



Pad Printer

Four-color open-ink-tray pad printer with shuttle

SP4-406

SP4-408

OPERATION INSTRUCTION



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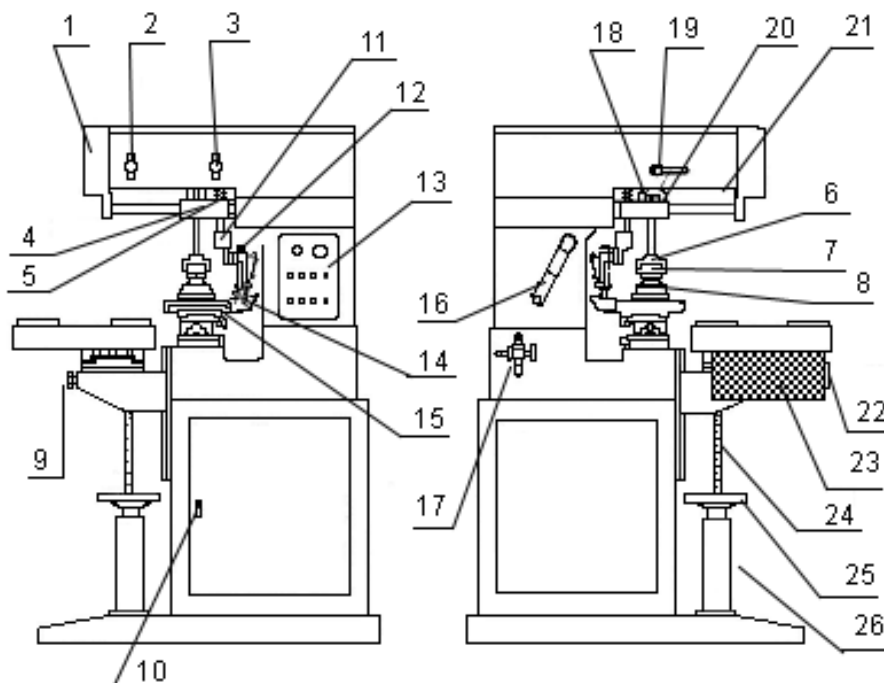
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Preface

LC Printing Machine 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- Controlling panel of pad printer
- 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

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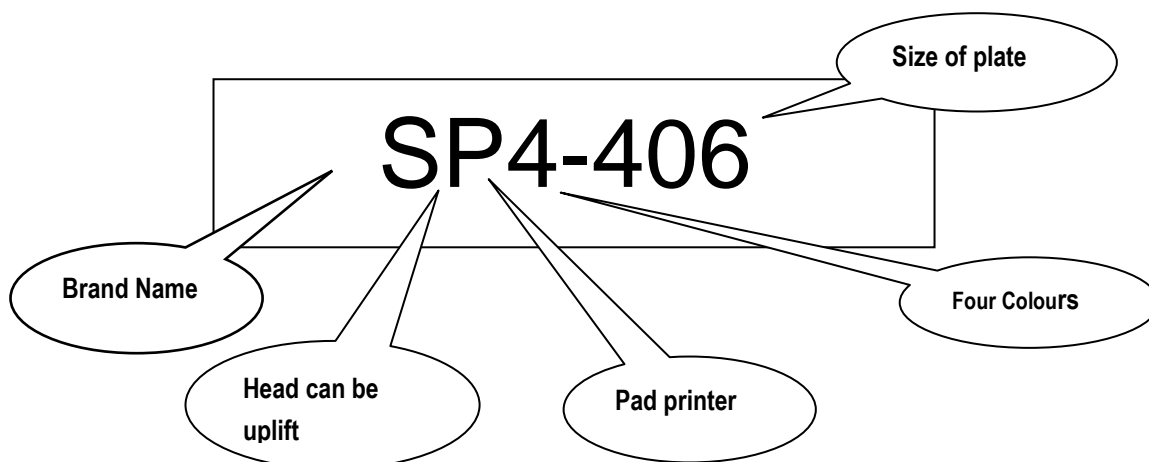
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2. Models and plate size of pad printers



Model	Description	Plate size
SP4-406	Pneumatic 4-colour pad printer with shuttle	100*150 mm
SP4-408	Pneumatic 4-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.



2. Power supply.

The machine applies both 220v and 240v electrical source, the consumption of compressed air is 0.43/CYCLE.

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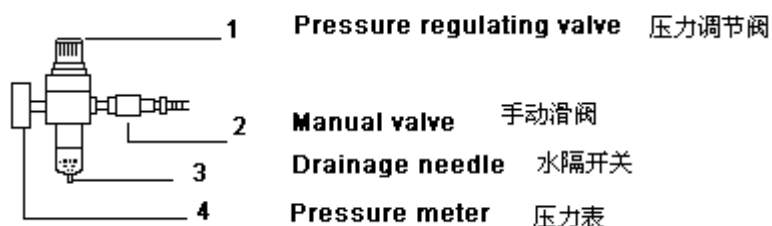
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3. Adjusting the pressure meter.

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 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

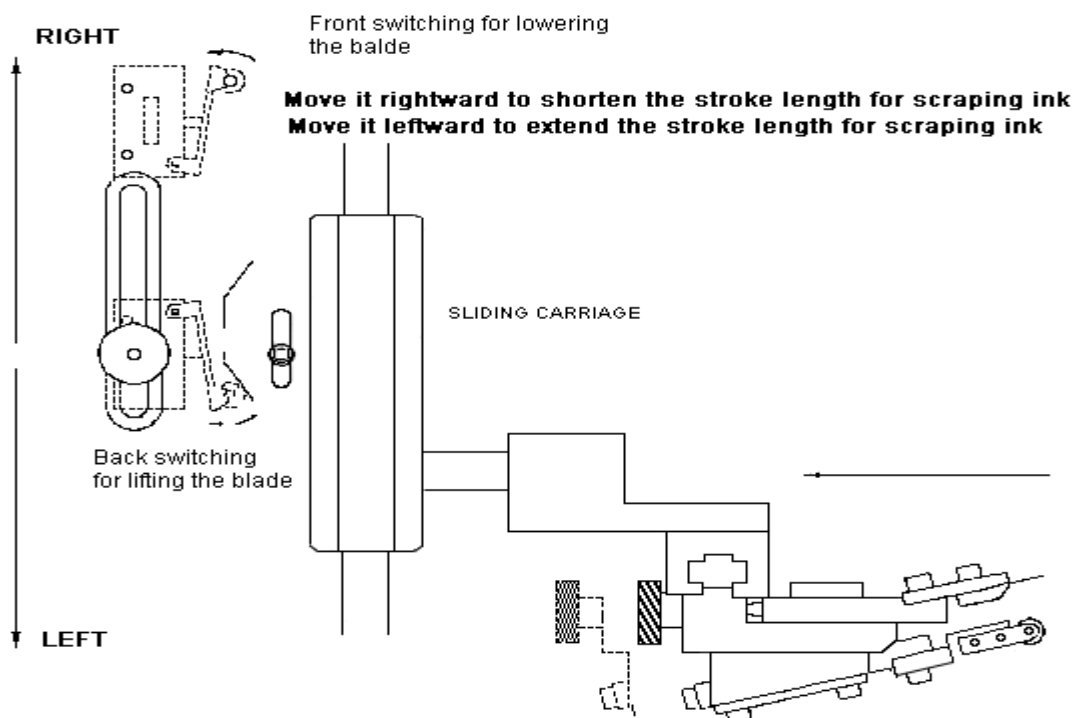
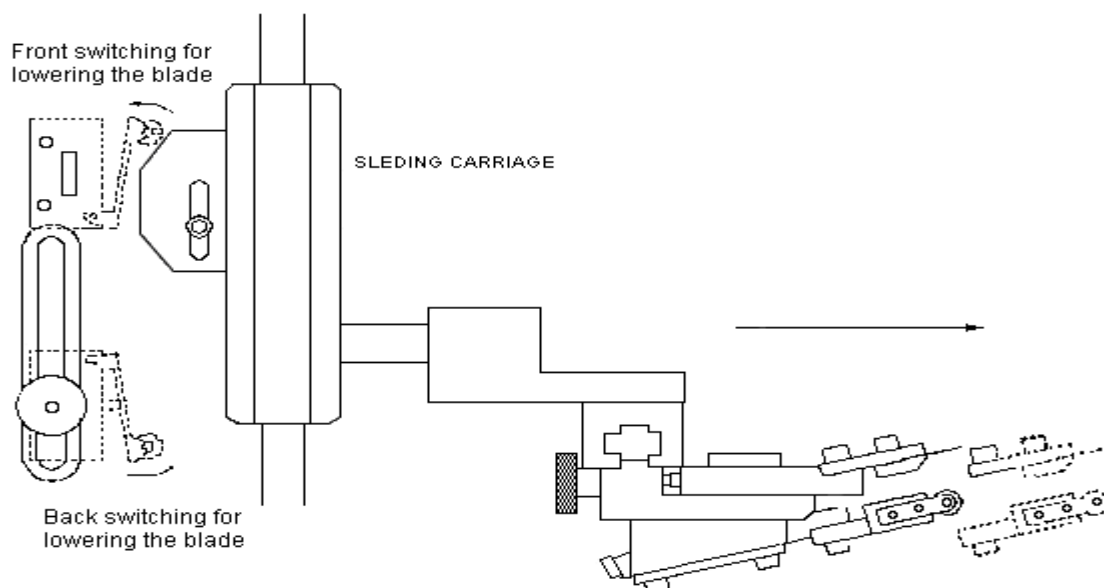
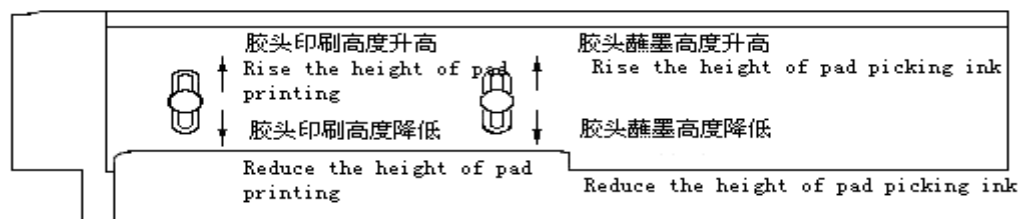
counter on the IC panel displays "000000", if it displays other numbers, then the machine can not be started, you should check the electric circuit.

