



Pad Printer

OPERATION INSTRUCTION

**Two colors Open ink-tray pad printer with
conveyer**

SP2-40610

SP2-40810



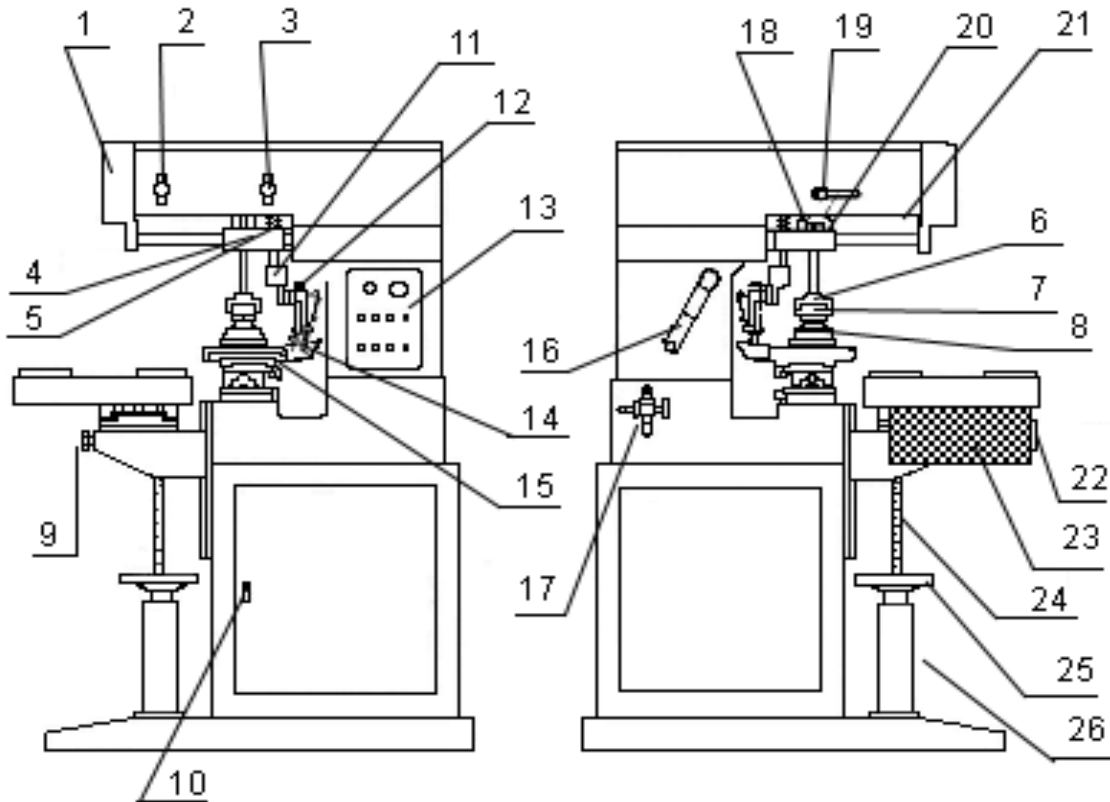
LC industrial company Limited

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Preface



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.

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	Plate area
SP2-40610	Pneumatic 2-colour pad printer with conveyer	100*150 mm
SP2-40810	Pneumatic 2-colour pad printer with conveyer	100*150 mm

Remark:

1. "P" in the model means the printer can not be turned, "SP" means head can be turned.

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.

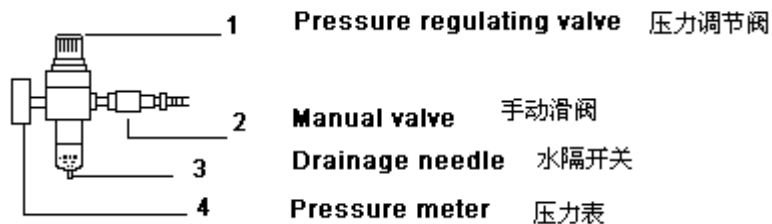
There are level adjusting screws distributed over the four footpads of machine, when adjusting, put the provided footpads on the ground first, which should be aimed at the screws. Turn the screw nut and then revolve the screws one by one in order to level the machine, finally, tighten the screw nut to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

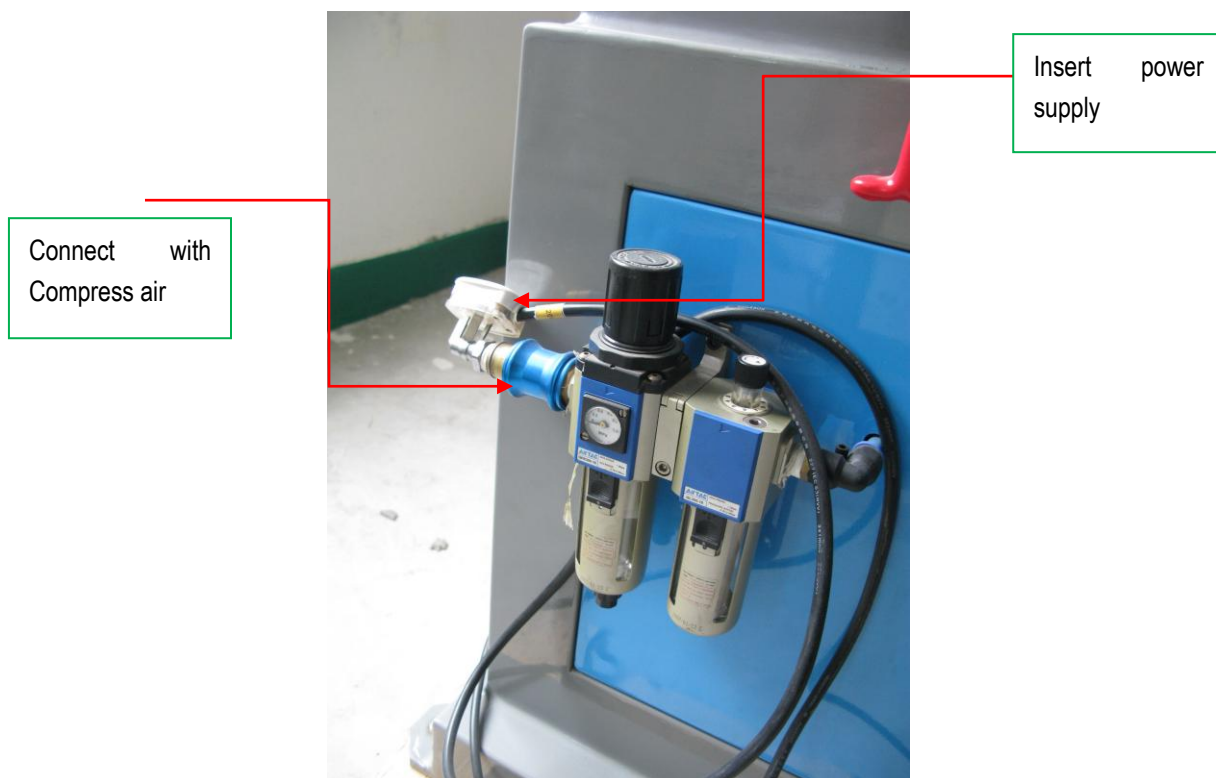
pressure.

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

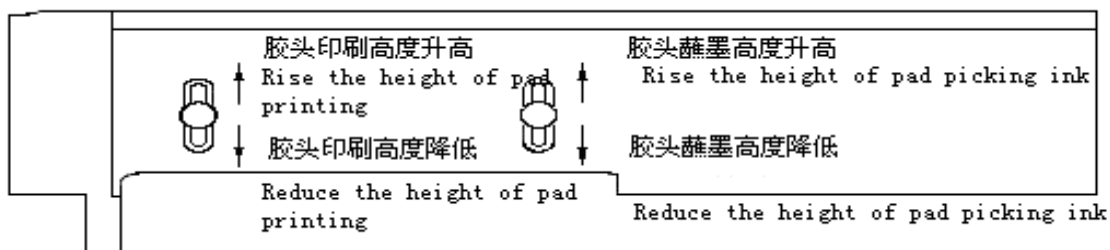


displays "000000", if it displays other numbers, then the machine can not be started, you should check the electric circuit.

- 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 (see drawing 4)

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



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7. Fixing the work-piece to the best position

1>adjustment of the 1-color pad printer (see drawing9)

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.

2> Adjustment of the 2-colour pad printer with shuttle (see drawing 10)

