



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

# INSTRUCTION MANUAL



**Model: FK812**

**Name: Automatic Card Labeling Machine**



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Labeling machine

## Chapter 1 Statement

### 1.matters need attention

1. As this labeling machine is a non-standard equipment, only trained workers are expected to operate it.

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

3. This operation manual applies to FK812 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 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.

## Chapter 2 Introduction

### 1.Basic Use

This labeling machine is designed for card labeling.

### 2.Technical Parameters

\* labeling accuracy:  $\pm 1\text{mm}$  (errors caused by product and label are not concerned);

\* labeling speed:40~120pcs/min, depends on the length and quality of the product);

\* Applicable Product Dimensions (length  $\times$  width  $\times$  height / thickness):

Length: 40mm - 400mm;Width: 40mm-200mm;Height: 0.2mm-120mm.

\* Applicable Label Size(mm): length: 6mm-150mm width (the backing paper) : 15mm-130mm;

\* Device dimensions (mm) (L  $\times$  W  $\times$  H): 2000 $\times$ 800 $\times$ 1400mm;

\* Voltage (V): 220V/50HZ;

\* Weight:about 180 kg.



### 3.Labeling Process Analysis

Put cards on the card separator→ The cards are separated one by one → The cards are transmitted by the conveyor belt → The inductive sensor detects the cards→ PLC receives the signal ,Labeling start and completed→ the conveyor belt send the labeled cards to the recycling device

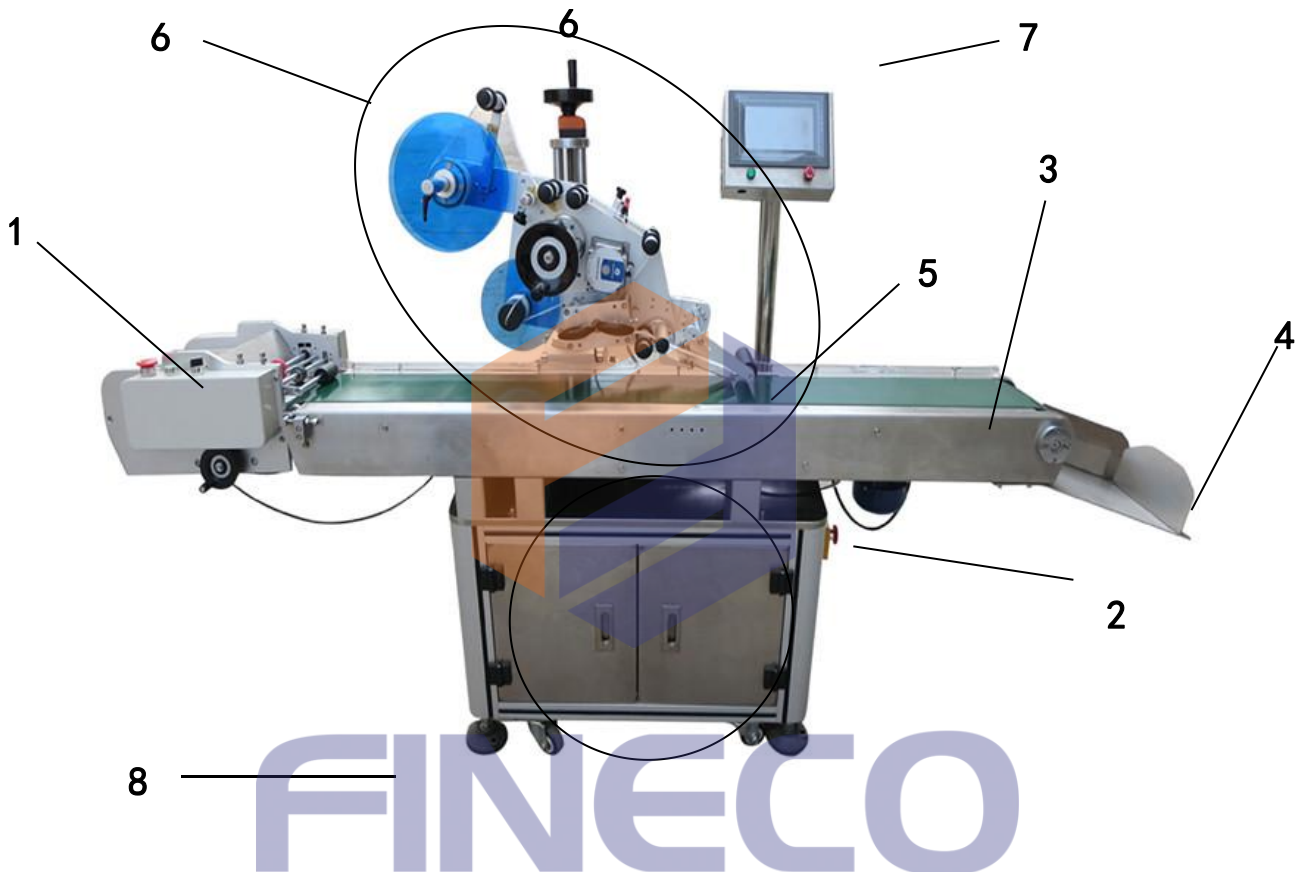


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## Chapter 3 Configuration

### 1.Overview

The configuration and function of each part are as following:



1.Card Separator: separating the cards one by one

2.Main Switch: controlling the general power supply.

3.Conveying Mechanism:conveying the cards to the labeling location and send the labeled cards to the recycling mechanism.

4.Recycling Mechanism: collecting the labeled cards.

5.Label-covering Mechanism: strengthening the label effect.

6.Labeling Head : the core part of the machine,which achieves labeling function.

