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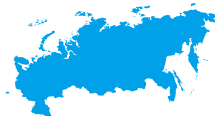
Koln, Germany



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Moscow, Russia



## Semi-Automatic Solder Paste Printing Machine User Manual



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**Thank you very much for  
your choice of our products and  
please read this manual carefully before using!**

## X. Attachment List

1. Tool Box \* 1 Set
2. Power Plug \* 1 PCS
3. Inner Hex Wrench \* 1 Set
4. Adjustable Wrench \* 1 PC
5. Locating Pin \* 25 PCS
6. Supporting Pin \* 30 PCS
7. Instruction Manual \* 1 PC
8. Certification \* 1 PC

## XI. After-sales Service

The warranty period of this machine is 12 months from the date of purchase. If the warranty period is not human, we will be free maintenance. If the warranty period is over or after the warranty period, we will charge the appropriate maintenance fee and maintain it for life.

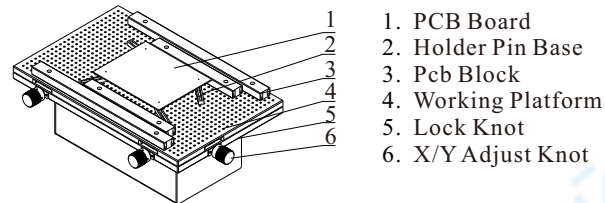
## I. Overview

1. This machine uses high-quality speed control motor and linear guide rail and other precision accessories assembled, so that the scraper head printing smoother.
2. Double-scrapers printing pressure can be adjusted by the up/down cylinder throttle valve, the lifting speed can adjust effectively avoid resonance
3. The printing head can be turned up 45° and fixed lock, convenient scraper loading and unloading and steel mesh cleaning, easy to operate.
4. The printing head can be fixed after many directions, fixed convenient steel mesh in place, effectively ensuring the printing effect.
5. The altitude of double-scraper of the printing head can be adjusted by adjusting the nut freely, so that the force between the scraper and the steel mesh can be controlled.
6. The level of spacing between the printing table plate and the steel mesh, the adjustment of the scale of the precision spinner, and the scale number display.
7. The robot arm moving range can be freely adjusted by the proximity switch, suitable for the requirements of different specifications of steel mesh.
8. The printing table plate has high density snail bee hole with the use of thimble and positioning needle, free positioning, simple operation, quick replacement, and suitable for single-sided substrate and double-sided substrate production work.
9. Electrical components using a microcomputer PLC combined with touch screen control, free choice of single or multiple printing and manual, semi-automatic and other modes.

## II. Technical Parameters

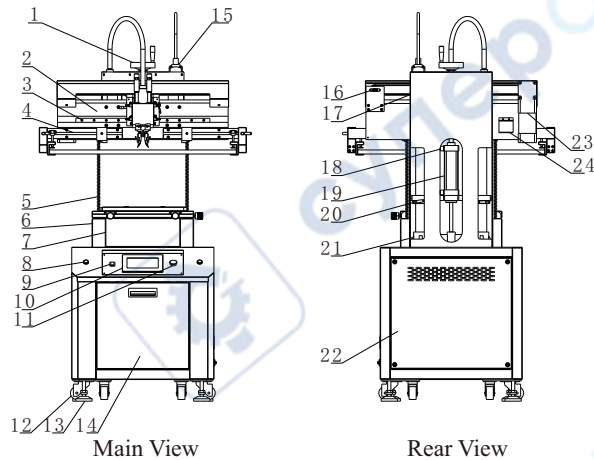
Model	ZB3250LY	ZB32125LY
Power Source	AC220V±10% 50Hz	
Power	100W	
Work Dimension	320*500mm	320*1250mm
Max Printing Size	320*450mm	320*1200mm
Max Printing Size	920*576mm	1570*576mm
Work Altitude	130mm	
Repeat Precision	±0.02mm	
Compressed Air	6~8Kgf/cm <sup>2</sup>	
Dimension	L850*W765*H1650mm	L1650*W765*H1650mm
Weight	200kg	280kg

