Super Primex

SPC-818D 1-Color Pad Printing Machine with Sealed Ink Cup (PLC control)

Manual Operation

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Contents

Ⅰ.General Descriptions

SPC-818D pad printing machine with sealed ink cup produced by Ever Bright Ltd. uses sealed ink cup to fill ink instead of traditional way to fill ink with open ink tray and the ceramic ring of ink cup takes the place of traditional doctor blade. Therefore the pad printer with sealed ink cup efficiently prevents ink from evaporating and bad flavor from escaping. On one hand the waste is reduced and on the other hand it is good for environmental protection. It is widely used on light industry, business, package, decoration, art and so on.

We compile the instructions for you so that you can properly master the operation procedure of this machine. Please read it prior to operation. Any questions please contact with us.

Ⅱ.Main Function and Technical Data

1. Main Function

- PLC controls each function for easy operation.
- High quality aluminum alloy is used to make structure solid and weight light.
- Inking by ink cup, ink viscosity is stable and no need to add any solvents in 6 to 8 hours, no evaporation, splash. Instead, 50 % saving; Good working environment retains.
- Convenient ink cup installation and remove for durable use.
- Duration time is adjustable to meet different requirement.
- Extra function "twice inking, once printing" is designed for thicker ink film.
- Unique edge structure ensures clean ink scraping and produces clear and sharp printing image.
- CE safety hood is equipped to meet safety requirement.

2.Technical Data

Model	SPC-818D
Ink cup diameter(mm)	Φ 120
Steel plate size(mm)	150x627
Ink cup stroke(mm)	450
Max. printing speed (pcs/hr)	1000
Air consumption(l/min)	350
Rated power	100 W
Rated voltage	1 Φ AC 220V±10% 50Hz
Rated current	1A
Noise(dB)	＜70
Outline dimensions(mm)	1120x750x1650
Wt. (Kg)	235

3. Working principal

Pad printer working principal is pad printing method, which can be divided into 4 steps:

a). Ink coating: coating ink on steel plate.

b).Ink scraping: scraping away the ink on plate

c). Ink sticking: sticking image ink on steel plate.
d).Pad printing: transiting the pad ink to substrate.

Ⅲ.Application

1. Application: It is suitable for the objects like plastics, paper, ceramics, metal, glass, rubber, and so on, and is widely applied in the fields like industry, commerce, package, decoration, art and so on.
2. Operation environment and related requirement
   a. Altitude: The machine and its matched electrical equipment can be used bellow the altitude of 1000 meters.
   b. Environment temp.: The machine and its matched electrical equipment can be used in the ambient temperature of from -5℃ to +40℃.
   c. Humidity: The machine and its matched electrical equipment can be used in the environment which humidity not more than 50% when in the highest temperature of +40 ℃.
   d. Good ventilation and lighting.
   e. Fireproofing measures: Dry-chemical fire extinguisher should be used to put out fire when indoors.
   f. Abandonment treatment: The machine should be dismantled when it is out of use. Each component of machine should be treated separately according to its property, which should be better done by professional department under the local law.
3. Limitation
   a. The machine is limited to use if the above requirements are failed.
   b. The machine is limited to use when the voltage standard can not be reached.
   c. The machine is limited to use when exceeds its function.
   d. The machine should be operated by professional personnel.

Ⅳ.Package and Transportation

1. Package of machine: The machine is wrapped with membrane first, and then packed with wooden case with a piece of packing list when leaving factory after inspection. There is a sign on the wooden case to remind you that not to bottom up machine and slant machine more than 10^0 to keep machine in good condition.
2. Transportation of machine: Place the machine onto truck according to requirement, and connect truck with machine firmly with rope. There should be without strong vibration and collision in the transportation way.

Note: a. Move the machine in stable and slow way.
b. The machine must be installed on flat ground and earthed properly.
c. Transportation: The machine and all matched electrical equipments should endure the transportation temperature from -25 ℃ to 55 ℃, and the storage temperature for short transportation within 24 hours should not exceed 70℃.

