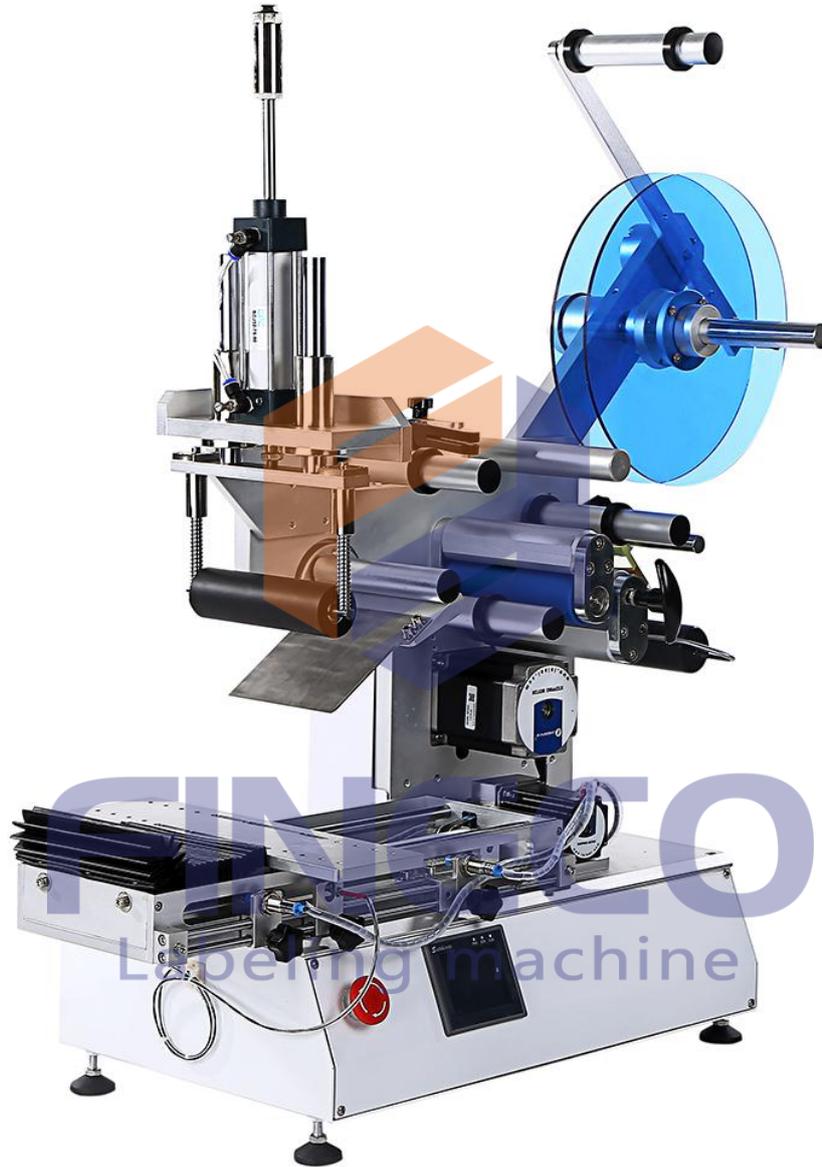




东莞市飞科自动化科技有限公司
Dongguan Fineco Automation Technology Co.,Ltd

INSTRUCTION MANUAL



Model:FK 617

Name: Semi-automatic Plane Labeling Machine Machine



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Chapter 1 Statement

1.Matters need Attention

1.1 As this labeling machine is a professional equipment, only trained workers are expected to operate it.

1.2 Operating this equipment needs to be in accordance with the instructions in the manual or under our technician' s guidance. Notice that some mechanical parts described in this manual are used for instruction only, not included in the standard configuration.

1.4 This operation manual applies to 617 ONLY and aims to ensure correct operation and adjustment. And we hold the final explanation right of this manual.

2.Rights Reserved

1. We will provide service of updating the mechanical parts, electrical parts and the software, but charge fees accordingly.

2. We will not be responsible for any machine problem that caused by your arbitrarily movement, and you should not change the machine without our engineers' suggestion.

3. Optional function : hot stamp printer and other needed functions. We will provide technical support for you but hold no responsibility for the optional functions.

4. We hold intellectual property rights for this machine and machine instruction, we will look into legal responsibility if copyright or something like that occurs.

3.Safety Considerations

1. Electric shock Caution ! Earth wire is indispensable for operating this

machine,make sure you have one.

2.Caution! Voltage overloaded is dangerous.

3.Caution! Do not touch the circuit in the electric box without our technician' guidance.

4.Caution! Do not touch the running mechanical parts.

4.Operation Cautions

Only trained worker are allowed to install,operate and maintain the equipment.

The operator should equipped with these qualities:

- be able to operate the machine safely by himself.
- be able to fix the small mistakes by himself.
- there should be at least 2 people at hand to provide guidance for him .

5.Operating Environment

Please do not use this machine in the following environment:

- with great temperature variation
- with high humidity
- with strong vibration or impact
- dusty
- where there is water, oil, chemical splashes
- Where there is a risk of explosive, flammable items

6.Run-in period

This machine are tailor-made according to your product,being nonstandard equipment and the operator must be trained,so there would be a run-in period of 1



month or so. In the run-in period, you can ask us for technical support if the machine can not reach to your requirement.