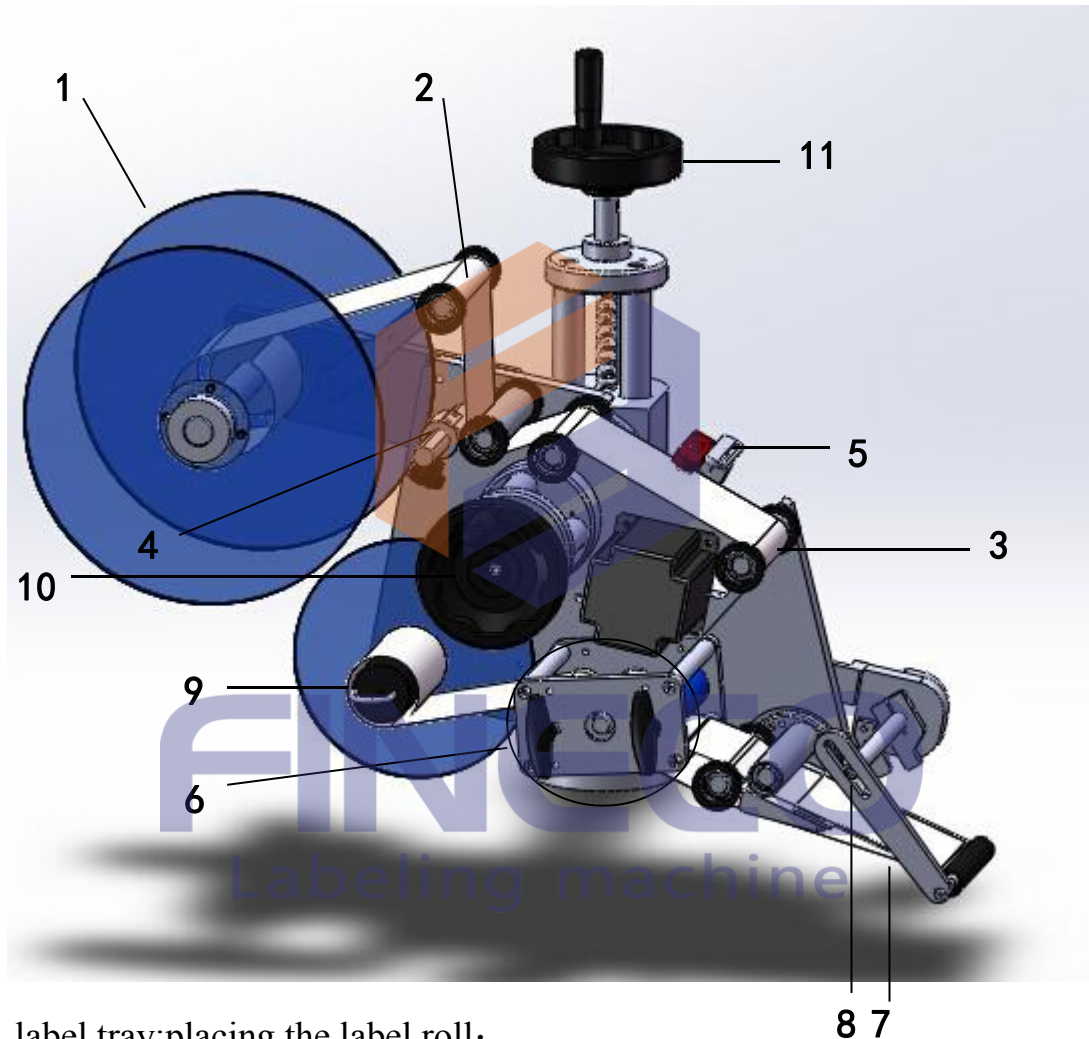


7.Touch Screen:setting parameters.

8.Electric Box: electric control center,consist of PLC and other controllers.

## 2.Detailed Drawing

### 2.1 Labeling Head Structure



1 label tray:placing the label roll;

2 brake: brake the label tray,in case the label loose tension.

3 roller: keep the tension of label.

4 compress device: compress the label to keep tension of the label .

5 electric eye frame:placing the electric eye,can be adjusted.

6 traction device: motivate the label movement.

7 label-peeling plate: peel the label from the backing paper.

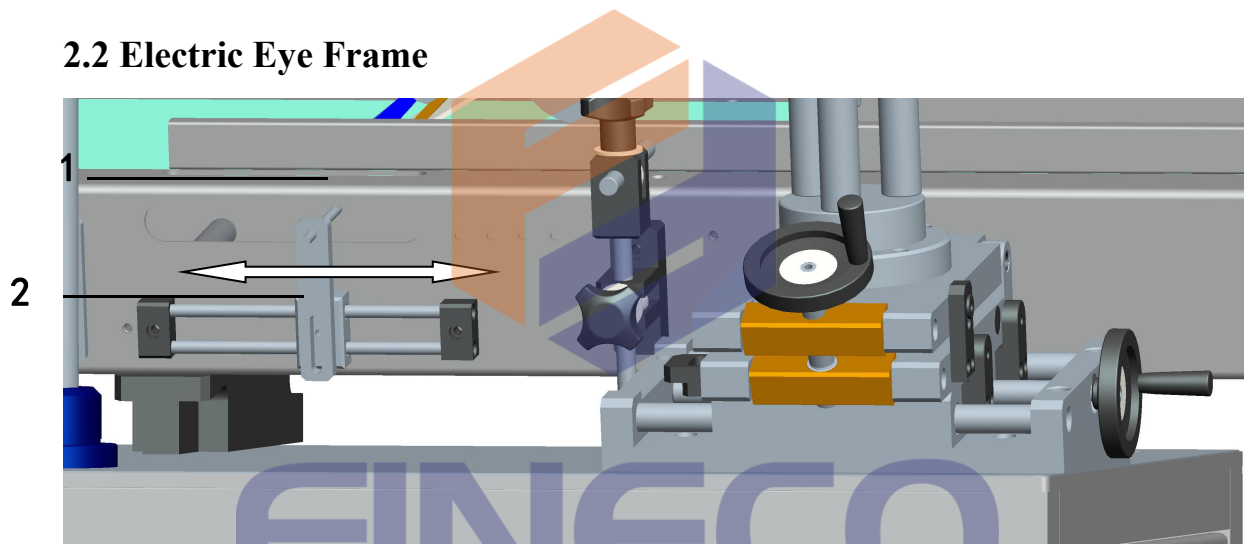
8 label-covering device: compress the label to strengthen labeling effect.

