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Bare Board Vacuum Loader

Operation Manual



Please read the instructions carefully before user operation

Preface

First of all, we sincerely thank you for choosing the SMT peripheral automation machine 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 machine. According to the customer's requirements, we can develop and design a series of automation machine, in order to meet the customer's high efficiency, energy saving, downsizing and other production needs. This manual describes the use of methods and machine 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 machine 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 machine 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.

1. Safety precautions

In order to use this product safely, be sure to observe the following items and make clear the signs and significance of the notes in the instructions.



Warning

Once misused, it is likely to lead to fatal or serious injuries.



Attention

Once misused, it may cause damage or material damage. In some cases, it may lead to serious consequences.






Examples of icons



This sign represents the contents of danger, warning, and prompt attention.



This sign indicates the act of prohibiting.

 Warning	
	Non - equipment maintenance personnel should not open the front and rear doors of the equipment.
	When the equipment is running, the hand shall not be inserted into the inside of the suction plate machine.
	Do not put the material that is not related to the production of PCB into the inside of the suction plate machine.
	Don't use hard objects to click on the touch screen.

 **Attention**

Do not use the environment in a environment with a temperature of more than 30°C .



Do not open the back door of the device when AGV is about to arrive at the position of bare board vacuum loader.



Do not change the parameters at the time of automatic operation.



In the maintenance of this machine, it must be maintained in accordance with the maintenance essentials, with the professional man..

2. Technical parameters

2.1. Introduction of functional features

Large stock capacity. Flexible suction cup positioning. By-pass mode selectable without removing PCB stack. Controlled by Omron PLC. Convenient front door stack loading. Conveyor width adjustment using hand crank. Towerlight display for machine status. Pre-warning low stack sensor.

2.2. Technical parameters

Model: S-V500

Dimensions: L650*W850*H1450 mm

PCB size :L500*W390MM

Biggest store PCB number : 100PCS

Transfer height: 920±30 mm

Direction: L to R / R to L

Conveyor Speed: 9m/min

Pitch selection: 10,20,30,40,50

PLC programmable controller control.

Operation control panel : display control touch screen

Power supply: single-phase 220 v, 50 hz

Air: 0.4-0.6 MPa

Weight: about 100KG

A set of electric control case

3.Operation steps

1. connect the power supply (220V, 50HZ) and gas supply (0.6MPa), turn on the power switch.
2. Switch is normal opening , and the touch screen appears as the Figure 3.1 interface