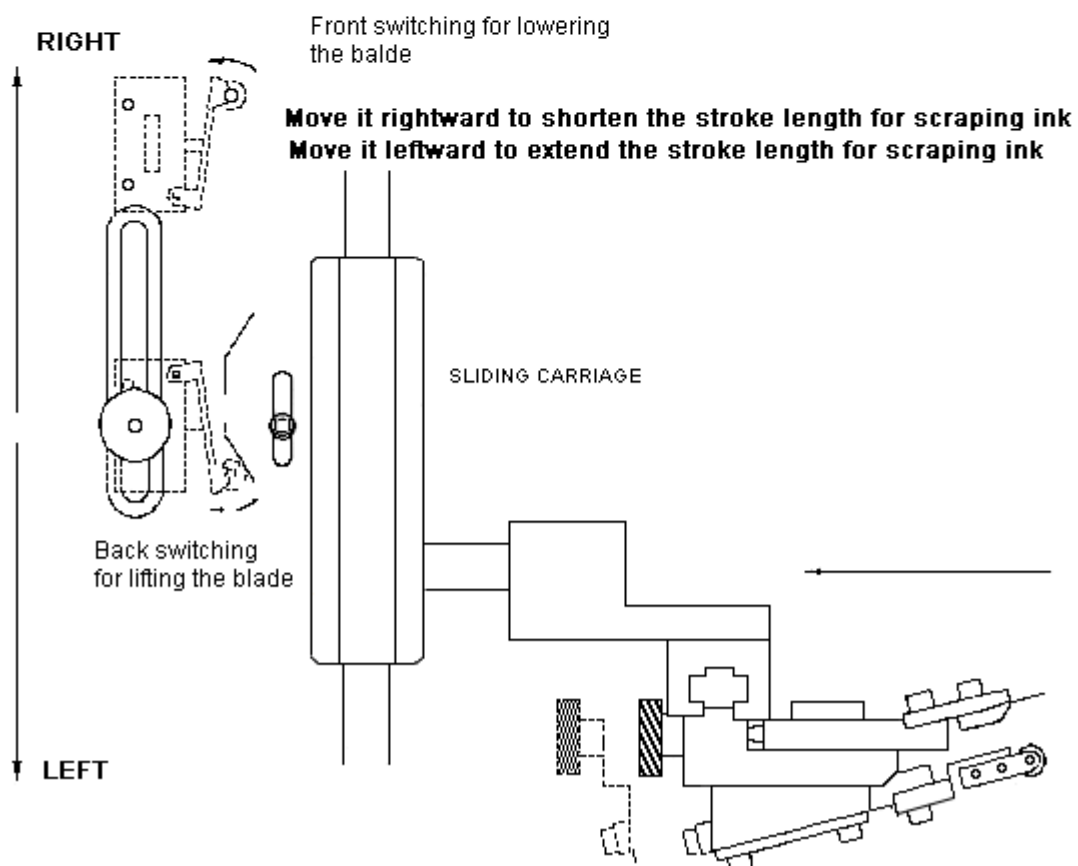
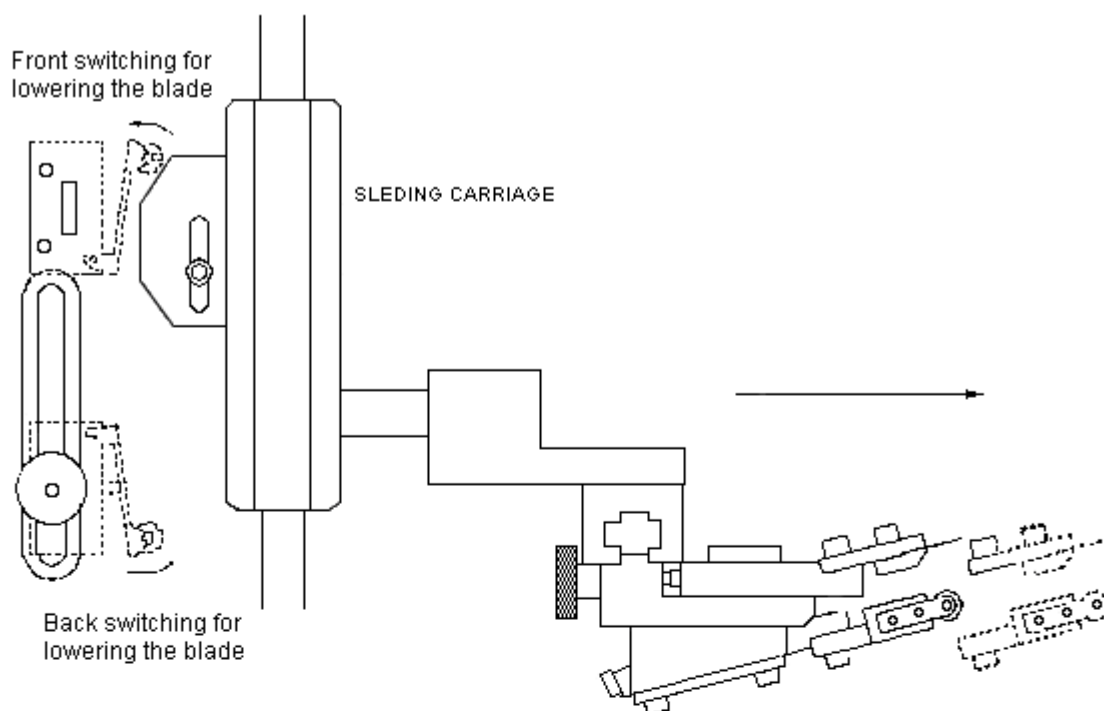
Fix the holding fixture of the work-piece to the "T" line of the worktable with the slide fixture (2) the position change method is the same with the 1-colour pad printer.

3> adjustment of the pad printer with conveyor (see drawing 11)

The conveyor usually has 8 worktables, 10worktables, and 16 worktables. Or 22worktabes, each worktable has the "T" lines and slide fixtures, for fixing the work-piece holding fixture adjusting the position of work-piece in front-back direction can be realized through following methods.

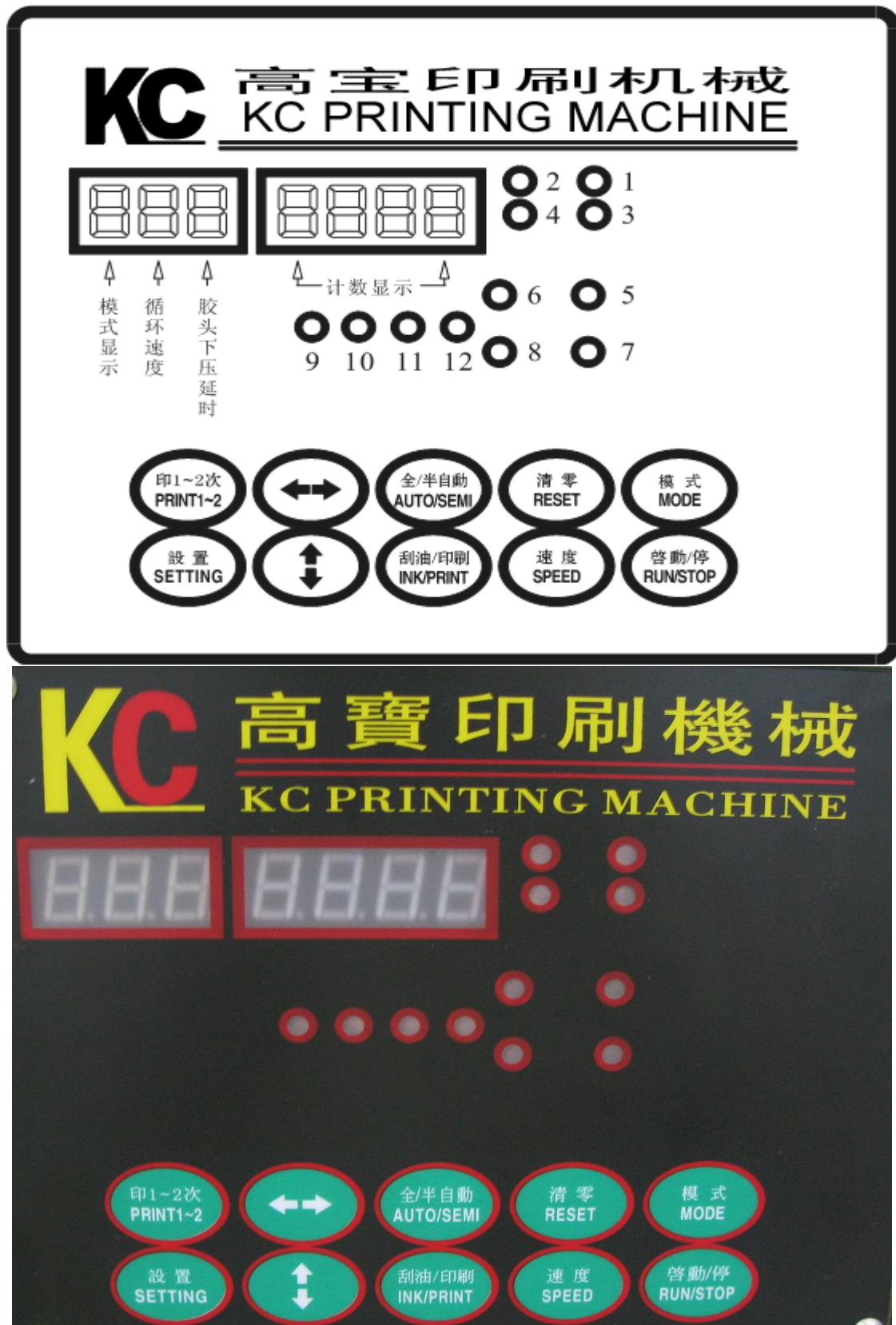
- A. if move the work-piece forward or backward, first, loosen the setscrew(6), and then turn the inching knob(3) turn it anticlockwise, the work-piece moves backward, turn it clockwise the work-piece moves forward until to the right position, and tighten the setscrew(6)at last.
- B. If move the work-piece leftward of rightward, first, loosen the setscrew(2),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(2)at last.

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





4. IC panel



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● Drawings and instructions of each key part

Functions of the keys:

1. INK DIPPING MODE

Press this key to change the working mode of the machine, and the indication digit of the counter will switch 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. "1": dipping ink once, printing once. The conveyor transports 1 work-piece.

"2": dipping ink once, printing once. The conveyor transports 2 work-piece.

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

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

"5": dipping ink once, printing once. The conveyor transports 1 work-piece.

"6": dipping ink once, printing once. The conveyor transports 2 work-piece.

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

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

"9": dipping ink once, printing once. The pad just stops there after printing

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.

2 SHUTTLE POSITION ADJUSTMENTS

3. **FRONT-BACK STROKE** in the status of stop ,press this key each time, the pad will run one stroke in front-back direction in order to prevent the ink from air-drying.

4. **UP-DOWN STROKE** In the state of stop, press this key each time, the pad will run one stroke in vertical direction,

5. **SIMO AUTO/AUTO** switch between the fully automatic mode and the semi-automatic mode.

6. INK RECLAIMING/PRINTING

7. **COUNTER RESET**. in the status of stop if press this key ,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.

