CYLINDER SCREEN PRINTING MACHINE

OPERATION INSTRUNCTION

操作说明书

LC Industrial company Limited 26-1
Website: Http://www.lc-pm.com Http://www.lcpadprinter.cn
Online contact Skype: yingsuhuakelven QQ: 726986799
Email: kelven@lcpadprinter.cn sales@lcpadprinter.cn

● Contents



Models and parameters of different types of screen printing machines

Model	Name	Printing size	Function	Printing speed
S-300S	With round working table	ϕ75×300mm	Cylindrical	1200PCS/HR
S-300E	With oval working table			
S-300F	With flat working table	200*300mm		1300pcs/H

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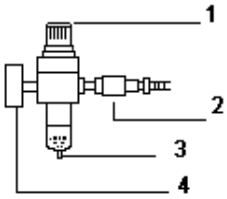
● Installation, Adjustment and Usage

This printer is appropriate to be installed in a clean, slow airflow, ash-free factory Workshop, where the temperature should be kept at about 25 ℃ (he printing ink is easy to volatize 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**.



1 **Pressure regulating valve** 压力调节阀

2 **Manual valve** 手动滑阀

3 **Drainage needle** 水隔开关

4 **Pressure meter** 压力表

There are level adjusting screws distributed over the four soles of the chassis, when adjusting, put the provided level mat on the ground first, which should be aimed at the screws. Turn the screw nut, and then revolve the screw clockwise till it press the level mat tightly. Then adjust the height of the four screws one by one in order to level the machine. Finally, tighten the screw nut to prevent the screw from loosing.

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.**

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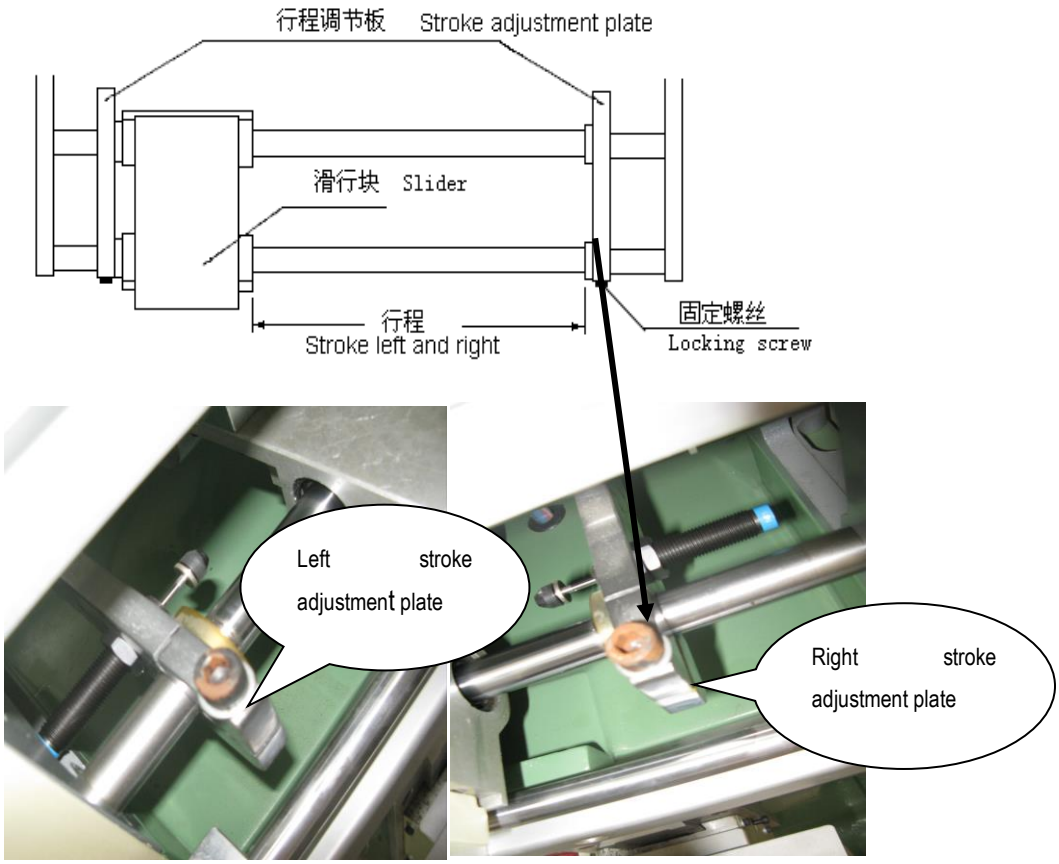
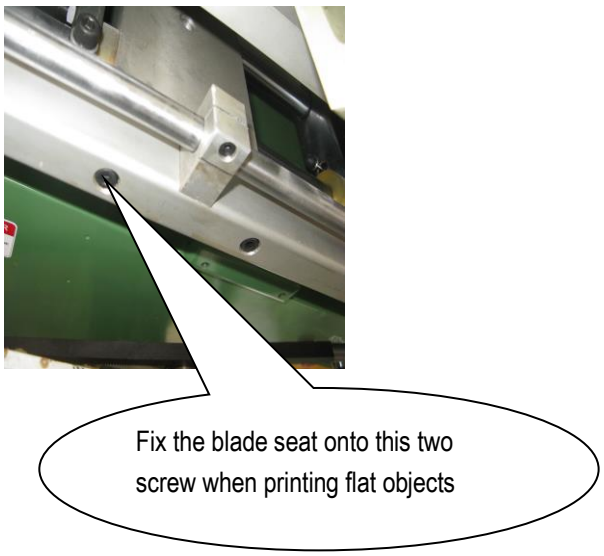
When the machine is working, pressure of the air inbreathed usually should be adjusted to 5 BAR. If you find the index is on the high side, push the pressure adjusting valve upwards, and then turn it anticlockwise to the standard pressure, while on the contrary, turn it reversely, after adjusting, press the valve downwards in order to fix it within the confines of standard pressure.



Components of the filter

4. Draining the contaminant water accumulated in the filter.

In order to keep the machine running well, preventing the outer moisture seeping in all the precision pneumatic organs built in the machine, you should drain the contaminant water accumulated in the plastic cup of the filter frequently. Push the drainage needle (see diagram 2) upwards several times; then you can drain it.



5. Adjustments of each mechanical part

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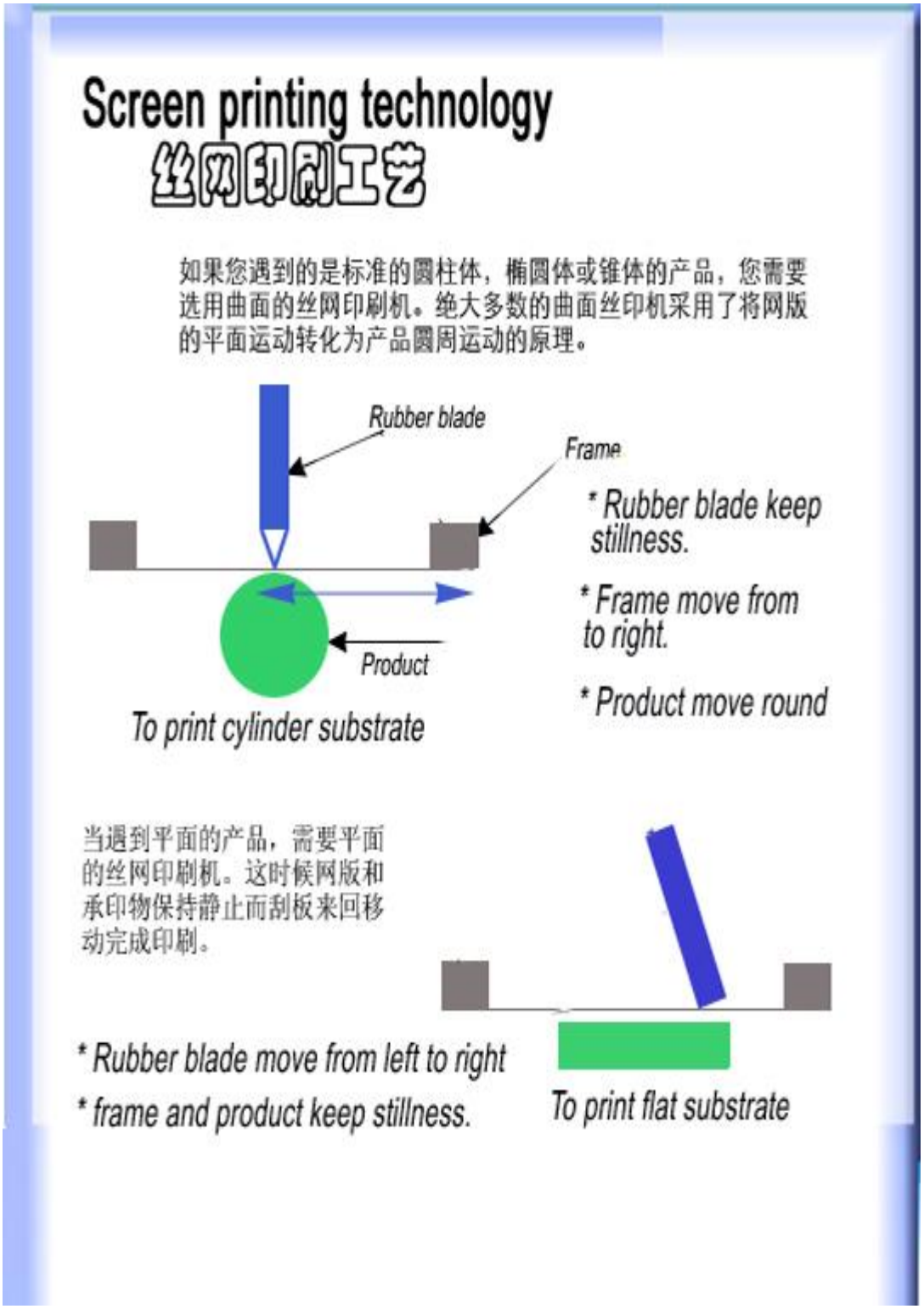
A: Conversion between cylindrical screen printing and plane screen printing.

