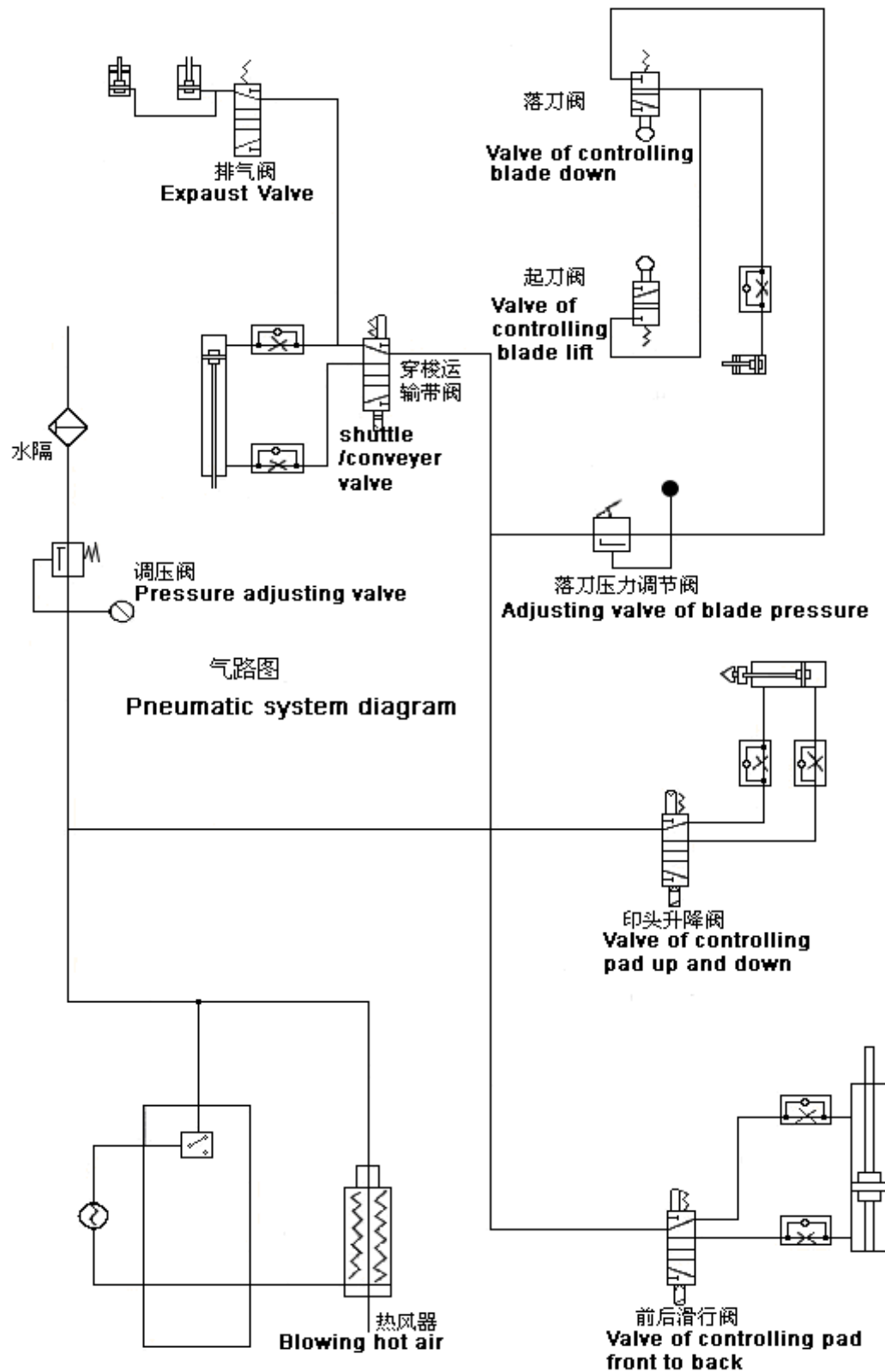


1. After installing the first colour plate, pad, ink, Please take a test , Make sure printing Words K onto correct position. Then fix the plate and fix the fixture.
2. Operate this machine and make the working table move to left side. Notice that do not adjust the position of fixture. Please adjust the position of the second colour plate, when you think the overprint precision is accord with samples. Then fix the second.



