

# Mini Unloader

## User's Manual



## Preface

Thank you very much for purchasing our products. This manual describes the hardware configuration, equipment operation, electrical diagrams, and maintenance. Please fully understand the contents of this manual and use it correctly.

Although we strive to ensure that the contents of this manual are correct, please contact our company if you find any questions or errors.

### **Warning:**

This equipment can only be operated by professional maintenance and repair personnel or trained qualified personnel.

Before turning on the power, please confirm that the external input power is consistent with the rated voltage and power.

of the equipment Please ground reliably the equipment. Pay attention to personal safety.

### **Attention:**

please read this user's manual carefully before operating the equipment and remember the precautions

please do not install this equipment near the source of electromagnetic interference

please do not modify the hardware and software program in the electric box, which is dangerous

Please keep this manual properly and maintain the equipment according to the manual

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# 1. Introduction

## 1.1 Overview

This machine is used for automatic PCB board unloading in the SMT industry.

## 1.2 Features

- a. Asynchronous transmission function
- b. Closed fuselage structure ensures safe operation
- c. Easy to operate key control interface
- d. Parallel and smooth width adjustment (screw)
- e. Fast, stable and accurate retrieval positioning
- f. Small footprint
- g. Double circulation tank chain structure
- h. SMEMA compatible

## 1.3 Technical specifications

Transport height:900mm  $\pm$ 20mm

Transfer direction:L to R

Power supply:110V /220V, 50 Hz/ 1 Ph,max 100VA

Air supply& consumption:  $\geq$ 6 bar,max10 ltr/min.

Pitch distance:10.20.30.40mm pitch or specify.

Conveyor Speed:6 seconds adjustable

Carry capacity:  $\leq$ 2kg

Conveyer type: 2 separated chain belt

Capacity: 50 pcs PCB (Cyclic)

## 1.4 Preparations before use

- A. Please use a 220 V single phase 50 Hz fixed power supply with a capacity of more than 200 W
- B. The machinery must be safely grounded and connected to the grounding bus
- C. The ground wire must be well fixed to the metal part of the body
- D. To ensure safety, keep your body away from running equipment
- E. Do not install the machine in dusty, oil mist, conductive dust, corrosive gas, flammable gas, humidity, shock vibration, strong interference, high temperature, and outdoor environment
- F. Avoid using a corrosive solvent to wipe the machine, and use neutral detergent
- G. Please keep this price manual for future maintenance



### **Attention**



If there is no reliable grounding, there may be a risk of electric shock.

## 2. Operation Instructions

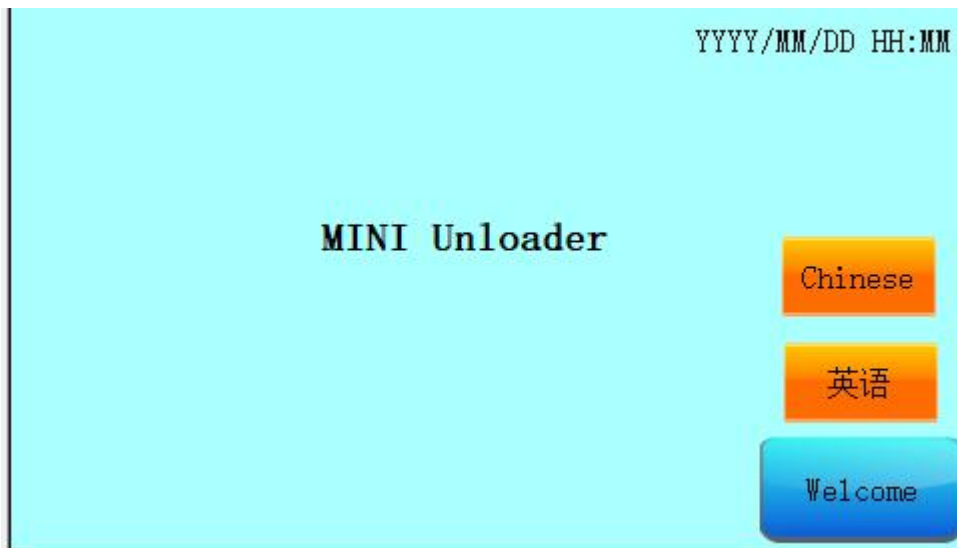
### 2.1 Precautions for startup

- a. In order to ensure safety, it is forbidden to touch parts in operation
- b. Check whether there are foreign matters in the machine.
- c. Check whether there are impurities or PCB on the track.