- 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 ink scraping stroke length

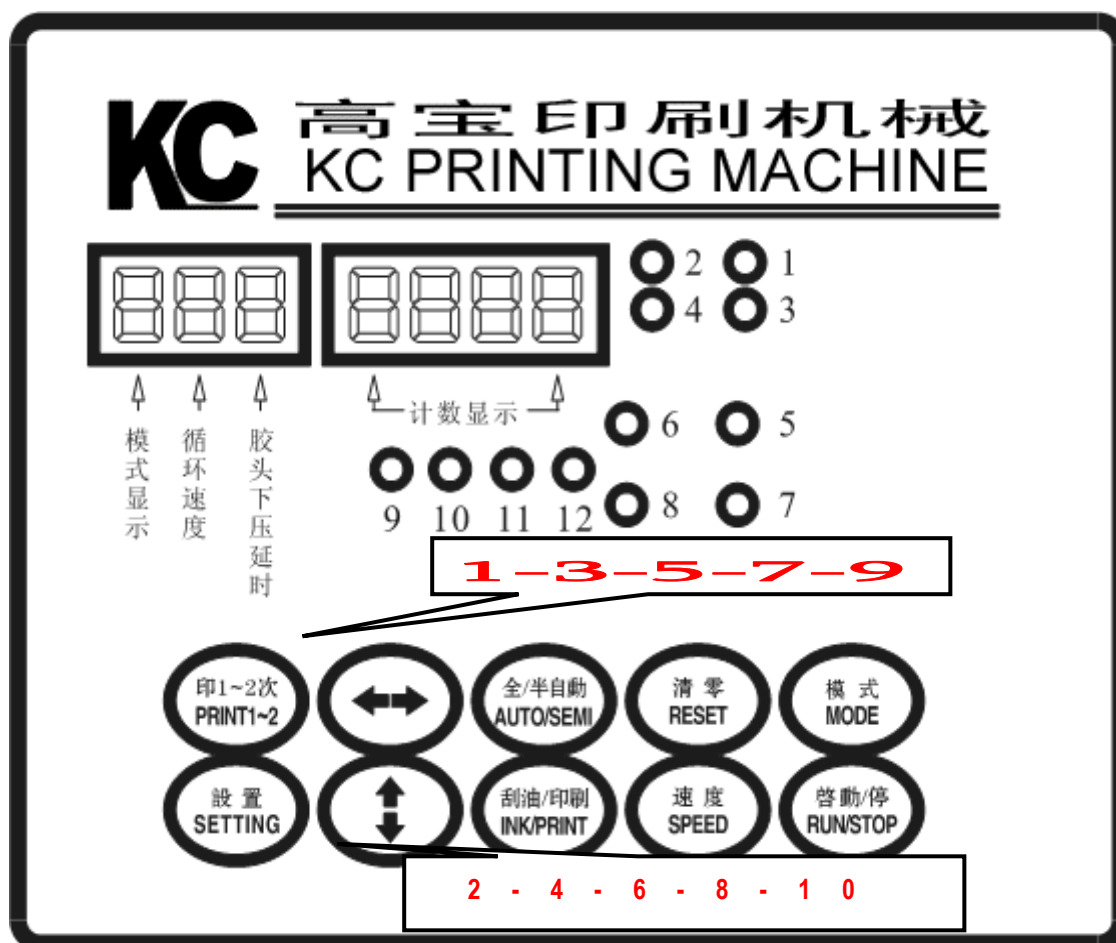
6. Adjusting the vertical stroke length of pad







4. IC Panel



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

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● Drawings and instructions of each key part

Functions 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” you can operate this machine with foot-switch ; 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 “4”;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 move ahead one workpiece.
 - iii.3>--Dipping ink once or twice, printing twice, and the conveyor will move ahead one workpiece.
 - iv.4>--Dipping ink once or twice, printing three times, and the conveyor will move ahead one workpiece.
- 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.

So we suggest you operate this machine under these mode.:

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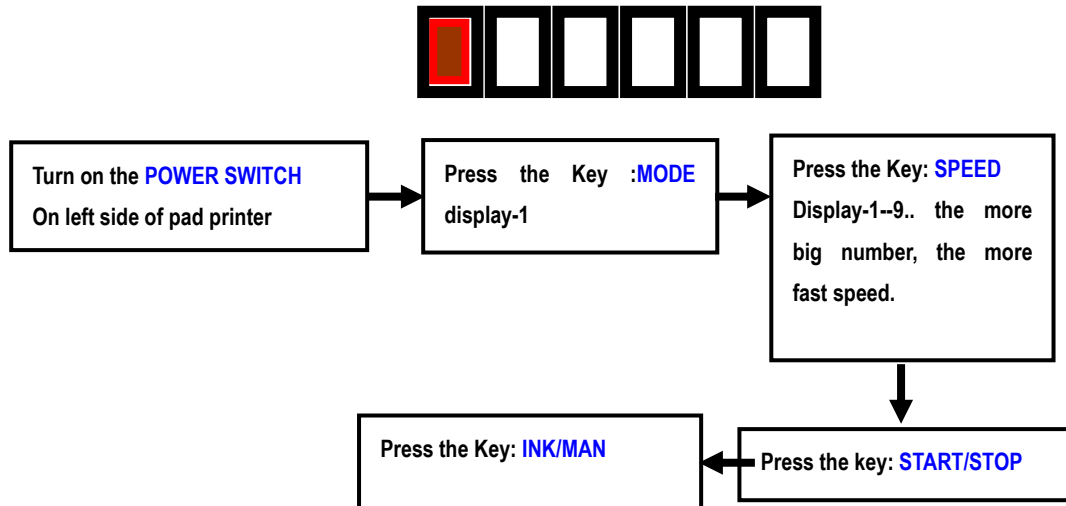
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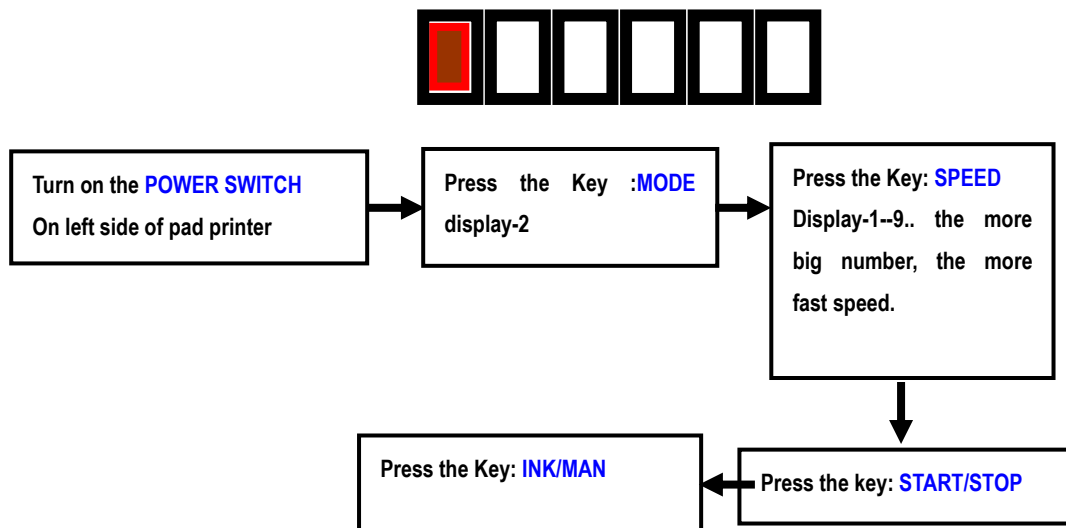
- 1- Print one colour with four colours pad printer with shuttle.

