

*Meet the Needs of the SMT Age*

**Please read this user manual carefully before running**



# Stacking Loader



**(An user manual)**

**This manual suitable for Models:SBU330 / SBU460**

PHONE : 0755-83203237

WEBSITE: WWW.SMTHelp.COM

ADD : Room 1806,Block 3,Jinyun COFCO,Qianjin 2<sup>nd</sup> Road,Baoan  
District,Shenzhen City, China

## **Introduction:**

Thank you for using the electronic device provided by our company.

This manual provides the relevant precautions for installation, operation, abnormal failure diagnosis and elimination and routine maintenance. In order to correctly install and operate this device, please carefully read this manual and properly preserve and hand it to the user of this device.

# Contents

- I. Introduction to Application
- II. Structure Principle and Operating Instructions
- III. Device Features
- IV. Main Technical Parameters
- V Service and Maintenance
- VI. Trouble shooting
- VII. Electric Wiring Diagram and I/O Table
- VIII. Precautions

## I. Introduction to Application

The stacking loader is widely used in PCB transmission, inspection, testing and buffer transfer. It is one of the main devices to connect and buffer the two devices.

It can be separately connected two devices, it can also be used in sections or groups, it can handle PCB boards of specifications in technical parameters.

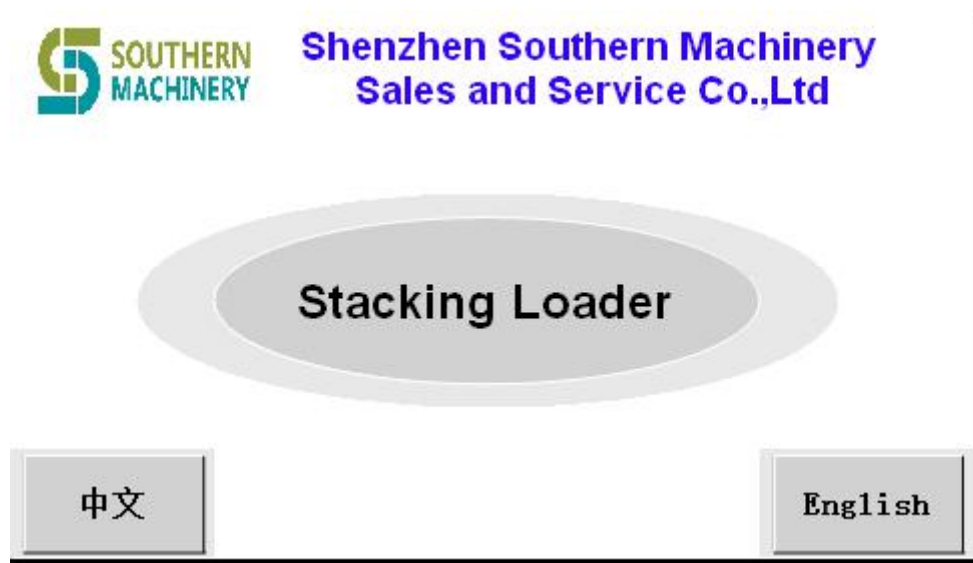
## II. Structure Principle and Operating Instructions

### A. Transmission principle

1. The belt on both sides of the guide rail has 1 step motor drive, motor rotation and stop the supply and demand board signal control of the upper and lower equipment and the light sense detection signal control of the equipment.

2. The guide rail is divided into fixed guide rail and moving guide rail, and the moving guide is adjusted by two guiding shafts to adjust its width (loosen both sides lock handle).