This machine can print on both cylindrical surface and plane surface, which is realized by the position exchange of printing scraper frame and printing arm frame.

B. Installation of the ink scraper and ink withdrawing scraper

1) Cylindrical screen printing (printing in normal direction)



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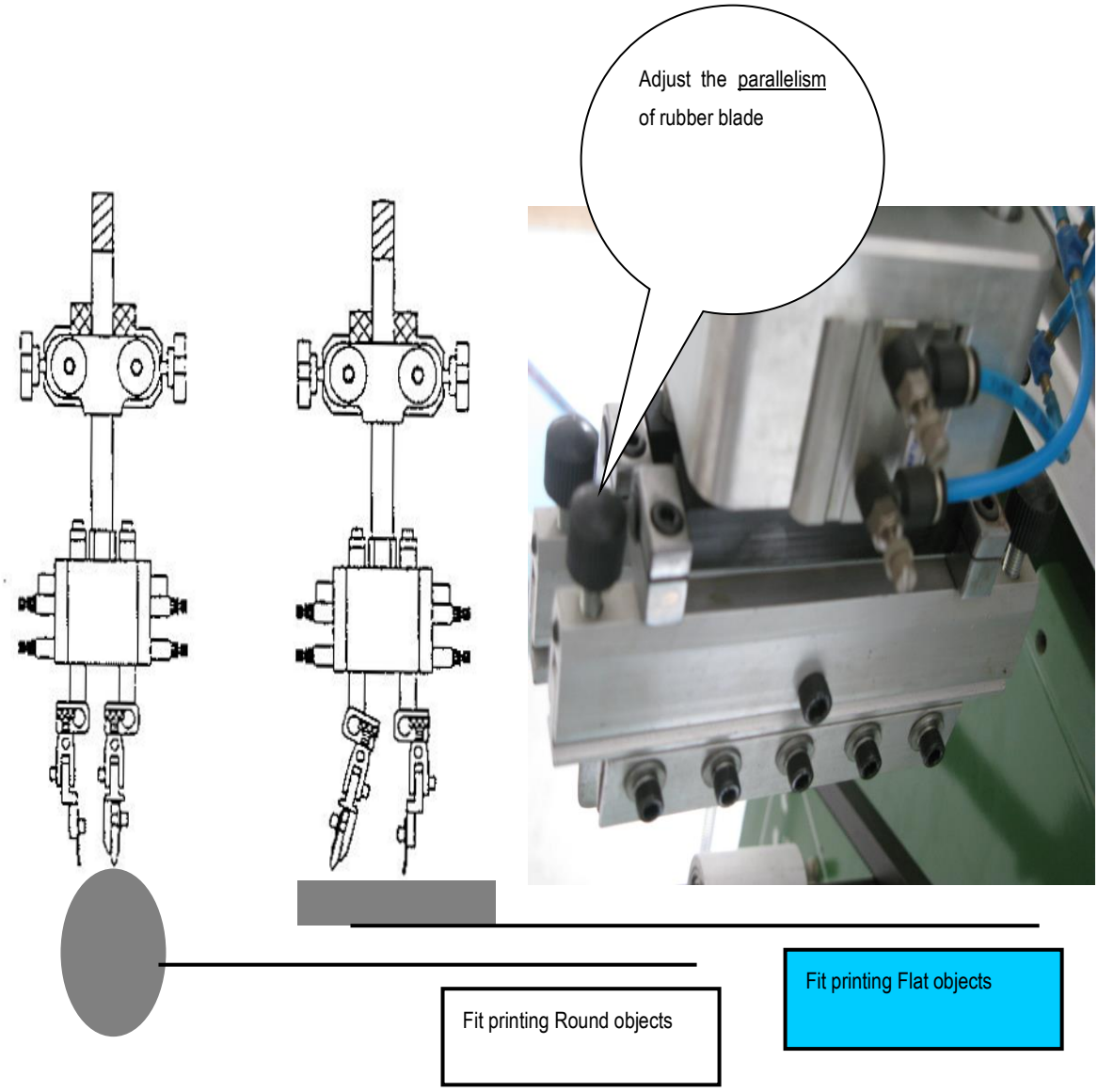
2) Plane serene printing (printing in normal direction)

C. Adjusting the printing stroke

Set the needed printing strode based on the pattern of the substrate, revolve the setscrews of the travel adjusting ram, and then move the travel adjusting ram to the left or right in order to match the needed printing dimension. At last, fasten the setscrews.

5. Printing adjusting methods:

a) Elliptical container serene-printing: first, make a fixture for the container in order to keep the stability of work piece during the course of printing. For a satisfied printing quality, you should adjust the relative position of the elliptical container and the screen frame, please refer to the diagrams of cylindrical



container and elliptical container for detailed instructions.

b) Plane printing: make a fixture and adhere it to the worktable before printing. If printing a heavy or thick work piece just put it on the worktable, if printing a light or thin work piece, in order to fix the work piece, you need an additional vacuum sorption platform. Please refer to the diagrams of the plane

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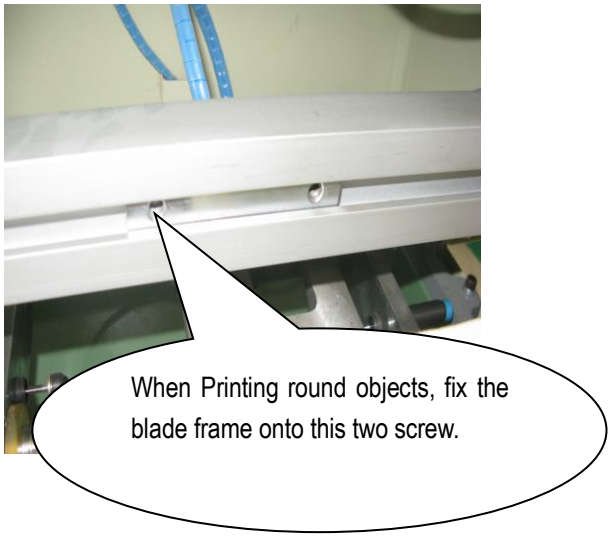
worktable and printing arm frame for detailed instructions.

1. Draining the contaminative water accumulated in the filter.

In order to keep the machine running well, preventing the outer moisture seeping in all the precision pneumatic organs built in the machine, you should drain the contaminative water accumulated in the plastic cup of the filter frequently, push the drainage needle (see diagram 2) upwards several times; then you can drain it.



5. **Adjustments of each mechanical part**

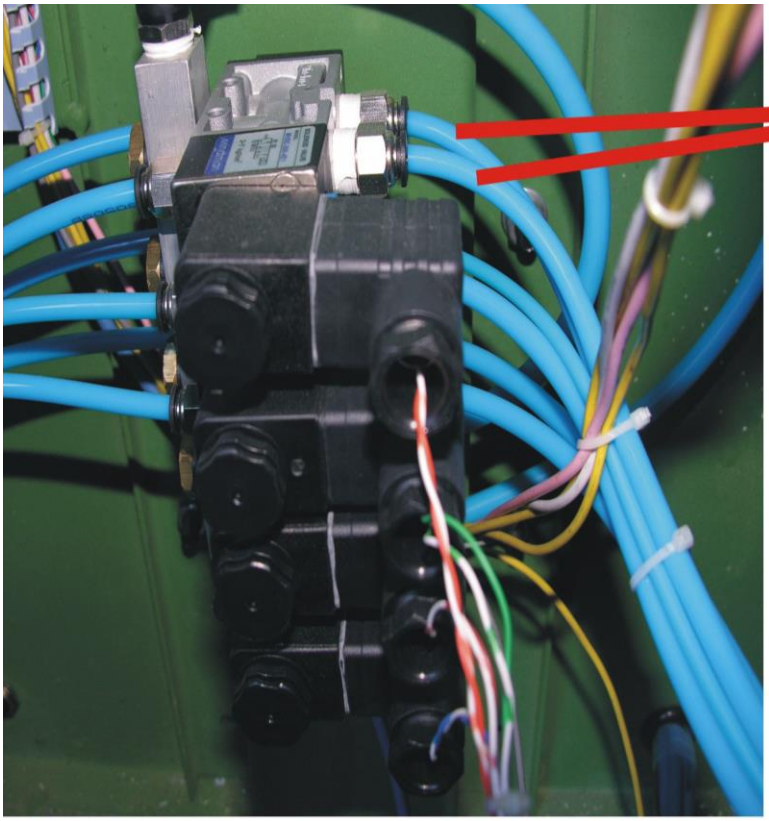
A: **Conversion between cylindrical screen printing and plane serene printing.**

This machine can print on both cylindrical surface and plane surface, which is realized by the position exchange of printing scraper frame and printing arm frame. (Refer to diagram 3)

B: installation of the ink scraper and ink withdrawing scraper (Refer to diagram 4)

C. Adjusting the printing stroke

Set the needed printing stroke based on the pattern of the substrate, revolve the setscrews of the travel adjusting ram, and then move the travel adjusting ram to the left or right in order to match the needed printing dimension. At last,



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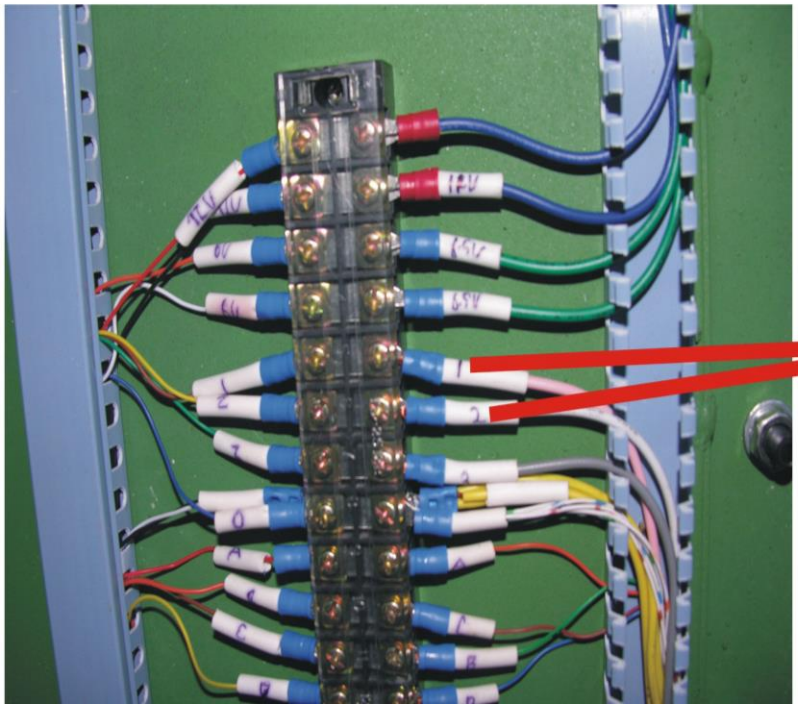

该二条线路互换
Please swap the two electron Lines each other

Fasten the setscrews.