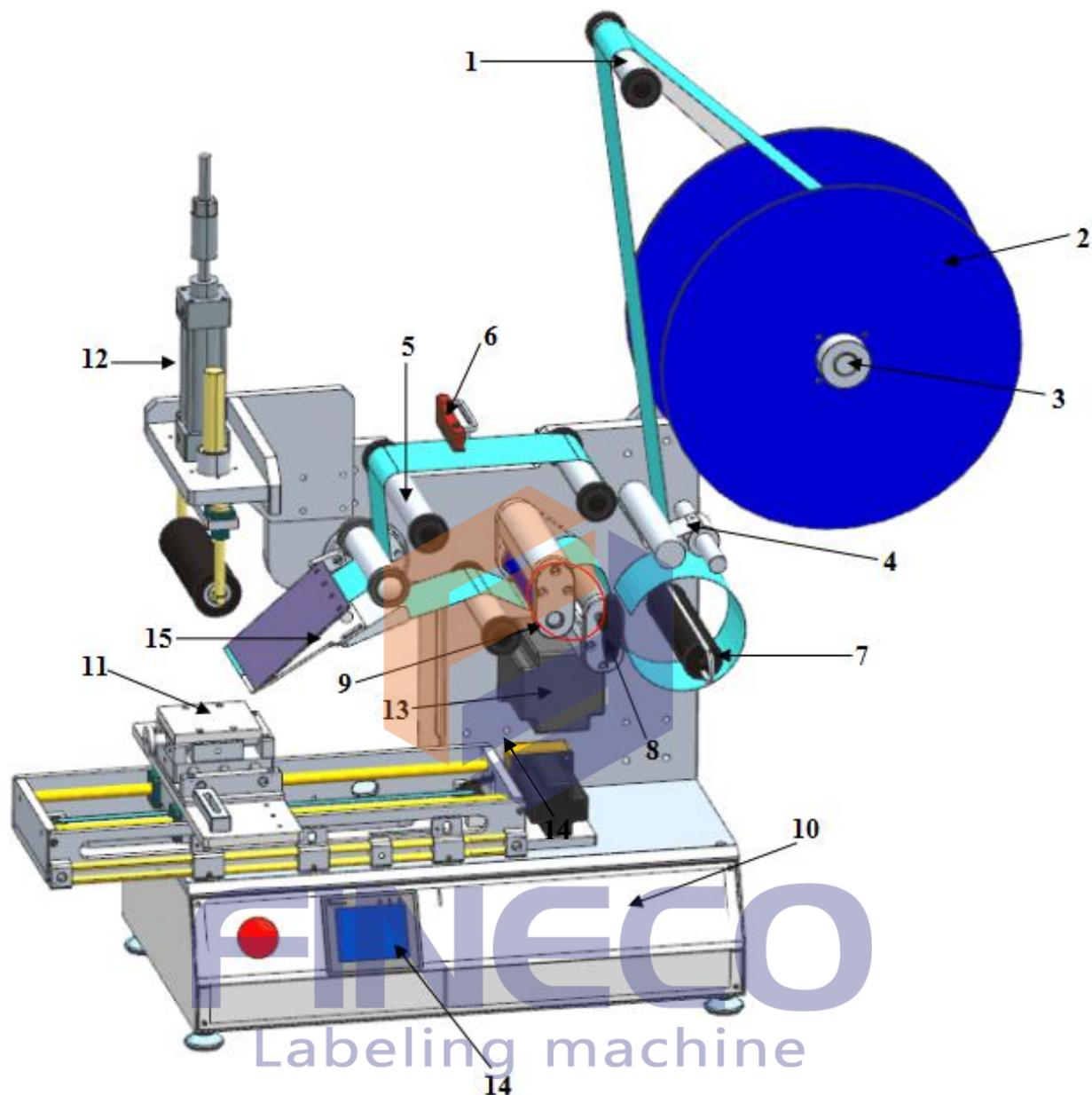
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Labeling machine

Chapter 2 Introduction

1 Brief Introduction

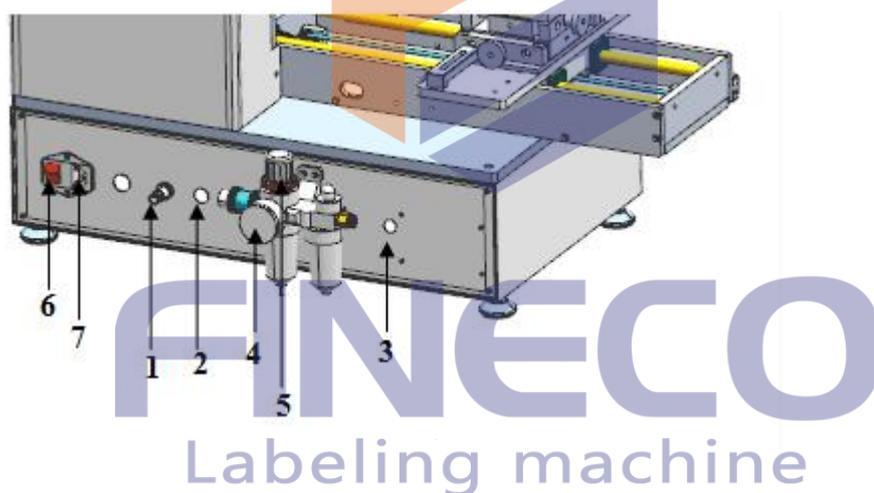
FK 617 semi-automatic plane labeling machine is specialized for plane labeling that requires high precision($\pm 0.5\text{mm}$).

2. Structure



- 1.Brake: keep tension of the label;
- 2.Label Tray: Place the label reel;
- 3.Label Reel Frame: fix the label reel;
- 4 Press Plate:press label,keep tension of the label.
- 5 Roller: Wind label;
- 6 Label Sensor: Detect label;

- 7 Recycling Device: recycle the release paper;
- 8 T shaped screw: Lock the traction device;
- 9 Traction Device: drive the label reel;
- 10 Electric Box;
- 11 Jig;
- 12 Cylinder: strengthen labeling effect;
- 13 Traction Motor: Drive the traction device;
- 14 Touch Screen: control the machine and set parameters here
- 15 Label-peeling Plate: form a “R” angle to separate label from the release paper.



- 1 Foot Switch Interface 2 Spare Interface 3 Air Pipe Interface 4 Barometer 5
Air Pressure Regulator 6 Switch 7 Power cord interface

3 Technical Parameter

- 1. Applicable Label(mm): L 10 mm~150 mm W 10 mm~150 mm
- 2. Label Reel: Inner Diameter: 40mm/76mm Outer Diameter: $\varphi \leq 250$ mm
- 3. Room Temperature: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$

4.Humidity: 35~85%

5.Power: 220V,50HZ

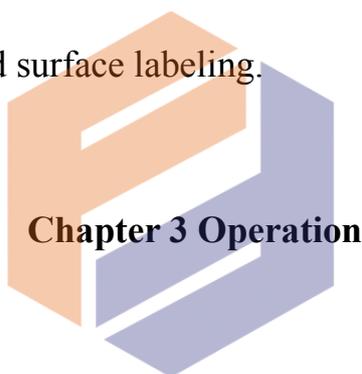
6.Dimension(mm): 970*436*980 (L*W*H)

7.Weight: 45kg

4 Application Scope

1.Widely use in various industries such as food,pharma,cosmetics,daily chemical,electronic...

2.Specialize for plane,curved surface labeling.



Chapter 3 Operation

1 Principle

① Transmission System: Motor drives the synchronous belt to run the traction and recycling device.Thus label will be peel at the peeling plate and the release paper be recycled.

② Control System: This labeler applies electricity and cylinder control syste.Sensor and foot switch send signal to PLC,then the preset labeling program start.

2 Workflow

Power on – Place label reel— Winding—Sensor Adjustment— Labeling Position Adjustment –Labeling

3 Power ON/OFF

3.1 Power On:

1. Clean the machine and surrounding, check if anywhere loose.
2. Connect electric circuit, turn on the main switch and emergency stop switch.
3. Connect air circuit.

3.2 Power Off: Turn off the emergency stop or disconnect the power cord.

Attention!!!

- ✧ Do not touch the power cord or plug in with wet hands, otherwise it will cause electric shock.
- ✧ Do not press the power cord.