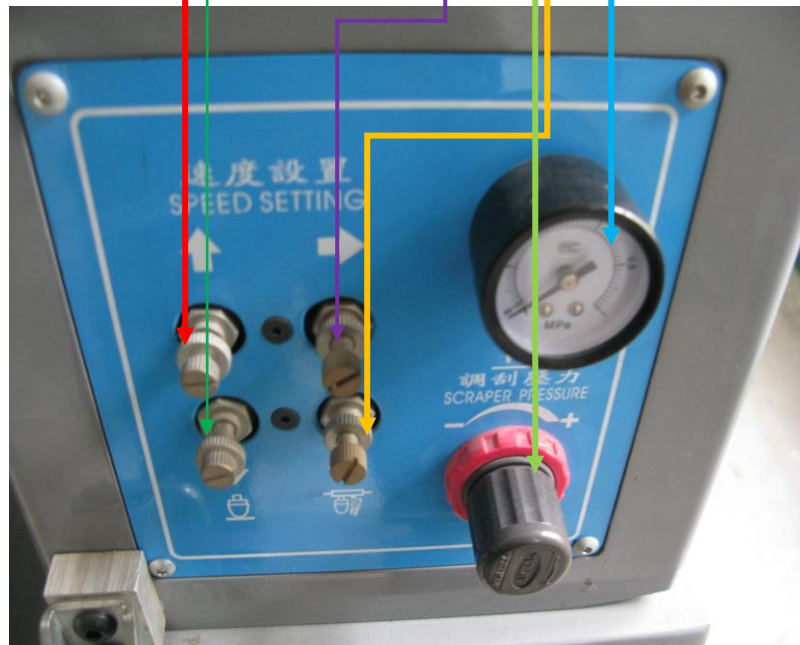
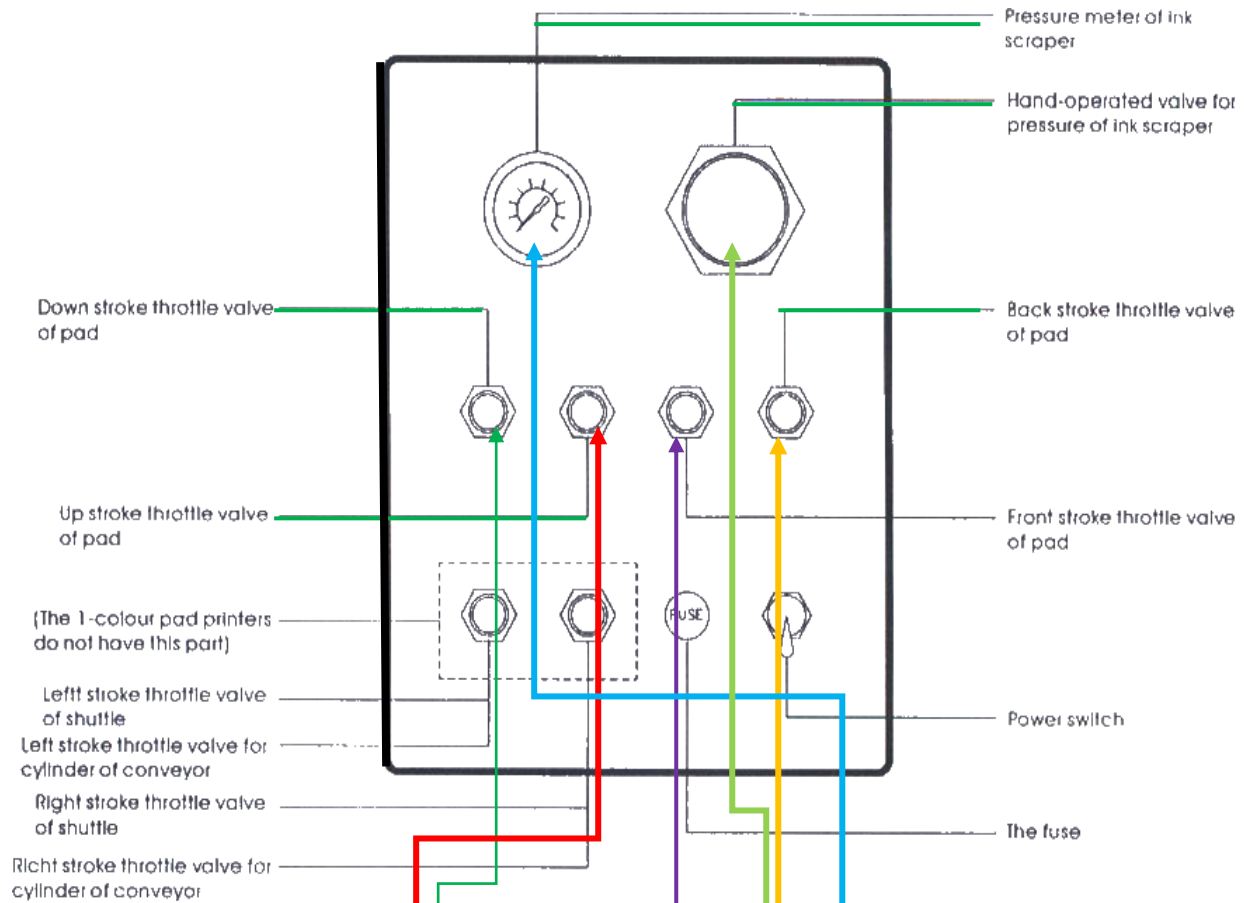
8 **SPEED SET**, from level0~9, from slow to fast (in the status of shuttling, press this key till the indication digit gets dim, and then stop pressing while, press the key"6" at the at the same time, you can set the "internal delay level" from 0~9, which is about 6~0 seconds, in order to make the shuttle keep pace with the pad.)

9. **MODE SET**. 0 meaning one color printing; 1 meaning two colors printing; 2 meaning three colors printing; 3 meaning 4-6 colors printing.

10. **START/STOP** Press this key at any time to start or stop the on going operation.



5 Operation panel (Drawing6)

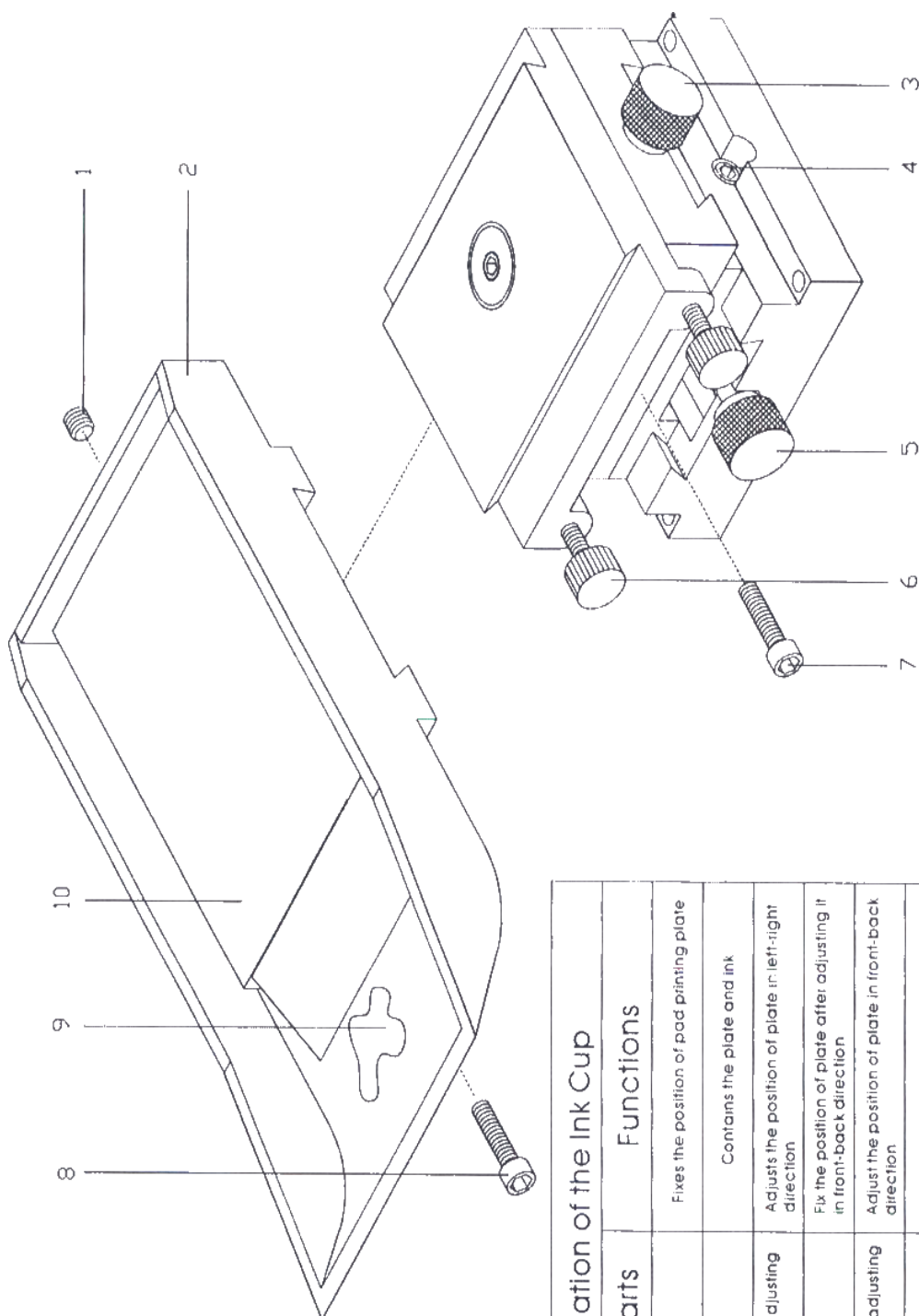


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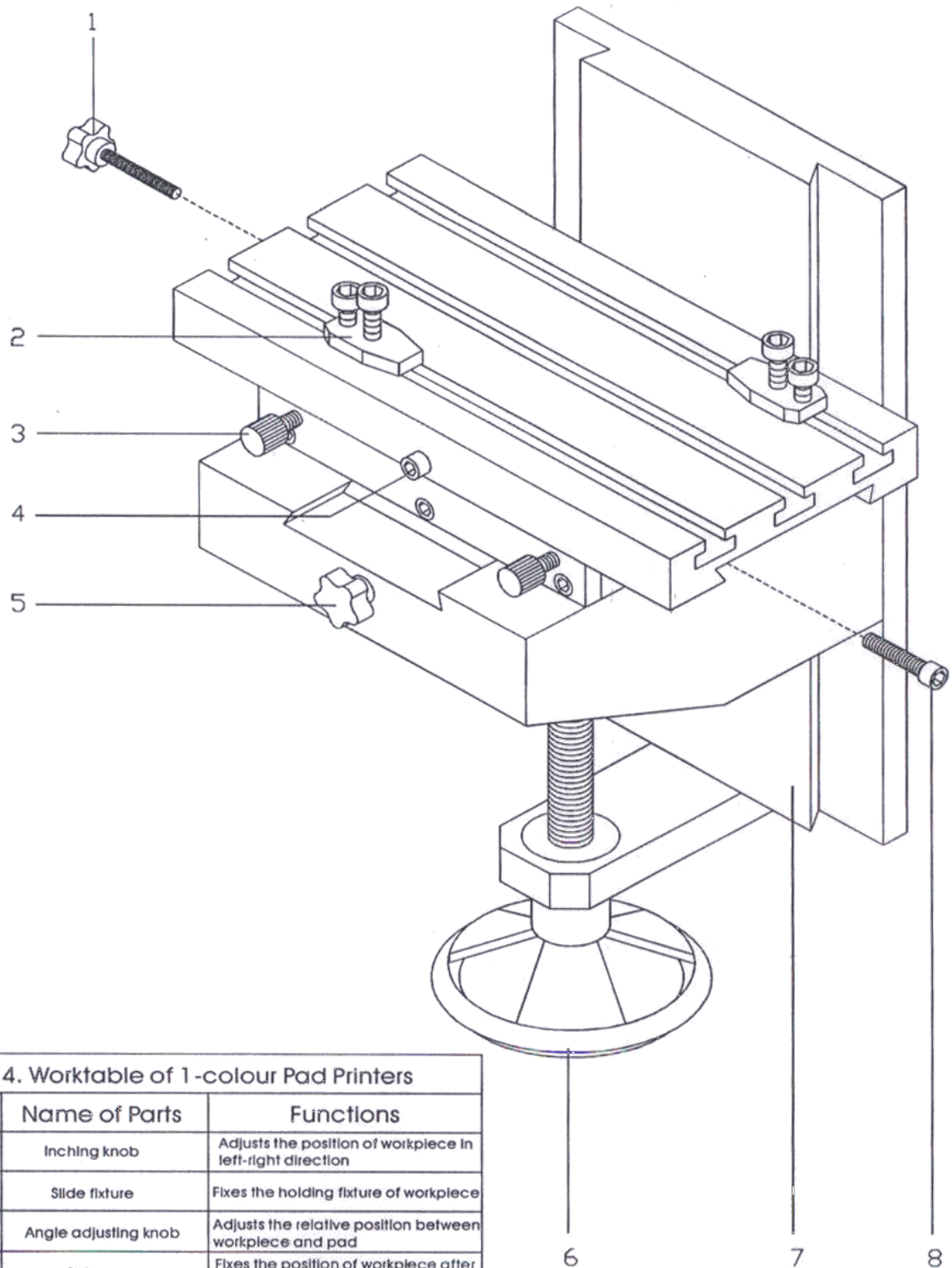
3. Installation of the Ink Cup		
No.	Name of Parts	Functions
1	M8 screw	Fixes the position of pod printing plate
2	Ink cup	Contains the plate and ink
3	Left-right direction adjusting knob	Adjusts the position of plate in left-right direction
4	Set screw	Fix the position of plate after adjusting it in front-back direction
5	Front-back direction adjusting knob	Adjust the position of plate in front-back direction
6	Angle adjusting knob	Adjust the rotation angle of plate
7	Set screw	Fix the position of plate after adjusting it in left-right direction
8	Set screw	Fixes the position of ink cup
9	Ink	Transfers to the surface of workpiece
10	Pod printing plate	Etches the printing design on it