1. **Printing adjusting methods:**

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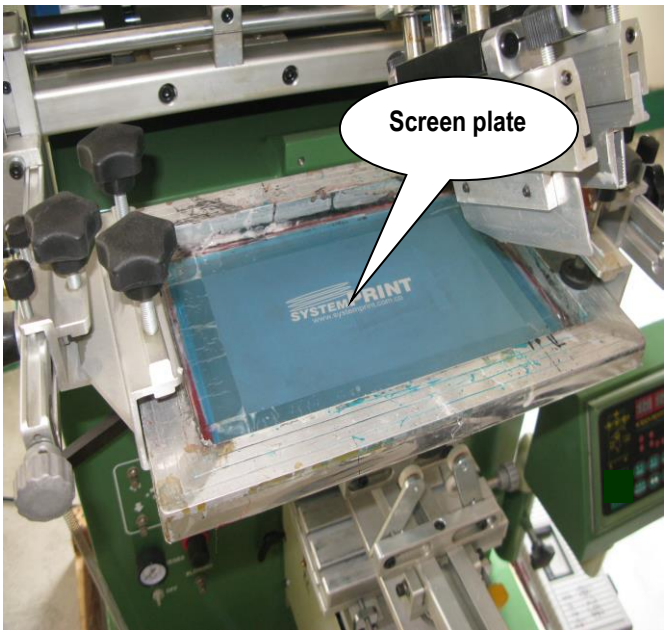
a) Elliptical container screen-printing: first, make a fixture for the container in order to keep the stability of work piece during the course of printing. For a satisfied printing quality, you should adjust the relative position of the elliptical container and the screen frame. Please refer to the diagrams of cylindrical container and elliptical container for detailed instructions.

b) plane printing: make a fixture and adhere it to the worktable before printing. if printing a heavy or thick work piece, in order to fix the work piece, you need an additional vacuum sorption platform. Please refer to the diagrams of the plane worktable and printing arm frame for detailed instructions.

● Cautions

1. Screen frame:

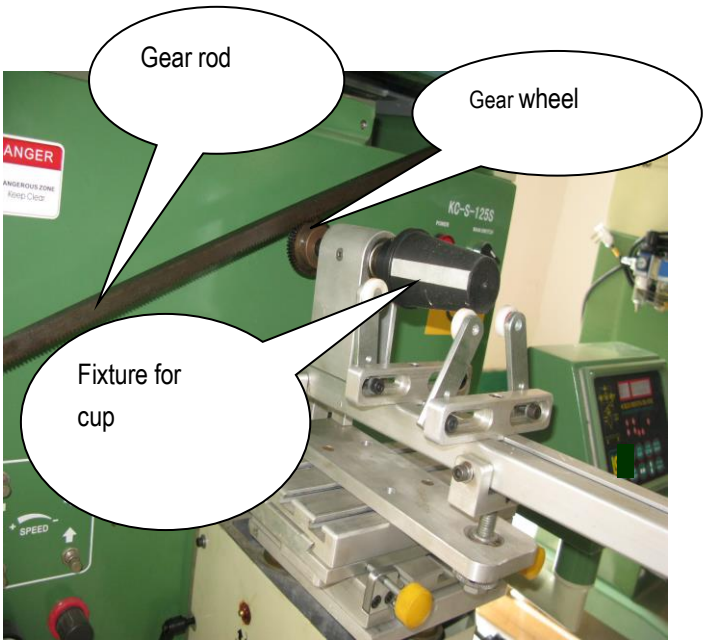
the frame is usually made of aluminum or wood, and the screen is adhered to the frame. The size of the frame inner circle is based on the size of the printing design, there should be a space of 60*100mm between the both ends and the squeegee left-right printing stroke.



If there is no inter-spaces or the inter-spaces is too close, the screen can not resole in time after printing, and then the pattern printed will be fuzzed.

2. Squeegee:

there is square squeegee and knife-edged squeegee, the former is suitable for plane and hard surface, and the later is suitable for accident surface. Because the square squeegee is more powerful while printing, lines of the pattern printed are fine, but if the surface is accident, the pattern printed will be unsatisfied. Since the knife-edged squeegee can whisk the ink throughout the printing stroke by its pointed edge (the square squeegee only scrapes the ink), then even the surface of the work piece is uneven, the accident squeegee also could print fine pattern. While, of needs fuscous chrome and dense ink on the work piece in order to make the pattern be lasting and wearable, also choose the accident squeegee.



3. Installation and position adjustment of the screen frame.

4. Check if the shape and length of the squeegee is compatible with the characteristic of the work piece printed. Adjust to the appropriate printing pressure between the squeegee and the screen frame.

5.Mix the ink to the appropriate chrome, of the ink is too ropy, not only it lacks the active, but also it can jam the mesh. Of the ink is too watery, the chrome of the pattern printed will not be enough, and the lines of the patter oil be fuzzed. Mixing the ink is a matter of importance. While printing, the ink stored on the screen frame could not be too much or too little. If too much, before the squeegee finishing printing, the ink stored will flow backwards to the printing design and leak through the mesh, and after ink withdrawing, the ink for the next time will be too little, when withdrawing ink, the ink could not cover the design completely, the pattern printed will be uneven. So you should pay attention to the remaining ink frequently. There are many kinds of inks, only by choosing the proper one, can you get satisfied printing quality.

6. Make the fixture for work piece printed. Not only make sure that inserting and taking out the word piece conveniently, but also make sure the work piece printed not standing upright. Since the work pieces are different in shapes, the fixture should be designed according to the actual needs. When printing round objects, it is very important to make a fixture. If there is anchor point on the bottle. Install a gear wheel on the axis of fixture. One Gear rod installed on the screen printer, this gear rod gear into with gear wheel and make the bottle whirl . Please ensure the reference circle of gear wheel is equal to the diameter of bottle.

7. the ash is the main negative factor and menace in screen printing ,so the workshop must be ash-free.

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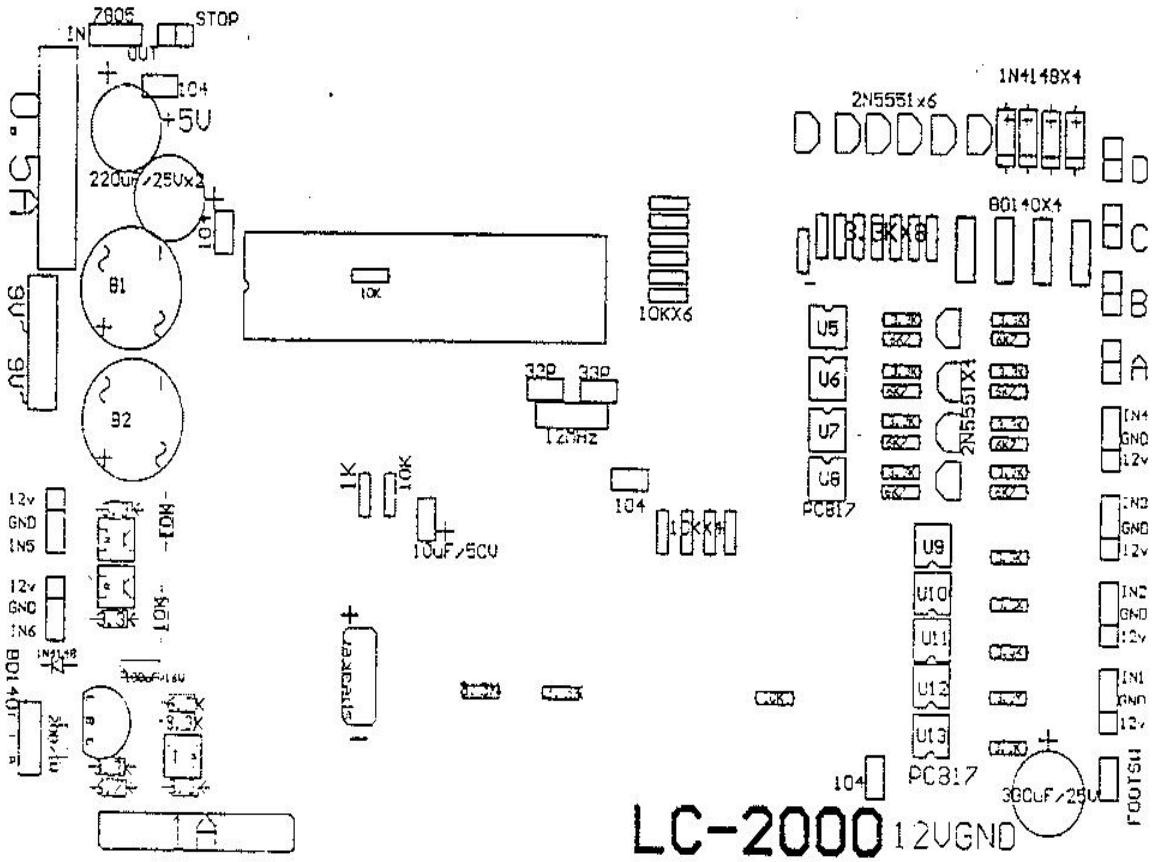
Circuit diagram



D: connect to the solenoid valve for the air source.

C: connect to the solenoid valve of the vacuum generator of the plane vacuum sorption platform.

B: connect to the solenoid valve for the lifting of the worktable.