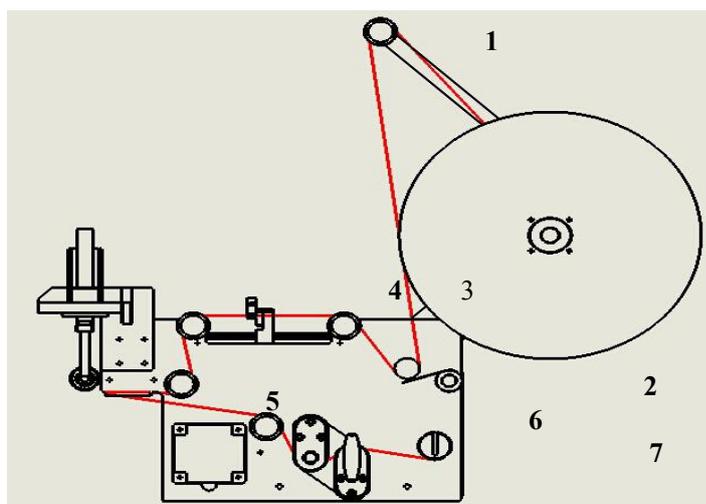
4 Touch Screen



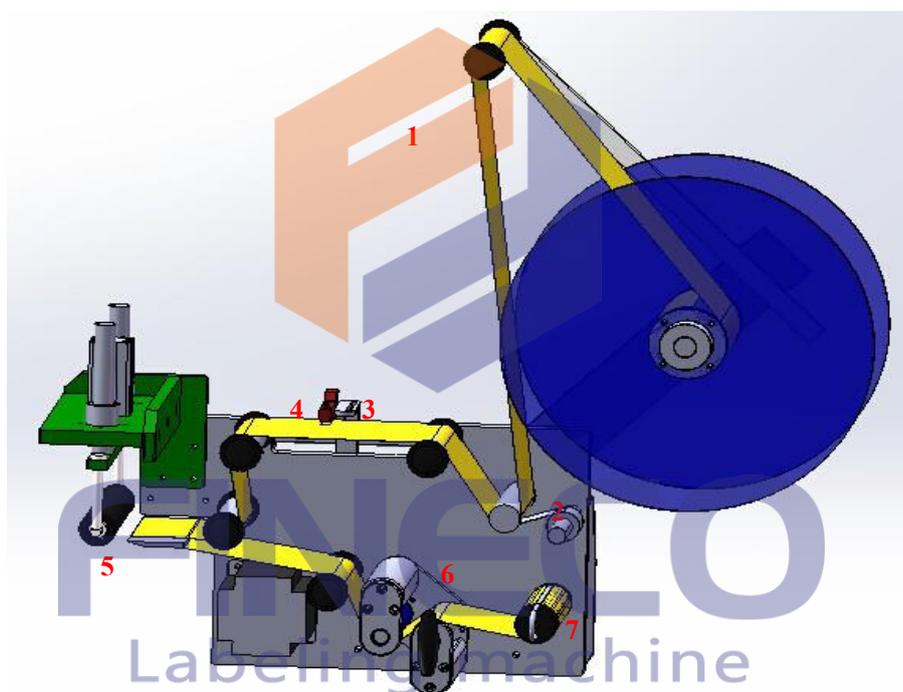
1. Emergency Stop: Turn off the machine if the labeler runs wrong.
2. Touch Screen: Set parameters and control the labeler.

5 Label-winding

Winding → Correcting → Set Label Sensor



Label-winding Diagram

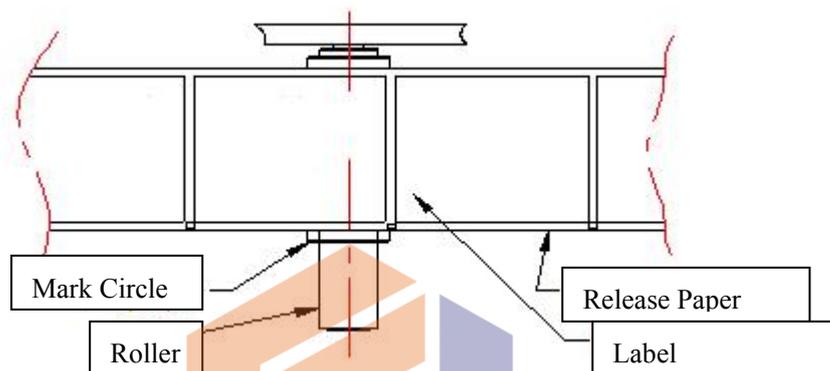


- ① “2” this small pressing plate is used to keep balance and tension of the label.
- ② There is a label sensor between “3” and “4”,label must go through the sensor’s slot.
- ③ Label is peeled from the release paper at “5”,notice that the peeled label should be able to pasted on product.If not,adjust the product postion.
- ④ The release paper is “S” shaped in the traction device “6”, lock the “T” screw

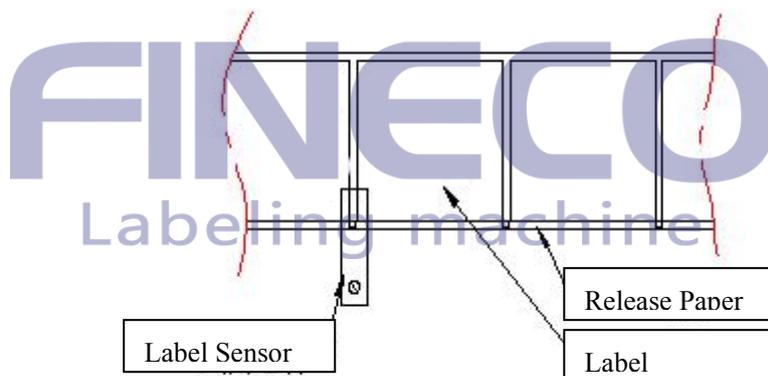
after winding done.

- ⑤ “7” recycles the release paper.

6. Correction



1. After label-winding, select “Manual” mode and click “Jog Label Out” to let the release paper move about 50cm to do self correction during this process.
2. After correction, use the circles on roller to mark the label route.