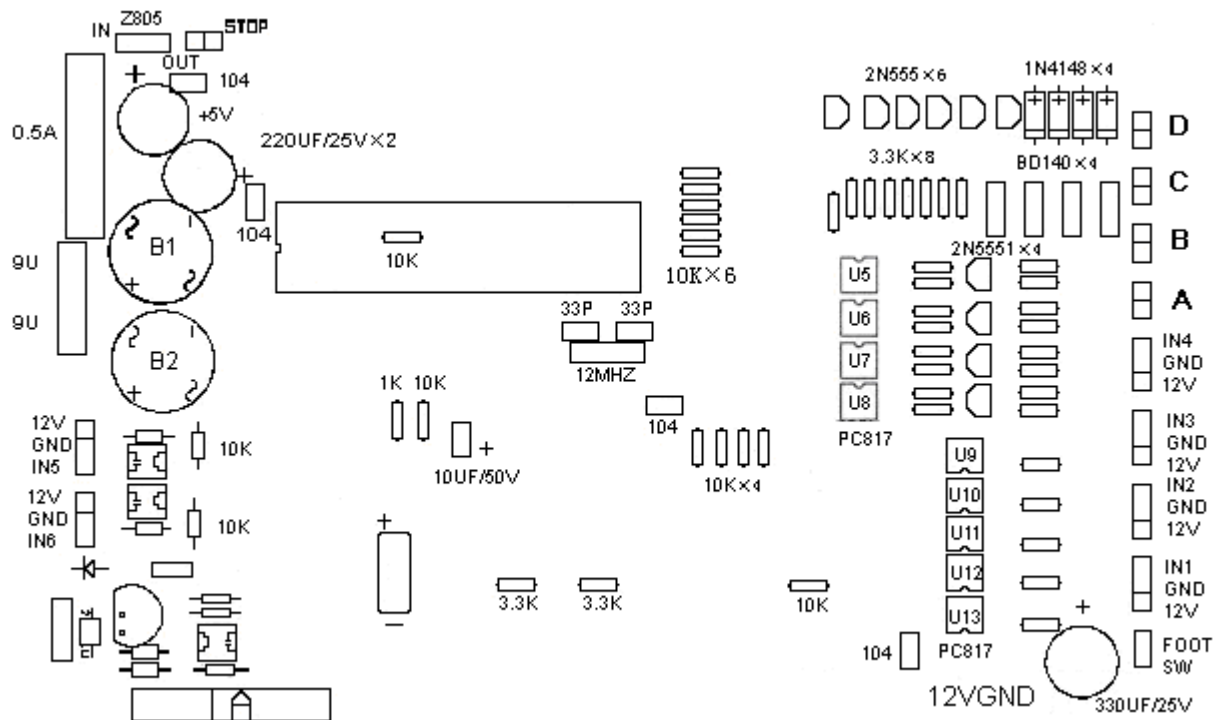


## 6. Pneumatic-controlling drawing.





## 7. Circuit diagram



### Instructions:

D----connects to solenoid valve of the last two cylinders for sliding the shuttle.(the4 colour 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**

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Website: [Http://www.lc-pm.com](http://www.lc-pm.com)

Online contact Skype: yingsuhuakelven QQ: 726986799 Whatapp: 0086-13592766499

Email: [sales@lcpadprinter.cn](mailto:sales@lcpadprinter.cn)