A: connect to the solenoid valve for the rod less cylinder.

: No connecting wire.

: Connect to the sensor switch for the lifting of the worktable.

: Connect to the leftwards sensor switch of the rod less cylinder.

: Connect to the rightwards sensor switch of the rod less cylinder.

: Connect to the foot switch.

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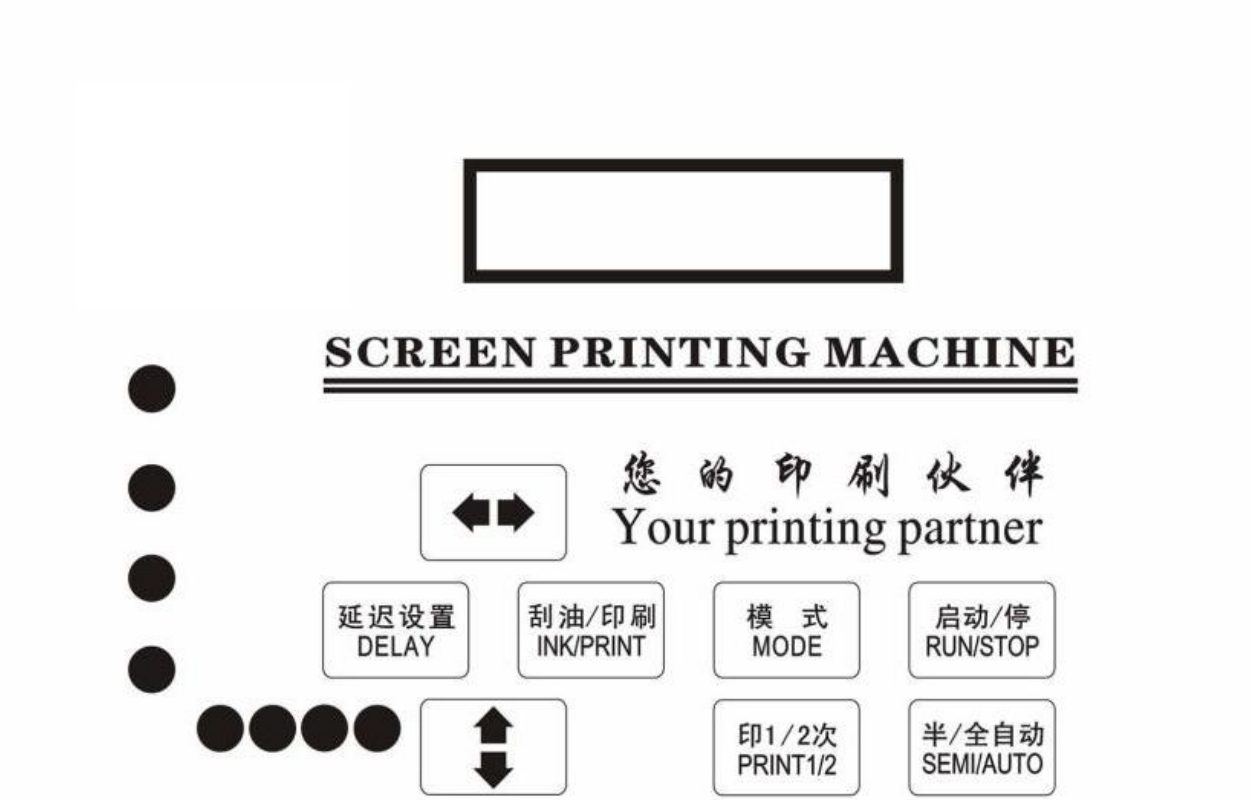
● Instructions of the IC panel and the operation panel

IC Panel



Instruction of each button:

✧ "the screen""; After the machine electricity display shows the following content;

T1-0 P:

AUTO STOP 0000

This interface for normal mode, of which "T1-0" is speed, "P1" is a single printing head run times, the "AUTO" is fully automatic mode, is to STOP state "STOP", "0000" is the number of printing.

✧ "**MODE**": each light press 1 time, two kinds of mode conversion to each other, stop state, long press this button to close/open source.

✧ "**left/right**" button: stop state, press, print head part to the left or right to run at a time.

✧ "**UP/DOWN**" : in the condition of downtime, press, workbench running up and down again.

✧ "**SETTING**" : when the machine stop set "T1" time "0-9, 9 is the fastest.

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✧ "**SPEED**" : the machine stops, the press, scraper/oil return operation; In counting alarm Settings mode, press, shift between Numbers.

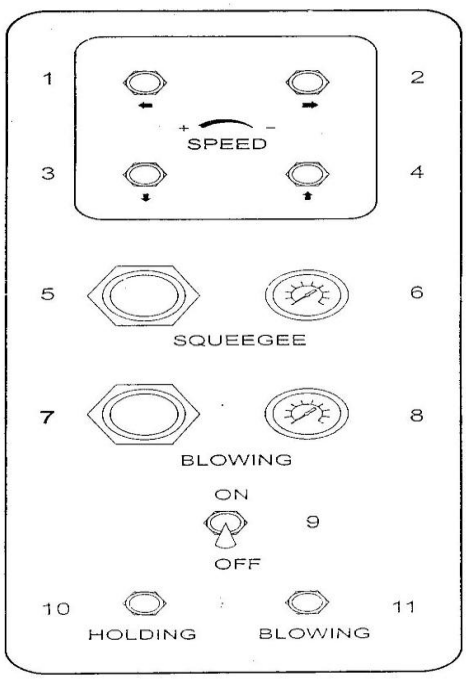
✧ "**RUN/STOP**" button: click this button at any time, start or stop the machine running.

✧ "**PRING1/2**" : set a single printing head run number (P1 / P2), P1 for the operation of a single printing head, P2 for the single printing head run 2 times. In counting alarm setting mode, press, digital increase.

✧ "**AUTO/SEMI**" : semi-automatic (run 1 week)/automatic (continuous) mode change the key. In counting alarm setting mode, press, digital. 4、

● Operation panel

1. Throttle valve for the printing arm/printing scraper frame left-stroke speed.
2. Throttle valve for the printing arm/printing scraper frame left-stroke speed.
3. Throttle valve for the worktable falling speed.
4. Throttle valve for the worktable raising speed.
5. Hand-operated valve for the air pressure of squeegee.
6. Meter of the air pressure of squeegee.
7. Hand-operated valve for the air pressure of blowing.
8. Meter of the air pressure of blowing.
9. Switch of the blowing of cylinder.
10. Tie-in of the cylinder for container holding.
11. Tie-in of the cylinder for blowing.



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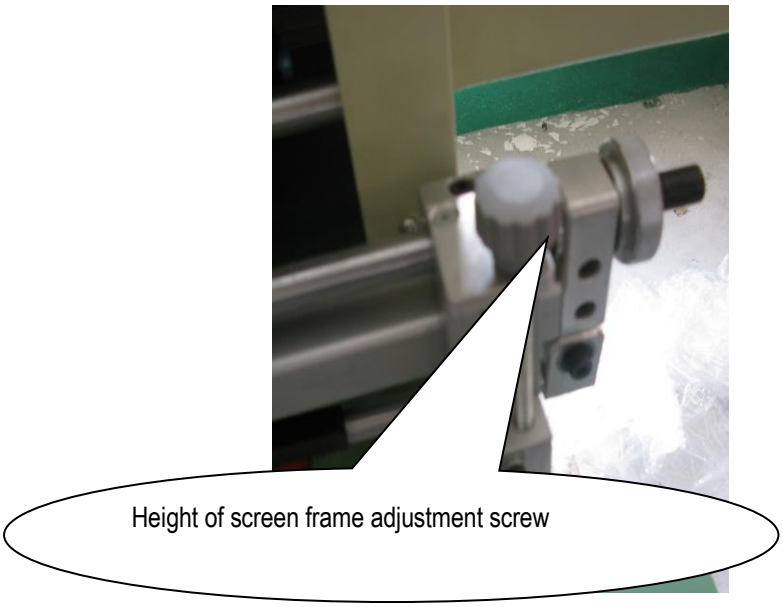
Maintenance

1. Infuse lubricant to the slide guiding organs of the machine once per week, in order to keep the lubricate of the organs.
2. The moisture in the compressed air should be filtered, in order to prevent the moisture from entering into the cylinder organs, which could reduce the longevity of the organs.
3. Keep the cleanness of every mechanical part and the machine frame; prevent the ink from adhering to them.
4. Remember to drain the contaminative water accumulated in the plastic cup of the filter frequently.



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Detailed instructions of the parts

1. Position adjusting end: prevents the printing scraper from going out of the position adjusting shaft.
2. Setscrew of the tunable panel: fastens the tunable panel of the printing scraper frame.
3. Raise and fall adjusting knob: adjusts the position of the cylinder on the printing scraper frame in vertical direction.
4. Vertical direction adjusting shaft: balance-keeping shaft of the printing scraper frame.
5. Upholding slide ram: upholds the printing scraper frame.
6. Slide shaft: the slide guiding shaft of the printing scraper frame.
7. Turntable panel: turns the printing scraper frame upwards through it in order to adjust the screen frame conveniently.
8. Setscrew knob: controls the turning of the panel.
9. Panel turning spindle: fastens and connects the printing scraper frame to the machine frame.
10. Fastening panel: fastens and connects the printing scraper frame to the machine frame.
11. Cylinder fixture: fixing the cylinders on the printing scraper frame.
12. Adjusting knob: adjusts the parallelism among ink withdrawing scraper clamp, screen frame and the substrate.
13. Ink-withdrawing scraper fixture: fastens the ink withdrawing scraper.
14. Ink-withdrawing scraper fixture: fastens the ink withdrawing scraper.
15. Ink-withdrawing scraper: reclaims ink onto the printing pattern of the screen after one stroke.
16. Ink scraper fixture: fixture for the squeegee clamp.