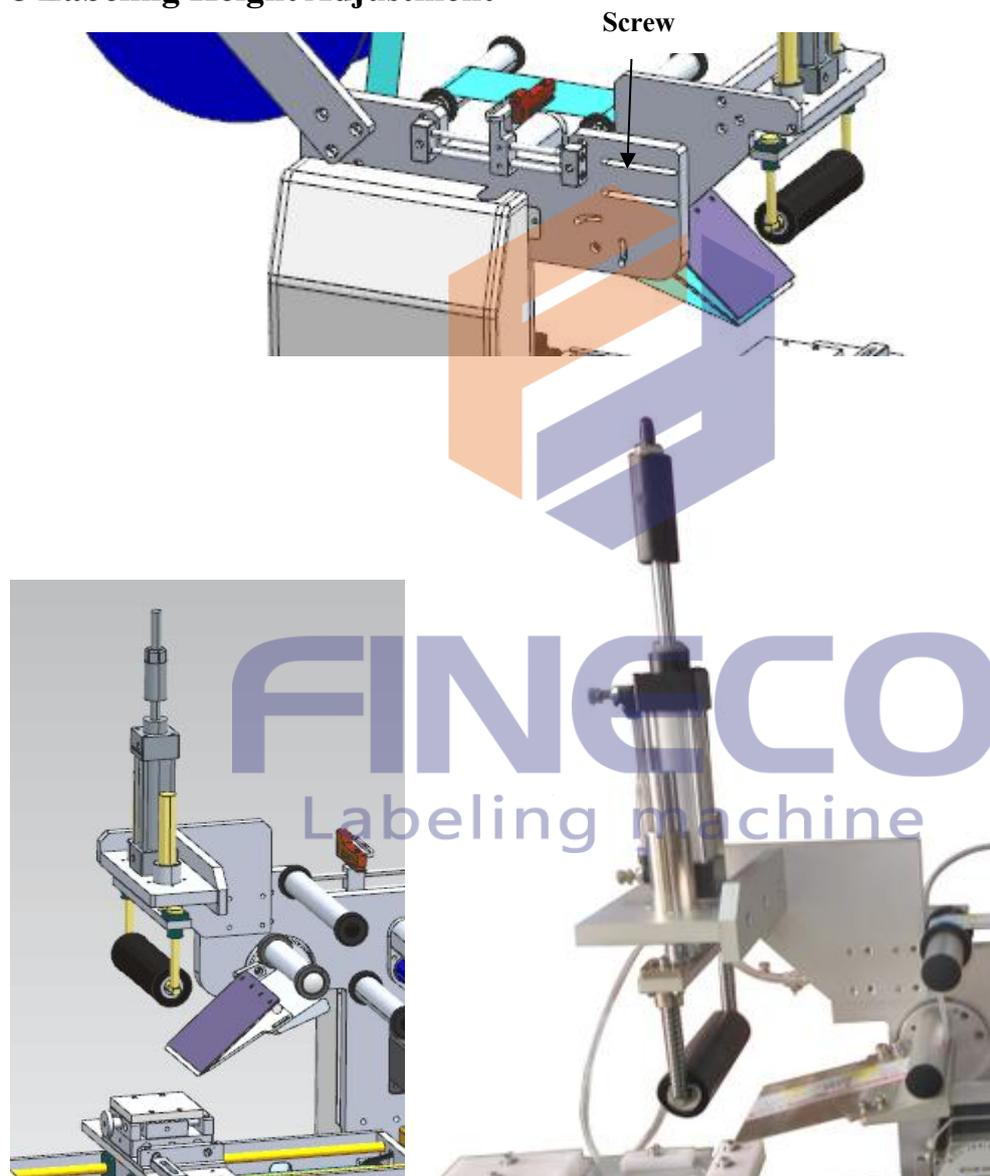
7 Label Sensor Position

1. Under “Manual” mode, click “Jog Label Out” to adjust the label length which stretches out from the label-peeling plate, 0-1mm will be ok.
2. Check if the label sensor is already set: When the “ready” signal lights up, put the label on the focus of the sensor, pull the label to make the gaps and labels

go through the focus alternately to see if the output signals change. Pls refer to the relevant chapter.

3. Under “Automatic” mode, press the foot switch to observe the peele-label length, move the label sensor to let it be 0-1mm.

8 Labeling Height Adjustment



Adjust the distance between the label-peeling plate and the strengthening sponge to be 5mm~20mm by the screws, and the sponge must be higher than the plate. Thus to ensure label can be pasted well on product.

Tips !!!

- ✧ Check if every part in right position.
- ✧ Check if the label sensor is well set.
- ✧ Check if the traction device locked.

9 Sensor Adjustment

The standard configuration of this machine is Datasensor SR21 , other kinds of sensors are optional.

There are 2 sensors on this labeling equipment:Product sensor and label sensor.

9.1 Label Sensor: (just for instruction use,not means the it being the sensor of your machine)



(1) The Adjustment of Leuze GS-63:

a. Work principle:Make use of light penetrability.The light penetrability of the label is different from the gap between two labels,suitable for paper label or the

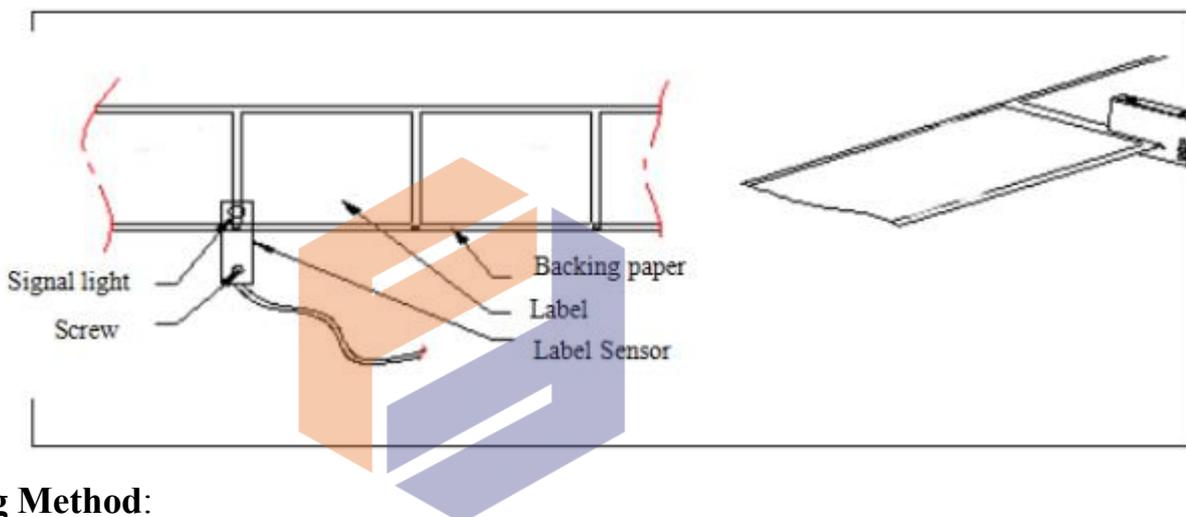
label has certain thickness.

b. About the signal lights and the adjustment button:

Green signal light : power light;

Yellow signal light: detection signal light (it lights up when detecting label) ;

Setting Button:used for setting different labels;



c. Setting Method:

Test :Make the label pass through the slot of the sensor and pull the backing paper,if the **yellow** signal light up when the label gaps pass and put out when labels pass,it means the label sensor works well and can be put into use directly.If not,you need to reset the label sensor:

- ① Put label in the focus of the slot, press the setting button for about 3 seconds until the yellow signal light flickers,then release the button.
- ② Pull the label to make the **gap** between two labels in the focus of the slot,press the setting button again for about 8 seconds,then release.
- ③ Pull the label,let labels and gaps go through the focus alternately.Check if the yellow signal light up and put out when the gaps and the labels alternately appear.

