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Buffer Machine

User's Manual



Please read the instructions carefully before user operation

Preface

First of all, we sincerely thank you for choosing the SMT peripheral automation equipment produced by our company. This company specialized production: conveyor, automatic feeding detection machine, vacuum suction machine, stacked on the machine, parallel transfer, angle conveyor, turning machine, machine, double buffer for the same reflow furnace system, a series of automated production equipment. According to the customer's requirements, we can develop and design a series of automation equipment, in order to meet the customer's high efficiency, energy saving, downsizing and other production needs. This manual describes the use of methods and equipment maintenance and precautions, in front of the machine, please carefully read this manual, and it will be properly preserved, wrong operation may cause the device does not operate normally or damaged parts. Due to man-made equipment failure or parts damage, will not apply to the company's exemption free warranty service range. Without permission of the company, please do not disassemble or replace the equipment parts, nor applicable to the company's free warranty warranty service range. As to the improvement and partial renewal of the product, we will not make further instructions. If you have any doubts, please contact our company for consultation.

Features of the machine

- a. Precision rack and AC motor control system, stable and reliable performance.
- b. "First in, first out" and "last in first out" mode and "through board" mode can be selected
- c. It can be adjusted according to the height of the front and rear position machines
- d. Realize partial machine failure without affecting the production efficiency of the whole line

1. Equipment technical parameters

This unit is used before AOI, after oven, for storage the NG PCB and cooling PCB.

3 modes:FIFO,LIFO and pass through

Dimension (L*W*H) : 1000*750(W)*1740(L)mm

PCB Size: 50*50-445*330mm

Transport height:900mm ±20mm or specify

Transfer direction:L to R or specify R to L

Belt type:ESD belt (round belt)

Pitch selection : 25mm

Power supply: 110 v, 50 hz

Power consumption:250VA max. or specify

Biggest store PCB number : 25PC

Load bearing: ≤ 2 kg

SMEMA compatible

Circuit board thickness : 0.6-4mm deep

Weight(KG): 230

Compressed air flow: Max 10 litres per minute

Compressed air supply pressure: 4 — 6 bar

2. General precautions

a. operator obligations

- 1) please read the instructions and the instructions of the attached machine in detail, and operate the equipment according to the instructions.
- 2) comply with the safety standards of the equipment, and ensure compliance with the regulations.
- 3) please use protective equipment and clothing in accordance with the provisions of.
- 4) do not touch electrical equipment with wet hands.
- 5) in operation, please ensure safety if you want to tidy up the equipment perimeter.
- 6) any part of the body must not enter the equipment during the operation.
- 7) in case of abnormal operation, please stop immediately and handle or contact the company according to the exception handling method.
- 8) every day after the job, please clean the equipment surrounding.
- 9) after daily operation, when you want to leave the equipment, please control the power supply and main control valve in accordance with the correct method.

- 10) prohibit the transformation of the very stop loop and action confirmation.
- 11) prohibit the transformation is the stop button, and confirm the safety shield off the safety switch, photoelectric tube, safety etc..
- 12) prohibit the occurrence of safety switch pull out or safety protection function cancellation.
- 13) Regular maintenance and confirm whether the stop action is normal or not. But at this point, you must put other people can not be near the signs notice placed in a clear position, inform the device is currently very stop or automatic safety device is being tested. However, the need for security and adjustment and the licensee are not subject to this restriction.
- 14) regular maintenance and confirmation of very safe test and protection action is normal. But at this point, you need to put other people not close to the signs notice placed in a clear position, inform the device, the current automatic safety device is being tested.

b. Condition change restrictions

- 15) Set the conditions for this device (voltage, current, pressure, speed and other equipment on the nameplate, marking that display settings), if want to change, must be responsible for the leader's permission, set the condition of change must be recorded before and after the change of value.
- 16) the quality determination of the workpiece must be carried out according to the sampling period stipulated by the detailed management document of the project. If there is an abnormality, the responsible person or leader should be reported immediately, and comply with the instructions.0
- 17) Safety confirmation during overhaul.
- 18) The following steps shall be taken to ensure safety during overhaul and repair.
- 19) Stop the equipment and confirm that the facility stops in safe position.
- 20) When entering the equipment, please confirm the status of the safety agencies, if necessary, you can set up special personnel custody or pull the safety switch lock and safety pin, and carry it with you.
- 21) The main power box switch, motor switch and other power supply must be cut off, the locking device must be locked and so on.
- 22) Using specified components.
- 23) Fuses and other over-current protectors and repair parts and so on, please use the specified product.
- 24) To correctly operate the equipment and correct safety operation, please pay attention to the nameplate posted on this equipment. This nameplate is very important. Please don't damage it or tear it off. If the nameplate is damaged or missing, please be sure to contact the responsible person or leader.