9 recycling device: recycle the backing paper.

10 horizontal adjustment adjuster:adjust the horizontal location of the whole labeling head.

11 vertical adjustment adjuster:adjust the horizontal location of the whole labeling head.

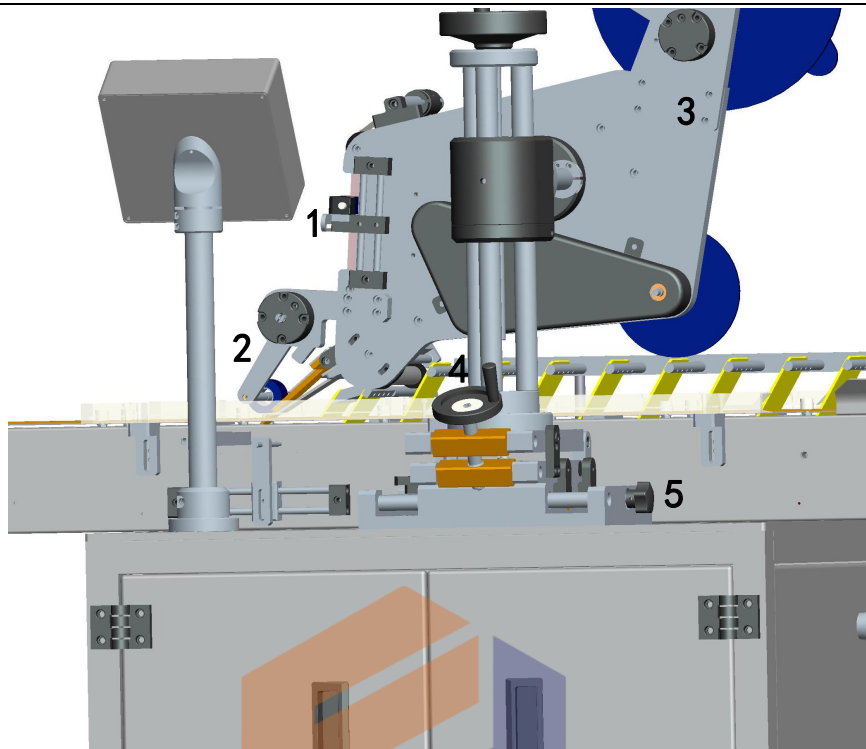
## **2.2 Electric Eye Frame**



1 electric eye : internally installed under the conveyor belt,detect product signal by the principle of light transmittance.

2 electric eye frame : can be adjusted horizontally.Cooperate with the labeling-delay function, can achieve anteroposterior positioning labeling.

## **2.3 Adjustment Device Structure**



\*Before adjusting, you should loose the corresponding locking screw .Remember to lock the locking screw after the adjustment has done.

1 electric eye frame: vertically moved to adjust the length of the label that stretches out from the label-peeling plate.

2.label-covering device: make the label tightly stick to the product.

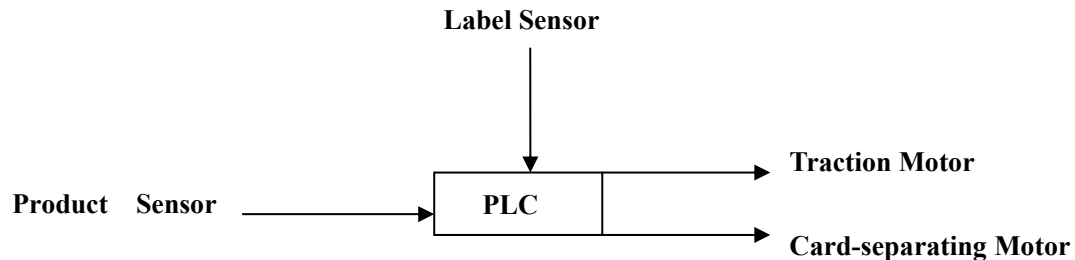
3 vertical adjustment turnplate: adjust the height of the whole labeling head to adapt to different products.

4 inclination adjustment turnplate:make the labeling head be paralleled to the conveyer belt.

5.forward and backward adjustment turnplate: move the labeling head forward or backward.