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

12v

GND

IN6

## 8. Maintenance

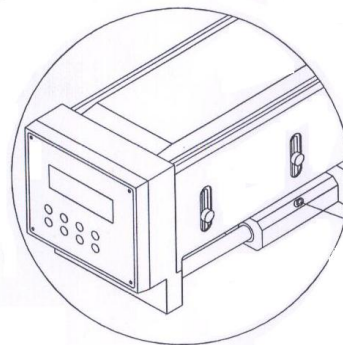
- 1> Keep the cleanness of the surface of machine. Please clean the machine with Alcohol or some solvent to clean the machine body. Installing pad printer in a dustless room will belong the usage life
- 2> Wipe the slide parts and infuse lubricant to them weekly.
- 3> Drain the contaminative water accumulated in the filter frequently in order to prevent the water from flowing into the inner pneumatic system. Compressor air source will influence Pneumatic parts including solenoid valve, Cylinder Jar. It is very important to keep air clean and drying.
- 4>.After the printing work, remember to clean the pad, plate and ink roller.

## 9. Precautions

1. The size of the plate should be compatible with size ink scraper clamp and ink roller

2. Pay attention to the choice of pad:

The hardness of pad includes the “soft”, “medium” and “hard”, if prints precision design, you should choose the hard pad, while prints on accidental surface, use the soft pad, furthermore, the volume and shape of pad should be similar with size of the design and surface shape of the workpiece. Please avoid the center of rubber pad to print the center of design.



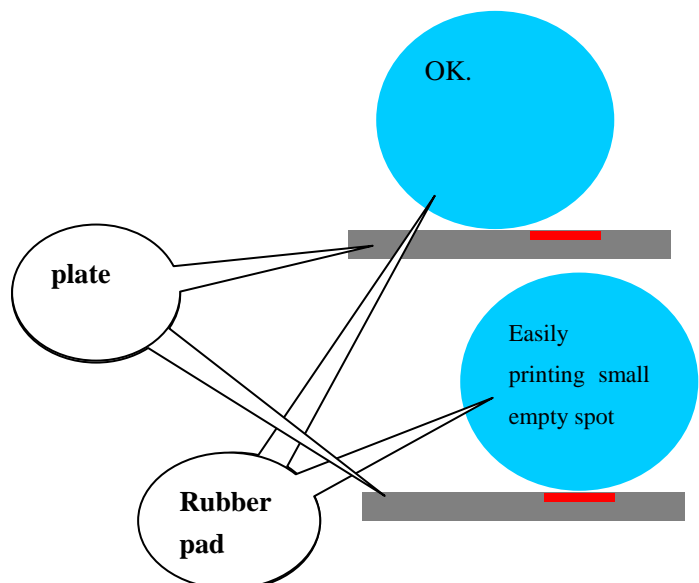
3. Usage of the ink:

According to different kinds of workpieces, such as plastic, glass or metal, etc, you should choose different inks, and the ink should be stirred before pouring into the ink cup.

4. When operation of the machine is paused, you should let the ink, scraping system go on working in order to prevent the ink from air-drying.

5.

6. During printing, you should infuse thinner into the ink cup according to different air-dry speed of the inks in order to keep the proper viscosity of the ink after infusing the thinner, stir the ink immediately. If the pad is stained, clean it with the cleanser.