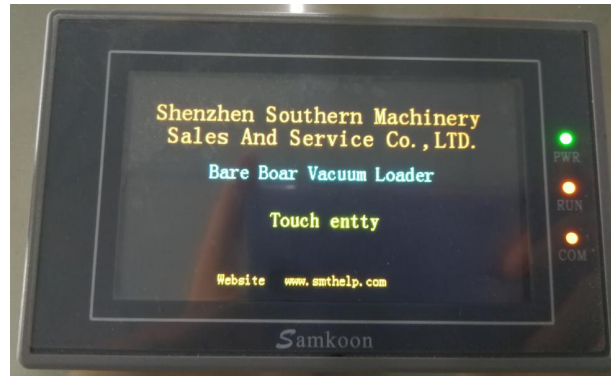


Figure 3.1

3. Click Figure 3.1 [Touch entry], and appear on the interface, such as Figure 3.2.

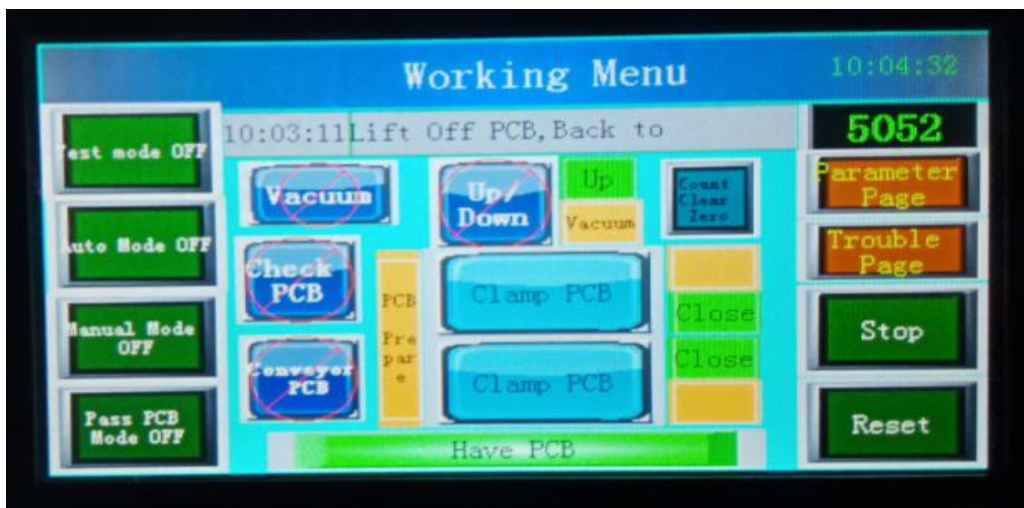


Figure 3.2

Note:All the parameters has been set up completely (parameter page),and no need to reset .

4. When PCB board is placed well,Keep the sucker away from the hole on the board, otherwise it will drop.

5.Parameter setting

(1) click the [Parameter page] as shown in Figure 3.2, as shown in Figure 3.3,according to actual needs, set up relevant parameters.