3. Function

a. Preparation before starting

b. **Cup foot:** Cup foot adjustment must be balanced to avoid mechanical vibration operation.

c. Gas source:

- The gas supply in 6kg/cm², pressure regulating valve to adjust the 5kg/cm².
- Gas source must be clean, waterless and dry.

d. Power Supply:

- Input voltage, please check whether it meets the requirements, capacity of more than 300 watts fixed power switch supply device must have leakage protection.
- If the power supply is not stable, must be equipped with power regulator.
- Safety earthing of machinery.
- The ground wire must be properly fixed on the fuselage.

e. Installation position:

Do not install machinery in dusty, oil mist, conductive dust, corrosive gas, flammable gas, damp, shock, shock, high temperature and outdoor environment.

a. **Working group:** (This is mainly composed of professional installation commissioning personnel)

- Please check whether the power supply meets the requirements after power on, whether the power switch is normal, and the power can be switched on normally.
- After the power to check the emergency stop switch and protection device is normal.
- Has the emergency button been restored.
- In the automatic operation of manpower can not deposit into the plate frame.
- Is the photoelectric sensed before and after the inspection.
- The position of each position should be adjusted well.
- The position of sensors can be input from PLC to detect the indicator lamp.
- The output of the output from the PLC point light detection.
- The program has been run by the internal control, customers can not change.

4. Operation instructions

a. Precautions

- for theTo ensure safety, it is forbidden to touch the parts in operation to
- check whether there are sundries in the machine.
- Check whether there is debris or jig plate on the track.

b. Startup page



Figure 1

Note: The page shown in Figure 1 will be displayed after startup, click [main menu] to continue