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4. Worktable of 1-colour Pad Printers		
No .	Name of Parts	Functions
1	Inching knob	Adjusts the position of workpiece in left-right direction
2	Slide fixture	Fixes the holding fixture of workpiece
3	Angle adjusting knob	Adjusts the relative position between workpiece and pad
4	Setscrew	Fixes the position of workpiece after adjusting it in left-right direction
5	Inching knob	Adjusts the position of workpiece in front-back direction
6	Handwheel	Adjusts the height of worktable
7	Guide rail	Guides the vertical side of worktable
8	Setscrew	Fixes the position of workpiece after adjusting it in front-back direction

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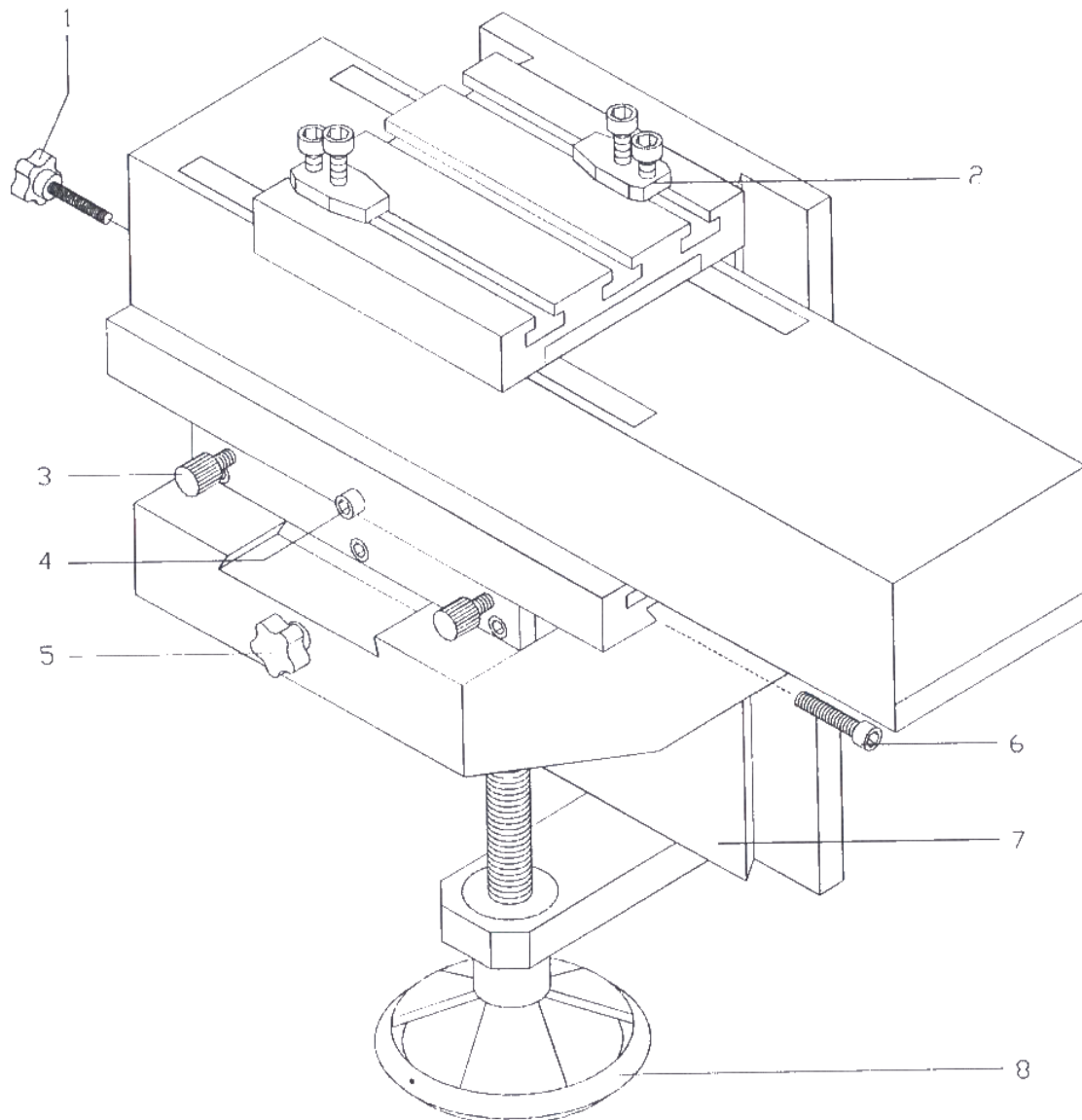
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5. Worktable of 2-colour Pad Printers		
No .	Name of Parts	Functions
1	Inching knob	Adjusts the position of workpiece in left-right direction
2	Slide fixture	Fixes the holding fixture of workpiece
3	Angle adjusting knob	Adjusts the relative position between workpiece and pad
4	Setscrew	Fixes the position of workpiece after adjusting it in left-right direction
5	Inching knob	Adjusts the position of workpiece in front-back direction
6	Setscrew	Fixes the position of workpiece in front-back direction
7	Guide rail	Guides the vertical side of worktable
8	Handwheel	Adjusts the height of worktable

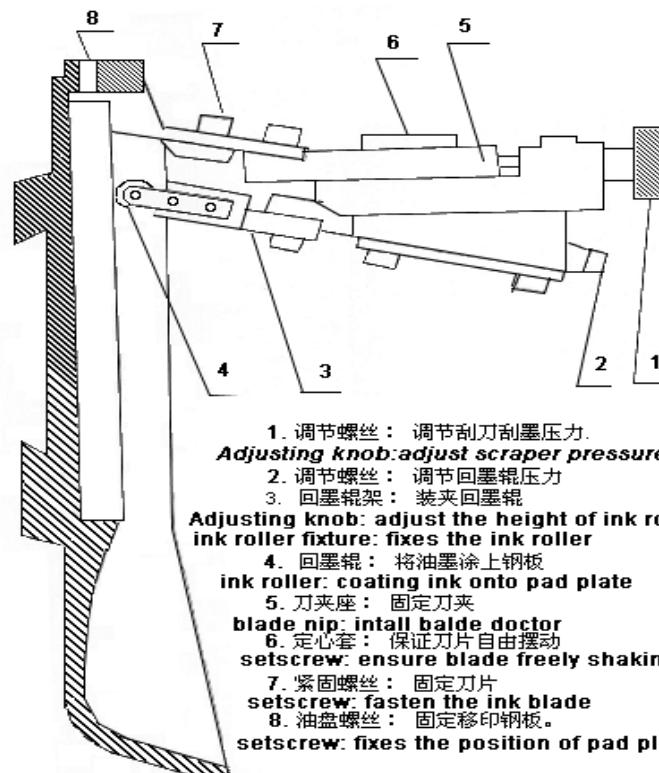
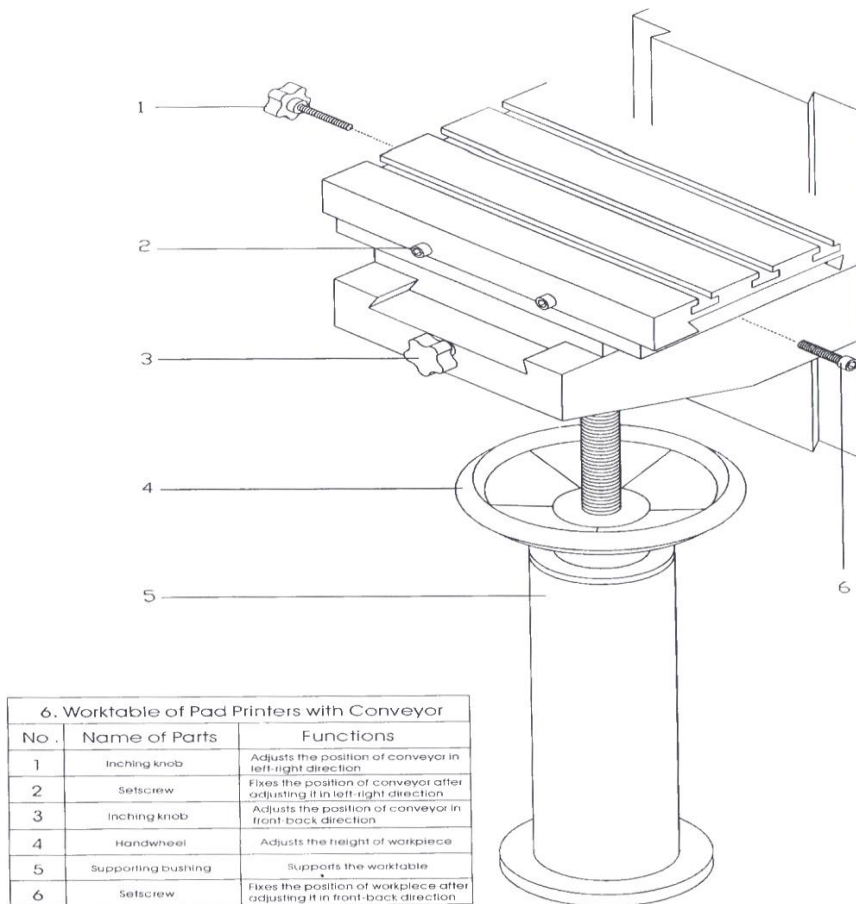