## Chapter 4 Electric Configuration

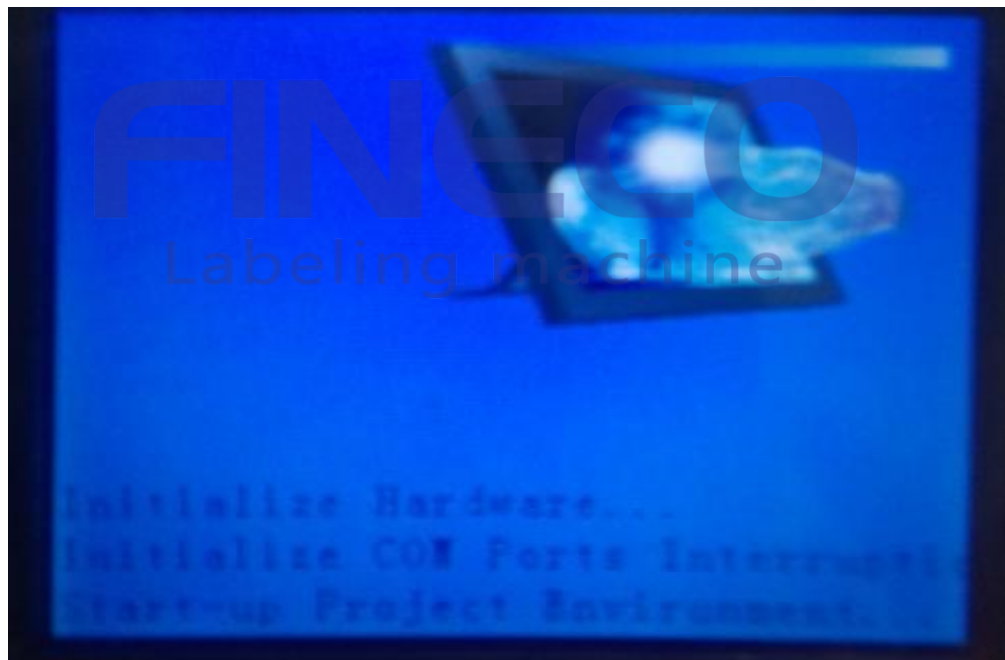
### 1.The principle of electric control



The signals output by the label sensor and the product sensor are analyzed by the PLC, then signals are sent to the traction motor and the card-separating motor, thus the labeling process is completed.

### 2.Touch Screen

2.1 turn on the machine, the initialize process will last 0.5 second.





2.2 Welcome Page:some basic information of the manufacture.click to redirect to the home page.



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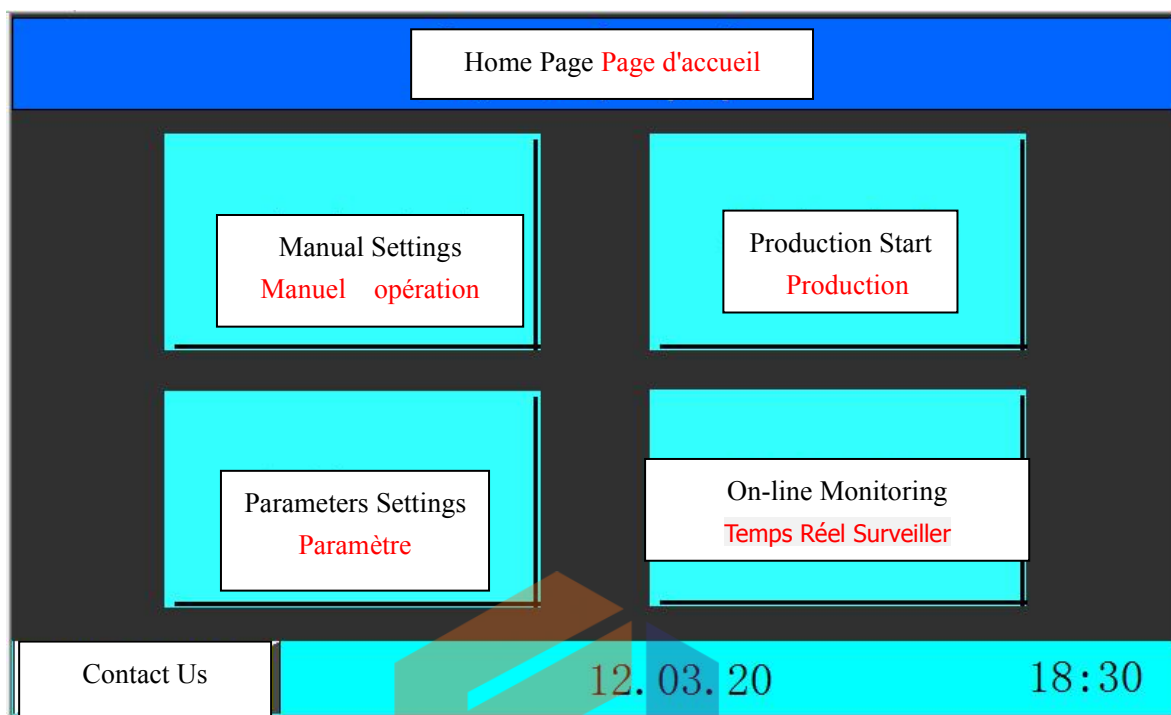
Automatic Card Labeling Machine



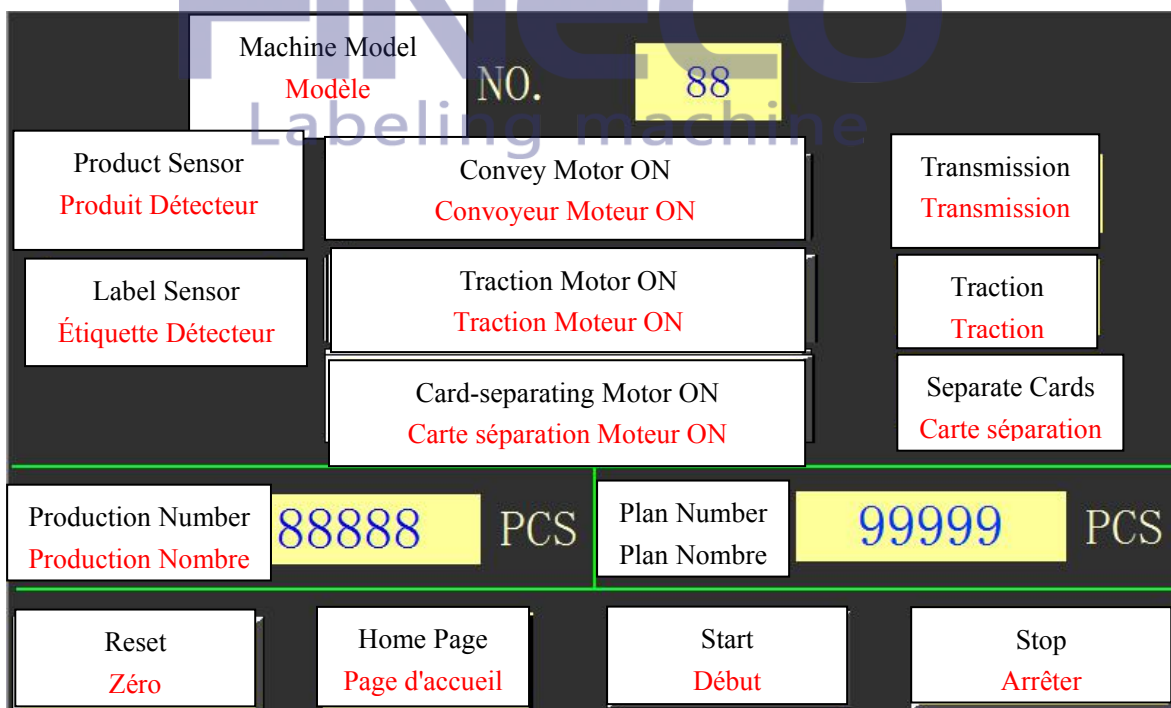
TEL:0768-81886391  
WEB:[www.finecolabeler.com](http://www.finecolabeler.com)  
ADD:No 11,Zhanchang Road,Wusha,ChangAn Town,Dongguan,Guangdong,China.