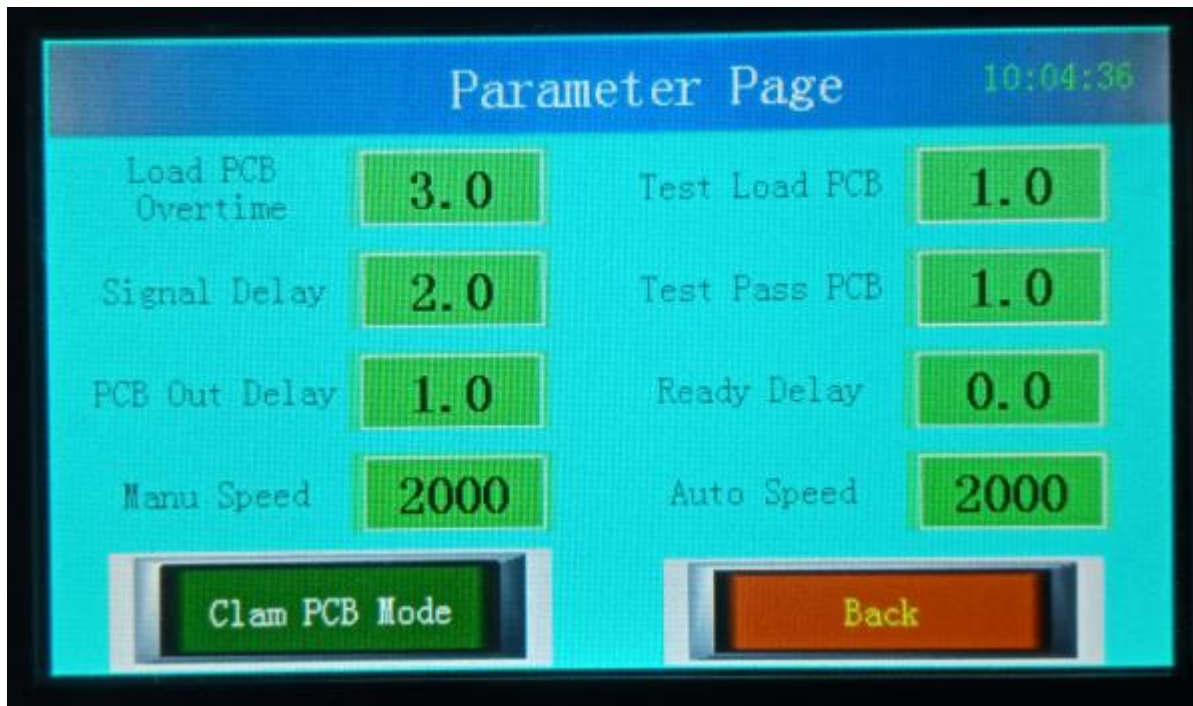


Figure 3.3

- ①Load PCB overtime:When the suction cup on board, warning signal time.
- ②Signal Delay:Signal waiting time.
- ③PCB Out Delay:Time for transporting PCB plates.
- ④Manual Speed:Belt transport speed.
- ⑤Test Load PCB:When the suction cup on board, warning signal time
- ⑥Test Pass PCB:Signal waiting time
- ⑦Ready Delay:Time for transporting PCB plates.
- ⑧Auto Speed:Belt transport speed

4.Maintain and record

4.1.Daily maintenance standard

Line	Maintenance program	Maintenance standard	Maintenance mode
1	Suction cups	Clean without breakage, test board not fall	Visual+Practical operation
2	sucking claw	Fixed, retractable naturally	hand touch+Practical operation
3	Clappers pneumatic cylinder	Fixed, retractable naturally	hand touch+Practical operation
4	Rise-fall pneumatic cylinder	Fixed, retractable naturally	hand touch+Practical operation
5	Roller wheel	Clean, no loosening	Visual + hand touch
6	Conveyor motor	Fixed, normal operation	hand touch+Practical operation
7	Rise-fall motor	Fixed, normal operation	hand touch+Practical operation
8	Touch screen	Fixed, touch effective	Visual+Practical operation
9	Button	Fixed, pressed button feedback normal	Practical operation
10	Tricolor lamp	Display normal	Visual

4.2.Monthly maintenance record form and maintenance standard

Line	Date	Program	Content	Standard	Situation
1		Conveying section	1, roller wheel cleanliness and fixed screw loose or not. 2, motor operation is normal or not, fixed screw is loose or not. 3. Whether the chain is broken or whether the lubricating oil on the chain plays a role. 4. Whether the sensor is sensitive or not.	1, the roller is clean and un-loose. 2. The motor runs normally. 3. The chain joint is perfect and add lubricating oil to its surface. 4. The reaction of the sensor is normal.	
2		Lifting mechanism	1. Practical operation to see the lifting movement is normal or not and whether there is a different noise in the action process. 2. Whether the silk rod and the guide column have lubricating oil. 3. The fixed screws are loose or not; 4, sensor sensitivity is sensitive.	1, the lifting movement are normal and sound. 2, the screws are not loose; 3. The reaction of the sensor is normal.	
3		Suction board mechanism	1. Whether the suction plate will get out of the board in practical operation. 2, the operation of the cylinder is normal or not; 3, the cylinder connector is Whether deflated or not; 4, sensor sensitivity is sensitive.	1, the suction plate is not get out of the board. 2, the operation of the cylinder is normal; 3. The joint is perfect; 4. The response of the sensor to normal	
4		Electronic control part	1. Whether there any dust in the electronic control box;	1. There is no dust in the electric control box.	

			2. Whether the terminal is loose or not; 3, check the relay, air switch, switch power supply, PLC etc.,.	2. There is no loose or leaky copper wiring terminal. 3. All electrical components have good performance and no loosening.	
Problems found and solved in maintenance:					
Maintenance person's signature:					
Engineer signature:					

5. Daily maintenance project

Time	Maintenance project
Daily	the water must be emptied after each use.
	the water must be cleaned up on the platform after each use.
Weekly	check whether there is water leakage in the pneumatic cabinet and electrical cabinet.
	check the looseness of the screws in each movement mechanism.
	check whether the external electrical connector is loose.
	cleaning the dust and debris in the electric cabinet and the pneumatic cabinet.
	check the air leakage of the pneumatic components and the joint of the trachea.
Monthly	check the oil mist special oil in the oil mist is too small, less is added.
	check whether the internal joint of the electric cabinet is loose.
	check the entrainment wheel, whether the belt wear out.
	lubricating grease for all bearings of each device.