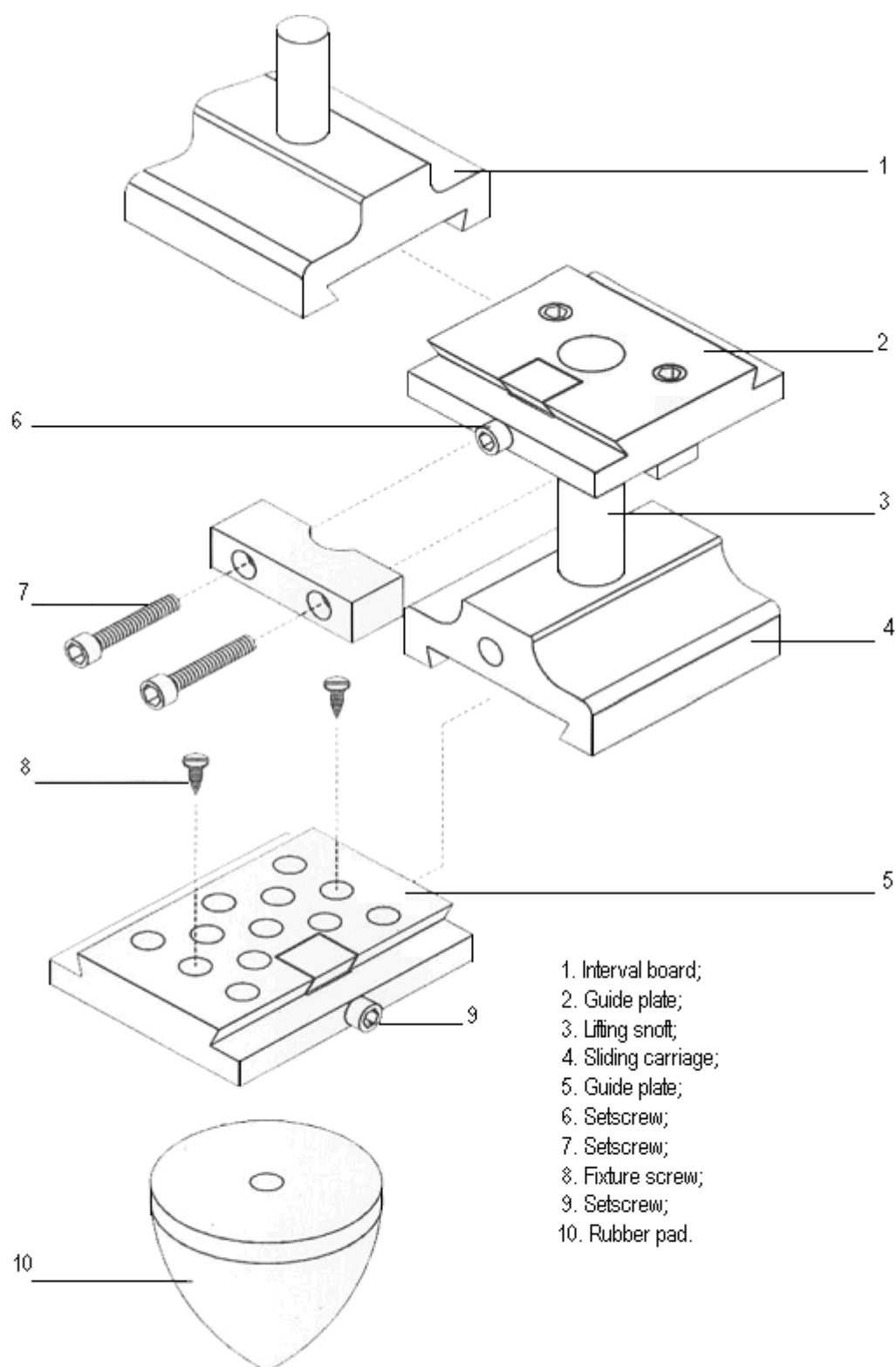
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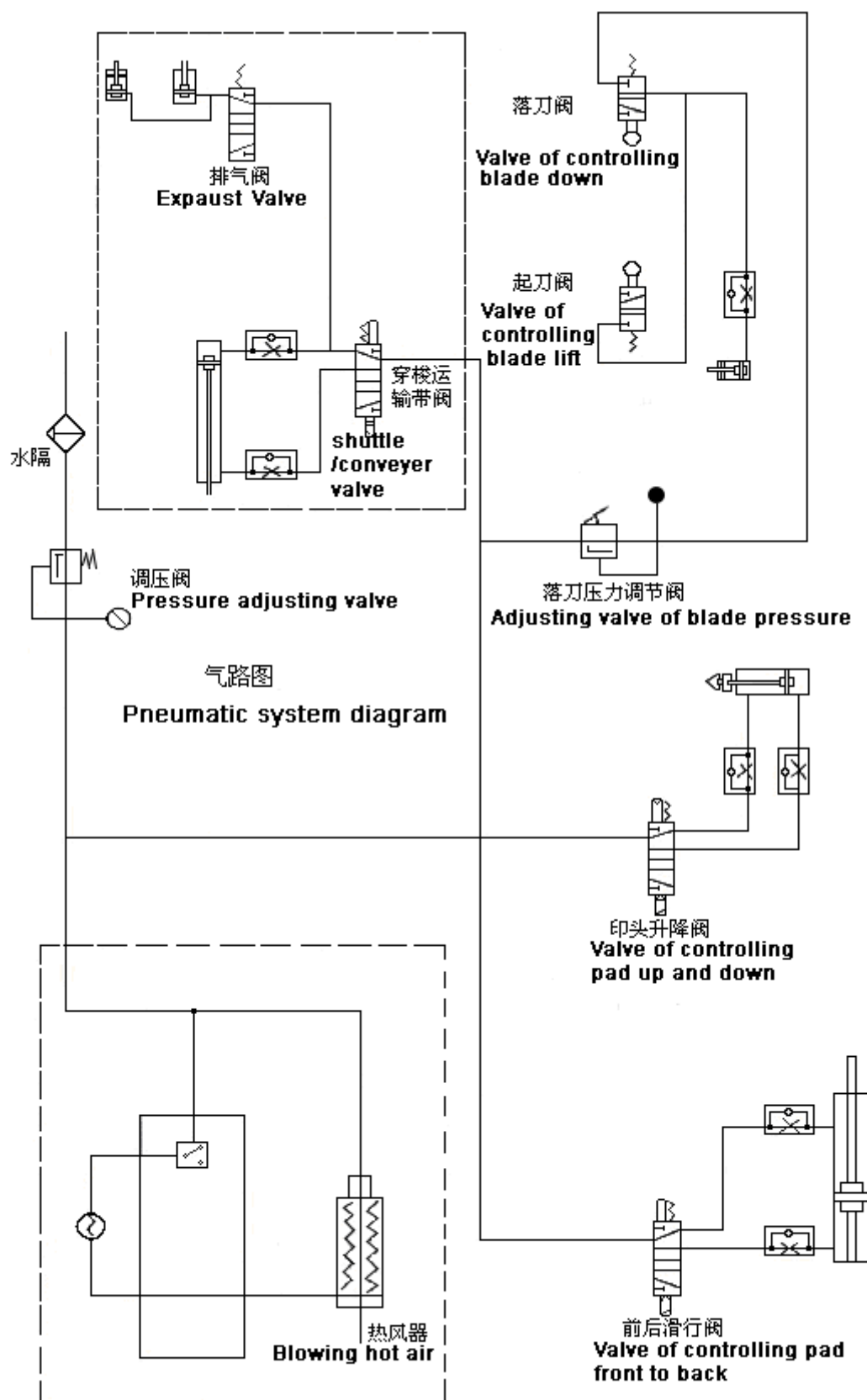
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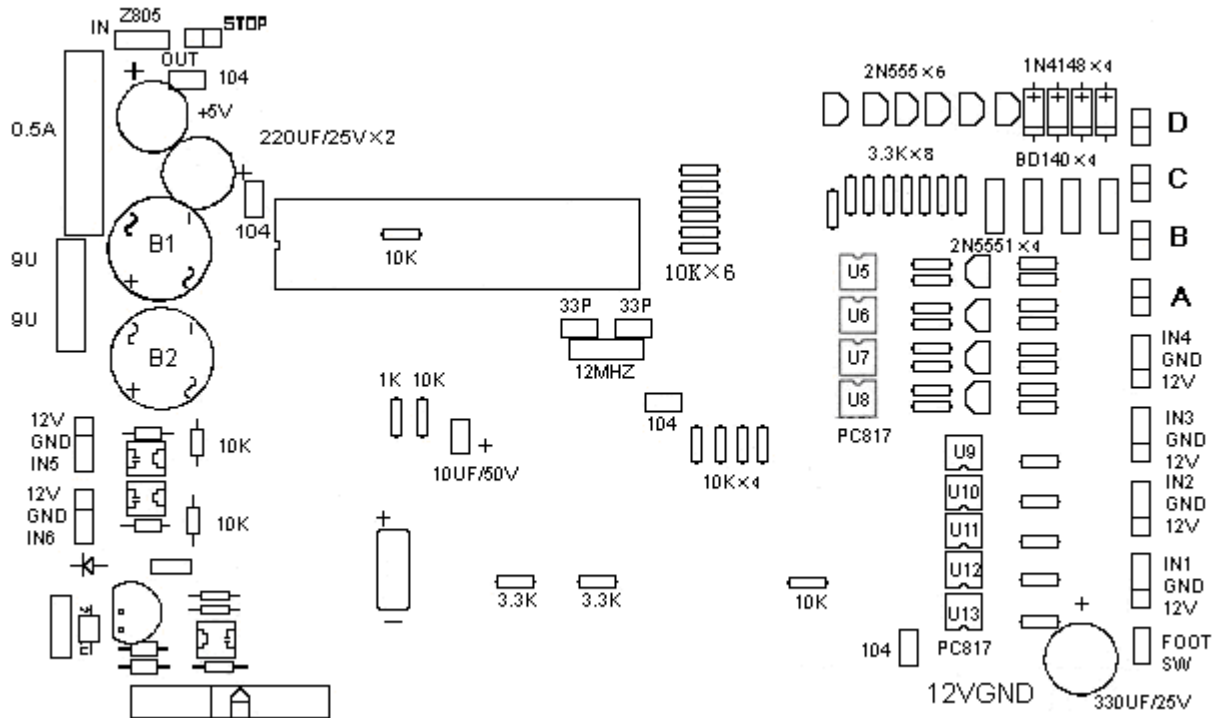








6. Circuit diagram



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

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

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12v

GND

IN6

7. 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.
- 4> After the printing work, remember to wash the pad, plate and ink roller.

8. Precautions

1. The size of the plate should be compatible with size of the ink cup, 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.

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.