### III. Technical Parameters



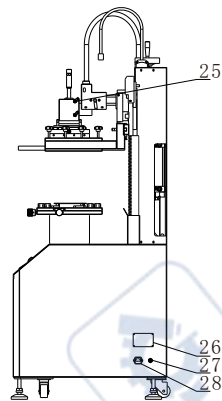
1. PCB Board
2. Holder Pin Base
3. Pcb Block
4. Working Platform
5. Lock Knot
6. X/Y Adjust Knot

Work Platform View

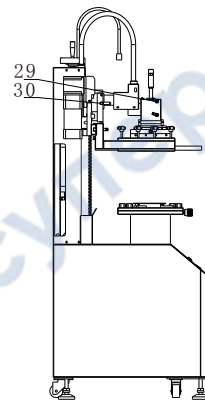


Main View

Rear View



Left View



Right View

### VII. Precautions

1. Equipment commissioning and operation do not put your hand into the printing station to prevent machine injury.
2. Scraper belongs to the sharp work piece carefully installed to prevent scratches.
3. Adjust the scraper movement travel when the induction switch must not exceed the range so as not to damage the machine.
4. Adjust the steel mesh to pcb board contact surface, do not too deep to avoid damage to the steel mesh.
5. Adjust the scraper pressure do not too deep to avoid damage to the steel mesh.
6. Non-professional maintenance personnel should not open the equipment repair.

### VIII. Maintenance

1. Clean the steel mesh and use a rag to stick alcohol to scrub the steel mesh clean.
2. Clean the scraper and use a rag to stick alcohol to scrub the scraper clean.
3. Clean up the table and wipe clean with rag slime alcohol.
4. Check the appearance of the equipment for any residue and wipe clean with a rag.
5. Regularly check and fill the x-axis rail and lift guide column with lubricant.
6. Regularly check whether the air pressure is normal or not.

### IX. Faults And Troubleshooting

Fault Phenomenon	Reason	Solution
No Power	1.No Electricity	Check Power Supply
	2.Power cable broken	Change Power Plug
	3.Faulty Power Switch	Change Power Switch
	4.Fuse Burnt	Change Fuse
	5.Power Source Broken	Change Power Source
Stencil Do Not Move Down	1.Up Limit Sensor Broken or Can't Detect	Adjust Sensor Position or Exchange
	2.Sensor Cable Disconnect	Change Cable
	3.PLC Faulty	Change PLC
	4.Solenoid Valve Broken	Change Solenoid Valve
Stencil Do Not Move Up	No Compressed Air Input or Pressure Not Enough	Check Air Supply and Adjust Pressure
Scraper Do Not Move	1.Motor or Capacity Broken	Change Motor or Capacity
	2.Motor Monitor Broken	Change Motor Monitor
	3.Scraper Not in Starting Position	Move Scraper To Limit Postion Manually
Scraper Do Not Move After Sencil Is Ready	1.Down Limit Sensor Faulty	Adjust or Change Sensor
	2.Sensor Disconnect	Change Cable
Scraper can not Stop Properly	Left or Right Limit Sensor Faulty	Change Sensor

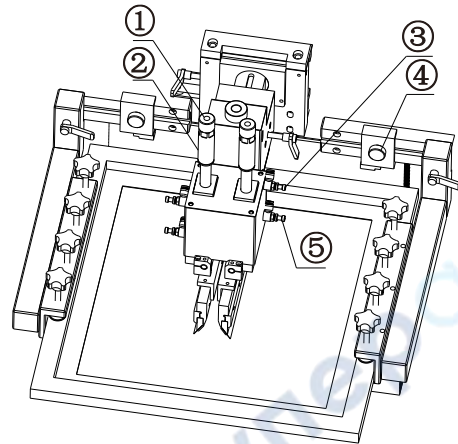


Fig. 9

### 6. Scraper Up/Down Moving Speed Adjustment

- (1) Counterclockwise rotation throttle valve ③ the scraper rise speed is accelerated, clockwise rotation throttle valve ③ the scraper rise speed slows down as shown in Fig. 9.
- (2) Counterclockwise rotation throttle valve ⑤ then the scraper pressure speed is accelerated, clockwise rotation throttle valve ⑤ scraper pressure slow down as shown in Fig. 9.
- (3) The left and right scraper debugging method is the same and this type of push.