V .Main Structure and Function

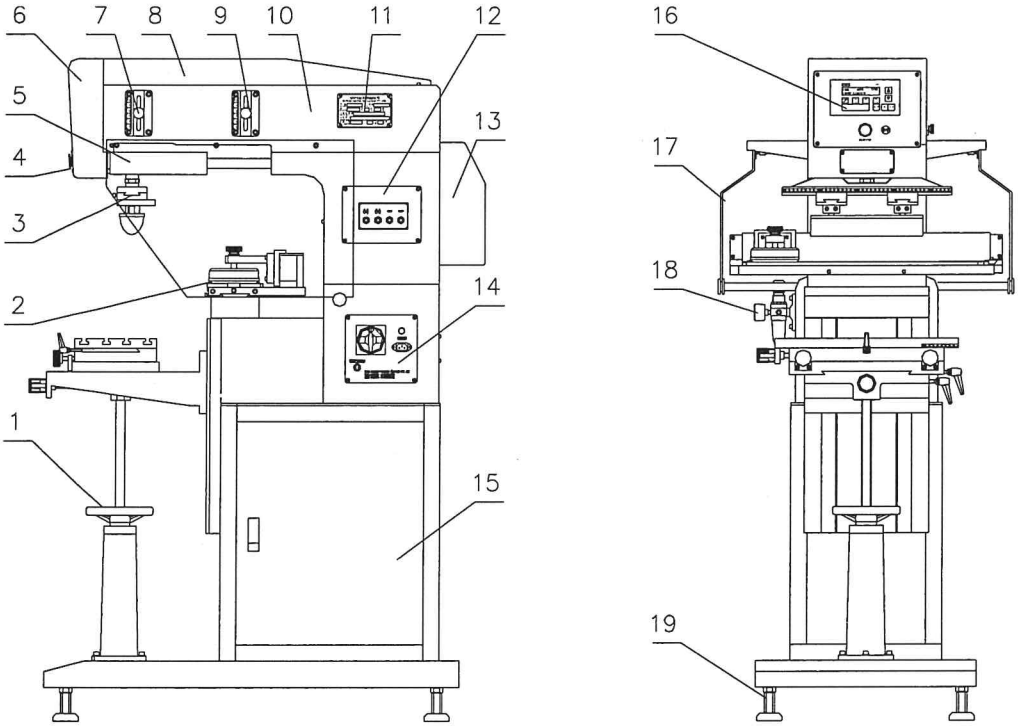


Figure 1

1. worktable assembly
2. ink cup assembly
3. pad assembly
4. emergency stop
5. telescope
6. machine head
7. pad printing stroke adjusting knob
8. top cover
9. pad inking stroke adjusting knob
10. machine body
11. name plate
12. flow control panel
13. rear cover
14. power panel
15. bottom base
16. control panel
17. safety hood
18. air filter assembly
19. bottom foot

VI. Adjustment Way of Main Components

1. Pad assembly and adjustment way

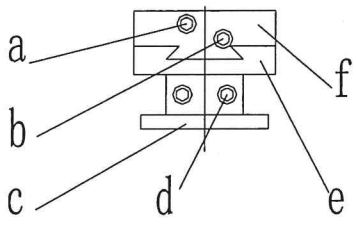


Figure 2

a. Pad left/right locking screw
b. Pad front/rear locking screw
c. Pad positioning base
d. Lock screw for pad positioning piece
e. Pad positioning piece
f. Pad connecting piece

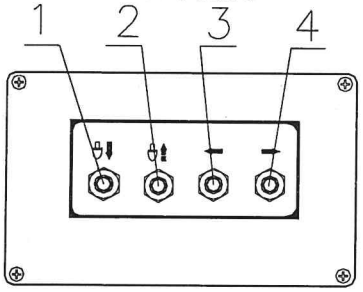
Adjustment way:

A--pad left/right position adjustment: loosen lock screw (a) first, then move pad connecting piece (f) slowly according to requirement. Lock (a) after adjustment.

B—pad front/rear position adjustment: loosen lock screw (b) first, then move pad positioning piece(e) slowly. Lock (b) after adjustment.

C—whole adjustment for pad: loosen lock screw (a) and (b), then operate according to the above procedure. Lock (a) and (b) after adjustment.