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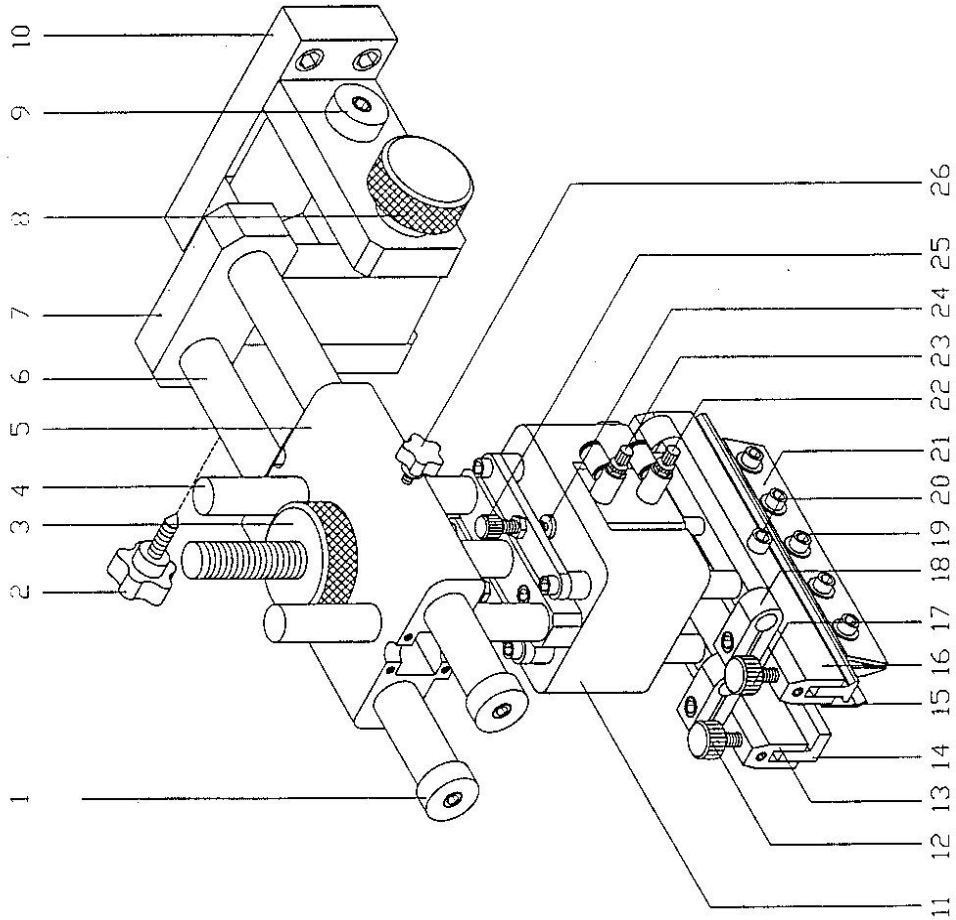

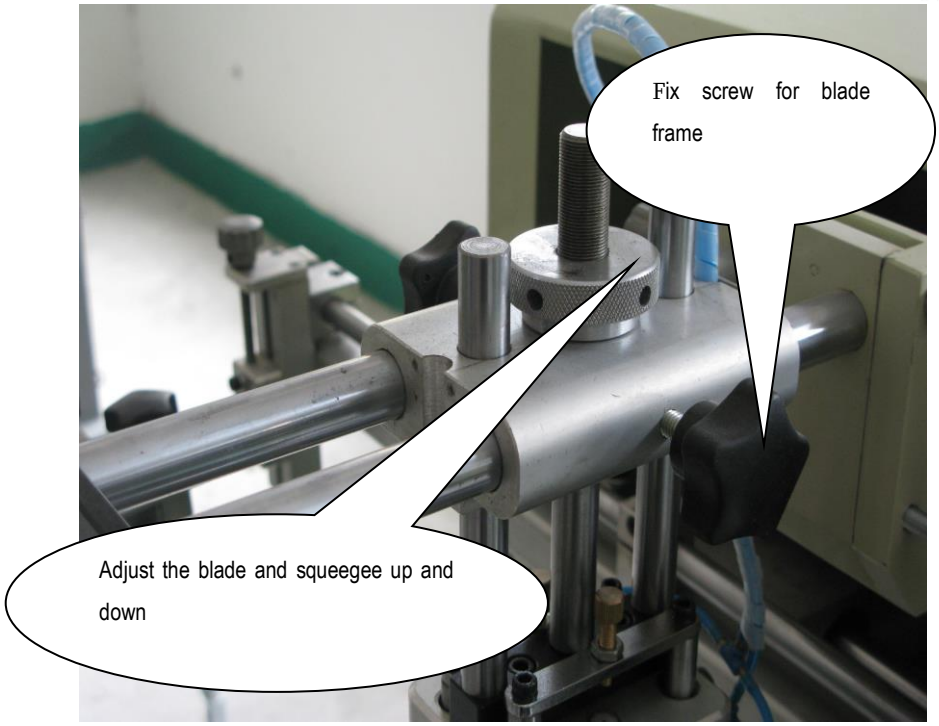

17. Adjusting knob: adjusts the parallelism among squeegee clamp, screen frame and the

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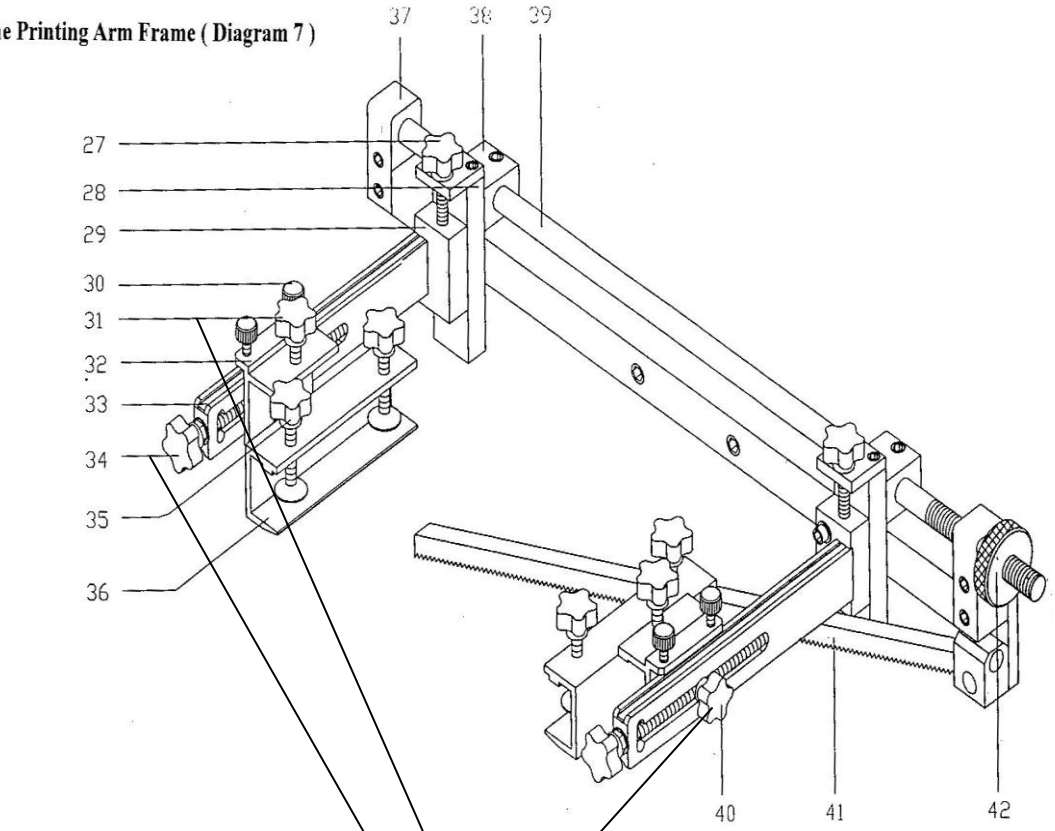
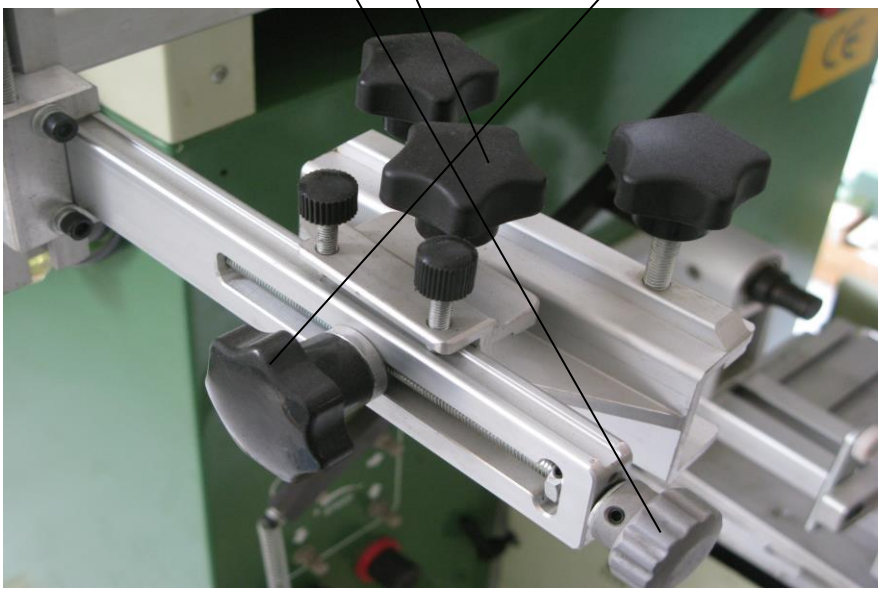
substrate.

18. Angle adjusting fixture; adjusts the ink withdrawing scraper and the squeegee clamp to the appropriate angle, and then fastens.
19. Squeegee clamp setscrew: fixes the squeegee after adjusting the position of it.
20. Angle adjusting spindle: a screw that drills through the squeegee clamp.
21. Squeegee valve; fixes the squeegee.
22. Throttle valve; adjusts the upstroke air current.
23. Throttle valve; adjusts the upstroke air current.
24. Downstream shock absorber; reduces the shock caused by downstream.
25. Inching knob: adjusts the downstream depth of the squeegee and ink withdrawer scraper.
26. Setscrew knob: fixes the slide ram of the printing scraper frame after positioning it.
27. Lifting adjusting knob: adjusts the lifting of the screen frame.
28. Lifting pedestal; the supporting pedestal for the lifting of the screen frame.
29. Lifting bar: sliding bar for the lifting of the screen frame, which fixes the printing arm.