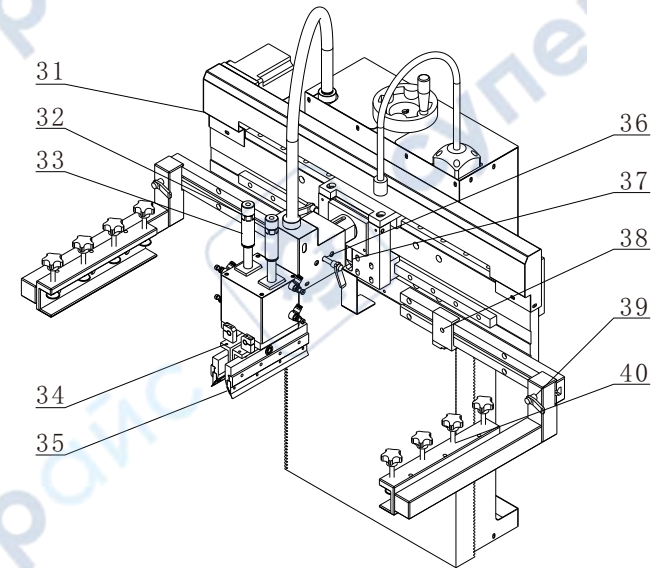
### 7. Scraper Left/Right Range Adjustment

- (1) Rotate the lock nut ④ counterclockwise, and move the limit sensor to the far right as shown in Fig. 9.
- (2) Enter the touch screen manual debug mode point-moving scraper to move right to observe the left scraper across the steel mesh printing area bit and then move to the right 20mm stop.
- (3) Move the limit sensor to the left until the sensor indicator lights up after touching the scraper head sensing sheet and the lock nut ④ and lock the position.
- (4) The position limit adjustment method is the same in both directions.

### 8. Start Printing

- (1) The stirred solder paste should be distributed onto stencil by blade to generate line accumulation which is longer then printing area.
- (2) Enter the touch screen to switch to the semi-automatic printing interface with both hands and press the start button to start production.

01. Altitude Wheel	02. X-Axis Crossbar Plate	03. X-Axis Rail
04. Width Adjustment Track	05. Organ Shield	06. Organ Shield Support
07. Workbench Base	08. Start Button	09. Power Switch
10. Touch Screen	11. Emergency Stop Switch	12. Casters
13. Floor Stand	14. front Door Panel	15. Lighting
16. Passive Wheel	17. Synchronized Band	18. Lift Speed Valve
19. Lifting Cylinders	20. Robotic Arm Locking Handle	21. Robotic Arm Base
22. back door panel	23. Scraper Motor	24. Motor Junction Box
25. Right Scraper Speed Control Valve		26. Origin Signage
27. Gas Source Interface		28. Power Outlet
29. Left Scraper Speed Control Valve		30. Flip The Lock Handle



Robot Arm View

31. Synchronous With Shield	32. Scraper Up And Down Lock Nut
33. Scraper Up And Down Adjustment Studs	34. Scraper Balance Adjustment Screw
35. Stainless Steel Scraper	36. Scraper Assembly Lock Handle
37. Flip The Tongue	38. Proximity Switch Adjustment Screw
39. stencil Holder Lock Handle	40. Stencil Holder Lock Handle Screw



## IV. Overview



Fig. 1

### 1. Semi-Automatic Operation (See Fig. 1)

- (01) Current time display: The upper right corner shows information such as the current time, the day of the month, seconds, and so on.
- (02) Illumination on: lighting switch button is used to control the light on or off.
- (03) Production statistics: output statistics are how many PCB boards are printed to count.
- (04) Count zeroing: when the count zeroing button is pressed, the value of the output statistics is reset zero.
- (05) Left Limit Ready: indicates the position of the scraper, when the left position is reached the state color change display.
- (06) Right Limit Ready: indicates where the scraper is located, and the state color changes display when the right position is reached.
- (07) Up Limit Ready: indicates the position of the robot arm, when the upper position is reached the status color change display.
- (08) Down Limit Ready: indicates where the robot arm is located, and the status color changes display when the lower position is reached.
- (09) Reset: Stop work in progress back to initial state.
- (10) Interface Switching: manual debugging, parameter settings, factory settings to switch to the corresponding interface.

### 3. Stencil and PCB Interface Adjustment

- (1) Release the robot arm locking handle ③ ⑤ as shown in Fig. 8.
- (2) Adjust the knot ① clockwise direction rotation of the PCB distance from the steel mesh gap expanded, counterclockwise rotation PCB distance from steel mesh gap reduction.
- (3) Lock handle ③ ⑤ after adjustment.