c. operator interface

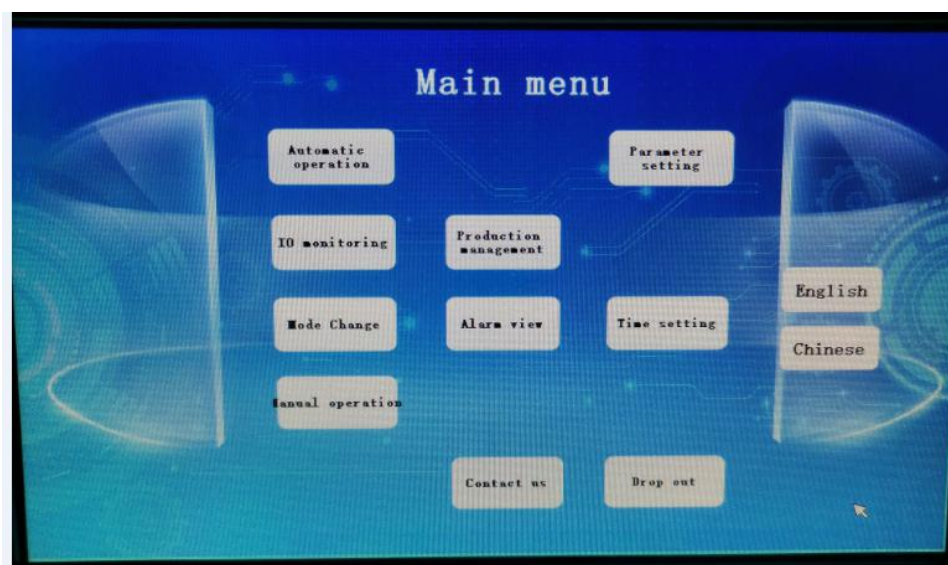


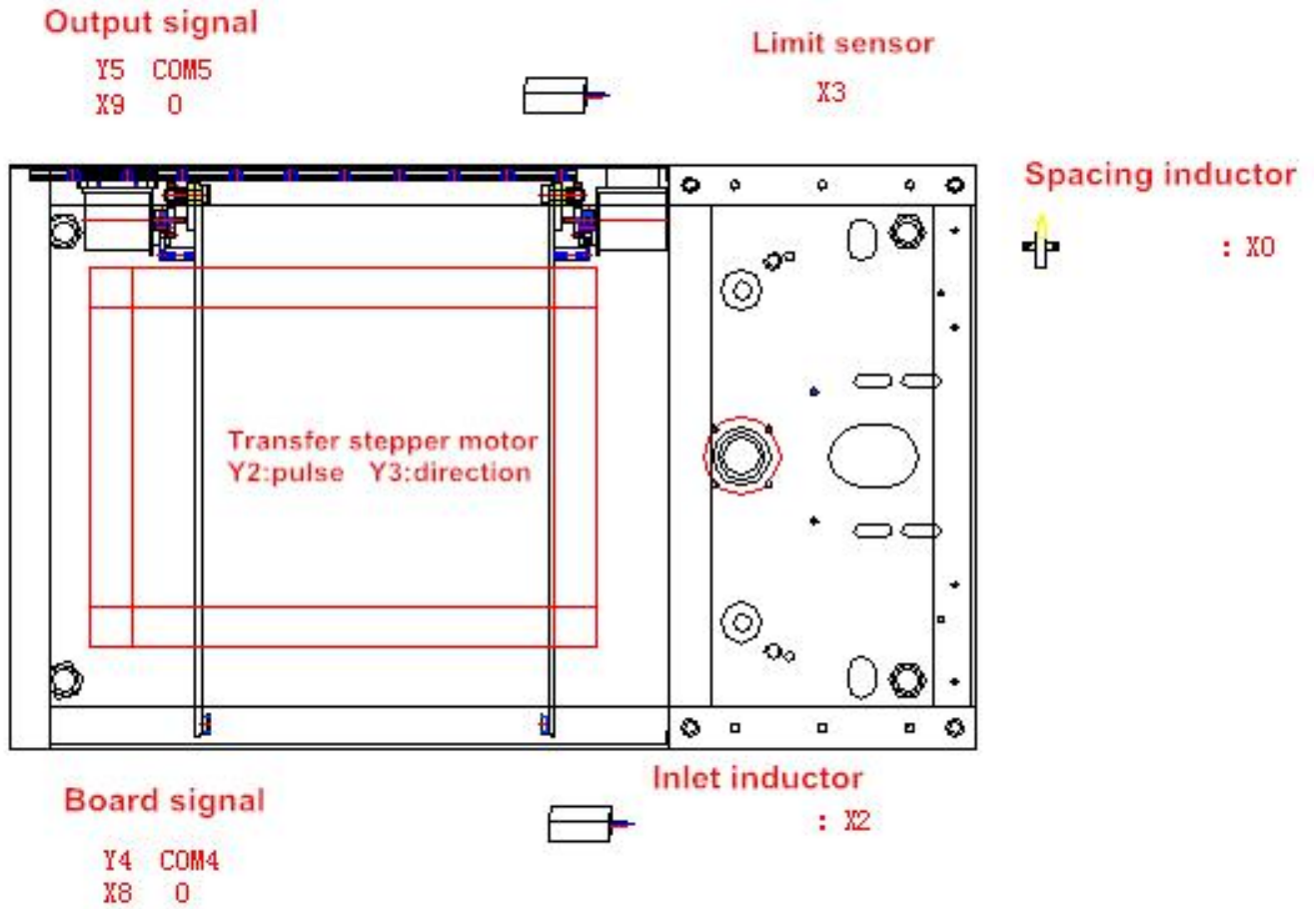
Figure 2

Description

- Automatic operation button: After clicking the button, the device enters the automatic operation state.
- Stop button: Click the button, the device stops automatic operation, manual operation and all actions
- Direct mode button: Click the button, the device enters the direct board mode
- I/O monitoring button: Click to enter the input port monitoring page.
- First-in first-out button: click the button to select the cache mode during automatic operation as the first-in frame board first out to the lower computer.
- Last-in first-out button: click the button to select automatic operation
The cache mode is the mode that the last-in-frame board first flows out to the lower computer.
- Parameter setting button: Click to enter the parameter setting page.
- Position setting button: Click to enter the position setting page.
- Alarm reset button: Click to clear the alarm state.
- Manual operation button: Click the button to enter the device Manual
- up button in manual operation state: In manual operation state, click the button, and the material frame will rise one space.
- Manually drop button: In manual operation state, click the button, and the material frame will drop one space.
- Material frame transfer button: In manual operation state, click the button, Material frame transmission step-by-step transmission
- before extension transmission button: in manual operation state, click the button, the front extension track transmission
- initialization button: in manual operation state, long press the button, all the storage board information of the material frame will be cleared, please take it out after clearing for the PCB in the material frame