### B. Operating instructions



Start Interface

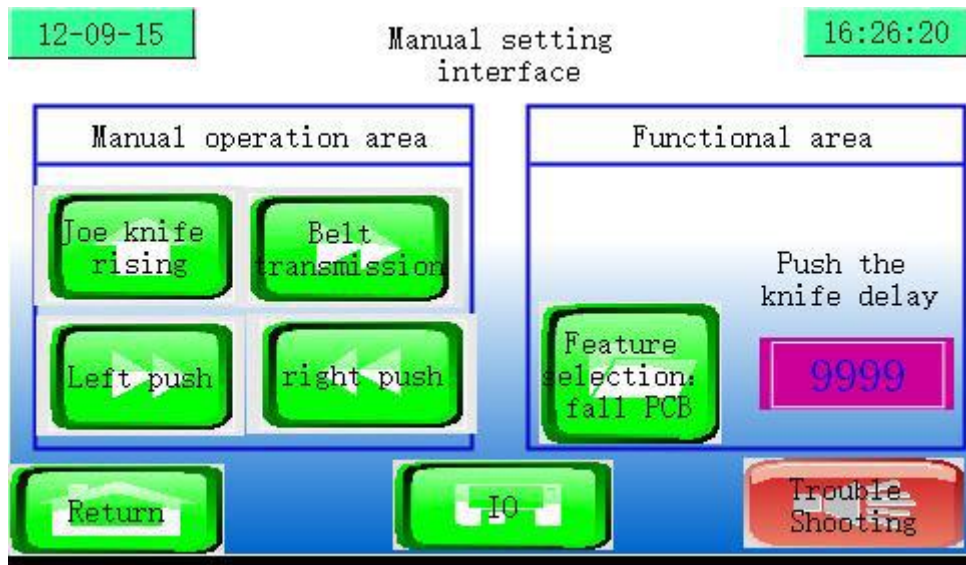


Figure 1 Manual interface

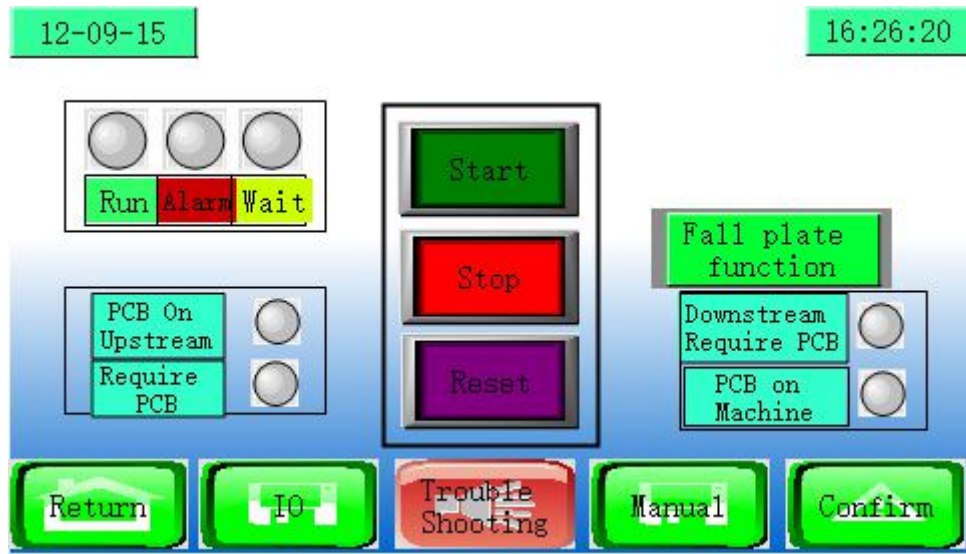


Figure (2) Automatic interface

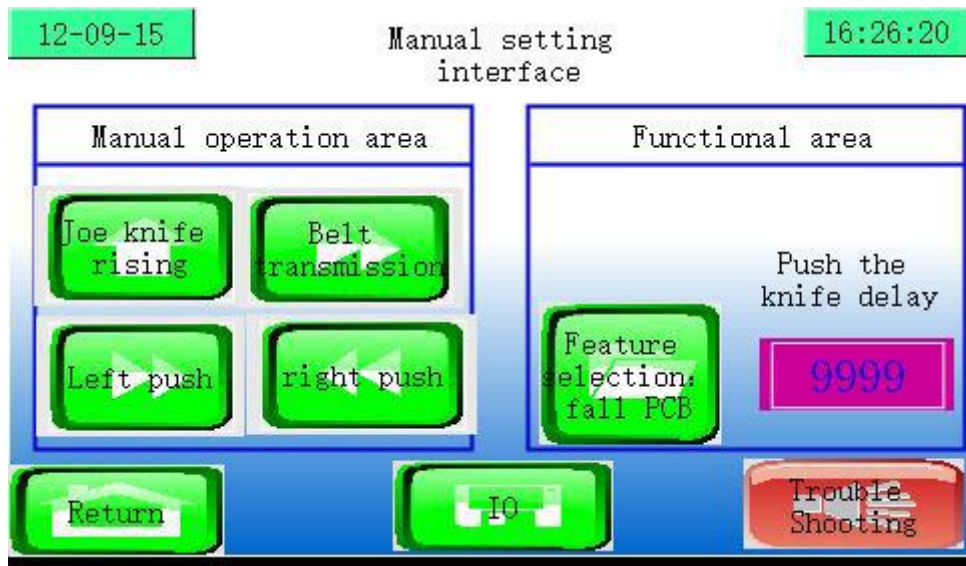


Figure (3) Fault Query Interface

I/O界面		Auto Interface	Maual	Return
P	X0 PCB On Upstream	P	Y0 Board needed by the loader	
P	X1 Require PCB	P	Y1 Board available for the loader	
P	X2 Inlet sensor inspection	P	Y2 Conveyor transmission	
P	X3 Middle sensor inspection	P	Y3 Cylinder jack-up	
P	X4 Exit sensor inspection	P	Y4 Push broach with fixation rail	
P		P	Y5 Push broach with move rail	
P		P	Y6 Running Indication	
P	X7 Emergency Stop	P	Y7 Failure Indication	
P		P	Y10 Wait Indication	

Figure (4) IO Interface

### Description

The machine has two functions of layer and straight in, can be set up by the touch screen 'manual interface' (see figure 1).

The machine has IO signal interface, it can be connected with the front and rear equipment, in front, middle and rear has a photoelectric switch.

Layer function: when there is a board on the machine (judge the

board through the light sensor), it immediately gives the rear equipment a board signal;When the machine needs to be used, the PCB board will sent to the back machine.

**Attention: after each board, please confirm with the 'release confirmation' button on the automatic screen of the touch screen (see figure 2).**

Direct function: the strap starts to operate when the board reaches the front light sensor position. Disconnect the board need signal after the board full enter the before light sensor. when the board transfer to the after light sensor and rear machine don't need the board temporary, the strap stop rotation immediately, then give a board signal for the rear machine, PCB board is waiting for the layer. when the rear need board, rear board will give a break-make signal, machine motor will stop when the motor transfer the full board to the rear light sensor. If there is a board on the machine, the front equipment will be suspended until the front device can be activated automatically.