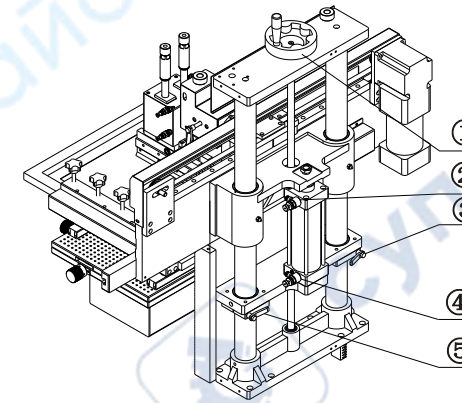


Fig. 8

### 4. Robotic Arm Moving Speed Adjustment

- (1) Turn throttle valve ② counterclockwise, the robot arm rises faster, rotates throttle valve ② clockwise, then the rising speed of the robot arm slows down as shown in Fig. 8.
- (2) Counterclockwise rotate throttle valve ④, then the robot arm drop speed is accelerated. Clockwise rotate throttle valve ④, then the slowing down the speed of the robot arm as shown in Fig. 8.

### 5. Scraper Pressure Adjustment

- (1) Hold the fixed adjustment stud ② in hand and loosen the lock nut ① as shown in Fig. 9.
- (2) The clockwise rotate adjustment stud ②, then the scraper pressure is reduced, counterclockwise rotate adjusting stud ②, the scraper pressure increases.
- (3) After adjustment, hold the fixed adjustment stud ②, and then lock the nut ①.
- (4) The left and right scraper adjustment method is the same.

## 2. PCB Install

- (1) Take a PCB board to be printed ① to measure the size of the positioning hole as shown in Fig. 5.
- (2) Find out the corresponding PCB plate hole size positioning needle from the toolbox ③.
- (3) Mount the positioning needle to the positioning pin holder ②.
- (4) Mount the positioning pin holder to the workbench.
- (5) The PCB board is fixed to the workbench plate against the positioning pinhole, at which point it is necessary to repeatedly lift the steel mesh alignment roughly, lock position pin holder after adjustment.
- (6) Then release the locking knob ⑤ under the workbench, passing three spinners ④ around and after. Repeated adjustment until the exact position-to-position rear lock is shown in Fig. 6.
- (7) When printing a double panel, the randomly configured thimble is secured below the PCB board to avoid the placement of components. As shown in Fig. 6 below.
- (8) When printing a single panel, the randomly configured fixed block is cushioned to the bottom of the PCB board as shown in Fig. 7.

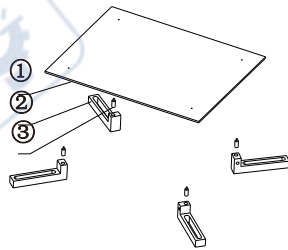


Fig. 5

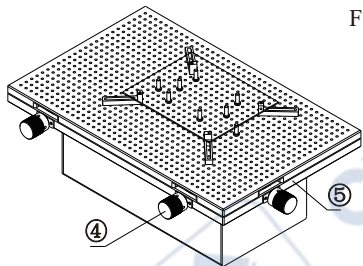


Fig. 6

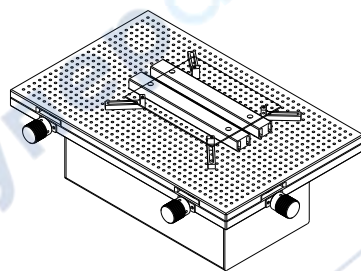


Fig. 7

- (11) Semi-automatic interface function: in this interface state, both hands press the start button at the same time to complete a. The secondary printing process, the interface status indicates that the button will change according to the action beat, and at the same time produce. The Output count value + 1.