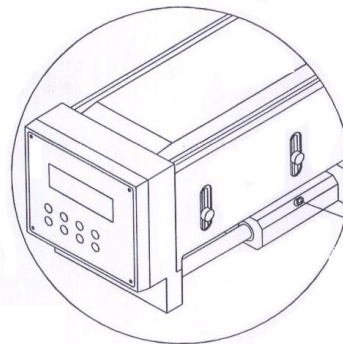
5. During printing, you should infuse thinner into the ink cup according to different air-dry speed of the inks in order to keep the proper viscosity of the ink after infusing the thinner, stir the ink immediately. If the pad is stained, clean it with the cleanser.

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

7. After the printing work, wash the plate with cleanser, and take down the ink roller to wash it.

Finishing pad printing task need all items below to be done:

- Making appropriate fixture and install it on the working table of pad printer
- Making and installing appropriate pad to the pad seat ;
- Base on customer printing document , etching pad plate and install in the front end of inkwell ;
- Choose correct ink and thinner and pour into the back end of inkwell ;
- Install doctor blade into blade nip.



Infuse lubricant once
per week



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.



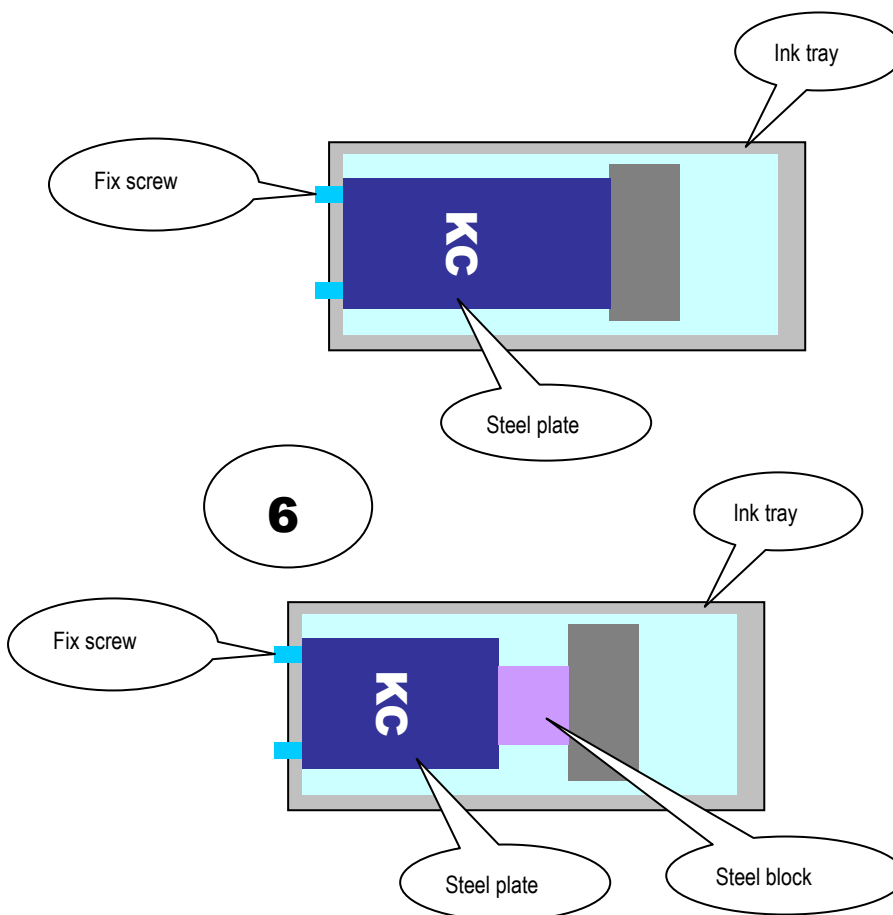
2) Connecting with compress air.

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.

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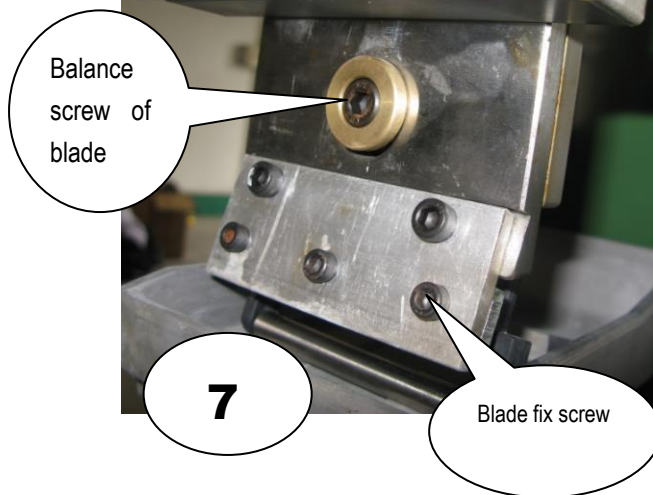
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There are one set ink roller (4) in tool box, Please install it according to the drawing. SP2-40610 and SP2-40810 use 100mm ink roller.

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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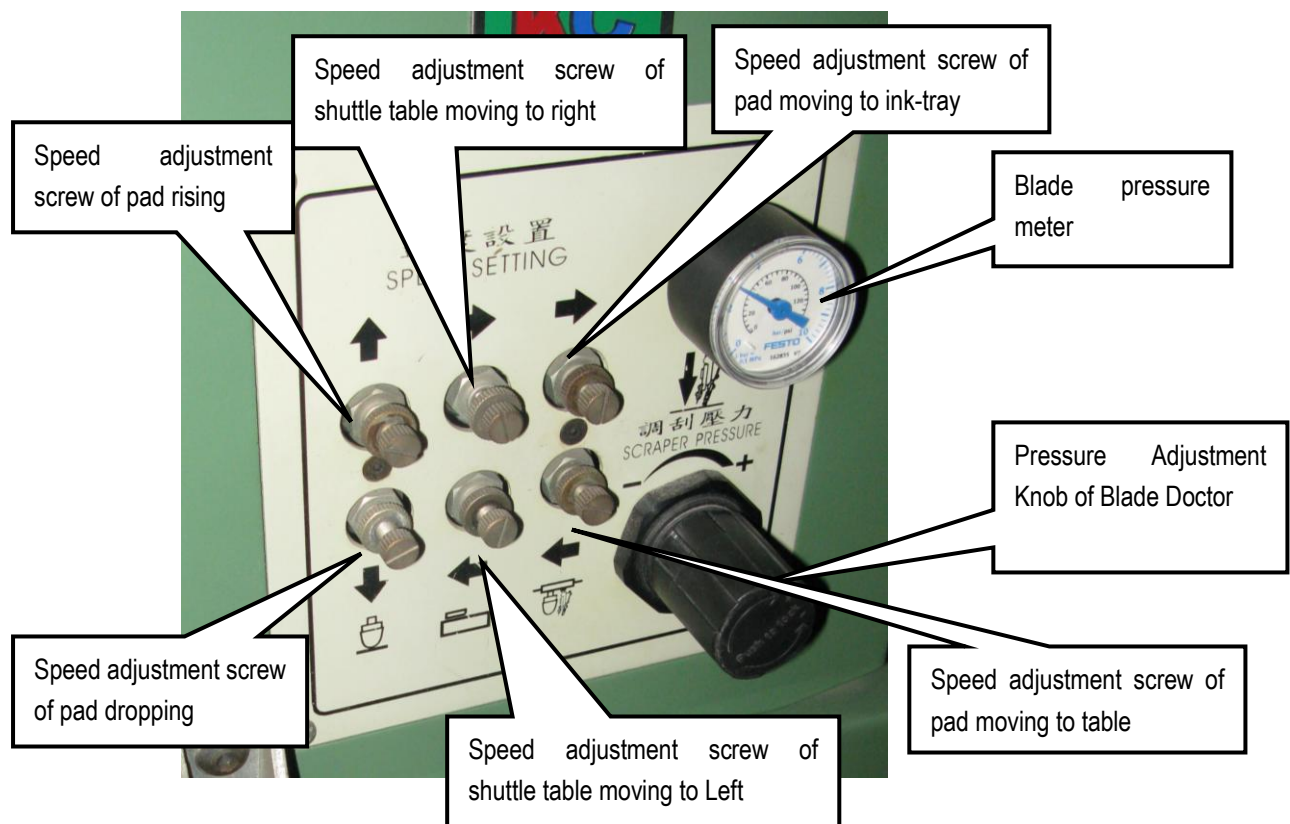


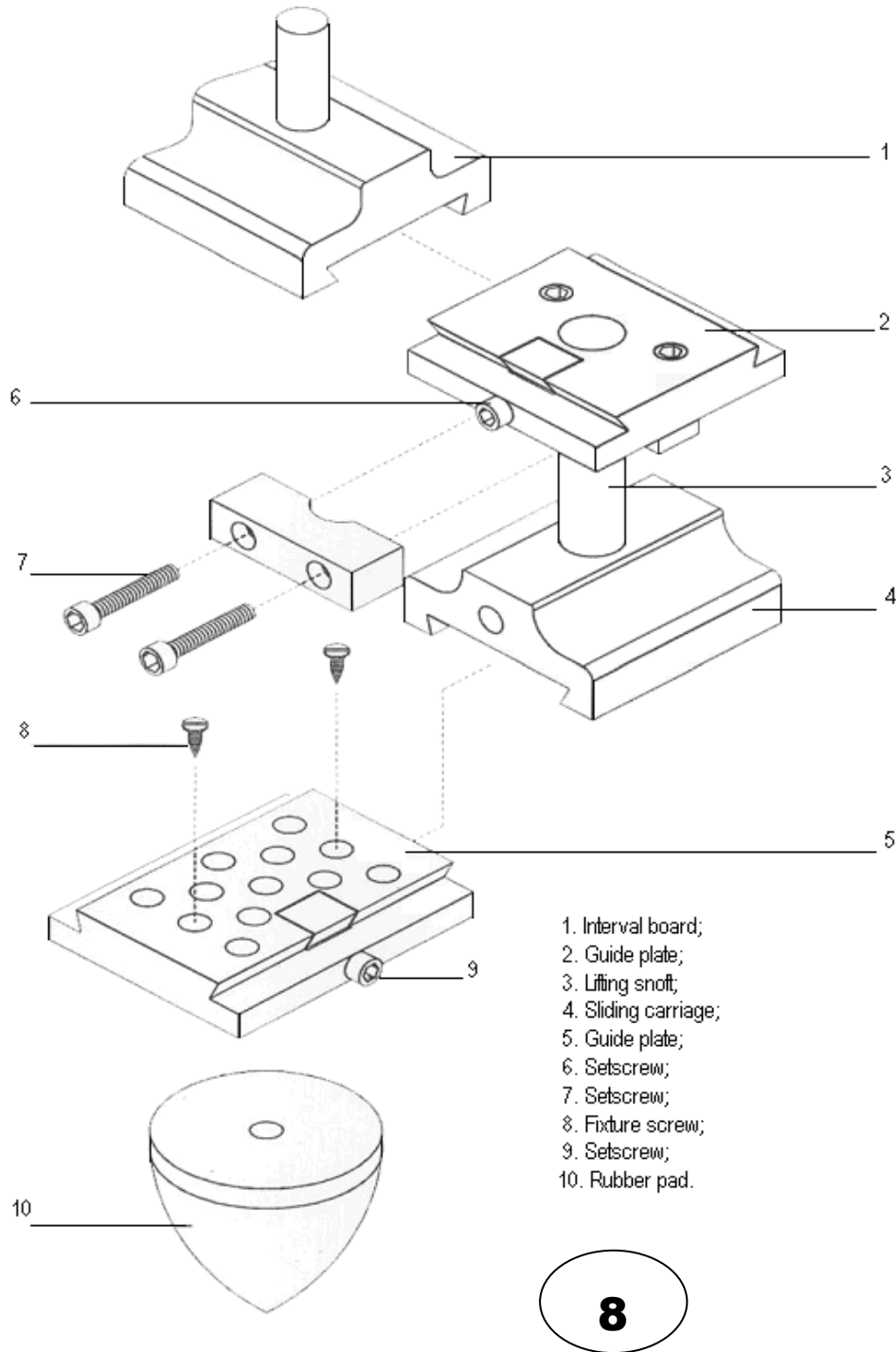
9) Install fixture.