**Attention: push knife delay is the time the push knife comes out and then the next action.**

### III. Device Features

- a) PLC control, action program can be based on customer requirements.
- b) Both ends have light sense.
- c) Have IO signal interface. Connect the before machine signal: C0, Y0 native need board, connect the rear machine signal: X1, 0V rear machine, C1, Y1 native board.
- d) Steel frame structure, rugged and durable, and can be connected with the upper and lower equipment.
- e) Special guide aluminum profile, beautiful shape.
- f) Light sensor position can be set at will.



g) Can be configured with fluorescent lamp, computer bracket, PCB sample frame, etc.

## IV. Main Technical Parameters

Model	SBU460
Overall Dimension	1650mm(L)*860mm(W)*1250mm(H)
Control System	PLC
PCB Size	Max L460*W460
PCB Conveyor Direction	Left to Right
Conveyor Height	900±20(mm)
Transfer speed	0.2M~9M/min
Drive motor	42stepping motor
Power	AC110V,50HZ
Weight	85kg
Power Consumption	0.4kw

## V. Service and Maintenance

In order to ensure normal operation of the device and avoid failure, regular safety check and lubrication should be made for it.

1. Lubricate the ball screws, guide rails, drive bearings and chain wheels by oiling.
2. Maintain the inside of the guide rails and chain wheels clean, tidy and free from foreign matters.
3. Make regular check on tightening screws at each position, which should be free from loosening.
4. Clean the light sensor regularly to avoid failure to work normally caused by



contamination by foreign matters.