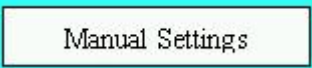
12. 03. 20Sunday18:30

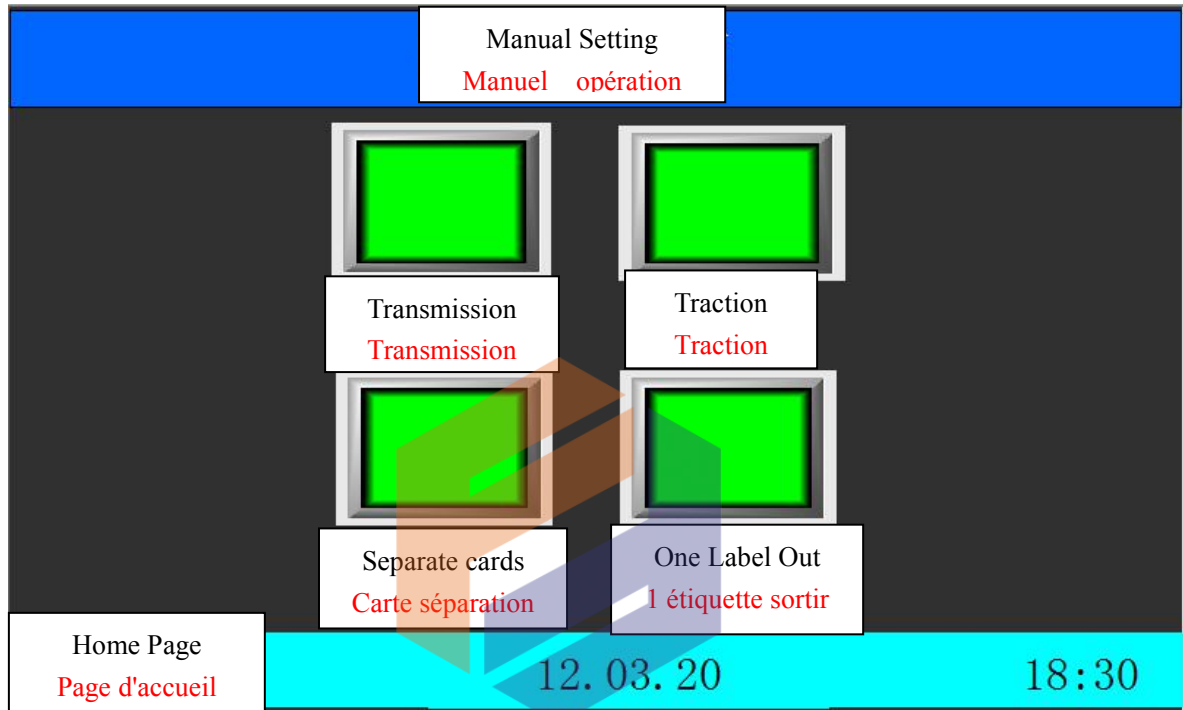
2.3 Home Page , there are four sections of the home page,click to enter the different interfaces.



2.4 Click the **Production Start** button, enter this page. click the corresponding button to turn/off the motors, besides, you can set the production number and plan number here:



2.5 click the , enter this page, this page is used to test the machine.



**2.6 Parameter Loading Page:** input correct password to set or change the parameters.



| System Parameter Page<br>System Paramètre |                  |
|---|------------------|
| Cipher Amending Mot de passe modifier     |                  |
| Original Password Initial Mot de passe    | 9999             |
| New Password Nouveaux Mot de passe        | 9999             |
| OK  |                  |
| Home Page<br>Page d'accueil               | 12. 03. 20 18:30 |

## 2.7 Parameter Setting I

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| Product <b>Produit</b>   | NO.    | 99 |
|--|--------|----|
| Manual Traction Speed<br><b>Manuel traction vitesse</b>                | 99999  | HZ |
| Automatic High Speed Length<br><b>Automatique rapide longueur</b>      | 999.99 | mm |
| Automatic Traction at High Speed<br><b>Automatique rapide traction</b> | 99999  | HZ |
| Automatic Traction at Low Speed<br><b>Automatique lent traction</b>    | 99999  | HZ |
| Labeling Delay<br><b>étiquetage retard</b>                             | 99.99  | S  |
| Product Signal Filter Time<br><b>Product Signal filtration temps</b>   | 99.99  | S  |

|   |  |                                    |  |
|---|--|------------------------------------|--|
| Save Parameters<br><b>Conserver Paramètre</b> | Select Parameters<br><b>Sélectionnez Paramètre</b> | Home Page<br><b>Page d'accueil</b> | System Parameters<br><b>System Paramètre</b> |
|---|--|------------------------------------|--|

### Meaning of the codes

1.Current Product: NO.XX, you can set and save parameters for each product .