7. Make the holding fixture for the work-piece in advance based on its shape.

## 10. Other Instructions

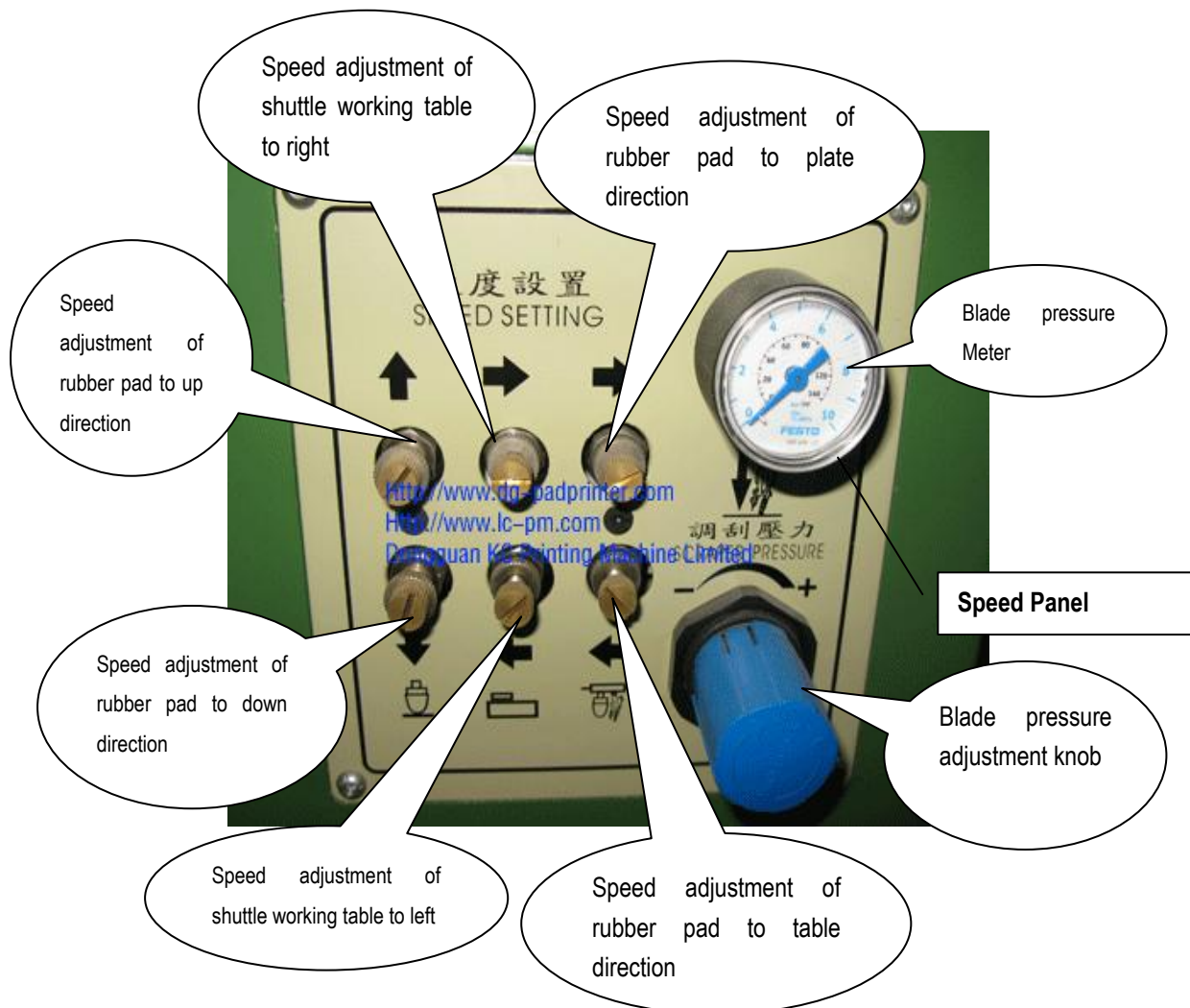
- **Speed Panel of pad printer**

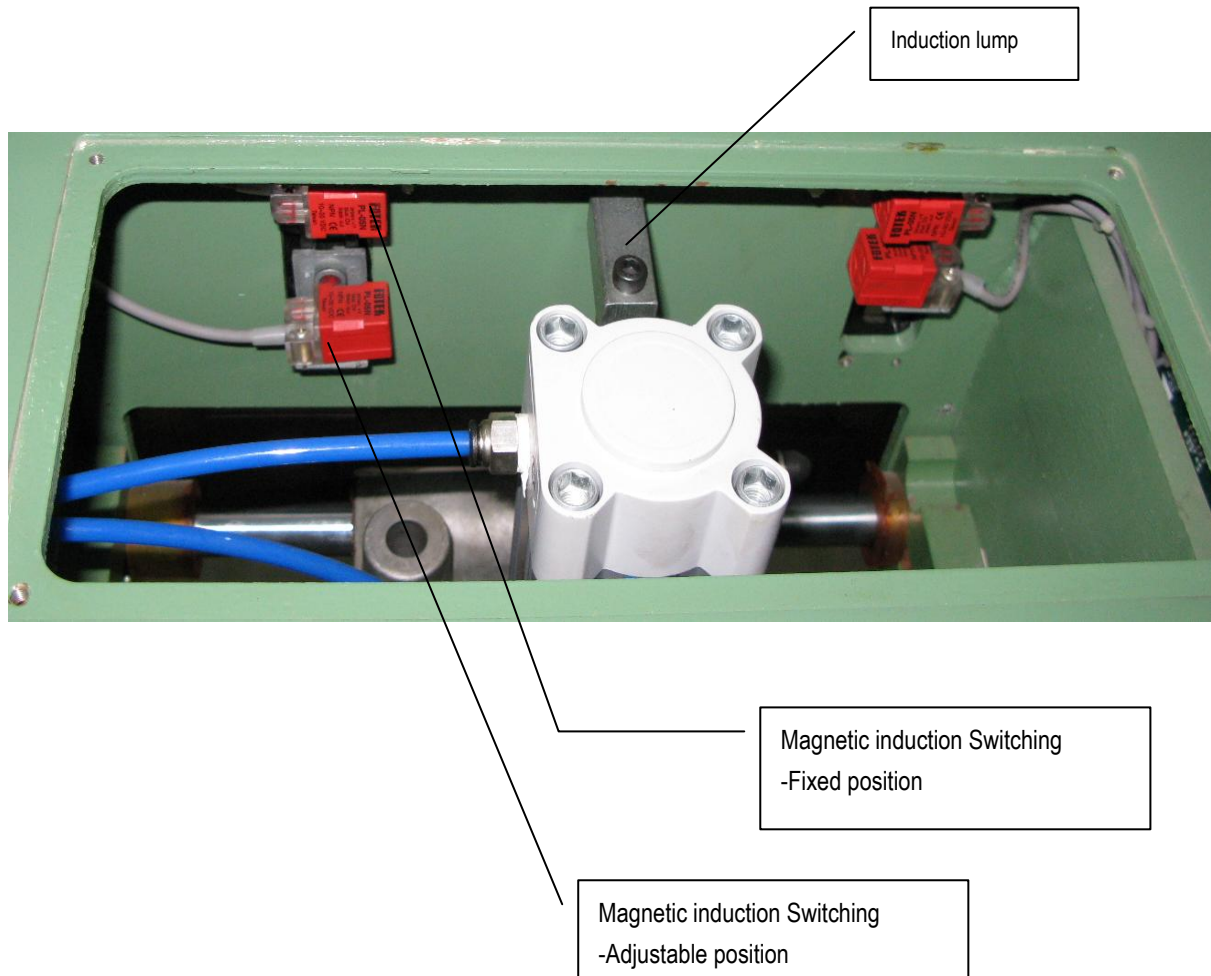
When you only adjust the speed of rubber pad combine parts , please adjust the screw of speed panel drawing

- **Power supply panel**

After you connect with power supply, you must open the switch of mainly power panel to start the machine. If you open the switch and find no display on IC panel, Please check the fuse.

You must push the slide valve of air combine part to connect air tube. Please remember open the air knob, or the compress air can not entering into pad printer. Please adjust the Knob till the pressing meter display 5-7 bar.█





There is one Limited switch installed on the screw, When move it to different position, it will touch the Block installed on Blade combination part, Limited switching control the blade up or down. The position decide the position of blade Lowing and lifting.

The best position is lifting up after removing all ink covering on design