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 two colors pad printer to print two colors, you need 10 fixtures. There are 10 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);

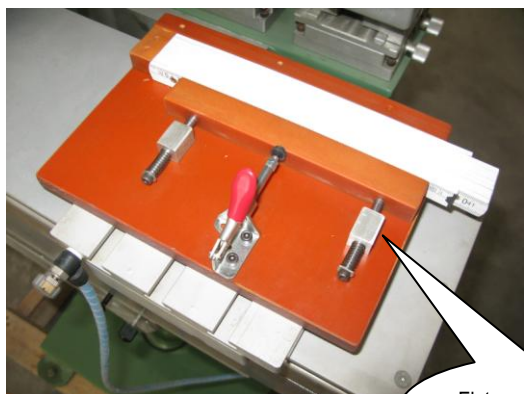
Working table can be adjusted as angle direction by turning the screw (3).

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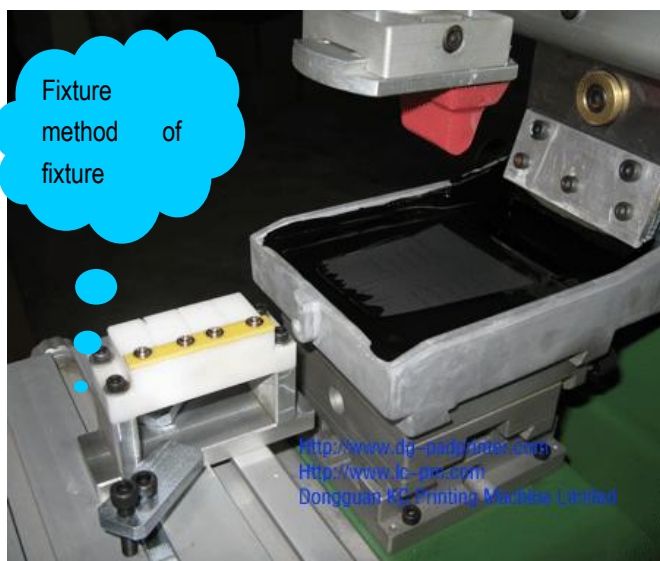
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Fixture for ruler



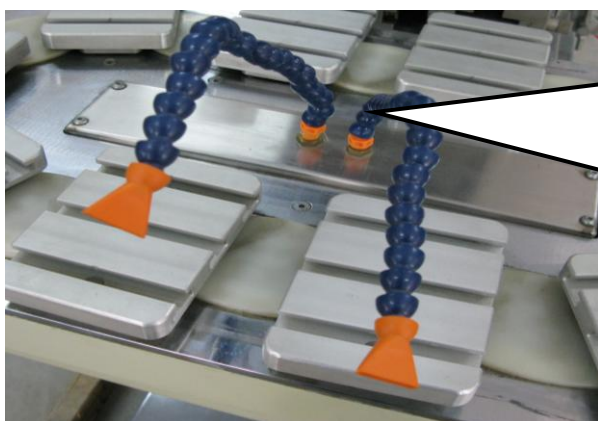
Fixture for disk



Fixture
method of
fixture

Printing
testing
drawing

9



Please install wind tubes on working table. In the process of multi-color 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.

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How to adjust working table

11) Overprint adjustment

Four colors 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.

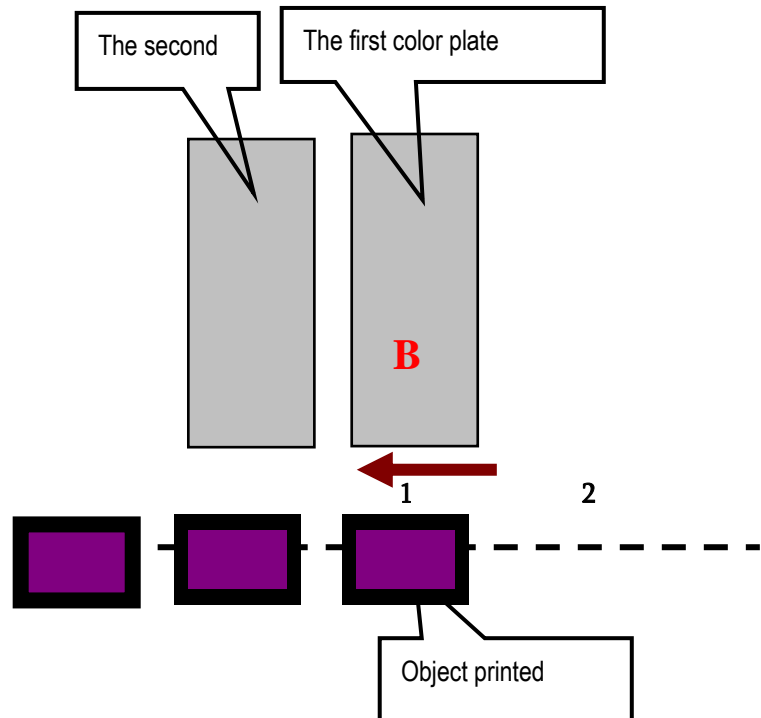
1# First adjust the first color:

- Please arrange the printing Sequence.

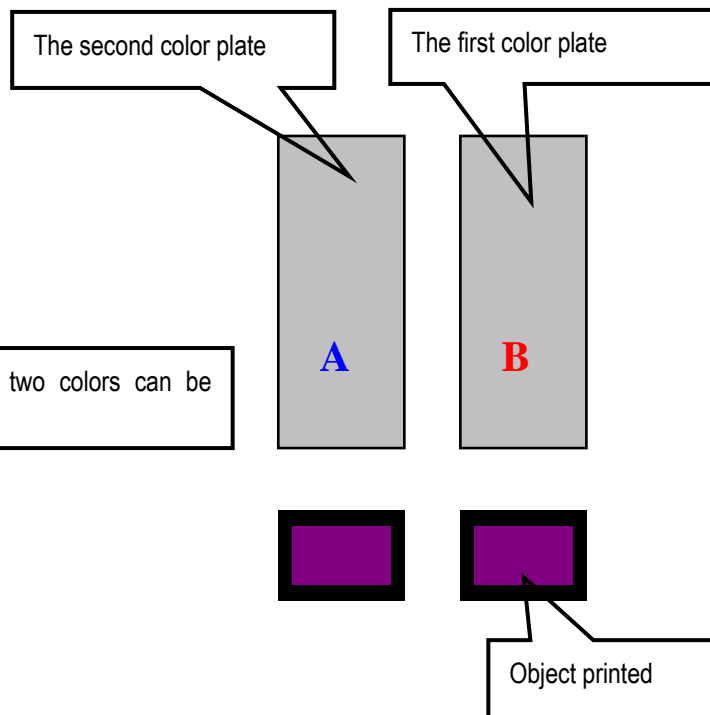
- Please install the first plate ;
- Install fixture on working table and put product on the fixture.

- 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 color 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 two colors can be printed same as samples,

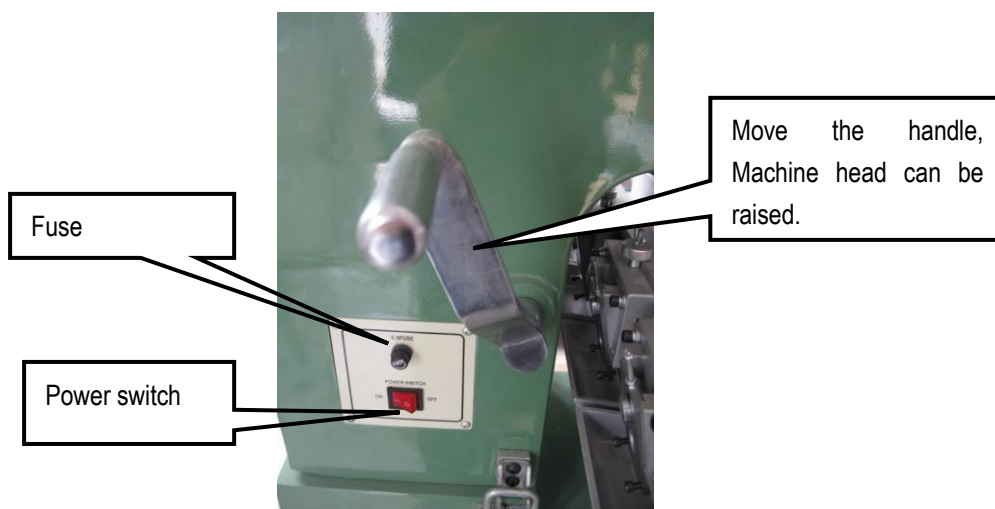
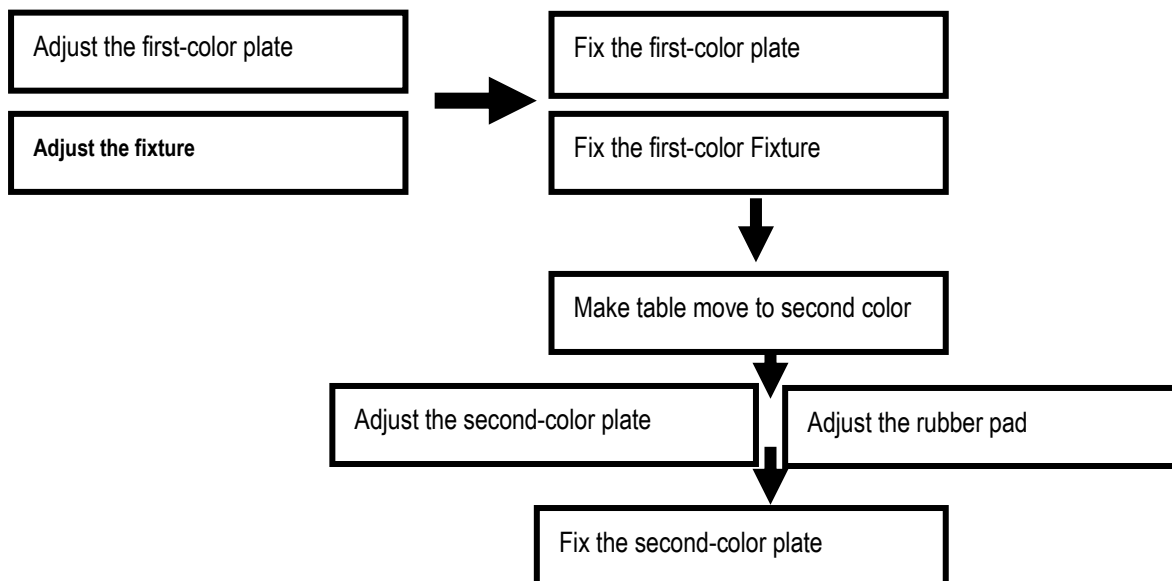