2. Flow control board



1. 1-way regulator for pad lowering down
2. 1-way regulator for pad lifting up
3. 1-way regulator for pad moving forward
4. 1-way regulator for pad moving backward

Figure 3

3. Ink cup assembly

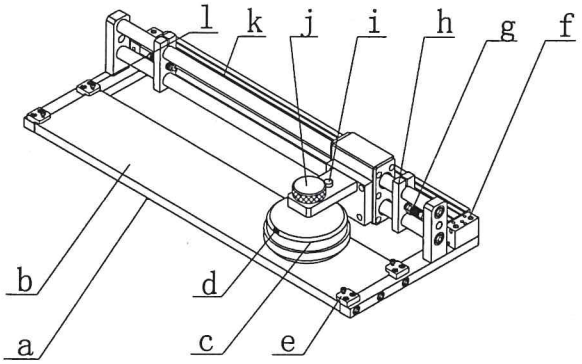


Figure 4

a. steel plate cushion: to support pad printing thin steel plate.

b. thin steel plate: with image.

c. ink cup: to contain ink.

d. cup lid: To seal the diluent entrance.

e. Steel plate pressing base.

f. ink cup cylinder: source of ink cup movement power.

g. hydraulic cushion: to cushion the movement power of ink cup.

h. telescope stop plate.

9. Positioning piece

10. pad printing thin steel plate

i. limit screw: To prevent cup from rotating when moving.

k. sliding axis: transmission ink cup do crosswise movement.

l. pad printing thin steel plate fixing screw: to fix thin steel plate on steel plate cushion.

(A) Ink Cup Removal

1.First Step.

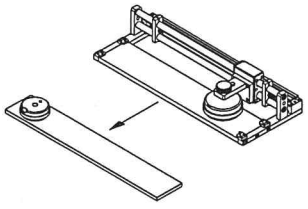


Figure 5

a. loosen steel plate fixing screw (l) and ink cup position limit screw (i).

b. remove ink cup knob assembly (j).

c. take out ink cup, thin steel plate and steel plate cushion

2. Second Step:

Hold ink cup (1) with hand and turn down the part which has been taken out to make ink cup upside down and steel plate shim face up. Slightly force ink cup slide away from thin plate surface. Care should be taken in doing this to avoid damaging ceramic ring edge.

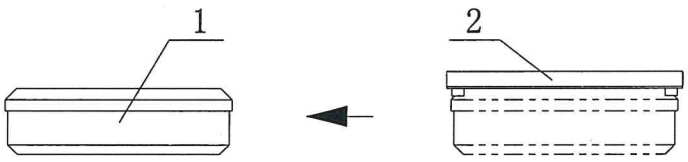


Figure 6

(B) Steel Plate Replacement

Remove fixing screw (1) of steel plate lock piece. Take away the old steel plate (b) and put the new one on plate cushion (a). Fix the new one on (a) with (1).

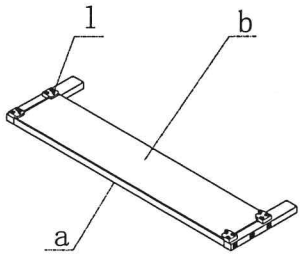


Figure 7

(C) Ink Cup Reinstallation

Turn the shim with new thin plate over and make the plate face down and the shim face up. Hold ink cup with one hand and the steel plate with the other to make ink cup slightly engage with the steel plate. Care should be taken to avoid damaging ceramic ring edge. Then turn the steel plate over to make ink cup face up. Put it on plate base and lock it after positioning

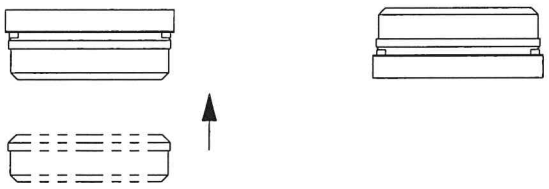


Figure 8

(D) Diluent Filling

Unscrew the cup lid as shown in Figure 9. Put a little hopper in the diluent entrance and put proper amount of diluent into the cup.