50 sets Maximum.

2.Manual Traction Speed:it means the label-peeling speed,which is controlled by the traction motor , in manual mode.

3.Automatic High Speed Length: every label-peeling process are divided into two parts,the first part: beforehand label-peeling,before the product reaching to the labeling location,part of the label had been peeled .This part is called



automatic high speed length, which can not be zero, generally speaking, the automatic high speed length is 2mm. The remained label is the second part.

4. Automatic Traction at High Speed: the speed of the traction motor in the first part of label-peeling process. (setting range 200—32000HZ)

5. Automatic Traction at Low Speed: the speed of the traction motor in the second part of label-peeling process. (setting range 200—32000HZ)

6. Labeling Delay: Typically be 0. With this parameter, the labeling process will not start immediately after receiving the product sensor's signal, but delayed. Only used in the following condition: moving the product sensor and the adjustment device both can not make the label stick to the designated place.

7. Product Signal Filter Time: if the first product has completed labeling, the second has already reached the labeling position, then it will be in a mess. In case you need to filter the the second product's signal from the product sensor.

## 2.8 Cipher Amending Page:

Parameter Loading Page Paramètre enregistrer page

Mot de passe

999999

OK

Home Page  
Page d'accueil

12. 03. 20

18:30

**2.9 On-line Monitoring:** monitor the conditions of each configuration,if the small circle turns blue,it means the corresponding configuration is working,this page is used in fault detection.

On-line Monitoring Temps Réel Surveiller

Label sensor  
Étiquette Détecteur

Traction motor  
Traction Moteur

Conveyor motor  
Convoyeur Moteur

Product sensor  
Produit Détecteur

Emergency Stop Switch  
Interrupteur d'arrêt d'urgence

Home page  
Page d'accueil

12. 03. 20

18:30

## Chapter 5 Adjustment Device

### 1.Mechanical Adjustment

#### 1.1 Label-covering Device Adjustment

Points:

1. the label-covering device should be parallel to the conveyor belt in order to make sure the product will be uniformly forced and steadily labeled.
- 2.the label-covering device shouldn't too low to let the product pass by or too high to touch the product.

#### 1.2 Labeling Head Adjustment

Points:Loose the locking screw before adjusting and lock it after adjustment is done.Turn the turnplate to achieve forward/backward,vertical/horizontal adjustment.

#### 1.3 Label-peeling Plate Adjustment

Loose the screw on the joint of the plate to achieve adjustment.the label-peeling plate can swing in a certain range to adapt to the products.

### 2.Electric Eye Adjustment

This machine is equipped with 2 electric eyes:product detect sensor and label sensor,you can adjust them according to your product and labeling requirement.

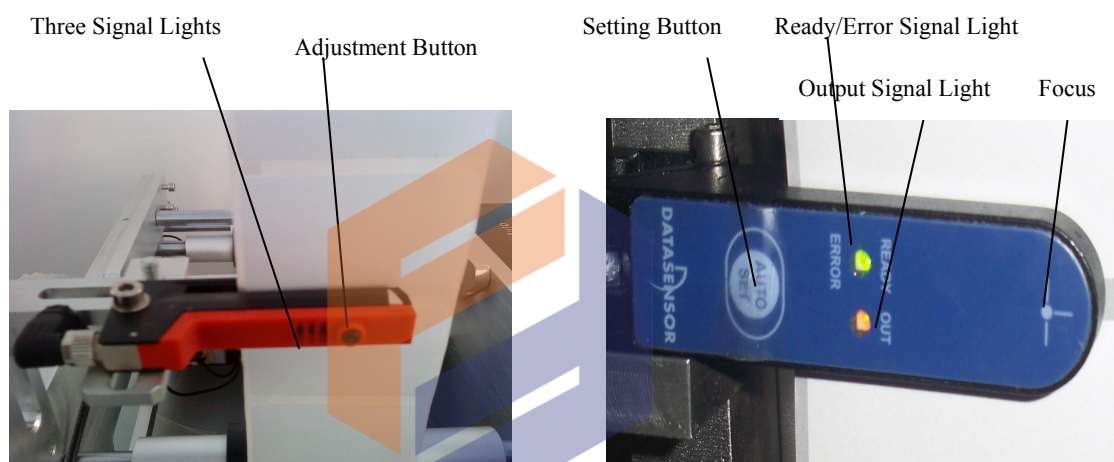
#### 2.1 Position Adjustment

You can adjust them by adjusting the electric eye frame,we have talked about this in the mechanical configuration part.

## 2.2 The Setting of Electric Eye

The standard configuration of this machine is MTS-2 slot-shaped electric eye, other kinds of electric eye are optional.

**1.Product Detect Sensor:** (just for instruction use,not means the it being the sensor of your machine)



leuze GS-63(Germany)

Thies SR21-IR(Italy)

### 1.1 the Adjustment of Leuze GS-63:

**1.1.1 Work principle:** light penetrability,the light penetrability of the label is different from the gap between two label,suitable for paper label or the label has certain thickness.