(2) the Adjustment of Datasensor SR21-IR(Italy)

a. Work principle: Detect label by the intensity of light,suitable for the label that made of different material from the backing paper.One side of the sensor launch light and the other side receives ,the intensity of the received light changes when the label and the label gaps alternately appears,by setting a threshold level, the sensor can detect if there is a label.

b. Setting Method:

① When the “ready”signal lights up,put the label on the focus of the sensor,pull the label to make the gaps and labels go through the focus alternately to see if the output signals change.If so,the sensor can be put into use directly.If not,pls set the sensor as following steps:

(1) Make sure label reel goes through the sensor slot, ‘focus’ on label.Press the ‘auto set’ button, the Ready/Error and Output lights would put out, it means the sensor is capturing the signal of the label on its focus. Do not move the label until the Ready/Error light flickers.

(2) When Ready/Error light flickers, draw the label to make the ‘focus’ on the gap between 2 labels..

(3) Press the ‘AUTO SET’ button again, Ready/Error light puts out. It means the sensor is capturing the gap signal. Do not move the label until the Ready/Error lights up.

(4) Pull the label back and forth to see if the ‘out’ signal lights up when ‘focus’ on the border of gap and label. Thus adjustment done.

(5)“Ready/Error” signal lights up shows that the sensor is working.

9.2 Product Sensor: (just for instruction use,not means the it being the sensor of your machine)

a. the connection method of FX-301series: please connect the product detect sensor as the picture.



b. Work Principle:

The detect sensor identifying objects by light reflection.it launches light on the object and the object reflects light to the sensor.When the reflection light reaches to your set number,the sensor can detect the object and send signal out.

c. Status Switching:

Press the“mode/cancel”button , the green signal changes among the “L/D”、 “CUST”、 “PRO”, representing different working status.

d Settings:

-Clear the induction zone,press the “+”button and adjust the green number to at least twice bigger than the red number.just as the following picture.



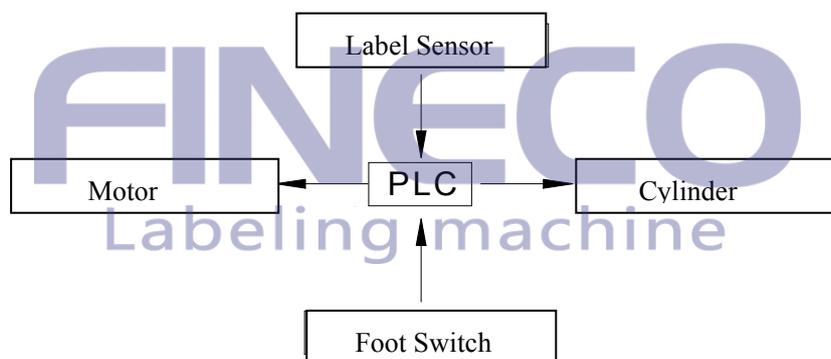
-Put a product in the induction zone(labeling position),make sure that the product stays close to the sensor frame on the left.You can adjust the labeling location of the product by adjusting the frame.

-Close the lid,setting finished.

-When the product be conveyed to the labeling position,the product detect sensor sends signals to PLC,then the PLC direct the relevant parts to operate,labeling start.

Chapter 4 Control System

1Control System

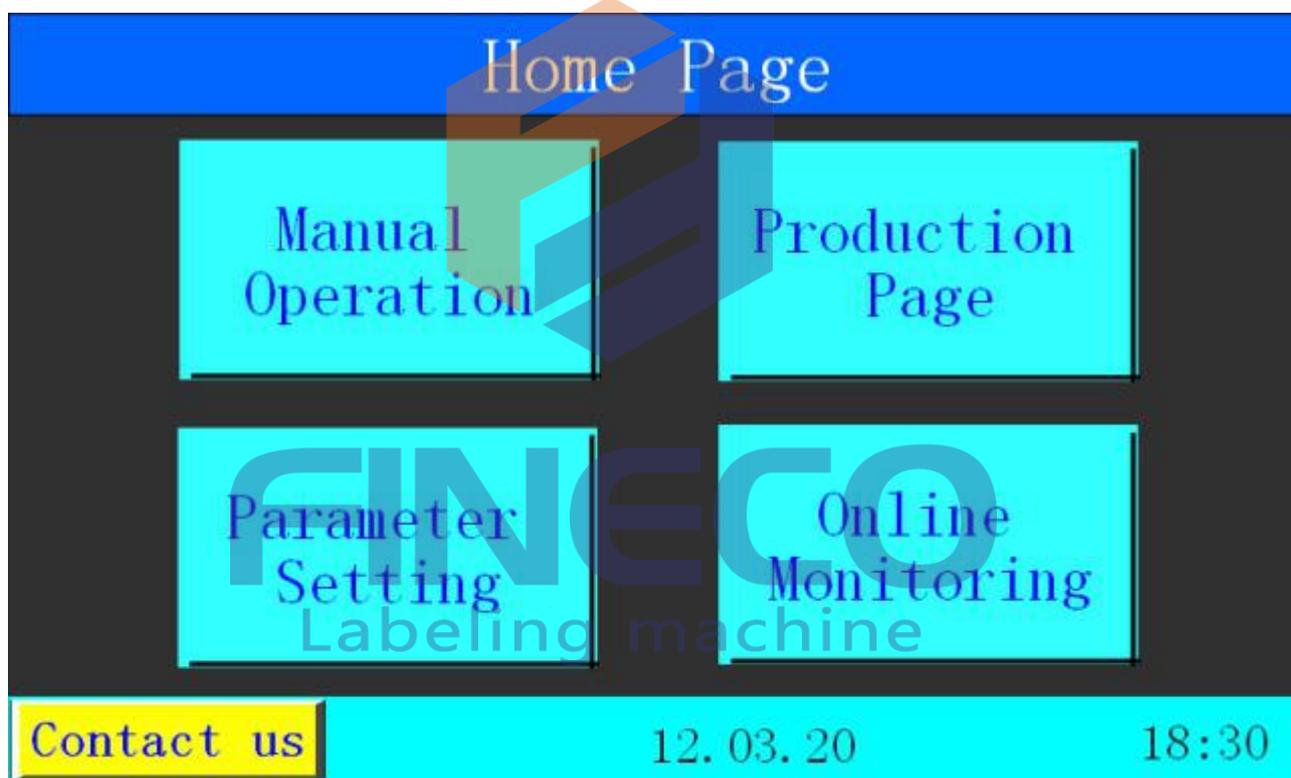


PLC is the core of the labeling machine,it receives signals from other parts and sends out signal to run the labeling program.Press the foot switch,PLC will start the preset program—Motor drives the traction device to peel label—Label sensor detects one label—Motor stops—Labeling&Strengthening process—Completed.