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



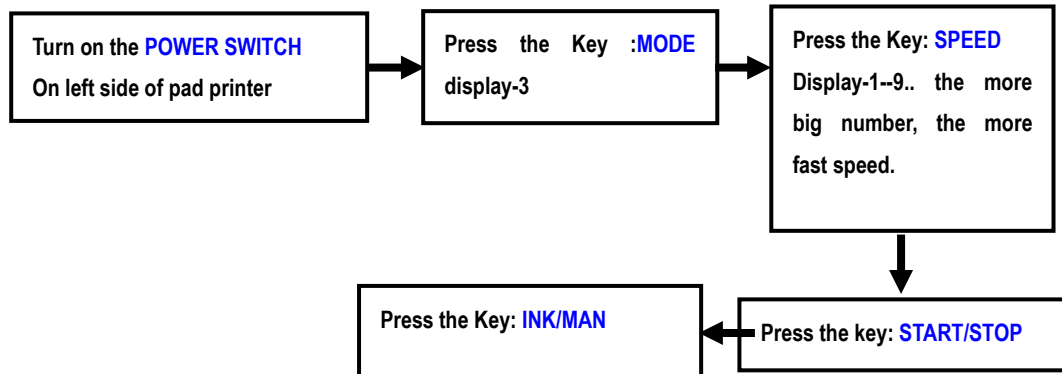
- 2-Print two colours one time with four colours pad printer with shuttle.

Press the “**MODE**” key. The indicator 1 display: **2**”. Then press **start/stop** key, Press **MAN/INK** key, the machine will print two colours and working table keep movement for one station to the second station.



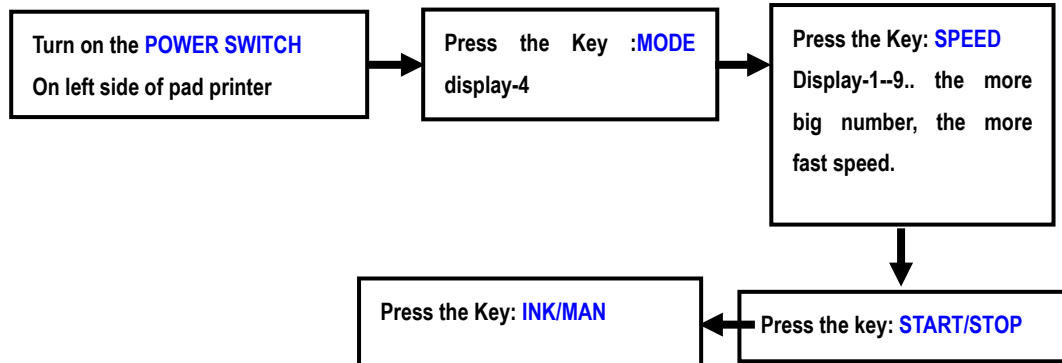
- 3- Print three colours with four colours pad printer with shuttle.

Press the “**MODE**” key. The indicator 1 display: **3**”. Then press **start/stop** key, Press **MAN/INK** key, the machine will pick up ink one time and print three times and working table keep movement for one station to second, third station.



- 4- Print four colours with four colours pad printer with shuttle .

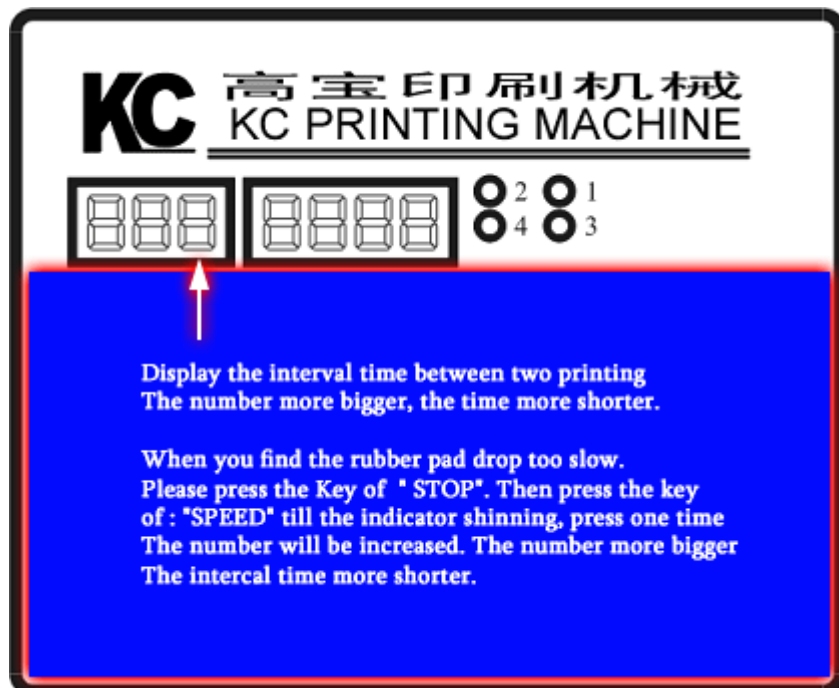
Press the “**MODE**” key. The indicator 1 display: **4**”. Then press **start/stop** key, Press **MAN/INK** key, the machine will pick up ink one time and print three times , working table keep movement for one station.



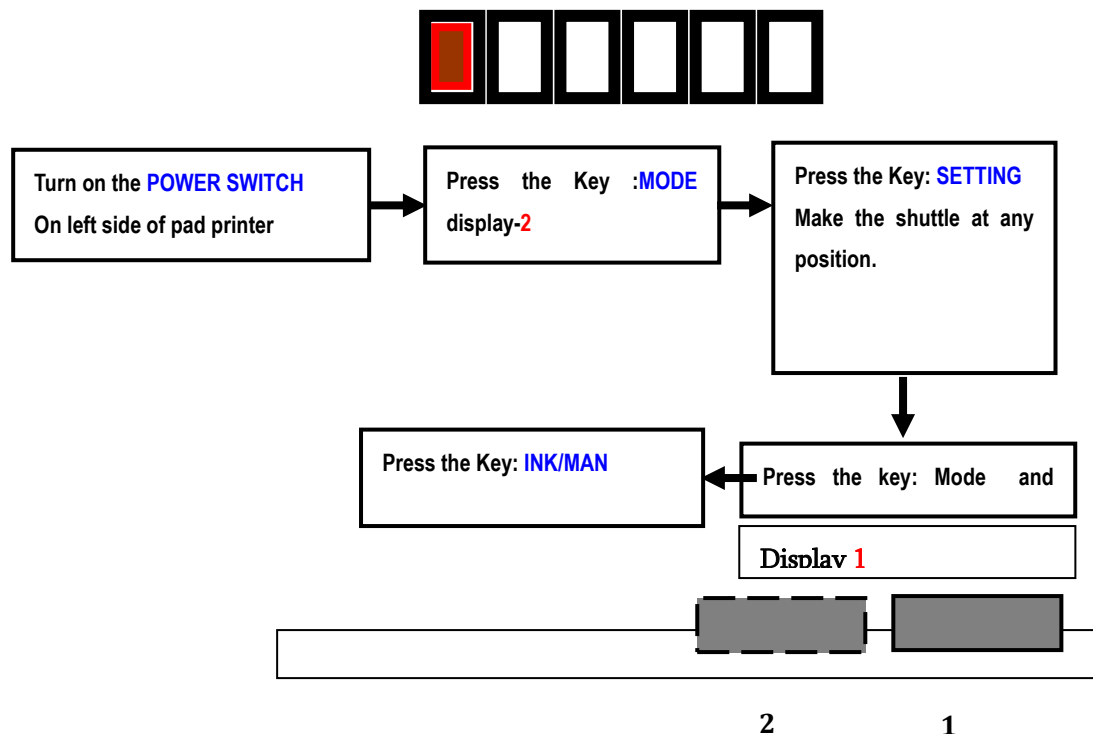
- When you want to change another mode, please first press the key of : **RUN/STOP**.
- When you want to operate this machine with foot switch, please press the key of **RUN/STOP**. Then press the key of **SEMI/AUTO**. There is one footswitch inside of tool box, Please install it onto the pad printer.
- When you find the speed of pad dropping is too slow, Please Press the key of **RUN/STOP** , Then press the **SPEED** Till the third LED digital shining , Please press this key till the number become bigger.
- When you want to get more thicker ink film, Please Press the key of **RUN/STOP**, Then Press the key of **PRINT1-2**.
- If you left in seconds, please do not stop the machine, Please press the key of **INK/AUTO**, make the machine enter Ink Mode. This method will avoid ink drying.