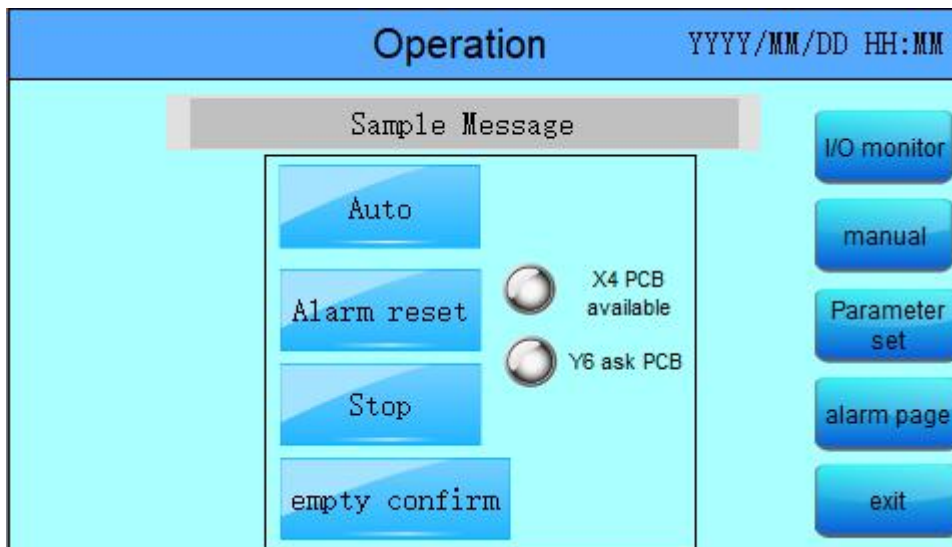
### 2.2 Operation Steps

#### 2.2.1 Boot page

Turn on the power supply of the device, touch the screen to enter the startup page, and click the button to enter the "automatic operation page"



## 2.2.2 Home page



### Buttons explain

**“Auto”**: click on the button, the device has reached the automatic running state.

**“Alarm reset”**: When the device automatically operates and the fault alarm buzzes, after the abnormal situation is handled, click the button to remove the alarm state of the device and continue to operate.

**“Stop”**: Click the button and the device stops running

**“empty confirm”**: When the receiving board is full and alarms, click the button to clear the alarm after taking out the board.

**“I/O monitor”**: When the receiving board is full and alarms, click the button to clear the alarm after taking out the board.

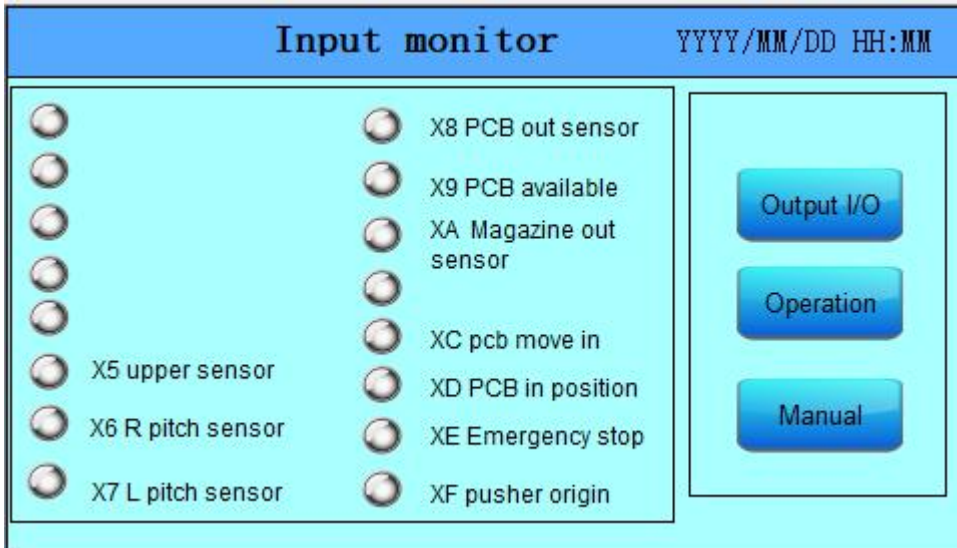
**“Manual”**: Click the button to enter the manual operation page

**“Alarm”**: click button enter alarm for the details

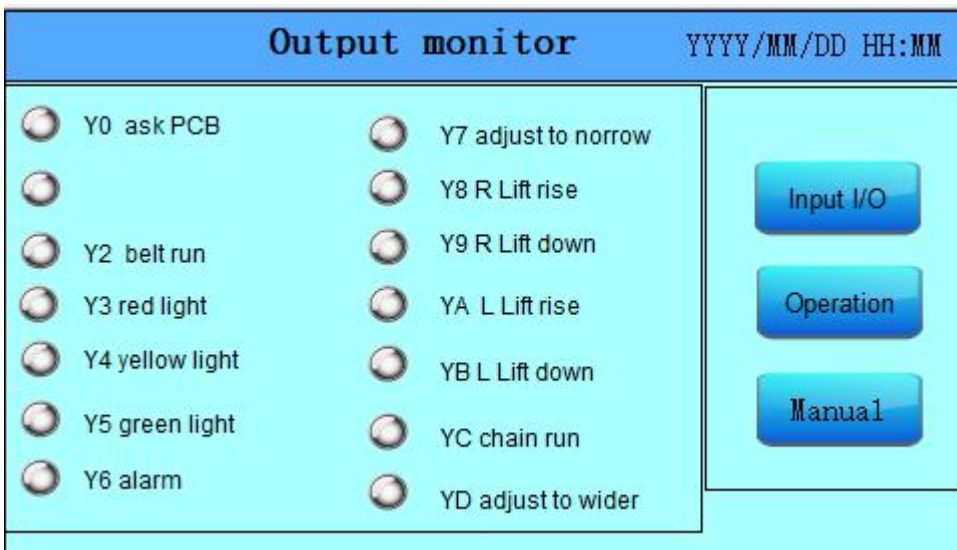
**“Parameter setting”**: Click the button to enter the parameter setting page.