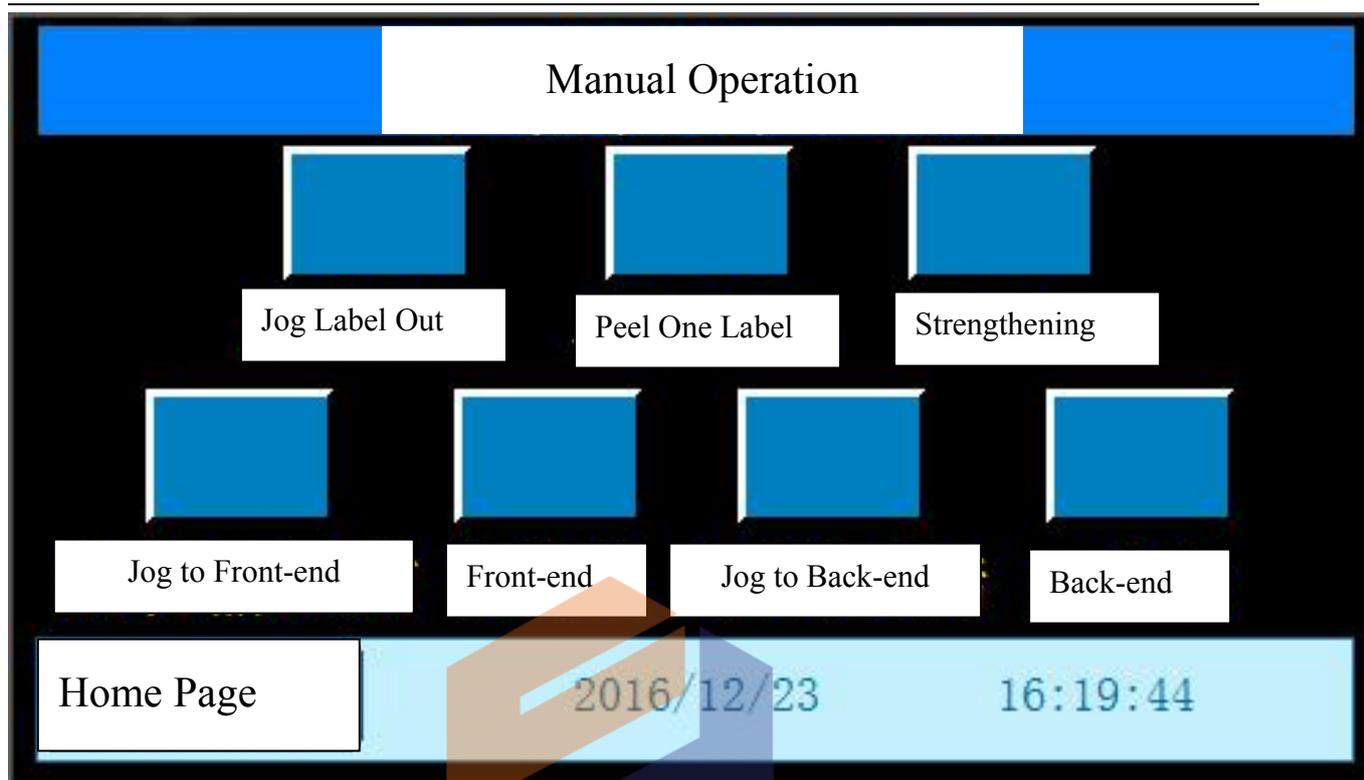
2 Touch Screen

2.1 Welcome Page: Click to enter home page

2.2 Home Page: there are FOUR sections,click to enter the different operation pages.



2.3 Click“Manual Operation”to enter this page.Click the buttons to turn on/off the corresponding motors for test and adjustment



Transmission Cylinder: Transmit product forward and backward while labeling;

Jog Label Out: Click to peel label little by little;

Peel One Label: Click to peel one label.

Strengthening: click to control the strengthening device up and down;

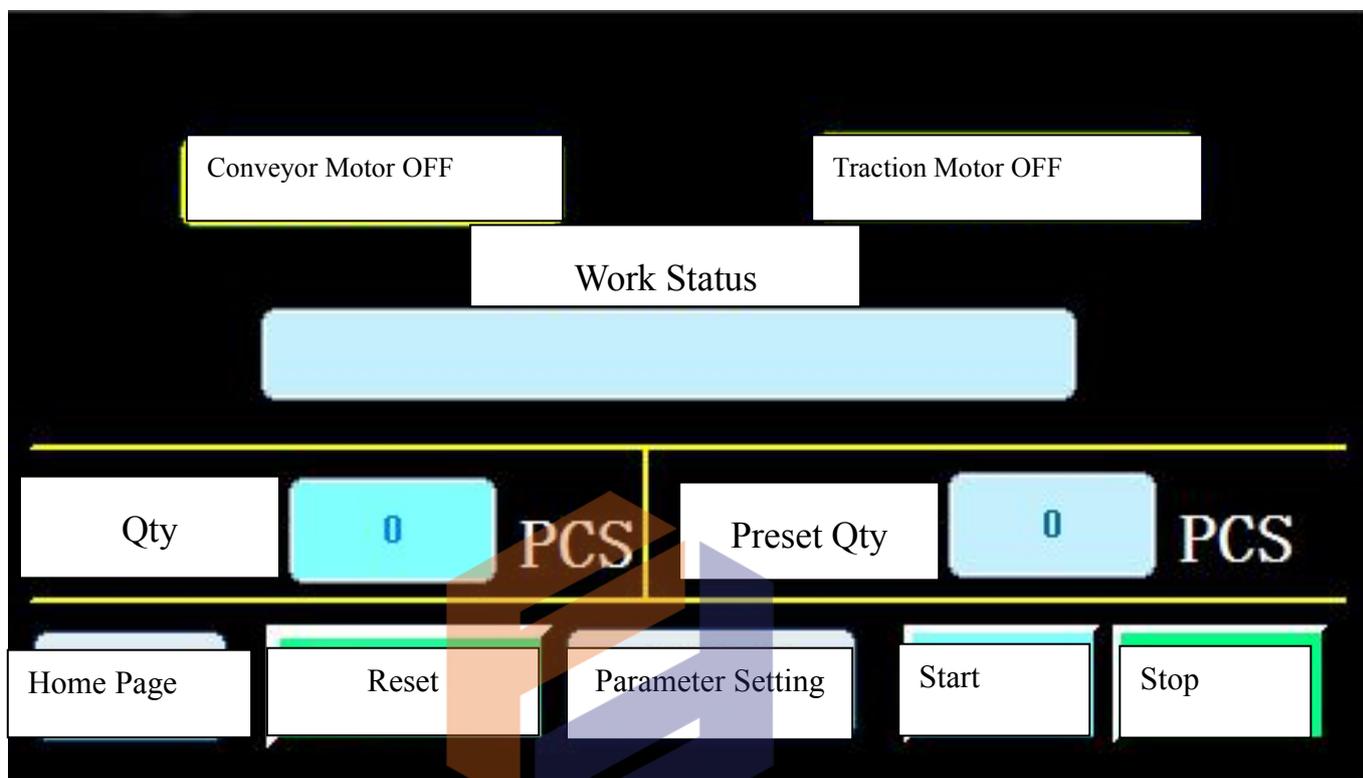
Jog to Front-end: Click to transmit the jig to the front end little by little;

Jog to Back-end: Click to transmit the jig to the back end little by little;

Front/Back-end: Click to transmit jig to the front/Back end.