5. PCB turnover frames should not be handled from the side of the guide rail to avoid damaging the light sensor.
6. The PLC program should not be modified at will to avoid program disorder.
7. Clear away dirt and impurities on the ball screws and guide bars timely.

#### **Recommended lubricating oil**

➤ Ball screws: Lubricating grease Mobil MOBILUX2

➤ Guide bars: Lubricating grease Mobil MOBILUX2

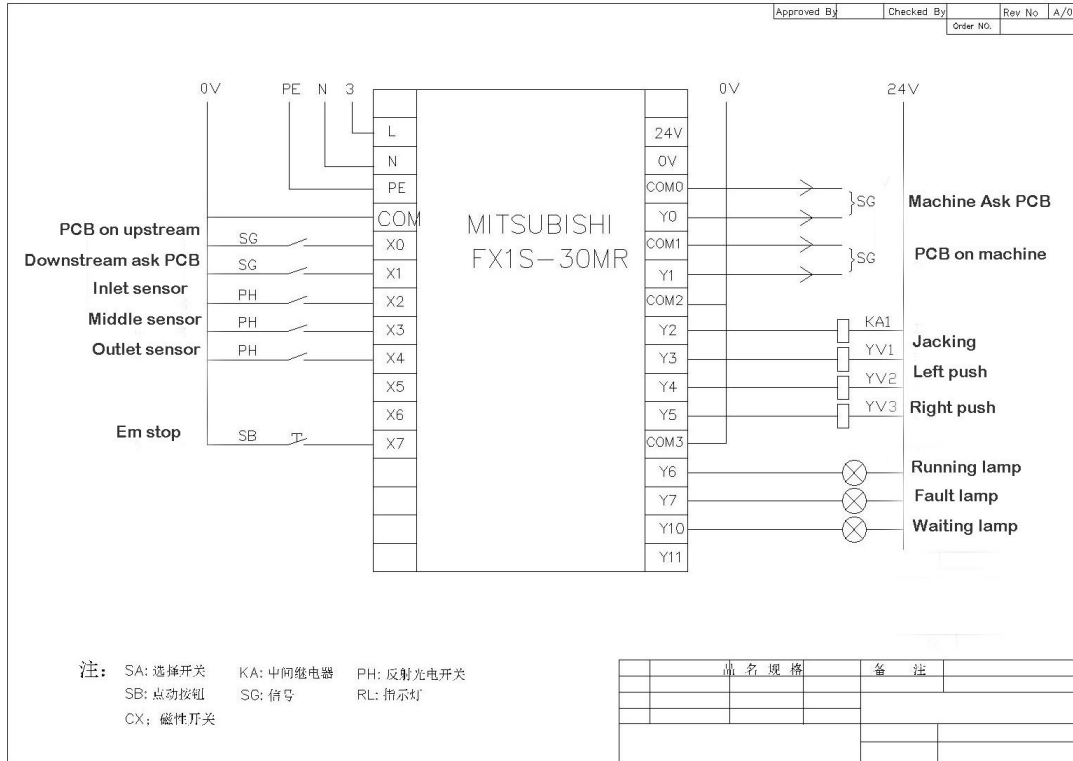
Or engine oil Mobil VACTRANO 2

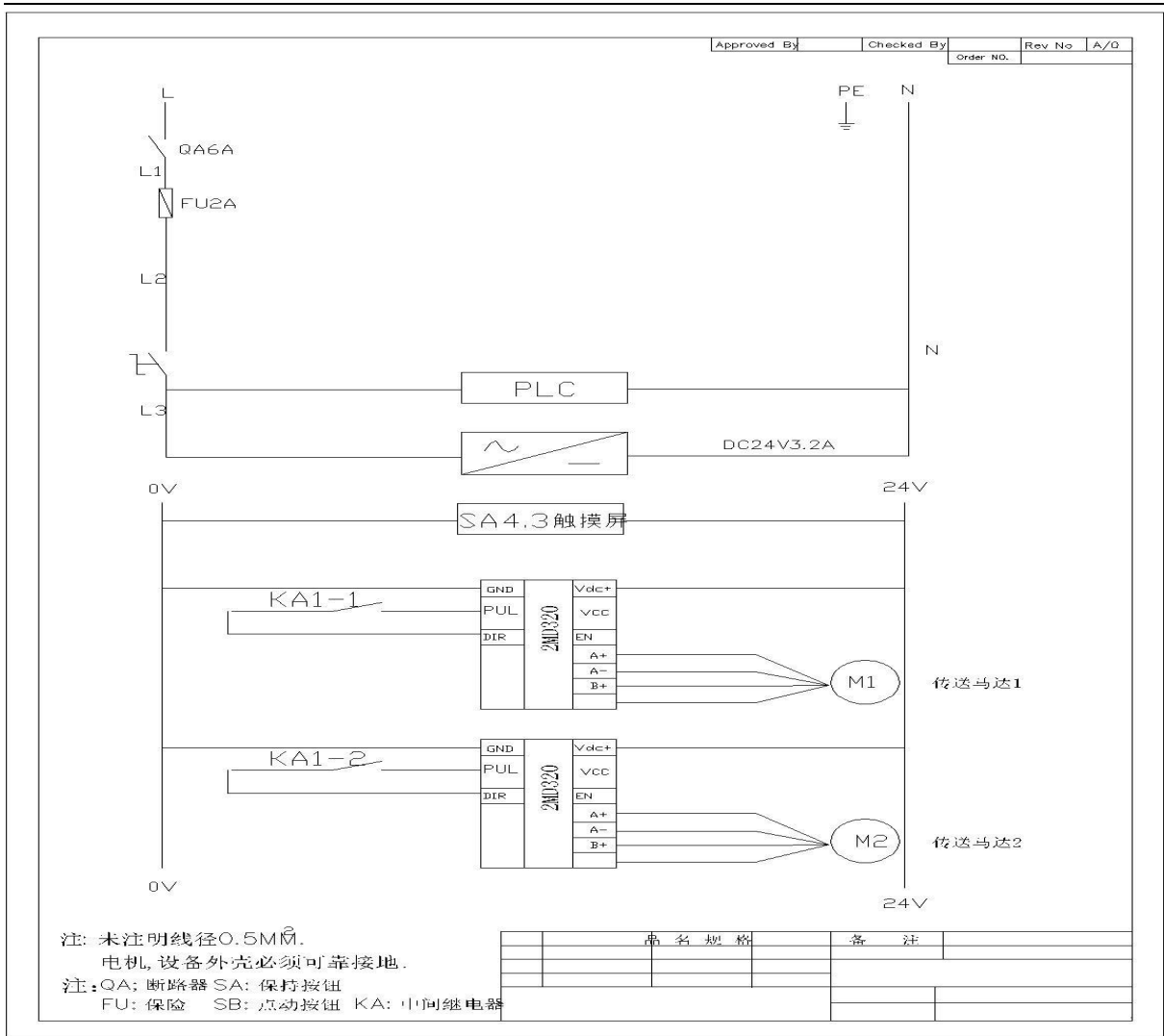
➤ Chain wheels and bearings: Lubricating grease Mobil MOBILUX2

## **VI. Trouble shooting**

- a) a)When the layer can't operation.
- b) i. Check whether turn on the light switch.
- c) ii. Check whether the air source is normal.
- d) iii. Check whether the PLC indicator is on.
- e) iv. Check whether the insurance pipe has been fused.
- f) v. Check whether the connection cables are reliable.
- g) vi. Whether the front and rear device has interlocking signals.
- h) vii. Whether the front light is obstructed by obstruction.
- i) b)When the stop position is incorrect.
- j) i. Check whether the guide rail is too narrow and has a card board phenomenon.
- k) ii. Check whether the PLC program is correct.
- l) iii. Check whether the light sense position is correct.