Note: Before the equipment runs automatically, you need to set the parameters according to the relevant fixture parameters before you can run the machine

5. Diagram



Remarks: Relay connection instructions

All inductors and output control lines are connected to the corresponding terminals, connected to PLC by color wire, and X as input,

Y represents the PLC output terminal voltage for green 220V output.

6. Exception (fault) processing

N O	Fault phenomenon	Reason	The barrier in row
1	Power on touch screen display	No power supply	Check the 220V power supply and 24V power supply
2	Transmission motor sound	With the transfer gear motor and each layer is loose	Adjust transmission motor fixed plate, loose match is good
3	Show that the plate is locked	The calculation of the position of the output plate of the lower computer is wrong	Whether the plate is normal, whether there is a card board situation?
4	Non entry plate	Is the current status automatic?	Switch to automatic state or whether the PCB plate is full
5	You need to transfer the electric machine	Whether or not the belt is turned?	Check whether the layers are not turned, or whether the transmission motor gear is loose
6	The lift has been rising and falling	Is the spacing inductor responsive?	检查定位齿条是否感应到,U型感应器是否损坏
7	The lifting platform does not rise or fall	Is the induction sensor in or out of the board?	Whether the induction is induced in the manual state and the inlet plate and the outlet port

7. Equipment maintenance

a. Maintenance cleaning project

1	Equipment shell	Ensure the appearance of the shell, no dust	Every day / time
2	Width adjustment optical axis	WD-40 can be used to prevent embroidery oil clean, no debris	Every day / time
3	Clean conveyor chain	There is no electronic component, paper tape and other sundries	Every day / time

b. Oiling project

1	All ball nuts	Lubricating grease (using grease gun)	Times / month
2	Rotary bearing	Lubricating grease (jet lubrication)	Times / month
3	All guide bar, wire rod	Grease (hand pouring lubrication)	Times / month
3	PCB conveyor chain	Lubricating grease (jet lubrication)	Times / six months

c. Adjustment project

1	PCB conveyor belt (chain)	The inner track bearing is adjusted when it is slack	Every quarter / time
2	Track width	Is it consistent?	Every quarter / time

8. Equipment inspection

- Check the conveyor belt is too loose, keep the belt clean
- To keep the lifting platform and axis linear bearing cleaning
- Cloth or paper used to wipe dirty oil, then add the lubricating oil to the ball screw
- To test all automatic and manual operation
- Transfer to test PCB is smooth
- To shut the power supply to the high lift, elevator checks has declined
- To check cylinder movement is smooth
- To check whether the wear track belt
- To check the photoelectric sensor, magnetic sensor is working properly



Pay attention

1. before any maintenance and maintenance, ensure that the power supply is in "OFF" position.

2. special attention should be paid to the positioning piece and some inductive switches during the maintenance, and the device will cause the loss of the machine to be estimated.

9. Safety precautions

a. aspects of personal safety

- 1) Before starting the equipment, it is necessary to determine whether the on-site personnel are in safe position.
- 2) Maintenance is not allowed in the operation of the equipment.
- 3) Equipment maintenance, should first determine the power switch, gas supply and other power switch is closed, before it can be maintained.
- 4) During the operation of the equipment, the operator should not touch or touch the parts of the equipment so as to avoid danger.

b. In terms of equipment safety

- 5) The equipment is fully automatic electronic control system, all control components, PLC instruction contact, or mechanical input and output type equipment prohibited unauthorized change.
- 6) The equipment is an irreversible device, power components, motor operation, maintenance and care, please pay attention to power wiring and direction of operation.
- 7) The manual switch and the automatic switch knob of each electromagnetic valve are used in the forced switch of each electric box of the equipment. Unauthorized use of the equipment without the permission of the person in charge of the equipment is strictly prohibited.
- 8) In case of mechanical failure, the equipment should be shut down immediately and notify the relevant personnel to repair.



Pay attention

Please hang the indicator board before maintenance