Importance Prompt



If you want to print one colour with this machine and make the shuttle stay at different position.



After setting, the machine will print one colour and shuttle stay at the Position 1 or 2.

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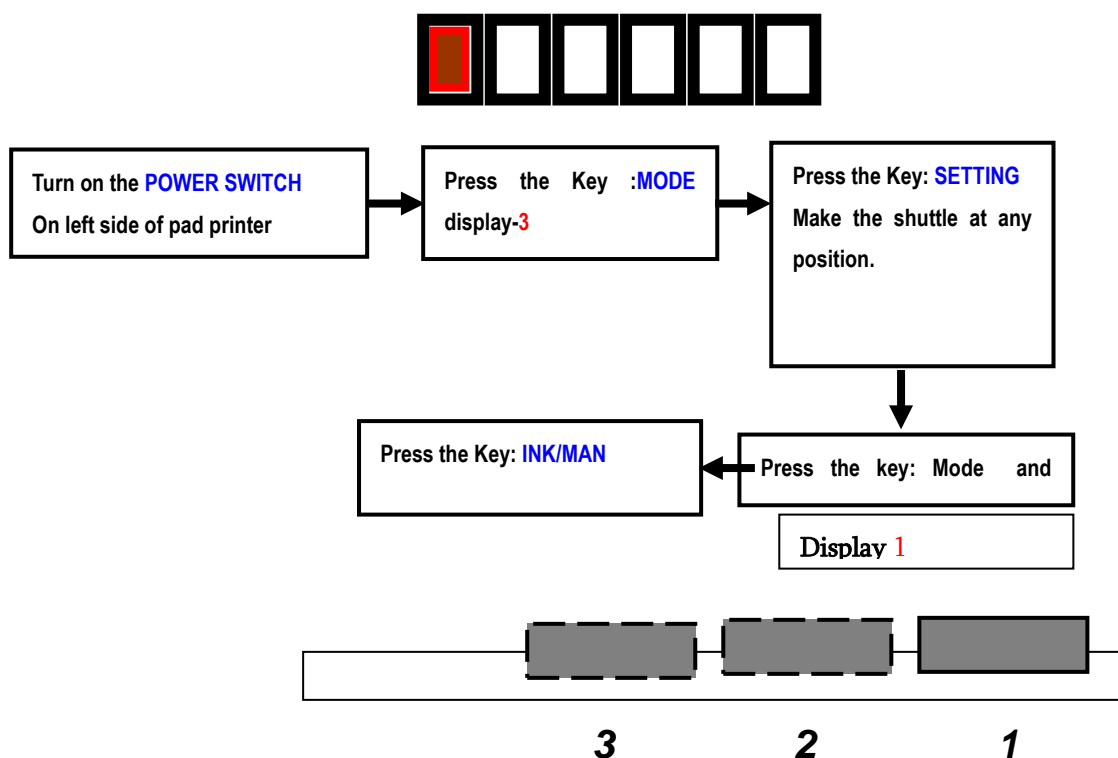
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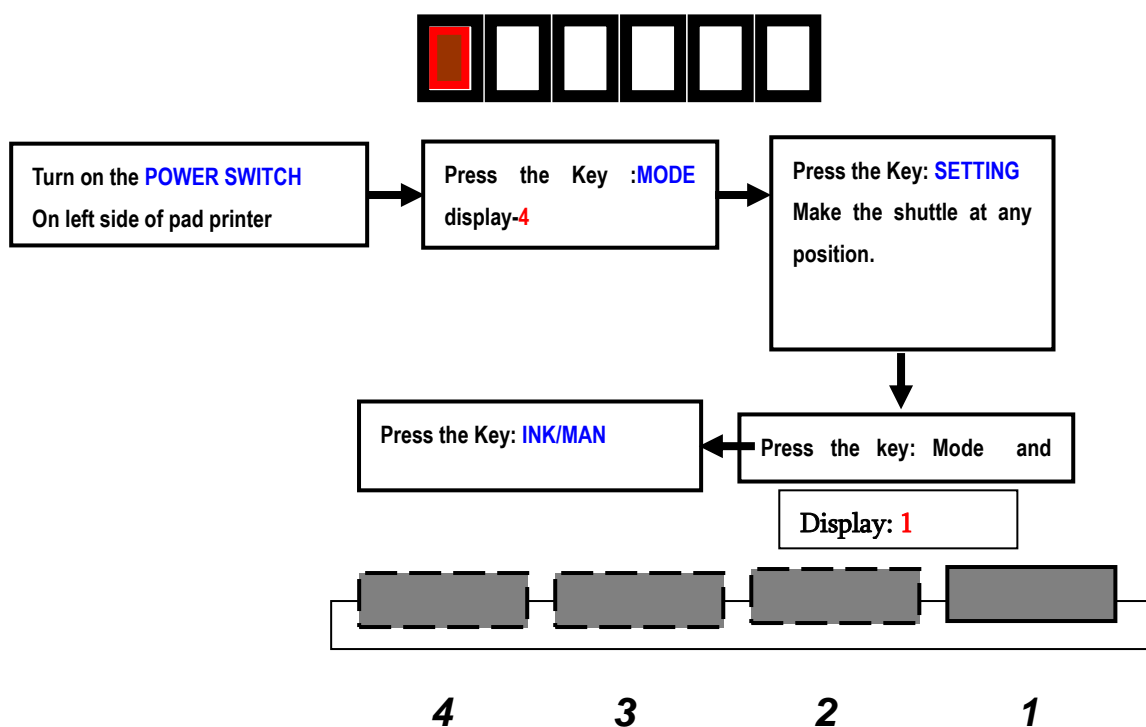
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After setting, the machine will print one colour and shuttle stay at the Position 1 or 2 or 3.



After setting, the machine will print one colour and shuttle stay at the Position 1 or 2 or 3 or 4.

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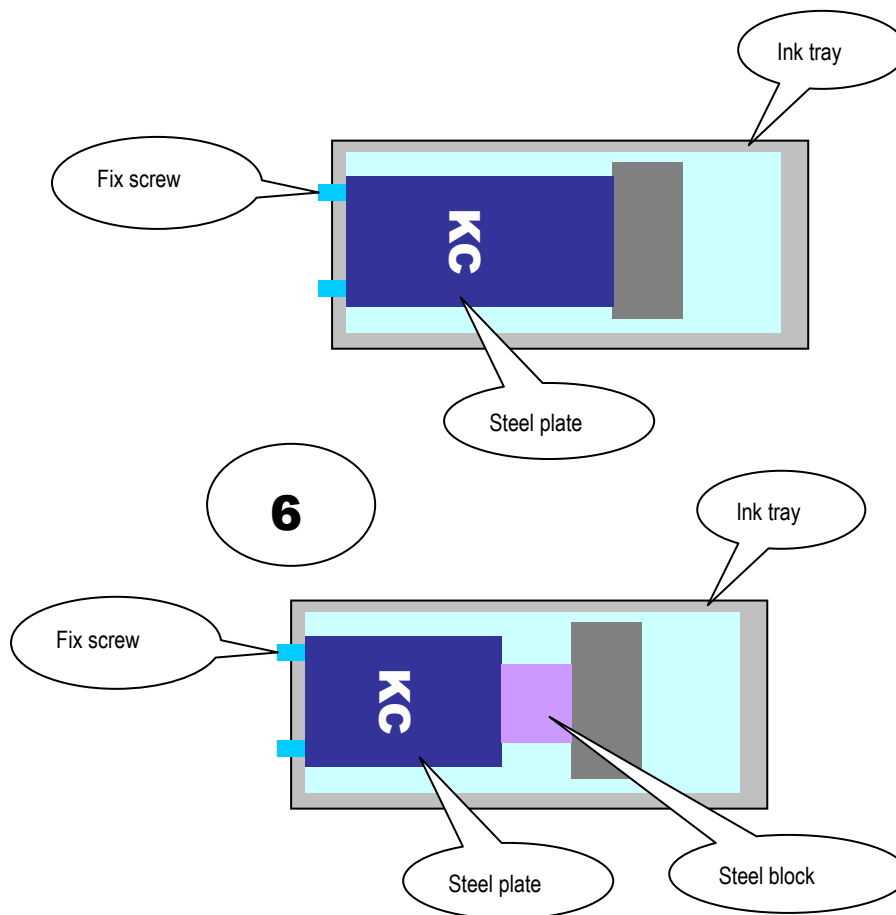
5 . Operation Process of machine

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. There are four Al plates in the tool box. Please see the drawing 6 to know hot to

use the aluminum plate.