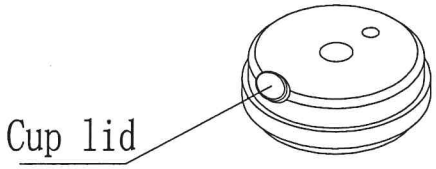


Figure 9

4. Air Valve Assembly

a. Air inlet joint.
b. Air filter installation holder.
c. Start valve for air source: turn it clockwise to connect in air, otherwise to cut off.
d. Pressure adjustment knob: turn it clockwise to increase pressure, otherwise to reduce.
e. Pressure gauge: to display the pressure of inlet air.
f. Jacking pin: push it up to discharge accumulated water.

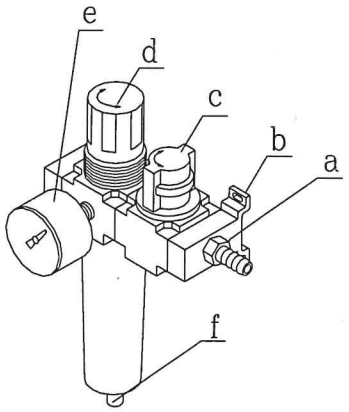


Figure 10

5. Worktable Assembly

1. hand wheel: to adjust worktable height.
2. knob: to adjust worktable angle slightly.
3. knob: to lock worktable left/right movement.
4. knob: to adjust worktable front/back position.
5. knob: to adjust worktable left/right position.
6. handlebar: to lock worktable up/down movement.
7. handlebar: to lock worktable front/back movement.

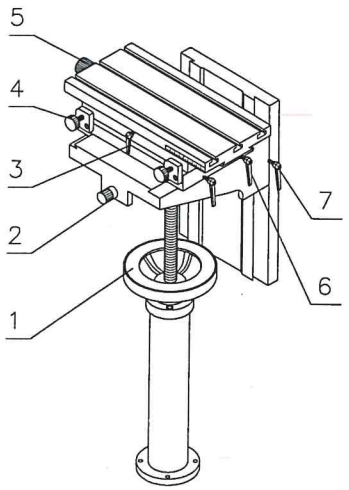


Figure 11

6. Power Panel

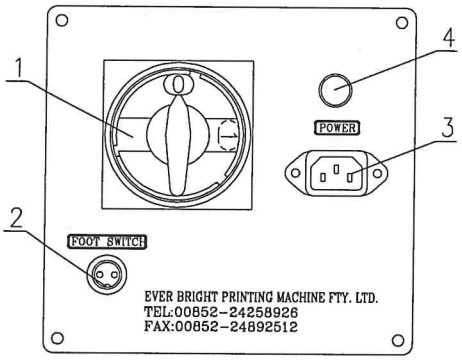


Figure 12

1. power switch: electricity is off when turn to "0" and on if turn to "1".
2.pedal switch socket.
3.power socket: notice whether the machine is 220V or 110V when connect to power supply.
4.fuse: it's possible to checking and replace fuse (250V, 3A).

7. Control panel

(1). Control panel

A. Working LED: when LED lights, machine is in running status; when it flashes with the frequency of 1 second, machine is standing by.