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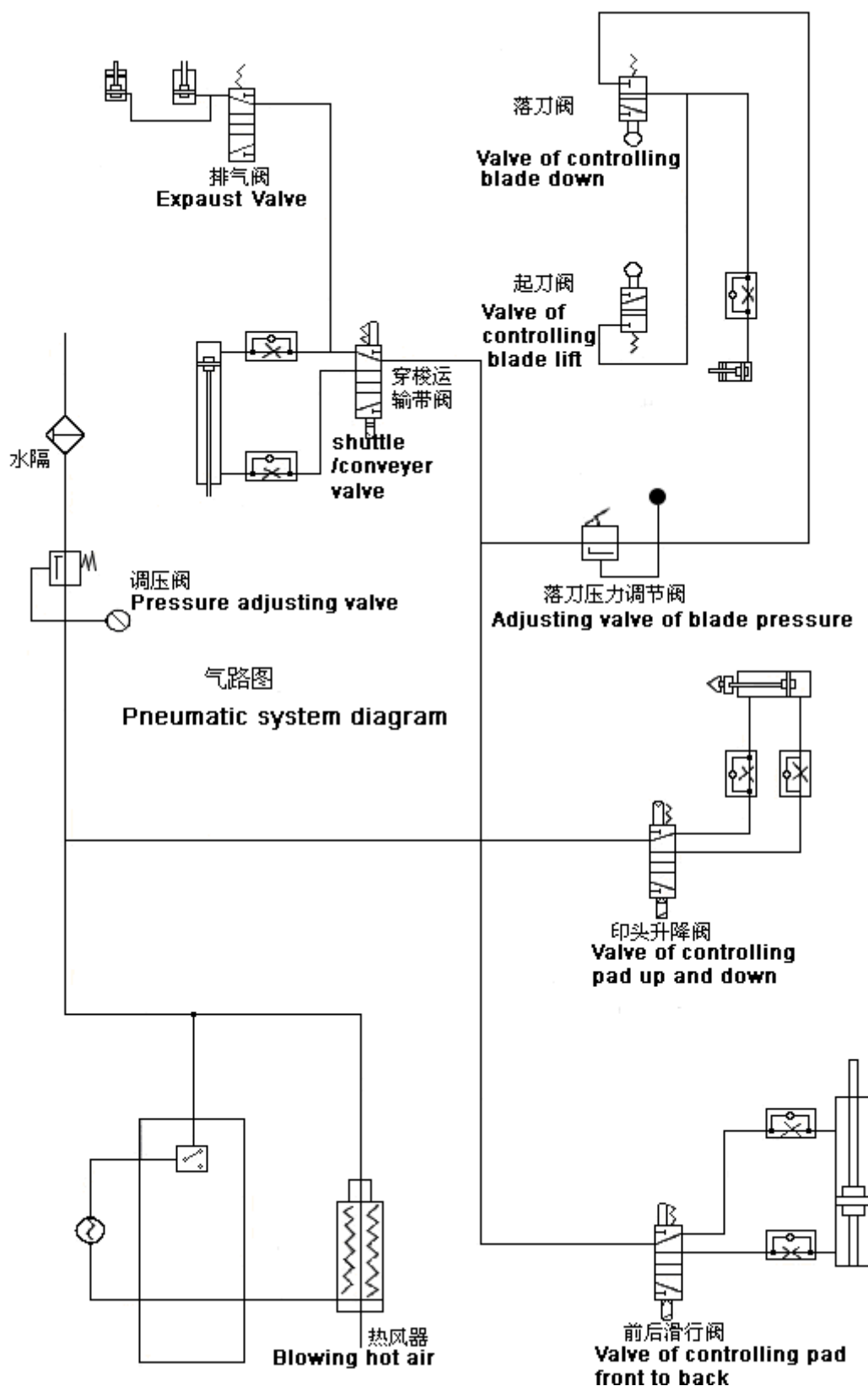
Online contact Skype: yingsuhuaakelven QQ: 726986799

Email: sales@lcpadprinter.cn



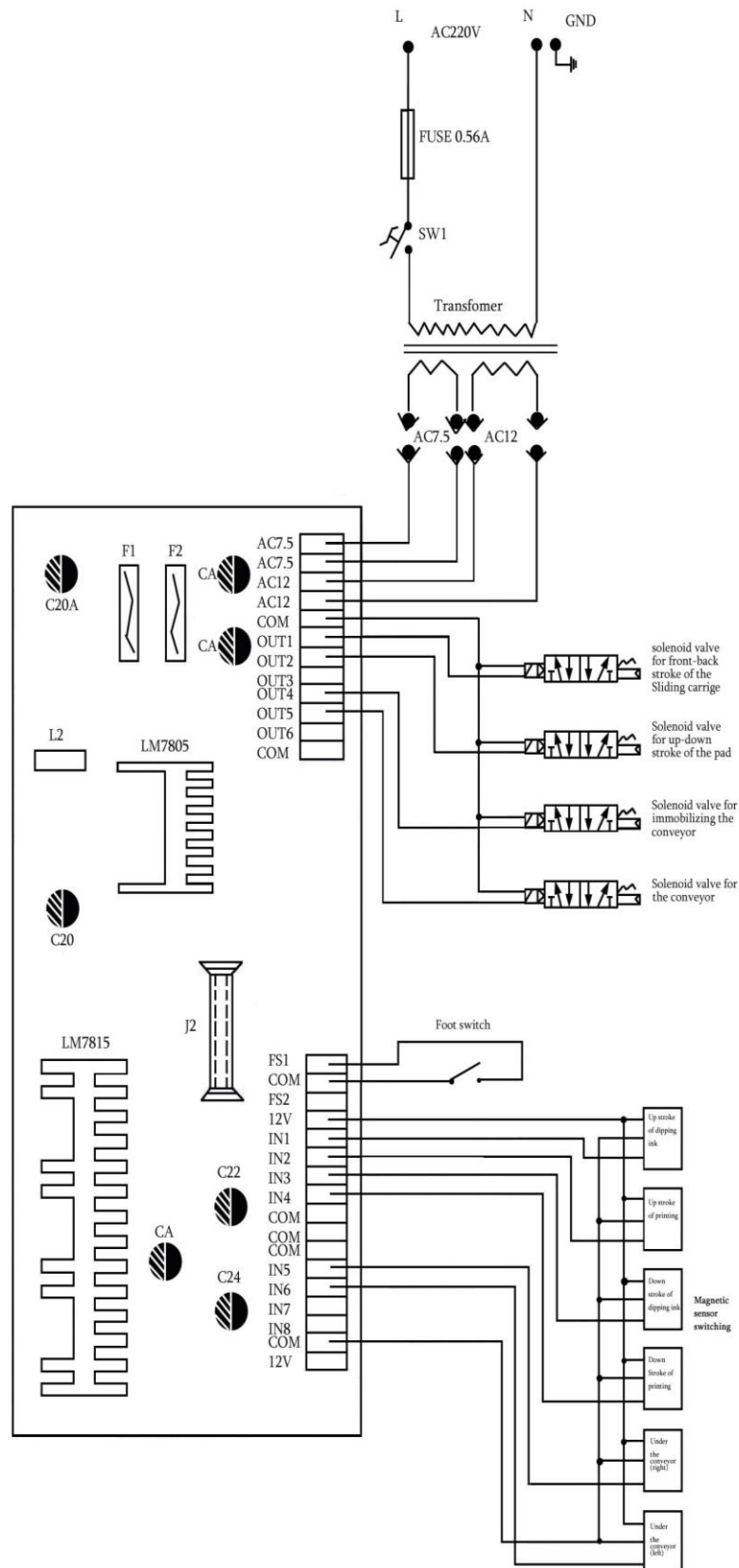


6. Pneumatic-controlling drawing





7. Circuit Drawing.



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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 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.

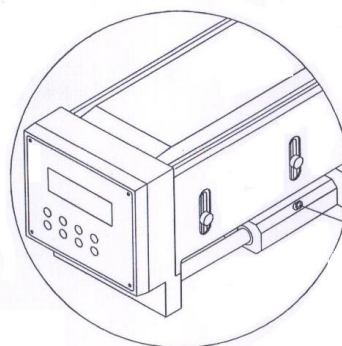
8. Usage of the ink:

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.

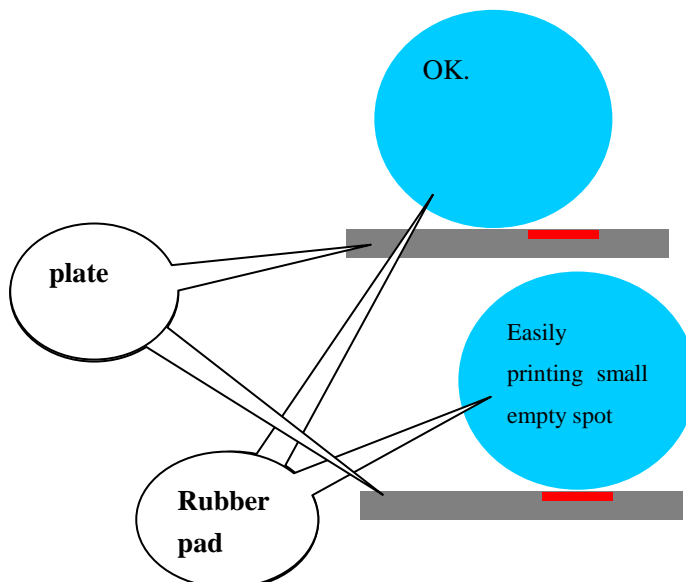
9. When operation of the machine is paused, you should let the ink, scraping system go on working in order to prevent the ink from air-drying.

10. 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.

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



Infuse lubricant once per week





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.■