## 2.2.3 I/O monitor page

Input monitor page

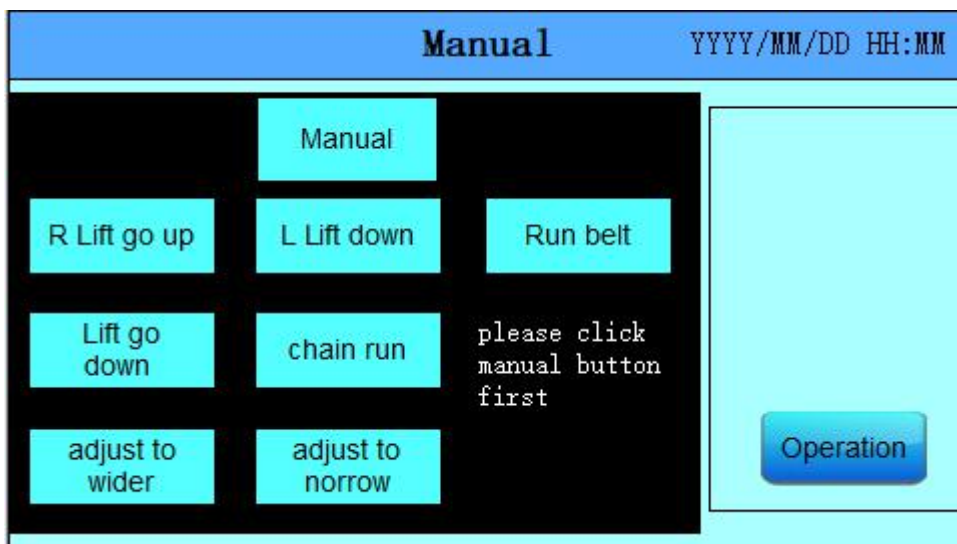


Output monitor page



This page can view the REAL-TIME STATUS of PLC input and output

### 2.2.4 Manual operation page





### Buttons explain

**“R Lift go up”**: The right motor run lifting

**“L Lift / down”**: The left motor run lifting

**“Run belt”**:The belt conveyor begins to convey PCB

**“Lift go down”**: The front and rear lifting motors go up together

**“Chain run”**: Chain begins to convey PCB

**“adjust to wider”**: The motor widens the track

**“adjust to narrow”**: The motor narrow down the track

### 2.2.5 Parameter setting page

Parameter Set		YYYY/MM/DD HH:MM
chain transfer time out	88888	
belt transfer time out	88888	
PCB move in delay	88888	
pitch setting	88888	
		Back

### Buttons explain

**“Chain transfer time out”**: Setting a transmission time for the chain, and alarm when time over.

**“belt transfer time out”**: Setting a transmission time for the belt, and alarm when time over.

**“PCB move in delay”**:Setting the feed delay time.

**“Pitch setting”**: Setting the Slot hight for the component.

### 3. Fault description

#### 3.1 Attention


- a. Be familiar with the installation position of mechanical devices and electrical components in the equipment, and understand their performance and function.
- b. Analyze the cause of the fault correctly.
- c. Find the faulty part and the faulty component
- d. Targeted maintenance.

#### 3.2 Causes and Solutions

Problems	Causes	Solutions
input board is stuck. The	The left height is different from that of the upstream	Adjust the threaded rod to a uniform height using an adjustable wrench
belt does not work	The motor is damaged or the belt is too loose.	Replace the motor Or belt
The indicator light of the power switch not on.	Switch is broken, the thread is loose, the power cord is disconnected	Unplug and open the panel to check if the thread is loose If it is loose, press again. If it is not loose, please replace the button



#### **Attention**

 Please disconnect the power supply for maintenance or replacement of electrical components, and do not operate with live power

### 4. Maintenance

#### 4.1 weekly

- a. check if the transport belt is too loose and keep the belt clean.
- b. wipe off the dirty oil with a nonsilk cloth or paper, and then grease the ball screw.
- c. Test whether the transmission of the product is smooth.
- d. Check the belt track for wear.
- e. Oil the lead screw for at least 2 weeks.