B. START/STOP button: to start or stop machine.

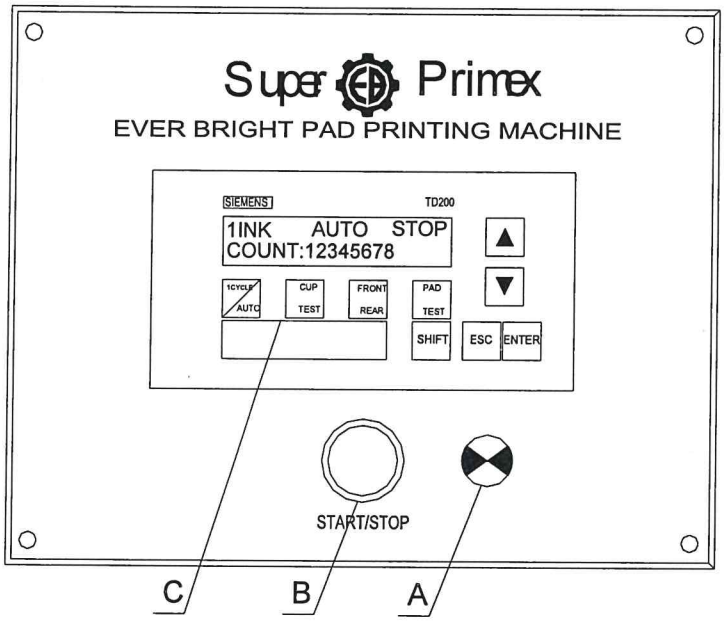


Figure 13

C. TD200 operation menu: for failure alarm, display and reset; the details are as follows:

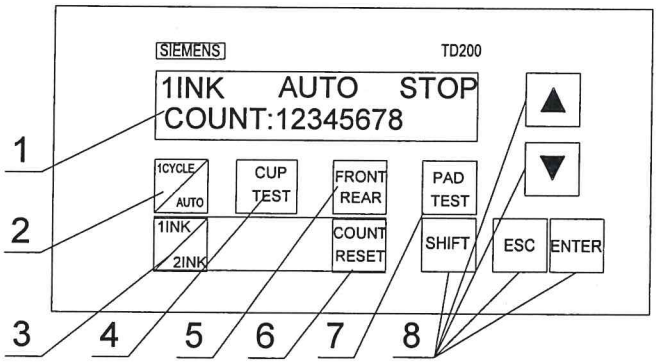


Figure 15

1. TD200 display menu(LCD): display parameter and status.
2. 1CYCLE/AUTO button: to select 1-cycle(step by step) working mode or full automatically working mode.
3. 1 INK/2INK button: to choose 1-ink mode or 2-ink mode.
4. CUP TEST button: when the machine stops and pad must return to upper position, press this button, the ink cup will do front/rear test and the horizontal cylinder will follow the ink cup to move.
5. FRONT/REAR button: to shift the position of the pad between inking position and printing position.
6. COUNT RESET button: press it when the machine stops, the count would be reset to zero.
7. PAD TEST button: Once press it, pad fall down on worktable
8. SHIFT/ESC/ENTER, up/down button: to reset or view the value. There will be detail instructions in "Parameter setting".

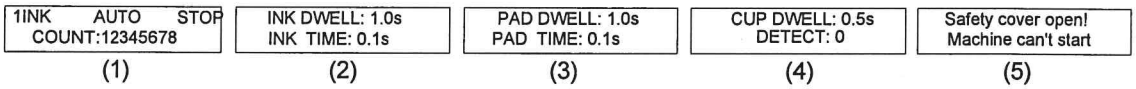
Note:

1. The button COUNT RESET and CLEAR TEST on TD 200 are only valid when machine is

standing by.

2. When connect to power for the first time, machine is not running. Press red button (STAR/STOP), machine would be in standing by status.
3. Emergency stop: red mushrooms shape switch under operation panel is emergency stop. When operator is in unsafe situation or machine fails during producing process, press this button to cut general power, machine stops rapidly; When failure is solved, turn the button counterclockwise, switch is back to original position and power is reconnected.
4. It's possible to modify the parameter only when the machine stops.

(2). Parameter setting

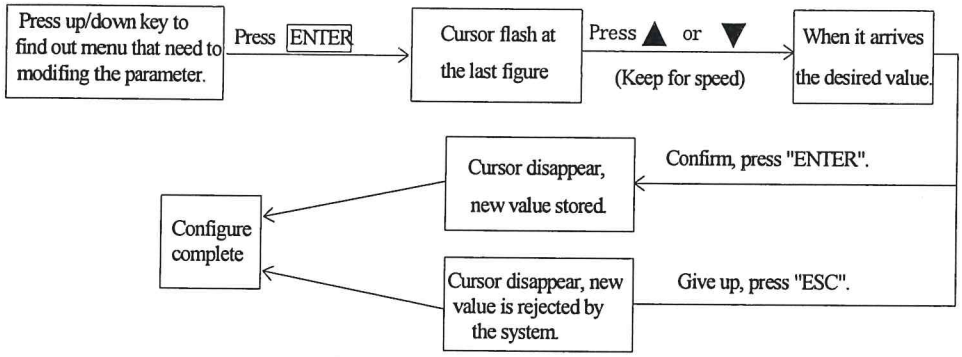


There are 15 LED displays the status and related parameter of machine, each display alternatively switched by "▲" and "▼". Follow form contains details:

The parameter is configured as bellow:

Display	Parameter	Function
(1)	1 INK/2 INK 1 CYCLE/ AUTO RUN/STOP	To display the current working condition of machine.
	COUNT: 12345678	To display the current printing times(0-10000)
	1	Current printing counting. Auto count reset after clean(valid when cleaning)
(2)	INK DWELL: 1.0S	Time when pad over steel plate (0.0—10.0S)
	INK TIME: 0.1S	Time when pad sticking ink over steel plate (0.0—1.0S)
(3)	PAD DWELL: 1.0S	Time when pad over substrate (0.0—10.0S)
	PAD TIME: 0.1S	Time when pad over workpiece(0.0—1.0S)
(4)	CUP DWELL: 0.5S	Time when ink-cup stops left or right under machine stop (0.0-10.0S)
	DETECT: 0	There's no products inspection function when set to "0"; when set to "1", the pad will lower down to print only when there are substrate in the place.
(5)	Safety cover open! Machine can't start	If it appears when press "START/STOP" ,that indicates the safety hood not shut well. Please shut it well and then restart machine.

Parameter setting is as follows:



Note: 1. Press the key ENTER twice when set the parameter of PAD TIME, INK TIME, the cursor would splash upon the related parameter.

2. When press ESC button to enter the following menu, it reminds to input correct password before into TD200. These parameters are preset and not allowed to be changed! Press ESC button once more to return to main menu.

SIEMENS TD200
PASSWORD REQUIRED
PASSWORD ■***

Ⅶ. Operation Procedure

Note: A. Prior to operating, you must be familiar to the position and function of each button and switch.

B. If there is any emergency case happened during operation, push the emergency stop button (Figure 1, 4) rapidly to cut off power and stop machine. Turn the emergency stop button indicated in the arrow direction to spring it up if restart machine.

1. Connect compressed air to air inlet joint of filter, open the air start valve(Figure 10, c), pull the pressure adjustment knob (Figure 10, d) up and turn it counterclockwise to adjust the pressure making the pressure gauge(Figure 10, e) display at about 5 to 7 bar. Press the water discharge button (Figure 10, f) after a period time to discharge the accumulated water in the glass.
2. Connect in power, the indicator flashes.
3. Choose and install suitable pad as the following figure.
4. Keep the machine tidy and clean.
5. Do manual ink scraping, sticking, manual rotation and printing test according to the introduction above.
6. Do adjustment according to part "Ⅵ" (Adjustment Way of Main Components) if the printing result is not ideal.
7. Auto printing can be done according to the introduction of the part of "control panel".
8. During printing, diluent should be added then mixed properly in accordance with ink drying speed to keep suitable ink viscosity.
9. After printing, ink cup, steel plate and pad should be cleaned. The ceramic ring edge easily gets damaged, so care must be taken when removing, reinstalling and cleaning ink cup.
10. The water-based ink can improve the working environment during printing for its nontoxic and pollution free property. Fire is strictly prohibited if solvent-based ink is used, and the operator must wear respirator and long-sleeve clothes. Wear disposable plastic gloves when do wiping, cleaning

to avoid damaging skin and respiratory tract. Personnel who are allergic to ink should keep away from it.

Ⅷ.Precautions

1. Power and air source must meet the requirement in the technical data form.
2. Operators must be technically trained to operate machine.
3. Operators must wear labor protection appliances according to regulation.
4. Machine must be checked and repaired by professional technicians after machine stopped for 30 seconds when there is malfunction.
5. Fire source should keep away from machine for ink is easily getting burnt.
6. The discarded ink must be treated according to the local law.
7. The protection device would short circuit automatically to protect machine if power is overloaded.

Ⅸ.Maintenance and Service

1.Machine case should be kept clean. When machine is not used, worktable should be covered to keep it clean.

2.Sliding parts must have lubrication.

3.Water accumulated in filter regulator must be discharged on time.

4.Power and air should be turned off if machine is down for long.

Do maintenance and fill in record to prolong lifetime of machine after machine put into use.

Daily maintenance: 1. Keep machine clean and tidy.
2. Discharge the accumulated water in the filter.

Weekly maintenance: 1. Daily maintenance procedure is included.
2. Add lubricant to each sliding part.
3. Check air source.