LC pad printer use 10mm Thickness steel plate, if you want to use polymer plate, we will make magnetism plate for you.

5) Install ink roller.

There are one set ink roller (4) in tool box, Please install it according to the drawing. SP4-40616 and SP4-40816

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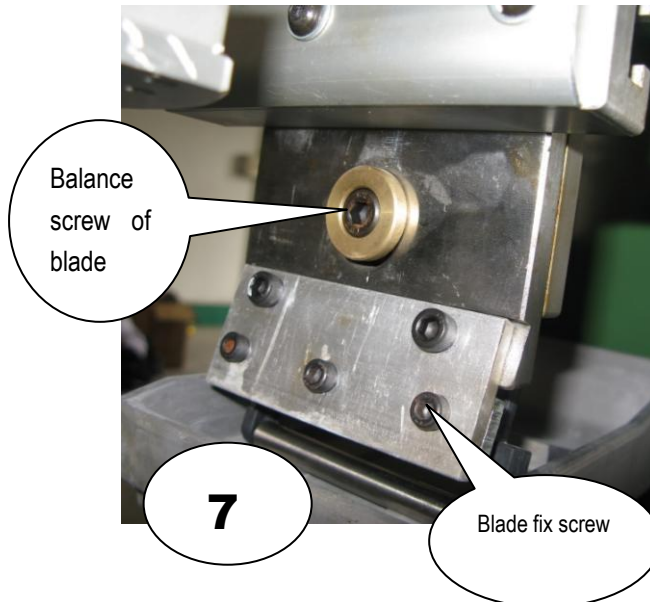
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use 100mm ink roller, SP4-60618 and SP4-60818 use 150mm ink roller.

6) 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.



(7). 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.



8) Installed 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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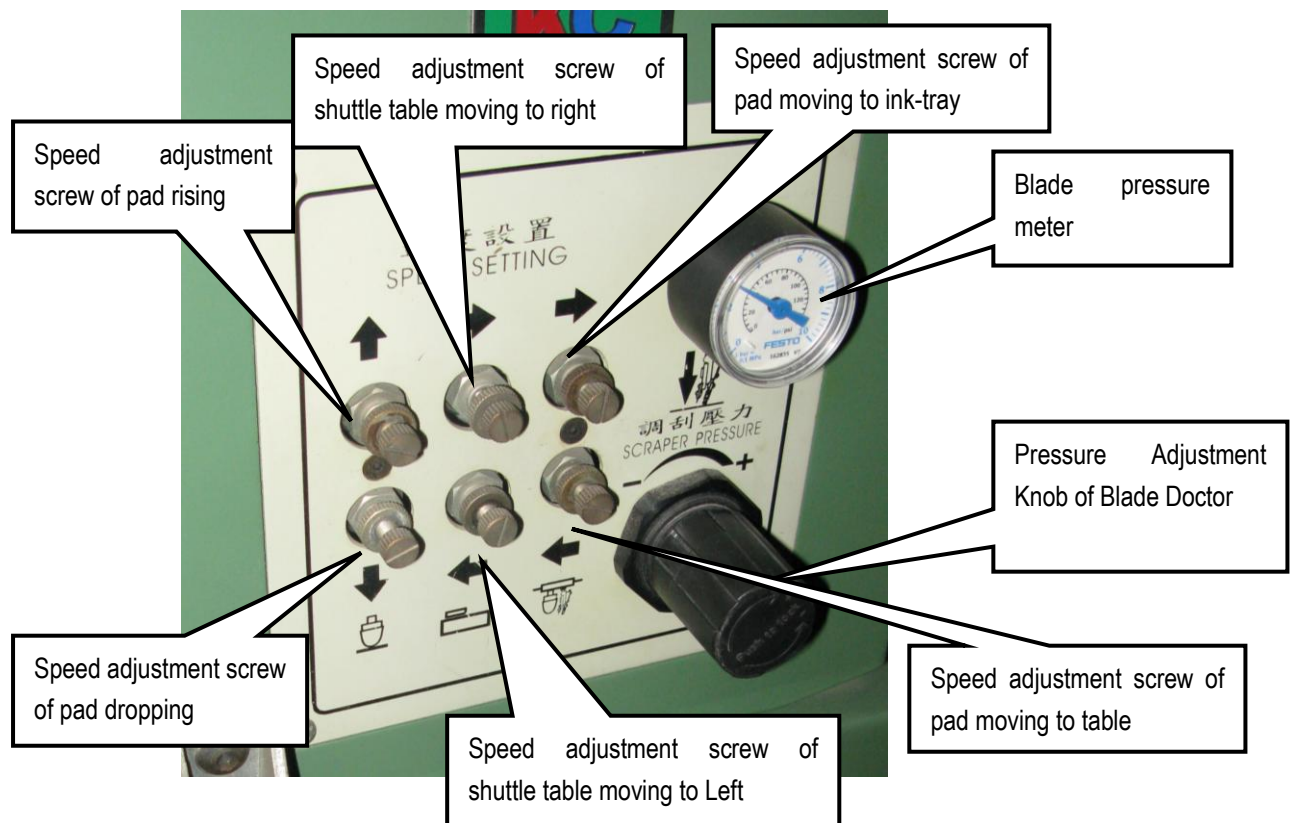


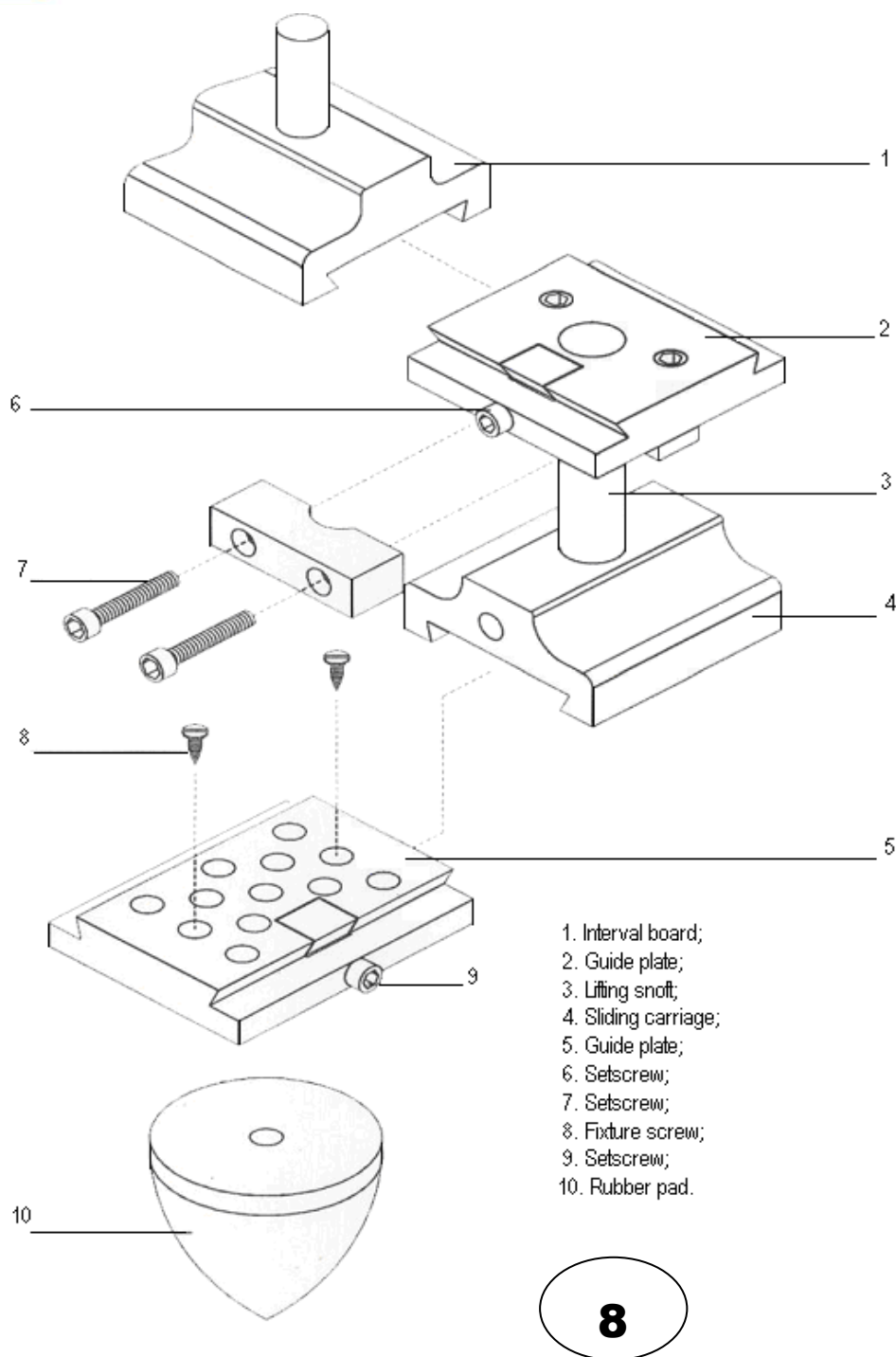
9) Install fixture.