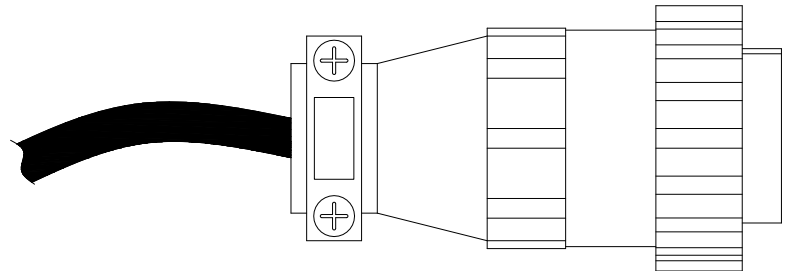
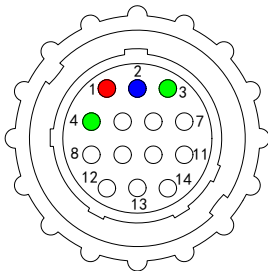
## VII. Electric Wiring Diagram and I/O Table



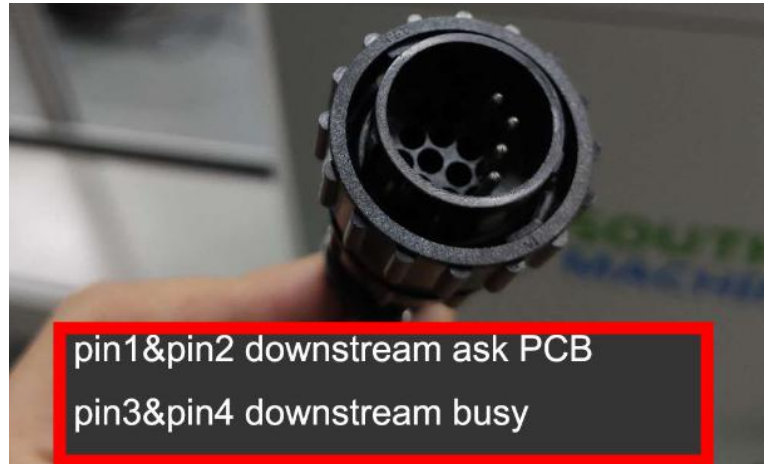
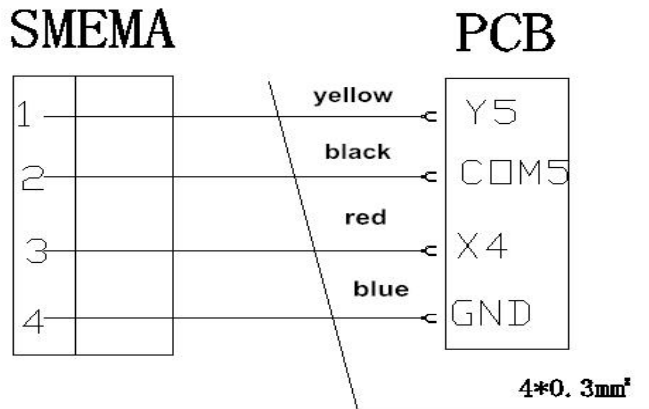


### Remark: Signal connection

Signal plug for connection with rear engineering machine



### Signal connection with the next unit



EMA connection

## VIII. Precautions

1. In order to ensure normal work of the device, the foot cup must be adjusted in installation to make the device remain level.
2. If the device is handled by the customer, the device should be handled by handing equipment with load capacity of 200kg at least.
3. In case of need to put hands into the elevator in maintenance, power source must be turned off to avoid danger.
4. If this device is interrupted in the automatic mode or stops due to sudden power outage, the loaded PCBs should be taken out and resetting pressed before restart.
5. This device should be installed in position meeting the following environment requirements.
  - a. Environments with temperature lower than 60℃ and humidity less than 90% without any dew.
  - b. Environments with little vibration.
  - c. Environments free from dust and smog.
  - d. Position with sufficiently firm ground to near the weight of the device.
  - e. Positions without interference of electromagnetic wave.
  - f. Surrounding environments free from inflammable, explosive and corrosion-prone gas elements.