Monthly maintenance: 1. Weekly maintenance procedure is included.
2. Repair or replace the wearing part of each sliding part.
3. Check each electrical component and wearing part of pneumatic component.
4. Check or replace the electrical wire.

Annual maintenance: 1. Monthly maintenance procedure is included.
2. Check, repair or replace each pneumatic or electrical component.
3. Check or repair the wearing part.
4. Program test for the whole machine.

Record table of daily /weekly /monthly and annually maintenance.

Item	Maintenance parts	Record	Person in charge
1	XXXXXX		
2	XXXXX		

Ⅹ. Common Defects and Troubleshooting

A. Air Pocket

1.Pad surface is damaged.

2.Diluent chosen is not correct.

3.Blade is not sharp.

4.Ink is too thin.

B. Rough and Unclear Line of Image

1.Pad surface is damaged.

2.Steel plate pattern is damaged.

3.Blade is not sharp or has undercuts.

C. Light Image Color

1.Ink is too thin.

2.Filler is too much.(Normally it should be controlled roughly within 5%.)

3.Steel plate pattern is worn.

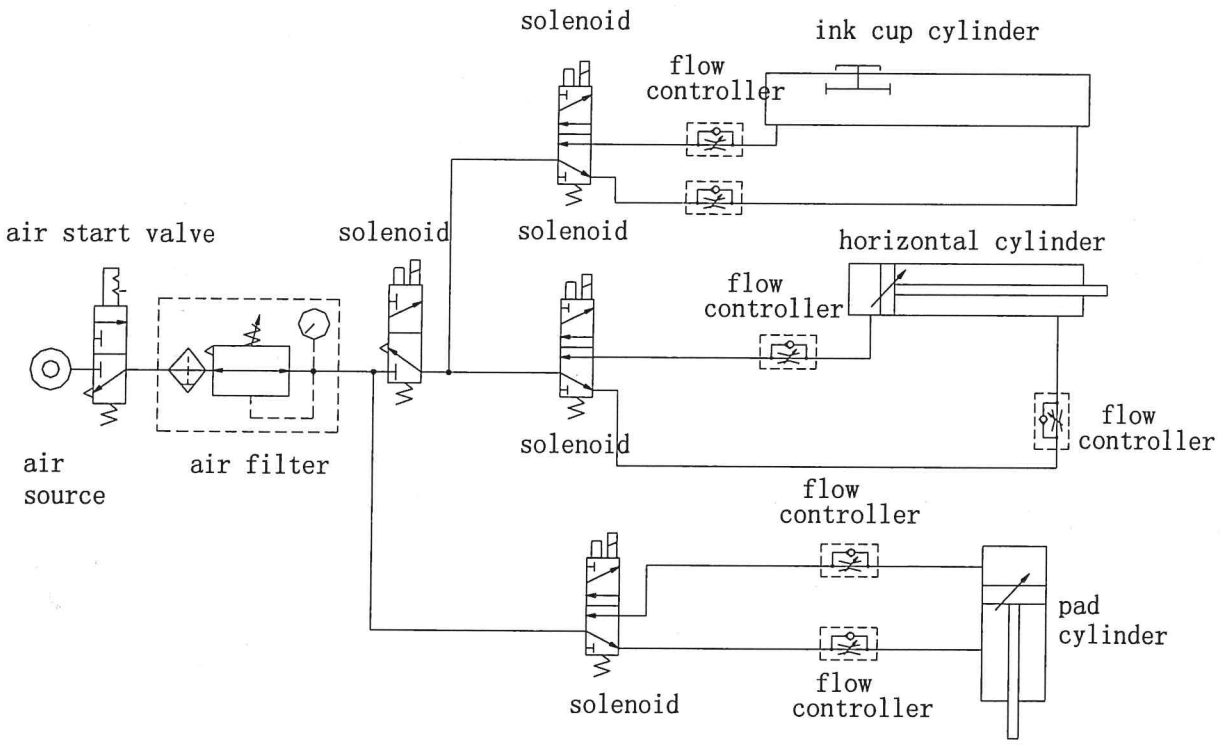
D. Deformation

1.Pad shape is chosen incorrectly.

2.Pattern is beyond printing range.

3.Pad pressure is too high.

XI.Pneumatic System Diagram



XII. Electrical Wiring Diagram