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.

When you use four colours pad printer to print four colours, you need 16 fixtures. There are 16 stations on the working table, Please install them one by one.

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

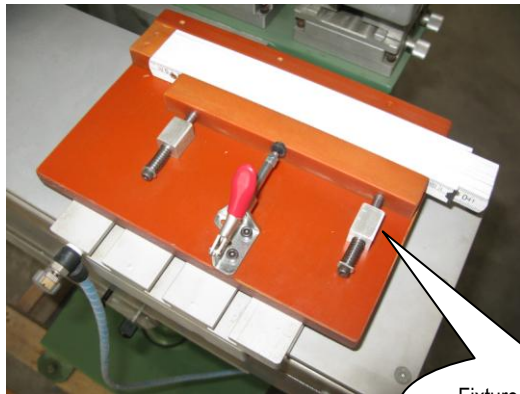




10) Adjustment of the working table. Drawing 10.

- 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);

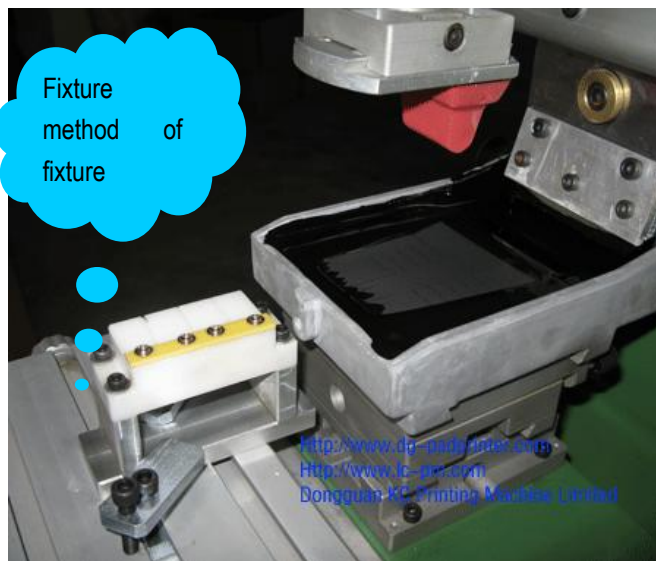
Working table can be adjusted as angle direction by turning the screw (3).



Fixture for ruler



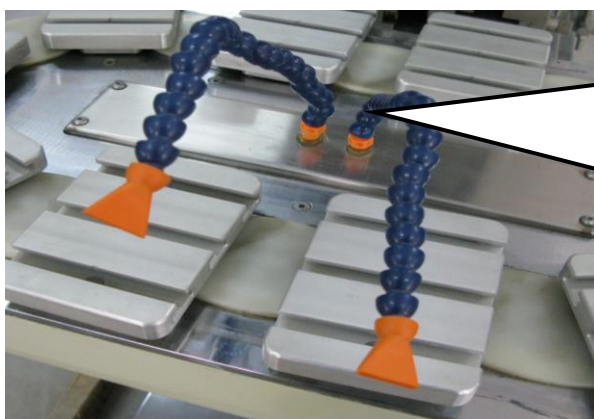
Fixture for disk



Fixture
method of
fixture

Printing
testing
drawing

9



Please install wind tubes on working table. In the process of multi-colour pad printing, air will quicken the ink drying speed.

11) 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.



How to adjust working table

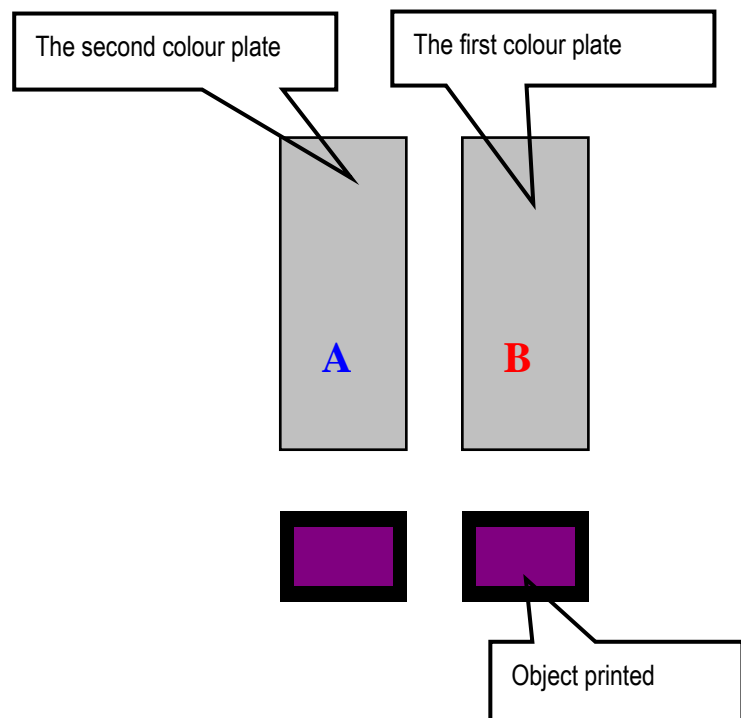
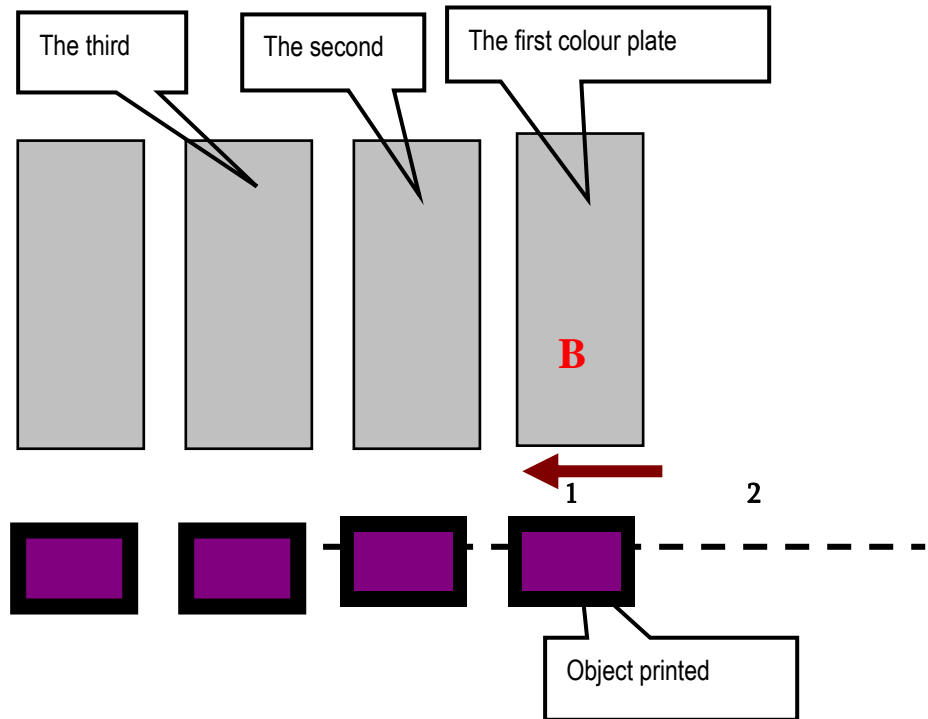
11) Overprint adjustment

Four colours pad printer have One shuttle table, It can be move at the four position. You must adjust the position one by one. Please follow the below process.

First install steel plate and one fixture with product, adjust the plate direction so that the design on plate can print correct position. When the product move to four plate one by one you must guarantee overprint is ok. Then fix all plates.

1# First adjust the first colour:

- Please arrange the printing Sequence.
- Please install the first plate ;
- 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 second colour plate to print correct position of product, fix the plate after adjusting. Till the four pcs plate can print correct position on products.