Fig. 2

## 2. Manual Adjustment (Fig. 2)

- (1) Left Scraper Drop, press this button then the left scraper drops again and press the scraper back in position.
- (2) Right Scraper Drop, press this button then the right scraper drops again and press the scraper back in position.
- (3) Scraper Move Leftward, press this button shortly then the scraper move leftward, press this button continuously to move scraper moving leftward until it reaches left limit.
- (4) Scraper Move Rightward, press this button shortly then the scraper move rightward, press this button continuously to move scraper moving rightward until it reaches right limit.
- (5) Knife Holder Drop, press this button to move the blade holder down until reaching the position limit.
- (6) Light On: lighting switch button is used to control the light on or off (same as the semi-automatic interface).
- (7) Interface Switching, press the square semi-automatic MODE, parameter settings, factory settings to switch to the corresponding interface.
- (8) Manual Adjustment Interface Function, the role of this interface is to test the operation of the action is normal or not, and adjust the related position between PCB and stencil. Repeat step operation to complete adjustment.



Fig. 3

### 3. Date Setting ( Fig. 3)

- (01) Left scraper drop delay: left scraper delay parameter set value and then drop.
- (02) Right scraper drop delay: right scraper delay parameter set value and then drop.
- (03) Left scraper drop delay: left scraper delay parameter set value and then drop.
- (04) Left scraper rise delay: left scraper delay parameter set value and then rise.
- (05) Right scraper rise delay: right scraper delay parameter set value and then rise.
- (06) Left shift start delay: scraper left move before the delay parameter setting value before starting.
- (07) Right-shift start delay: the scraper right move before the delay parameter setting value before starting.
- (08) Print left shift speed: scraper start to move left when the speed unit mm/s.
- (09) Print right shift speed: scraper start to the right when moving printing speed unit mm/s.
- (10) Number of repeat printings: print back and forth multiple times by the set number to achieve the desired effect.
- (11) Planned production setting: Enter the planned output alarm when the preset value is reached. Proofing mode on: The robot arm drops to the platform stop when proofing mode is started. Wait for the user to confirm that the pair is correct and then press the start button again to complete the printing process.
- (12) The function of the parameter setting interface: to respond to different PCB boards by changing different parameters printing requirements to achieve the desired results.

**4. Factory Settings:** this content by the equipment manufacturer debugging used, the user does not need to adjust.

## V. Device Installation and Adjustment

1. Carefully unpack the wooden box packaging placed good equipment, by adjusting the bottom of the equipment foot cup will adjust the level of the whole machine.
2. The air circuit connected to the lower right air intake of the equipment, adjust the air pressure to 0.6Mpa.
3. Open the front door panel of the device take out the power cord in the toolbox connected to the lower right power connector of the device power.
4. Open the operating panel on the device power switch, at this time observe the touch screen lit up, check the emergency stop switch. Whether it is in the bounce state, if it is in the press state, rotate it clockwise to bounce.
5. Click the manual debugging button below the touch screen to switch to the manual debugging interface.
6. Click on the left scraper to drop, the right scraper down, the scraper left shift, the scraper right shift, the knife frame drop lighting on and other buttons to check whether the function sits properly.

## VI. Operating Instruction

### 1. Stencil Install

- (1) Release the head fixing screw ①, turn the head up 45 degrees Fig. 4, by the tongue stuck.
- (2) Loosen the steel mesh bracket lock handle ② and move the left and right bracket to the symmetrical distance on both sides to fit stencil length.
- (3) Release the steel mesh fixed handle screw ③ in turn.
- (4) Push the pre-prepared steel mesh into the U-shaped card slot and secure the handle screw to press the steel mesh as shown in Fig. 5.
- (5) Loosen the tool holder retention screw ④ move the tool holder at the steel mesh printing area and lock it.
- (6) Lock the steel mesh bracket and the head to ensure that the steel mesh bracket does not shake to this steel net installation.

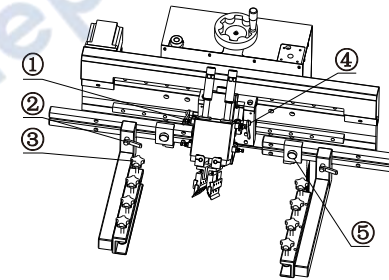


Fig. 4

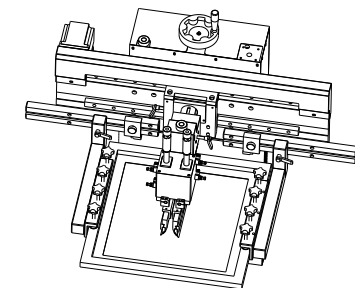


Fig. 5