2.4 Click “Production”, turn ON/OFF the traction motor and conveyor motor,

check the work status of the equipment. Besides, you can set labeling quantity here.



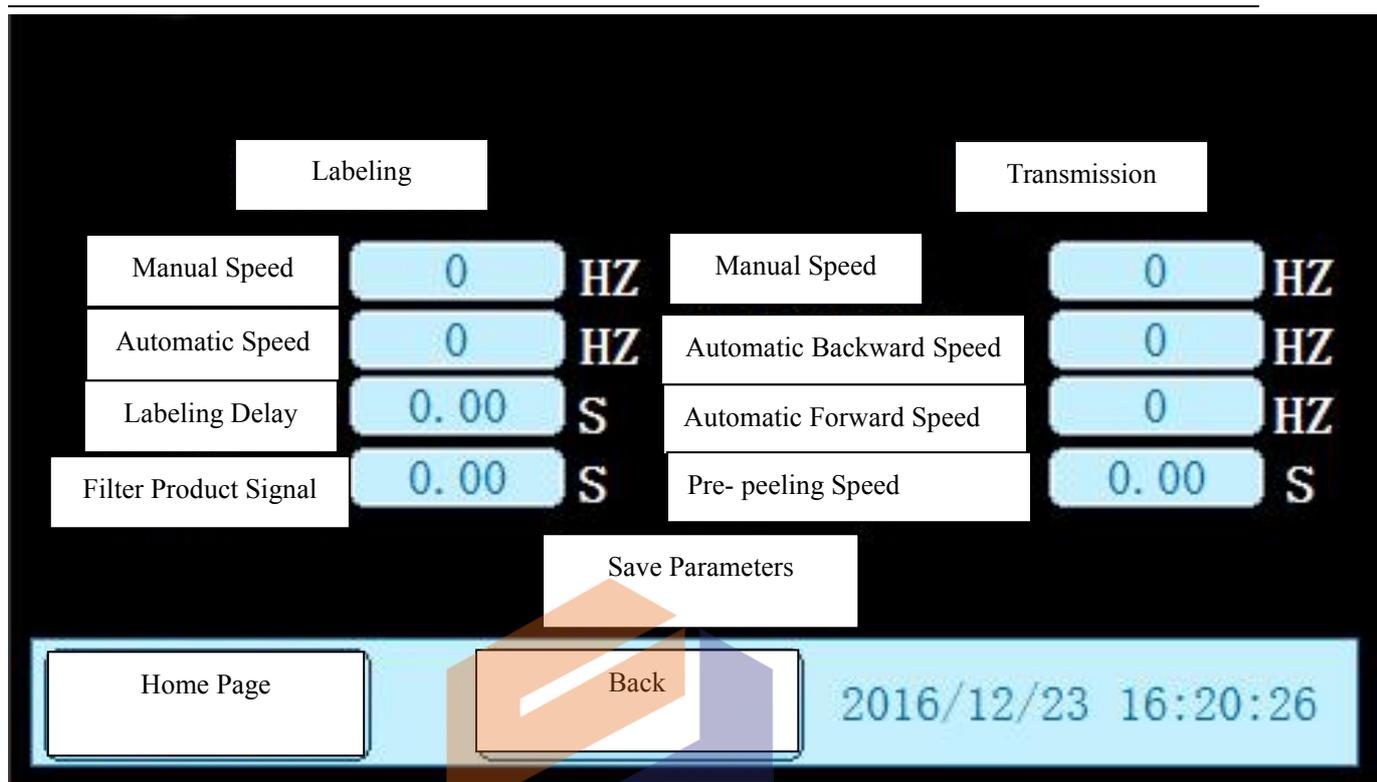
Quantity: counting the labeling quantity;

Preset Qty: set plan quantity here, the labeler would remind you after mission completed.

2.5 Parameter Setting

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Labeling machine



Product NO.: you can set parameter group for each product;

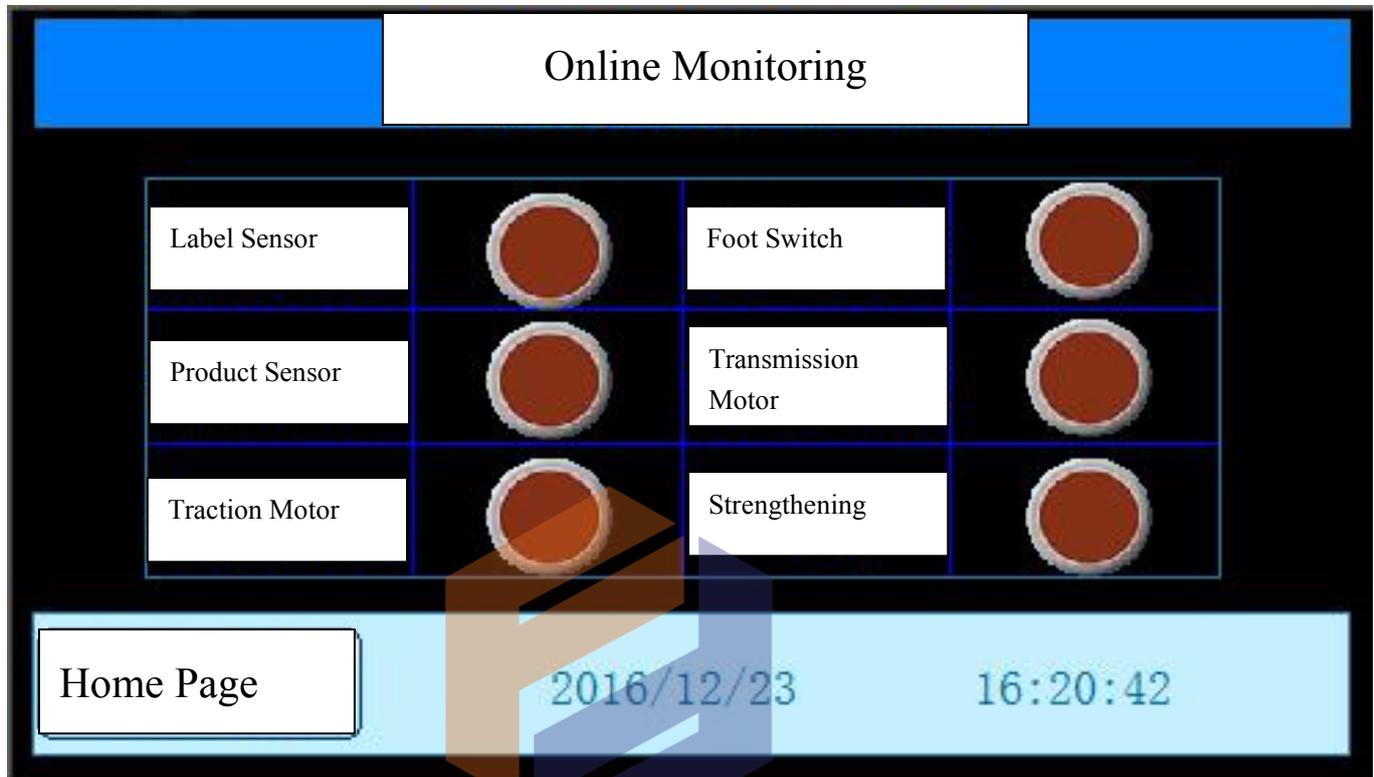
Manual Speed(Labeling): The speed of label peeling under manual mode, setting range 100~19500 HZ;