Adjust the plate position to ensure four colours can be printed same as samples,

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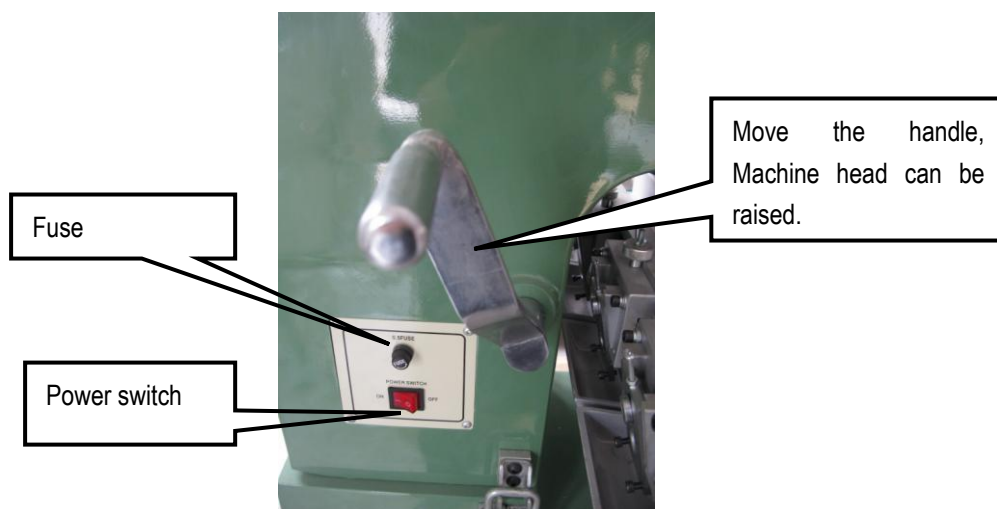
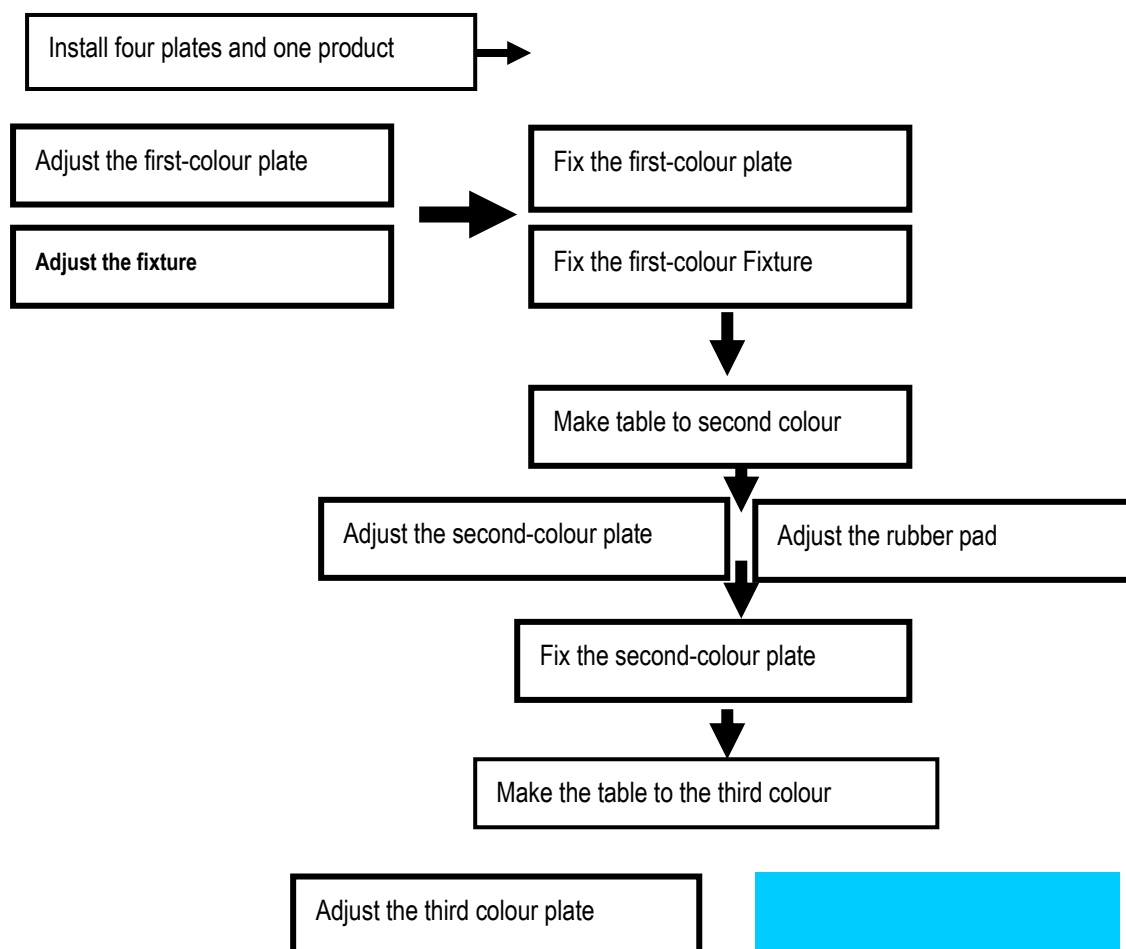
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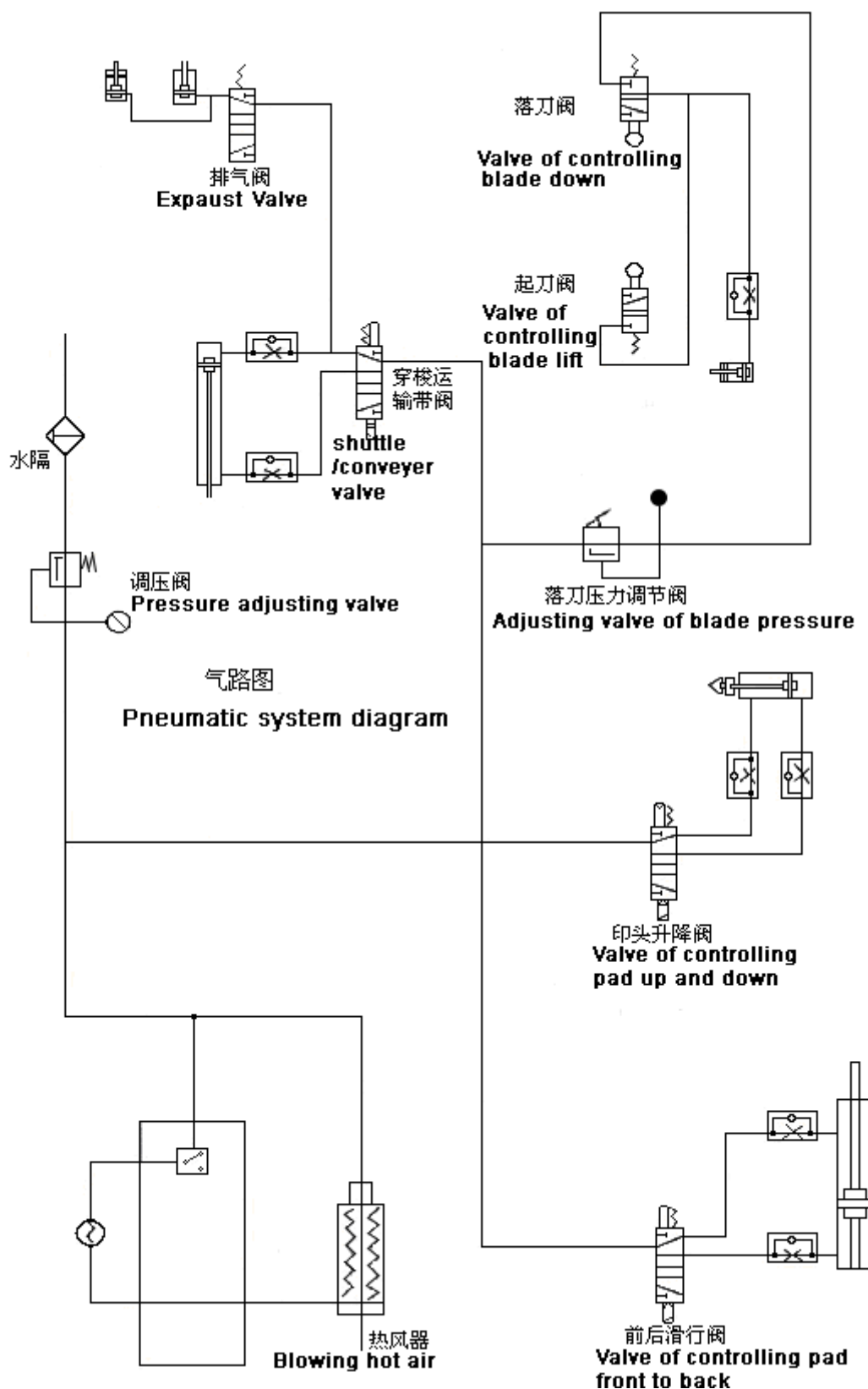
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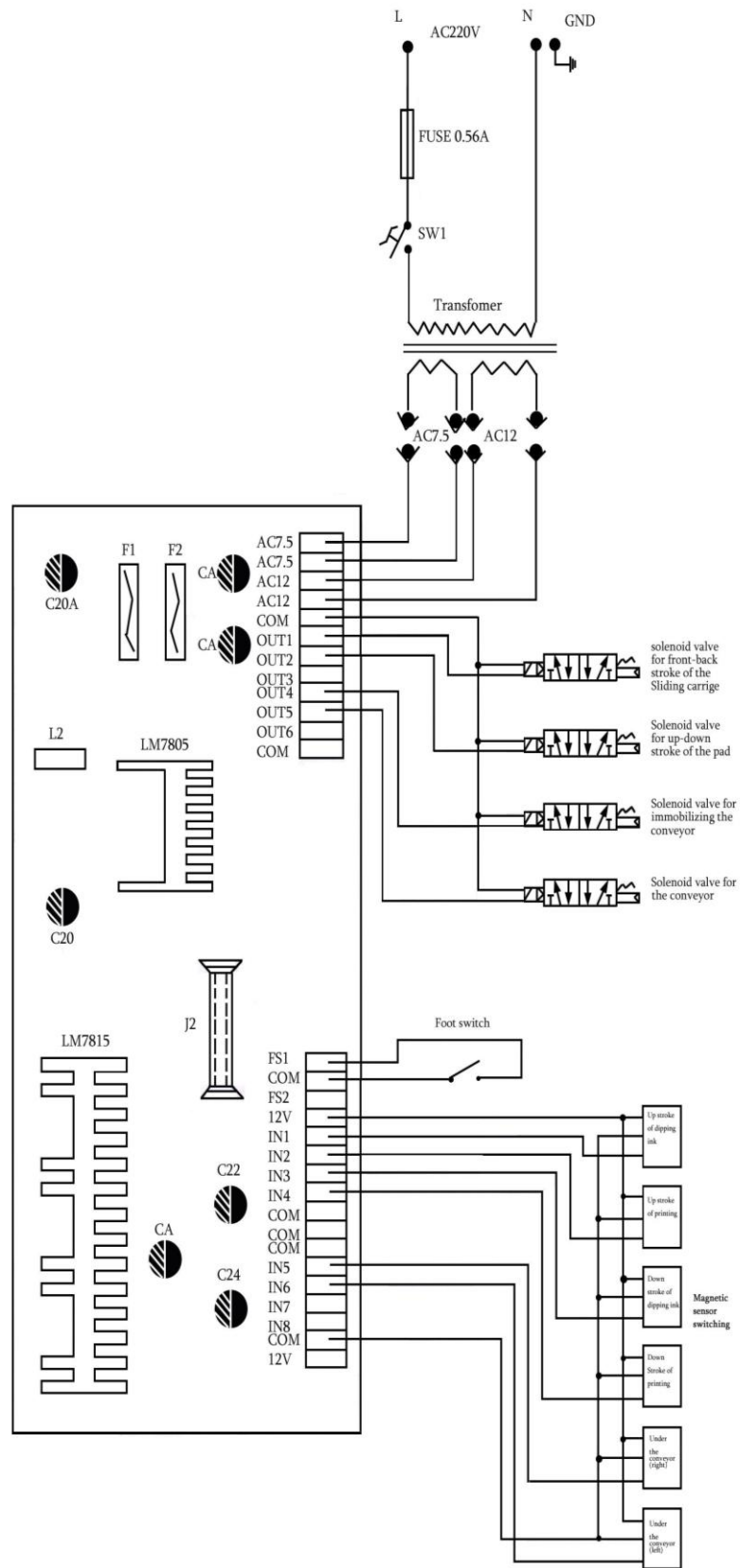