The Printing Arm Frame (Diagram 7)





30. Lifting bar: sliding bar for the lifting of the screen frame, which fixes the printing arm.

31. Angle adjusting knob: adjusts the position of the screen frame in horizontal direction.

32. screen frame fixing knob: fixes and fastens the screen frame

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33. Sliding fixture: move it in front-back direction in order to adjust the position of the screen frame.

34. Printing arm: fixes the position of the screen frame on it.

35. Position adjusting knob: adjusts the screen frame in front- back direction.

36. Screen frame setscrew: revolves it in order to fasten the screen frame.

37. Screen frame clamps the screen frame. Clamps the screen frame.

38. Supporting pedestal for the printing arm frame: the main supporting pedestal for the horizontal slide of the screen frame.

39. Sliding fixture: fastens the printing arm after positioning it.

40. Slide shaft: moves the printing arm components leftwards or rightwards through it.

41. Setscrew knob fastens the screen frame after adjusting the position of it.

42. Rack: meshes with the gear in the cylindrical or conical printing.

43. Inching knob: leftwards or rightwards moving the printing arm components.

44. Throttle valve: adjusts the leftwards-sliding speed of the printing scraper frame and printing arm frame.

45. Throttle valve: adjusts the downwards-sliding speed of the worktable.

46. Throttle valve: adjusts the upwards-sliding speed of the worktable.

47. Pressure adjusting valve: adjusts the pressure of the ink scraper.

48. Pressure meter: indicates the pressure of the ink scraper.

49. Pressure adjusting valve: adjusts the pressure of air blowing.

50. Air blowing switch: controls the blowing.

51. Vet hole: the container-goring cylinder with air source.

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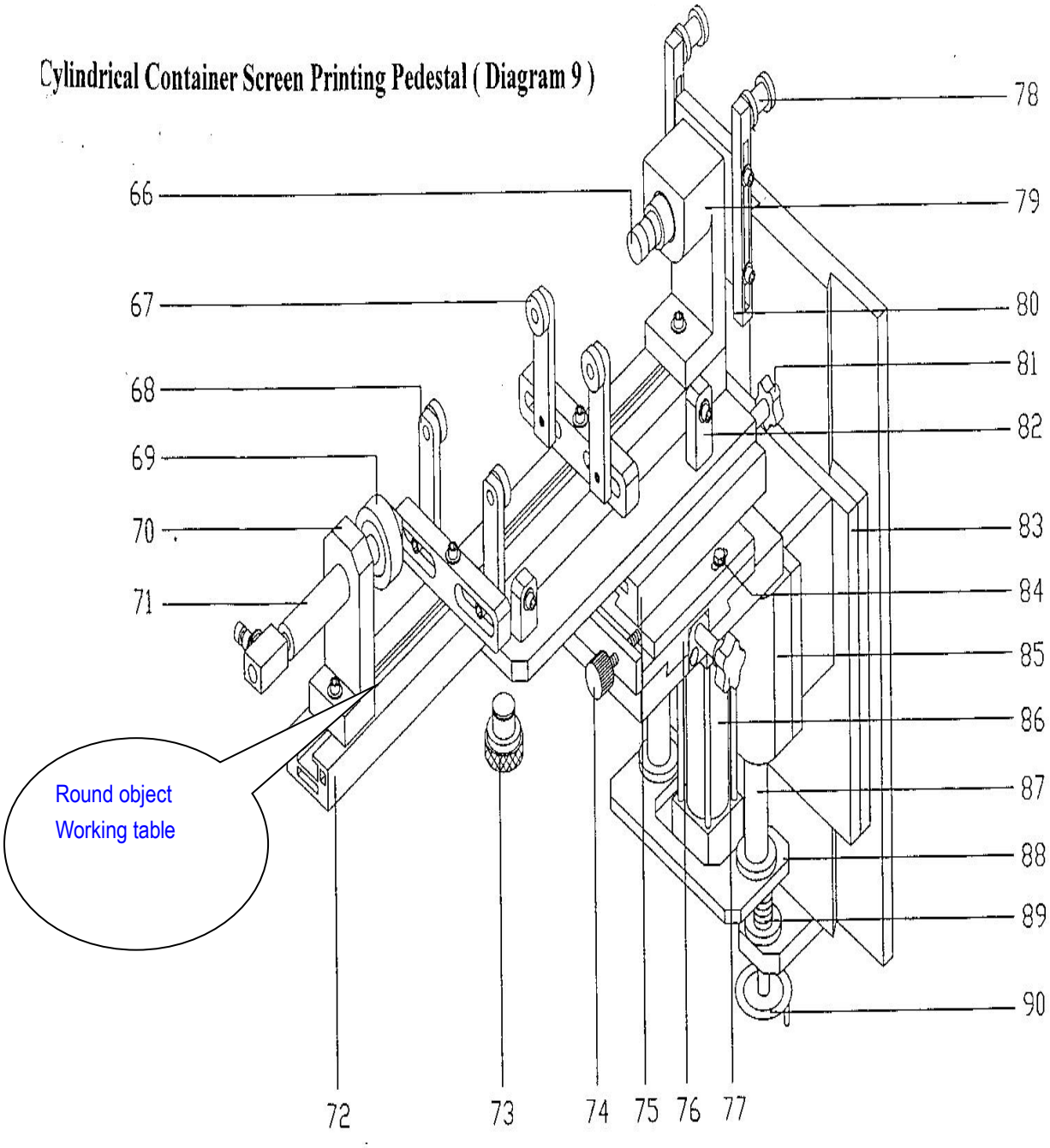

52. Pressure meter: indicates the pressure of air blowing.
53. Vent hole: tie-in of the container-goring cylinder
54. Fixing plate: fixes the printing arm frame.
55. Supporting rack: supports the printing scraper frame.
56. slide shaft: guides the slide of the printing scraper frame and printing arm frame

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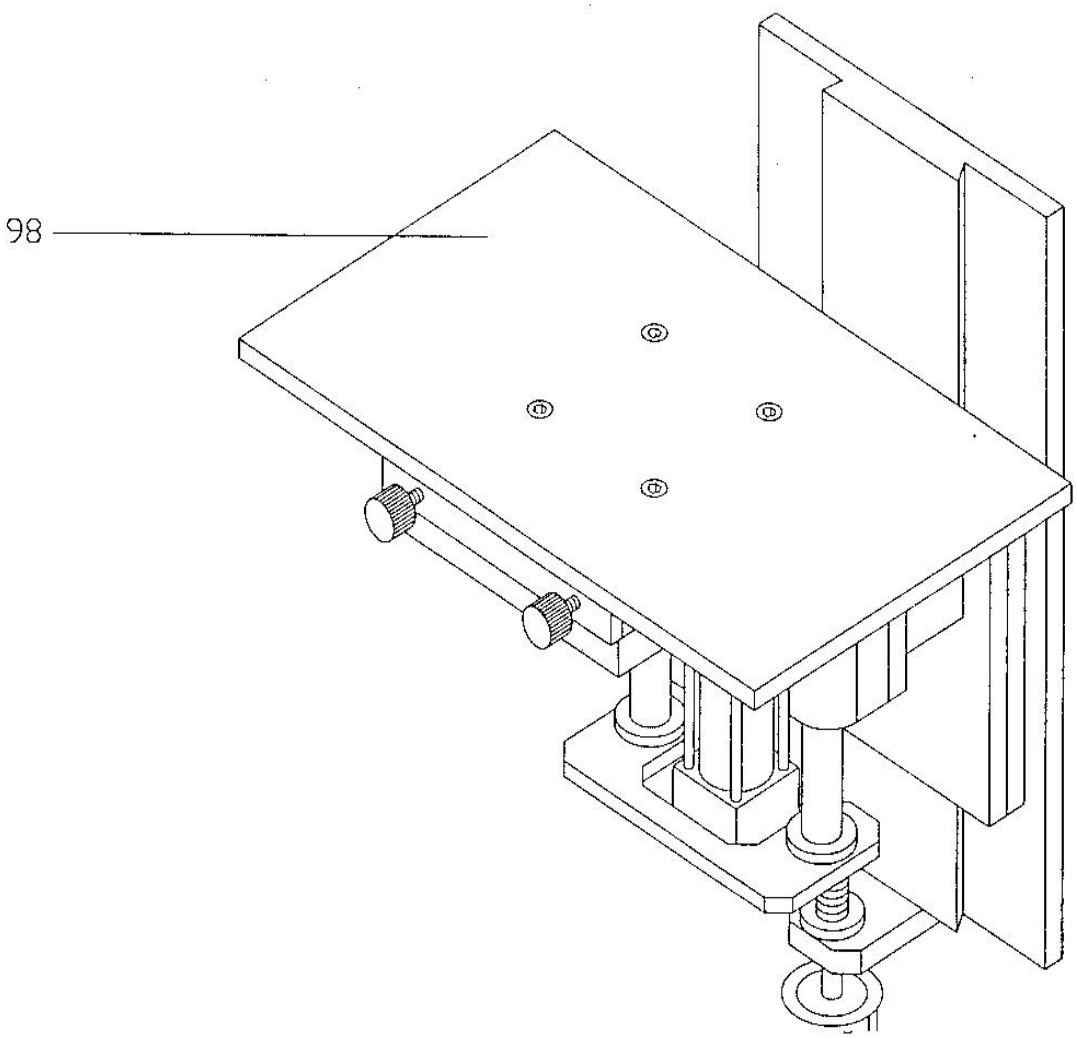
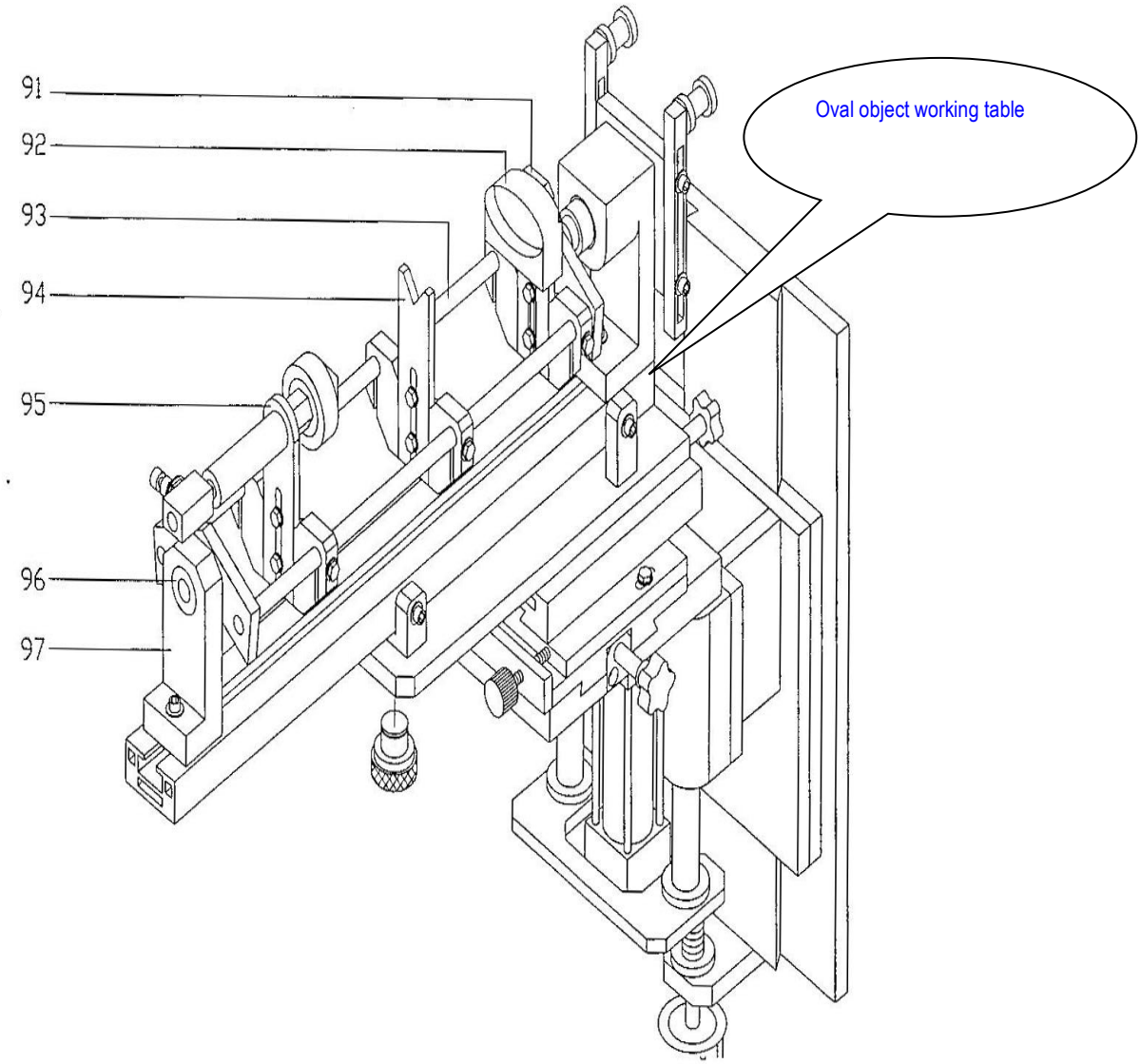
57. Shock absorber: reduces the shock caused by the strike of sliding ram.
58. . Shock absorbing cushion: reduces the shock caused by the strike of sliding ram.
59. Sliding panel: slightly adjusts and fixes the position of the printing scraper frame.
60. Transverse adjusting screw: adjusts the printing scraper in left-right direction slightly.