Labeling Delay(Labeling): labeling won't start until this time past. Usually be "0", used when neither moving product sensor nor mechanical adjustment can make label be pasted to the right position.

Filter Product Signal: sometimes product still in the labeling position after be labeled, so we need to filter the signal of the already labeled product. Usually be "0".

2.6 On-line Monitoring: Indicating the status of each configuration, if the signal light turns blue, it means the corresponding configuration is working, this page is

used in problem checking;



Chapter 5 Common Problem Solution

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Labeling machine

1.Labeling Unsteadiness

1.1 Tighten the label-pressing device .

1.2 Tighten the traction device,do not screw so tight that Release paper wrinkles.

1.3 Control the product quality,remove the labeling error caused by product.

1.4 The product should be paralleled to the label.

1.5.The product should rotating smoothly and do not touch the label-peeling plate.If the product is too light to stay,use the coping device to fix the product.

2. Labeling Deviation

Maybe the label-pressing device is too tight,loose it slightly.

Label correction is needed before automatic operation.

3.Bubbles and Wrinkles

3.1 Slow the labeling speed so that the label-covering device can strengthen the labels.

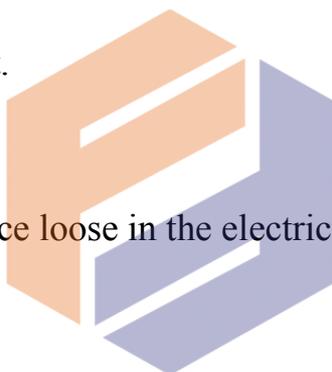
3.2 It appears if the label is transparent or too soft.

4.The machine won't work

4.1 Check the electric circuit.

4.2 Check the fuse circuit.

4.3 Maybe the circuit interface loose in the electric box.



5.Release Paper Broken

Possible causes: poor quality of the release paper;mechanical parts scratches the release paper;label adhesion.

①:Check the release paper,if it is already broken or cut heavily during label production,contact your label provider to improve their craftsmanship.Glassine material is recommended as release paper.

②:Check if there any part scratch the label in the traction process and adjust them.

③:Adjust the pre- peeled length in case label stick to the already pasted product.

6.Labels come out incessantly at a time

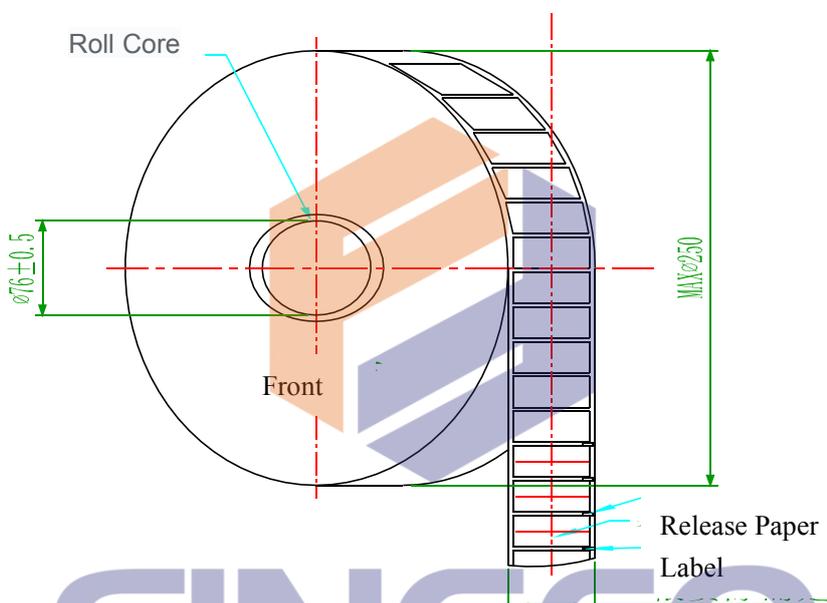
①Label Sensor:reset the sensor according to the instruction manual.If the problem still exists,maybe the sensor is not applicable to the label or it has broken,contact

your labeler supplier in this situation.

②Label- winding:If label bypasses the label sensor' s focus the sensor would not be able to detect labels.

Chapter 6 Matters Need Attention

1.Label Reel



All sticker labeling machine apply rolled label, let see what needs attention to make label reel. Labeling machine

1. Release Paper: Glassine/PET film

With good die cutting performance and toughness, these 2 materials can adapt to high speed automatic labeling machine. Most customers use Glassine release paper.

2. Die Cutting Tolerance: ± 1 mm

Except for tolerance, notice do no harm to the release paper in the cutting process.

Or the label reel will break when labeling.

3. Keep the same distance(2mm~4mm) between every 2 labels.
4. Labels need to be lined up straightly, leave about 2mm~5mm space between labels and the margin of the release paper.
5. Inner diameter:76±1mm; Outer Diameter: ≤260mm

The roll core should be as long as or shorter than the label width.

6. For transparent label, which can not be detected by common label sensor. There are 2 solutions:
 - a. Change the label sensor.
 - b. Make a remark on the release paper for detecting, such as drilling, or printing a black line between every 2 labels.



7. Release direction: It relates to labeler type. Need to consult the labeling machine supplier.

2 Maintenance

2.1 Maintain and Clean

① This machine is powered by AC power,so it needs replace the fuse for overload protection .

② Please use alcohol to clean the machine; and use commercial neutral cleaning fluid to clean the electric box.

③ Matters need attention:

Do not use cleaning tool that would damage the surface of the machine.

Do not use corrosive plastic utensils;

Do not use acid soluble liquid.

2.2 Routine Maintenance

Regular inspection is necessary ,especially the following parts:

① The conveyor belt's speed and accuracy (after extended periods of use)

③ Clean up waste paper scraps and pieces.

④ Remove oil residue from the rollers and the machine edges.

⑤ Clean the sensor lens with a soft brush or cloth.

2.3 Surface Maintenance

This machine have chrome plating processed,equipped with antirust function.However, you still need to pay attention to rust in the placing processes,using anti-rust oil to spray the stainless steel and iron parts from time to time.