6. Pneumatic-controlling drawing





7. Circuit Drawing.



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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 enlong 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 work-piece. Please avoid the center of rubber pad to print the center of design.

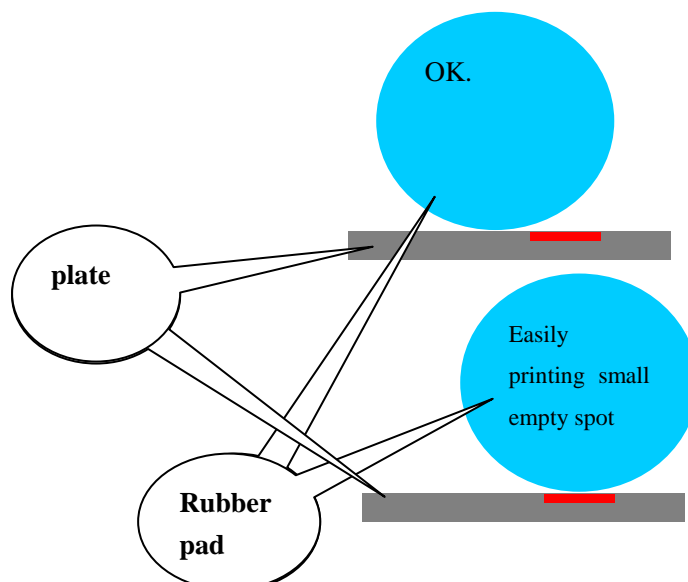
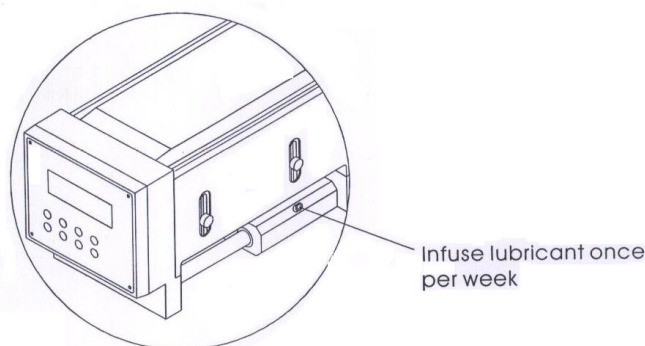
3. Usage of the ink:

According to different kinds of work-pieces, 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. 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.

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





10. Other Instructions

a) Speed Panel of pad printer

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

b) 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.

1. 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.■

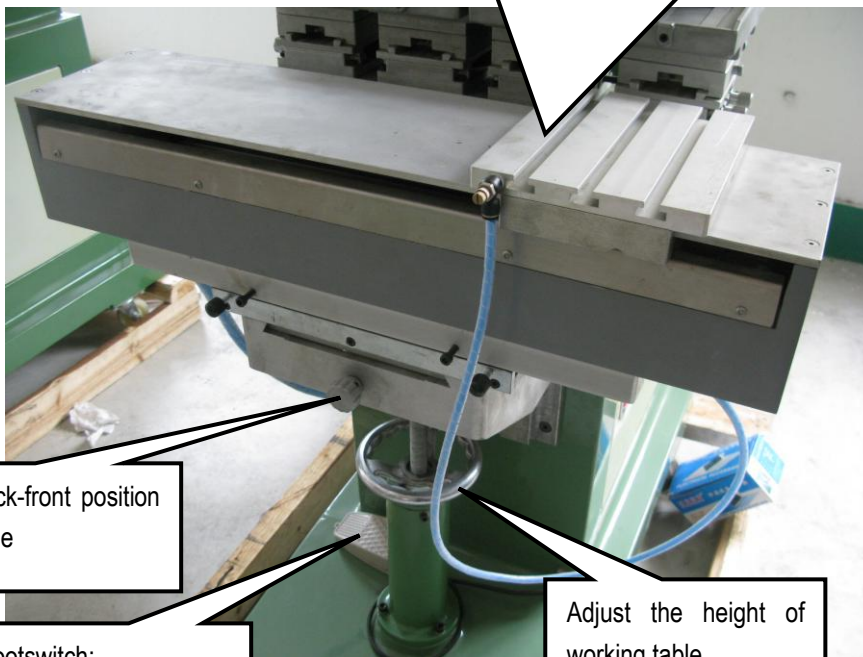
Shuttle table:

Install fixture and products, when print only one colour, the shuttle table stay at one place stillness.

When printing multi colours, The shuttle table can be moved at different spot.

Please install Blowing tube on the table when you get the machine.

When you print multi colours, need the blowing tube to dry ink.



Adjust the back-front position
of working table

Footswitch:
Drive this machine by
Semi-auto mode.

Adjust the height of
working table

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