Plane Screen Printing Pedestal (Diagram 11)

61. Transverse adjusting panel: adjusts the printing scraper frame in left-right direction.
62. Slide stroke fixture: sets the confine of the slide stroke of printing arm frame.
63. Power switch: master switch of the electrical source.
64. Indicator: displays the power connecting status.
65. IC panel: controls the operation of electric and pneumatic organs.
66. Cylindrical container fixture: fixes the cylindrical container.

Elliptical Container Screen Printing Pedestal (Diagram 10)



67. system of pulleys: supports and rotates the container or work piece.
68. Supporting pedestal: supports the system of pulleys.
69. Container-goring wimble: fixes the container.
70. Container-goring fixture: fixes the container-goring cylinder.
71. Container-goring cylinder: a pneumatic organ for fastening the container.
72. Supporting bar of the container fixture organs: adjusts the lean angle of the printing fixture.
73. Inching knob of rotation: adjusts the lean angle of the printing fixture.
74. inching knob of rotation: adjusts the rotation of the supporting pedestal organs
75. Position adjusting pedestal: adjusts the position of the container in front-back direction.
76. Transverse adjusting knob: adjusts the position of the container in front-back direction.
77. Transverse adjusting knob: adjusts the position of the container in left-right direction.

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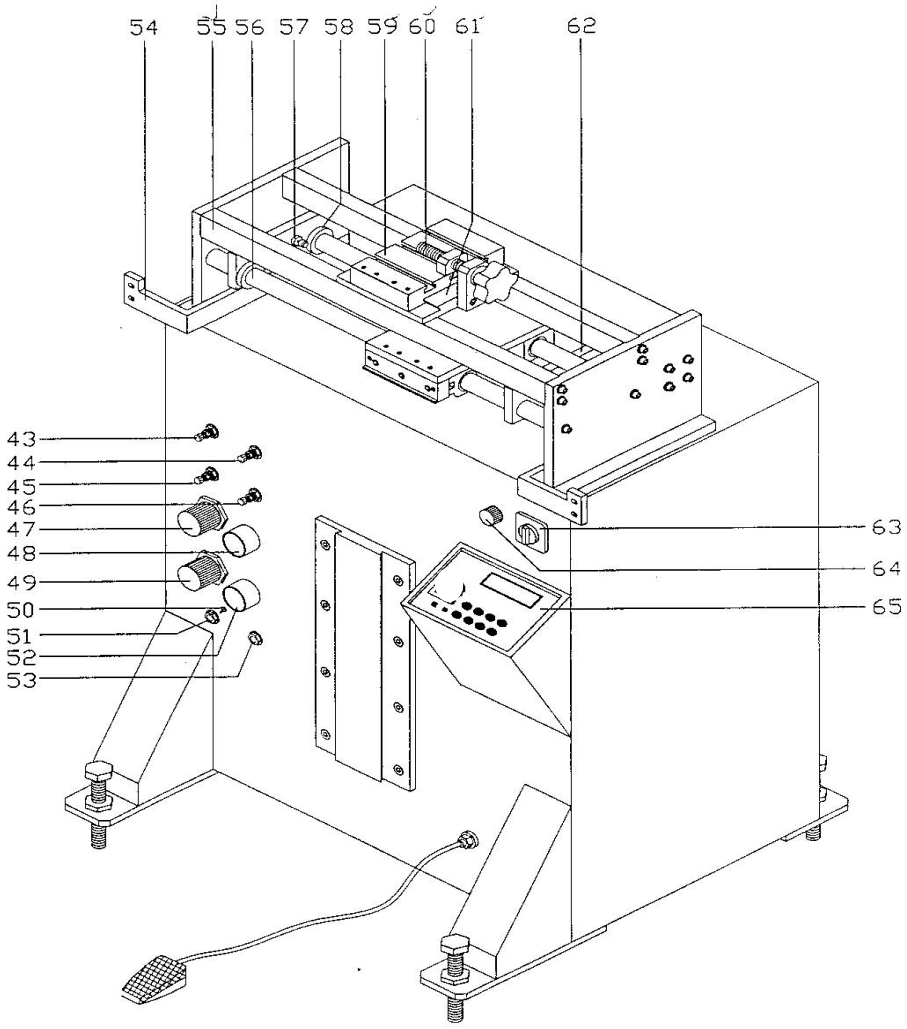
Online contact Skype: yingsuhuakelven QQ: 726986799
Email: Kelven@lcpadprinter.cn sales@lcpadprinter.cn

78. Rack-pressing work piece: adjusts the interspaces between the rack and gear.
79. Bearing bush: installs the bearing on it in order to rotate the container.
80. Supporting pedestal of the rack-pressing work piece: supports the rack-pressing word piece.
81. Inching knob: adjusts the position of the container in front-back direction.
82. Pedestal of the supporting bar: supports the supporting bar.
83. Lifting supporting pedestal: adjusts the lifting of the worktable organs through it.
84. Setscrew; fixes the position after adjusting.
85. Lifting bearing bush: controls the precision of