#### 1.1.2 About the signal lights and the adjustment button:

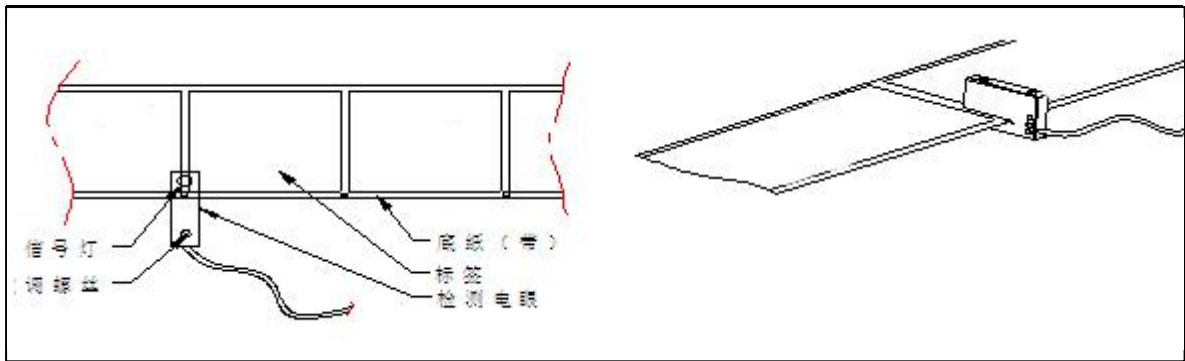
Green signal light : power light;

Yellow signal light: status light (it lights up when output signal) ;

Adjustment Button:used for setting detect parameters of different labels;

#### 1.1.3 Setting Method:

Make the label pass through the slot of the electric eye and pull it,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: firstly, put label in the slot of the sensor, press the adjustment button for 3 seconds and you will see the yellow signal light flickers, then release the button, pull the label to make the gap between two labels in the slot, press the adjustment button again for 8 seconds, then release it, thus adjustment completed. Pulling the label, you can see the yellow signal light up and put out when the gaps and the labels alternately appear.

## 1.2 the Adjustment of Thies SR21-IR(Italy)

**1.2.1 Work principle:** the intensity of light, 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, suitable for the label that made of different material from the backing paper.

### 1.2.2 Setting Method:

① When the “ready” signal lights up, put the label through the slot of the sensor, pull the label back and forth, if the output signal lights change, the sensor can be put into use directly.



②Press the automatic setting button,the green and yellow signal lights would put out and the electric eye begin capture signal of the medium(the backing paper) in the slot,you can not move the label until the green signal light flickers.

③When the green signal flickers,pull to make the second medium(the label) on the focus of the sensor.

④Press the “AUTO SET” button and the green signal put out,the electric eye begin to capture signal of the label,do not move the label until the green signal lights up.

⑤Pull the label back and forth, the output signal light up in the gap of the two mediums,thus the setting completed.

⑥ “READY” signal lights up shows that the electric eye can work under the condition in which two mediums alternately appear.

**2.Product Detect Sensor:** (just for instruction use,not means the it being the sensor of your machine)

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



## 2.2 Work Principle:

The detect sensor identifying objects according to the amount of the light reflection.it launches light on the object and the object reflects light to the sensor,when the amount of light reflection reaches to the set number,the sensor can detect the object and send signal out.

## 2.3 Status Switching:

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

## 2.4 Settings:

2.4.1 Not laying any product on the detecting place ,open the transparent cover of the amplifier,press the “+”button and adjust the green number to at least 2 times bigger than the red number.just as the following picture.

2.4.2 Laying the product on the labeling place,make sure that the product stays close to the locating rod on the left.You can adjust the labeling location of the product by adjusting the locating rod

2.4.3 Close the transparent cover,setting completed.

2.4.4 Put product on the labeling location,the product detect sensor sends signals to PLC,then the PLC direct the relevant parts to operate,labeling start.



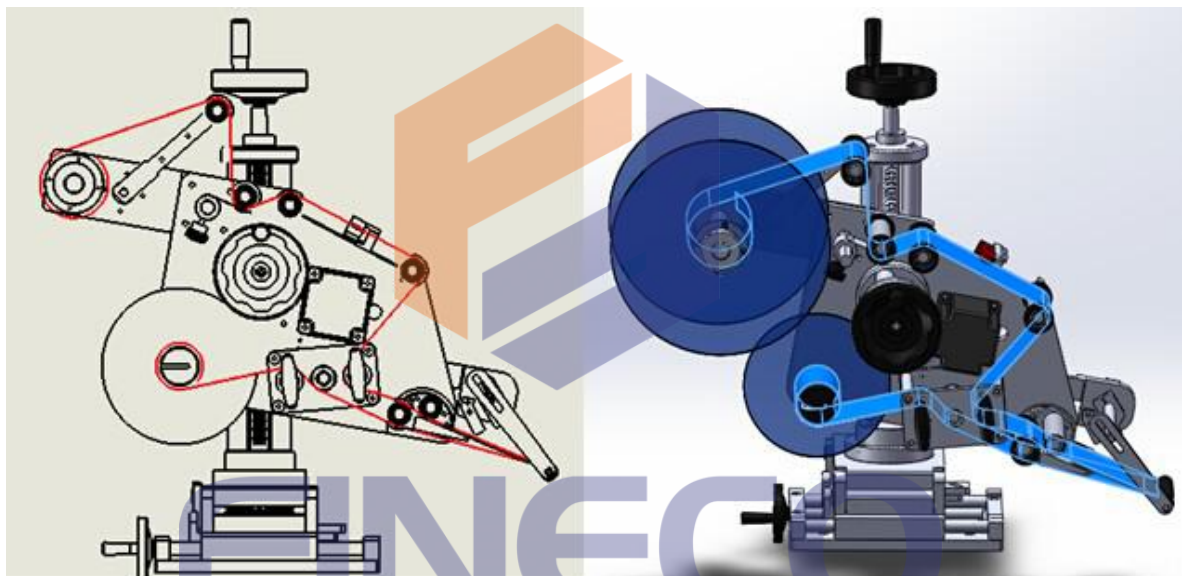


## Chapter 6 Operation

### 1.Label winding

Please winding the label as following:(key point:keep the intensity and balance of the label)

#### Label Winding Diagram



### 2.Mechanical Operation

Preparation :Turn on the power,choose the manual condition.

