

## Mini Loader

### User manual

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CE

\* Read this user manual carefully before using this equipment.

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## Safety Precautions

### Please read before using

#### aspects of personal safety

- Before starting the equipment, it should be determined whether the field personnel are in a safe position.
- Maintenance work is prohibited during equipment operation.
- When the equipment is being maintained, it is necessary to determine whether the power switch such as the power switch or air source is turned off before maintenance work can be performed.
- During the operation of the equipment, the operator should not approach or touch the operating part of the equipment to avoid danger.

#### Safety aspects of equipment

- This equipment is a fully automated electronic control system. All control components, PLC command contacts, or mechanical input and output models are prohibited from unauthorized changes.
- This equipment is an irreversible equipment, power components, motor operation, Maintenance, and care, please pay attention to the power wiring and running direction.
- Forced switch in each sub-unit of the equipment, manual and automatic conversion knob of each solenoid valve. Unauthorized use is strictly prohibited without the permission of the person in charge of the equipment. In the event of mechanical failure, the equipment should be shut down immediately and the relevant personnel should be notified to repair it.

## 1) Application introduction

The SMT Mini Tower Loader is a place-saving small footprint loader. Due to the design, it is easy to hand load after manual stencil printing without the use of separate cassettes.

This manual is for the following models

- G-M350

## 2) structure principle

The GUS-M350 is a PCB loader with a small footprint. The boards can be loaded by hand after stencil printing the solder paste. The operator can continuously load boards where the GUS-M350 releases the boards 1 at a time on request from the downstream machine.

The GUS-M350 is connected to the SMEMA port of the downstream machine. For connections please check the connection instructions in this manual.

## 3) Equipment characteristics

- Equipment model: G-M350
- In vitro size: 600 (L) \* 565 (W) \* 1550
- PCB size: 400mm~350mm
- PCB transmission direction: left to right (right to left can be customized)
- Transfer height: 900+50/-20mm
- Machine weight: 260kg
- Power supply voltage: AC220V 50/60Hz
- Total equipment power: 150
- Total equipment current: 2A

## 4) Operating instructions

When the power switch is turned ON, the system will enter the main page on the HMI unit.



On the left side under Monitor the PLC information is displayed. Showing all the input signals X0...X7 and all output signals Y0...Y7

From this page, the operator can select:

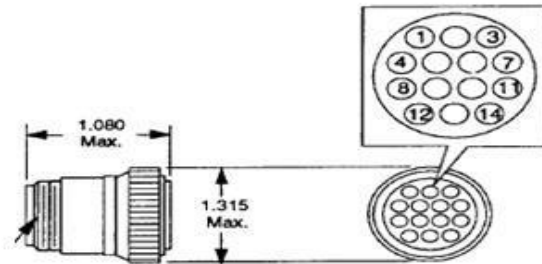
COUNT (ON/OFF)	:Count the number of PCBs
MANUAL /AUTOMATIC	: Switch between MANUAL and AUTOMATIC mode.
PUSH	: PUSH 1 board out
WIDEN/NARROW	: Set the PCB width
DOWN/UP	: Move the tracks up and down.
HOLD TIME	: Timeout time

On the outside of the machine:

Emergency STOP	: Any operation can be terminated at any time.
Power switch	: Control the power of the whole machine.

## 5, SMEMA signal wiring

About SMT connection station SMEMA wiring:



SMEMA Signal wiring method and principle **Front (Host computer) :**

1, 2 lines- seek board signal from the front machine

【Line 1: Black, Line 2: Red】 **0V** local seeking board

3, 4 lines- receive the signal from the front board X4

【Line 3: Yellow, Line 4: Green】 0V

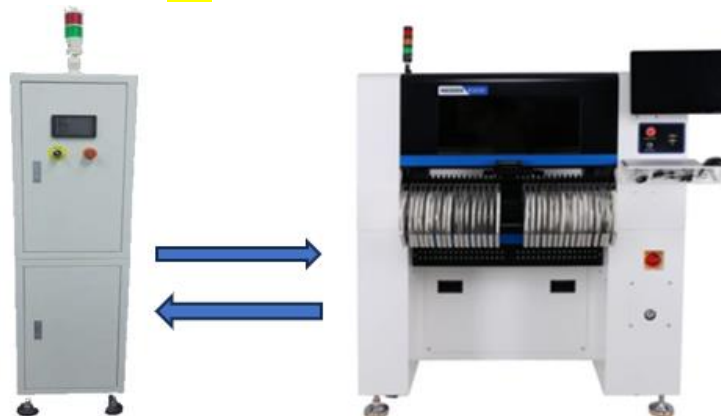
**Rear (Lower machine) :**

1, 2 lines- After receiving the signal for the machine to seek the board X5

【Line 1: Black, Line 2: Red】 0V

3, 4 lines- send the signal of the local board to the back machine

【Line 3: Yellow, Line 4: Green】 The **0V** machine has a board



For the Neoden Pick and Place machines connect the RED and BLACK wires to the K1830 SMEMA pins 1 and 2. For the Neoden 4 machine connect the RED and BLACK wires to the pins 1 and 5.

## 7, maintenance

In order to ensure the normal operation of this equipment and avoid malfunctions, the equipment needs to be regularly inspected for safety and lubricated (small maintenance every 2 weeks; major maintenance every 4 weeks)

- 1) Lubricate the lead screw, guide rods, and transmission bearing.
- 2) Keep the guide rails and lead screws clean.
- 3) Regularly check the fastening screws of various parts, there should be no play on the connections. (especially check the Jimi screws that fix the sprockets);
- 4) Clean the sensors;
- 5) Regularly check the wear and tear of the transport belt;
- 6) Clean the sliding track and guide rods;

## 8, Common troubleshooting

Green light (long light): automatic control

Yellow light (long light): manual control

Red light (flashing): alarm status

1. the rack transport timeout! After processing, press the "Reset" button to continue running!
2. lifting platform lift timeout! After processing, press the "Reset" button to continue running!
3. the rack transport timeout! After processing, press the "Reset" button to continue running!
4. push board timeout! After processing, press the "Reset" button to continue running!
5. the track plate exit plate retention timeout! After processing, press the "Reset" button to continue running!

### Attention!

1. Make sure the power supply is in the "OFF" position before performing any maintenance.
2. Pay special attention to the positioning piece and sensor switches during maintenance. If you accidentally touch these devices, it can lead to damage of the machine.
3. When the lifting carriage is in the normal position, it will work! After processing, touch the "Reset" button to continue running!
4. When the rack out of the basket sensor is not working properly! After processing, touch the "Reset" button to continue running!
5. If the PCB sensor is not triggered, while the machine running!  
After processing, adjust the sensor, then continue running!
6. There are obstacles at the exit of the lower conveyor line. After processing, touch the "Reset" button to continue running!



## 9, Equipment Warranty Regulations

In accordance with the industry practice in machinery and equipment (SMT peripherals), all our equipment is guaranteed for one year from the time of delivery. During the warranty period, customers can contact the company for warranty items according to invoices or related documents. The following conditions will not be covered by the warranty :

1. Faults caused by natural disasters (such as earthquakes, fires, floods, lightning strikes, etc.)
2. Failure caused by modification of the structure and circuit of the equipment or protection device without the permission of the manufacturer
3. Failure caused by improper maintenance of the machine by the customer or the use environment does not meet the environmental allowable conditions for the use of the equipment, such as: excessive humidity, excessive dust, excessive temperature, impact, beating, etc.
4. After the equipment exceeds the warranty period, we will provide long-term after-sales services. We will charge a certain amount of travel expenses due to the customer's area. We need to charge the price for the spare parts. The spare-part center has commonly used spare parts in stock and can provide customers with their needs in a timely manner.

If there are errors or unclear parts in this manual, please call or write to us for guidance. We are very happy to receive your feedback! The manual is written for the machines developed by our company and is used for customers' reference when operating, maintaining, and overhauling the equipment.

The company is constantly committed to new product development and technological improvement. The parameters of this manual are subject to change without notice.