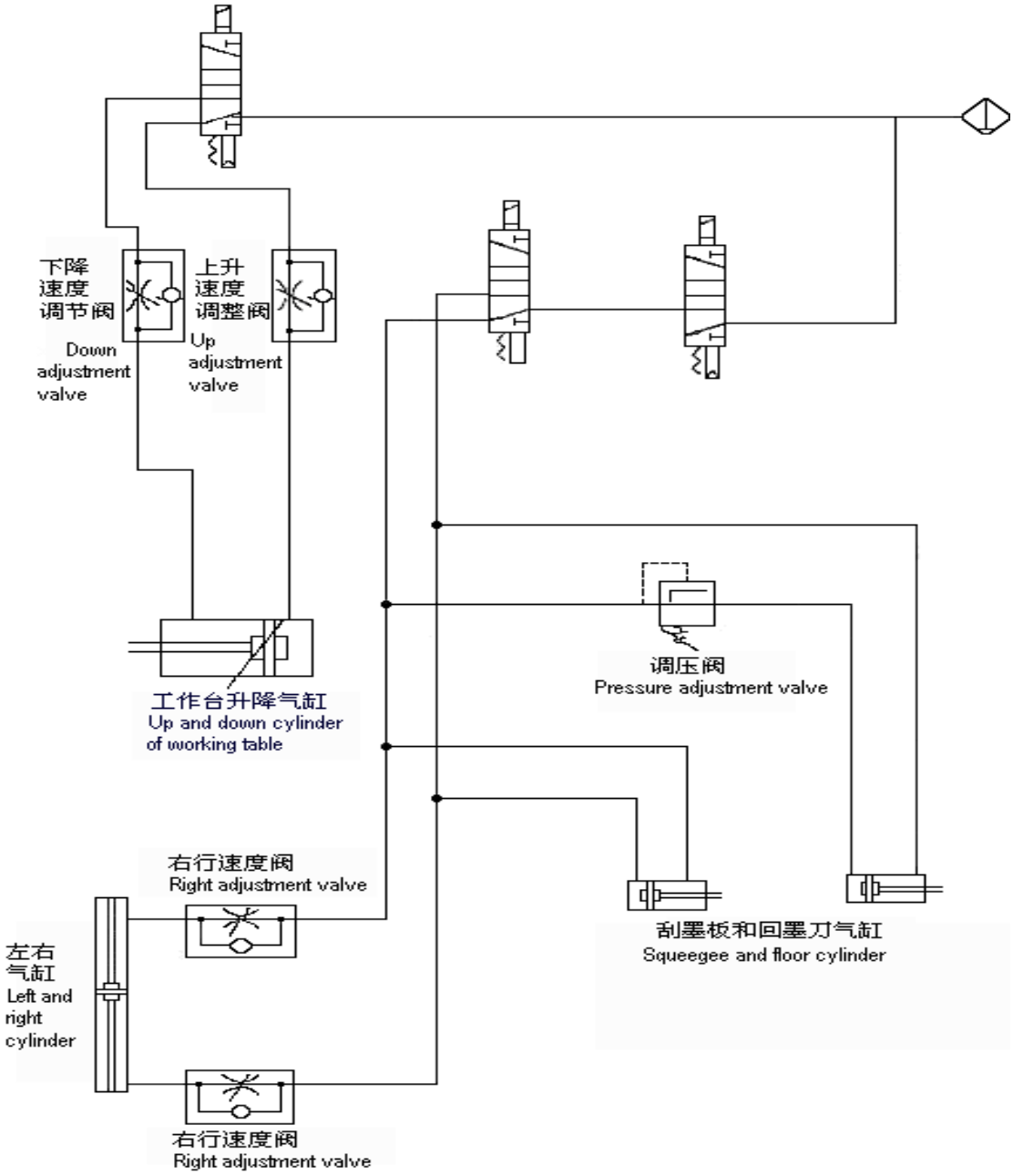
The Machine Frame (Diagram 8)



lifting.

86. Cylinder for lifting; a pneumatic organ that drives the lifting of the worktable organs.
87. Slide shaft: guides the lifting of the worktable components.
88. Fixture panel: fastens the slide shaft to prevent it from swinging.
89. Screw for lifting: lifts the worktable components through it.
90. Revolving hand wheel: adjusts the lifting of the worktable.

91. Supporting pedestal; a fixture that supports the elliptical container.
92. Elliptical container fixture; fastens the elliptical container.
93. Parallel shafts: parallels the fixtures and adjusts the position of the fixtures through these Shafts.
94. Elliptical container pedestal; supports the elliptical container.
95. Elliptical container goring fixture: fixes the container-goring cylinder.
96. Bearing rotation center: drills through the bearing bush in order to make the elliptical container fixtures swinging.
97. Elliptical container supporting pedestal: supports the elliptical container fixture components.
98. Plane plate: puts the substrate and fixture on it.



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Email: Kelven@lcpadprinter.cn sales@lcpadprinter.cn

圆面印刷时的操作步骤：

Round face printing steps:

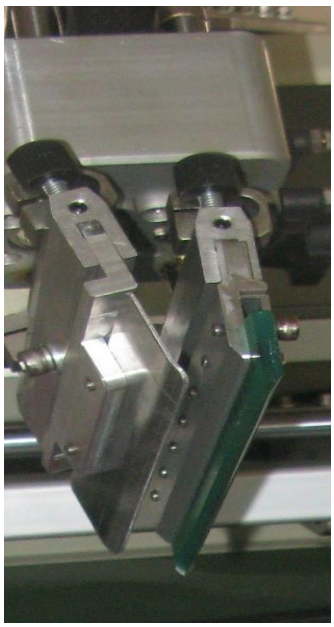
Round face printing, the scraper moves only up and down, left and right screen frame movement occurs, adjust the machine's best result in the screen printing process and products to maintain parallelism, uniform squeegee pressure, back blade inking uniform.

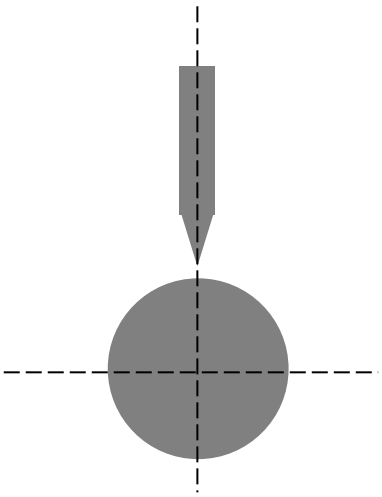
1) Install fixture, keep the fixture axis perpendicular to the plane of the rack. For the cylinder, to ensure that the level of the cylinder on the bus.

2) usually are equipped with gear clamp, place the rack gear and the gear inside the machine.

3) installation squeegee and back blade for cylindrical products, we recommend the use of 25 * 5mm or 35 * 7mm tip scratch hardness between 75-85 degrees.

Ensure that the squeegee blade width and back width of screen image than about 5mm wide at its widest point. Ensure sharp scraping the centerline center line aligned products.





4) install the network version, or a model based on user needs, design adjustment screen above the approximate location and product fit, and to ensure that the process of screen movement can generally cover the entire print area. Note that when the installation screen print head lift.

5) adjust the screen left and right trip, the first screen to the right position to promote, ensure that the scraper under pressure to cover the screen when the far right of the above pattern, the machine screen the slider left and right were two stopper, the stopper position fixed, network

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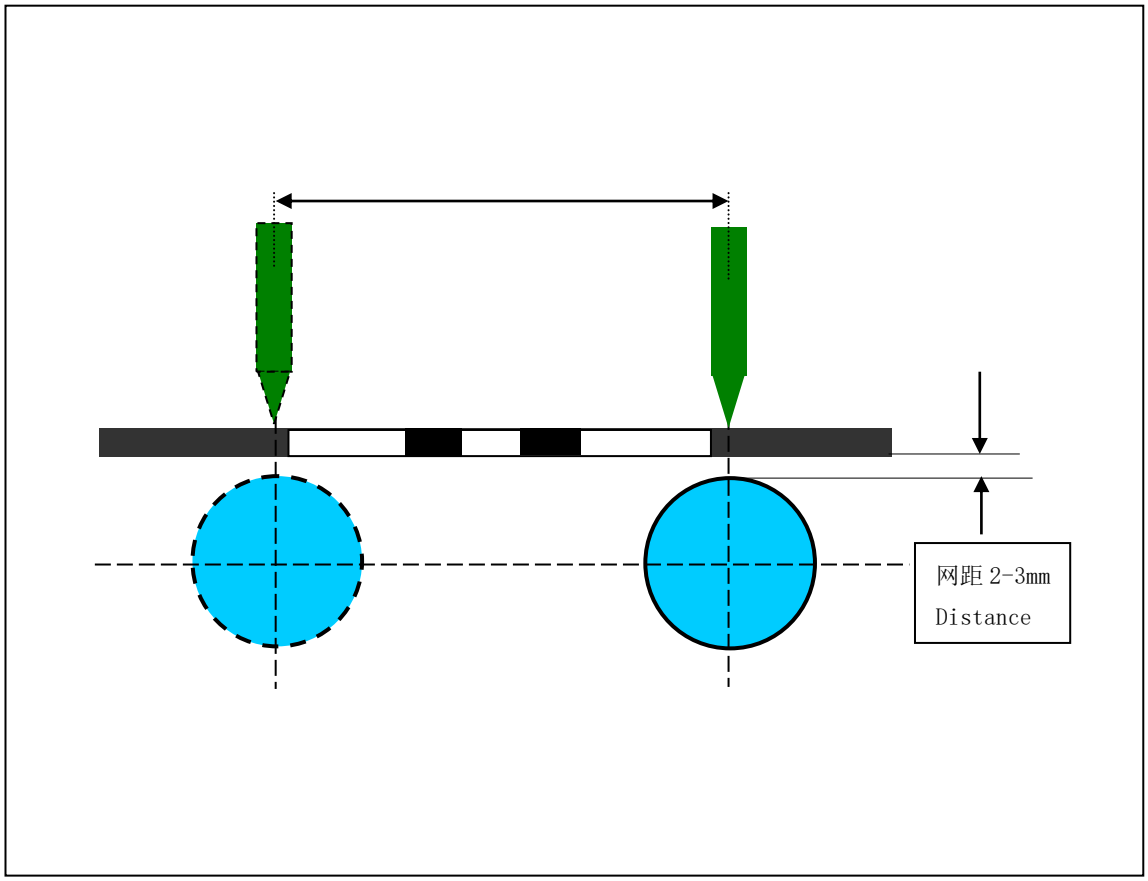
Email: Kelven@lcpadprinter.cn sales@lcpadprinter.cn

version of the trip has been so fixed, replaced another product, the first block release of these two limit, again adjust the itinerary, usually, screen The maximum stroke is the pattern with the maximum length of 20mm.

6) adjust the network distance. Printing process, screen and the distance between products is the network distance, usually to ensure that the network distance between the 2-3mm, the larger screen of the tension, the smaller network distance. Specific adjustment method is: first drive to the far right screen, adjusting the screen and the product range, and then drive to the far right screen, to ensure that screen at each location and products from the same network.

All the parts start printing before the adjustment is completed, all the moving parts to be fixed, to prevent the walk.

7) printing, according to the products, materials, select the appropriate ink and thinner, and thinner the ink after the deployment of appropriate, added to the graphic part of network box, start the machine began printing, the printing process, and gradually increase the pressure on the scraper to ensure clear print image



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Email: Kelven@lcpadprinter.cn sales@lcpadprinter.cn