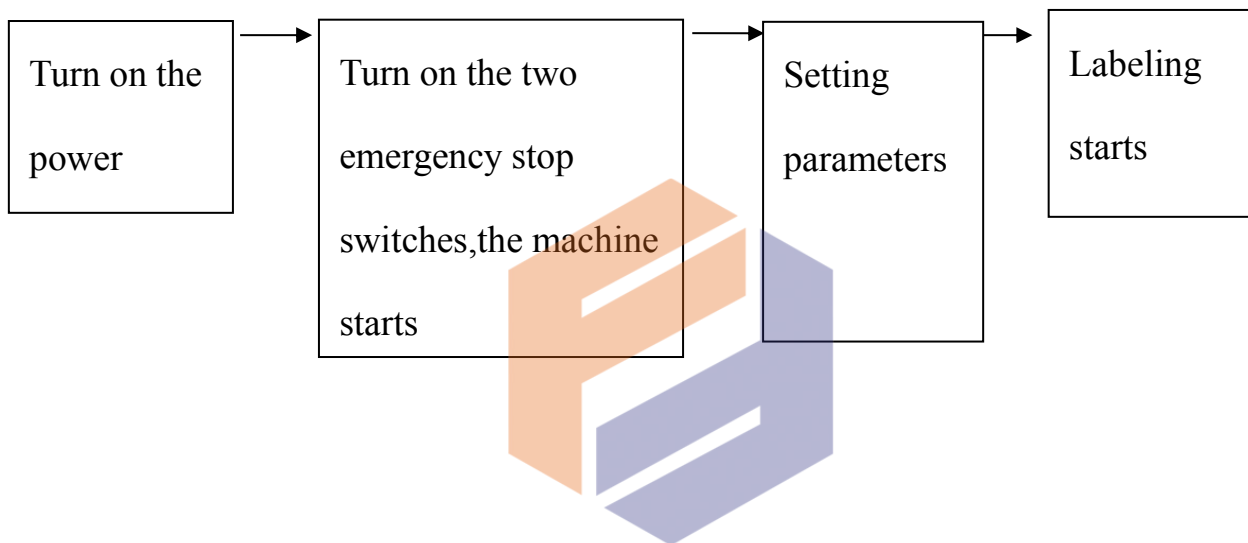
1.Conveyor Mechanism Adjustment: please refer to the adjustment section we talked before.

2 .Labeling Location Adjustment: laying the product below the label-peeling plate,adjust the labeling head or the locating rod to make the plate stop at the designated labeling location.

3 .Anteroposterior Adjustment: if moving the labeling head or the locating rod

can not realize labeling requirement,there are three methods to achieve your requirement.the first one is moving the product sensor forward or backward,thus advance/delay the detection;the second one is setting delay labeling time; the third one is setting the automatic high speed length.

### 3.Electrical Operation



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## Chapter 7 Product Maintenance

### 1.Maintain and Clean

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

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

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. Routine Maintenance

Regular inspection is necessary ,especially the following parts:

- 1.The conveyor belt's speed and accuracy (after extended periods of use )
- 2.Clean up waste paper scraps and pieces.
- 3.Remove oil residue from the rollers and the machine edges.
- 4.Clean the sensor lens with a soft brush or cloth.

## 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.

## Chapter 8 Usual Fault Treatment

### 1.Release Paper Breaking

Influence Factors:the quality of the backing paper;the friction in the traction process;label adhesion.

Step 1:Check the backing paper,if it is broken or of poor quality,then you should contact your label provider to change the backing paper.It is recommended to use glassine bottom paper.

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

Step 3: Check if the label stick to each other, or it will be broken easily. Adjust the automatic high speed length to make sure the label would not attach to the labeled product.

## **2. Labeling deviation more than 2 mm**

Influence Factors: Label deviation; the label-peeling plate is not parallel to the conveyor belt; the traction wheel skid; product error.

1. Label deviation: Loose the traction device, pull the label back and forth, correct the label trend automatically. Then fasten the limit circles on the two sides of the label.

2. The label-peeling plate is not parallel to the conveyor belt: Adjust the labeling head to make it be paralleled to the conveyor belt.

3. The traction wheel skid: tighten the locking screw of the traction wheel.

4. product error: errors happen in the product manufacture process also bring about labeling deviation, so the product quality must be strictly controlled.

## **3. Labels come out incessantly at a time**

It relates to the sensibility of the label sensor, please adjust the sensor according to the steps we talked before. If the problem still exists, maybe the electric eye is not applicable to the label or the electric eye has broken, please contact us in this condition.

Another cause may be the label bypasses the label sensor so the sensor can not



detect the label, please make sure the label goes through the slot of the sensor.

#### **4. The Release Paper is Loose at the Label-peeling Plate**

There are two possible causes: the traction speed is too low, or the traction device skid. Try to improve the traction speed or tighten the locking screw of the traction device. In addition, please check whether the drive belt behind the recycling axis is intact.



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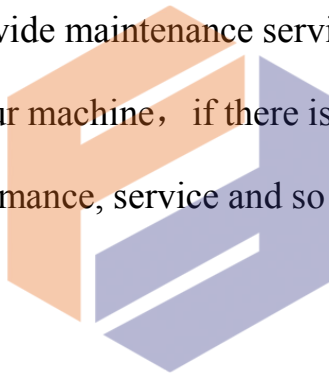


### Service Commitment

Fineco based on the principle of customer first,dedicated to provide thorough pre-sale and after-sales service.

1. Professional technical consultation service
2. Professional training service.
3. Responsible for providing technical support.
4. One year warranty, provide maintenance services.

Thank you for using our machine, if there is any dissatisfaction with equipment quality, performance, service and so on, welcome to put forward valuable suggestions!



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