Plane labeling machine Manual

YCT-30

Contents

Chapter One: Solemn Statement

Ⅰ Routine matters

Labeling machine belongs to the non-standard machinery. Its operation requires a certain technology.The operation level is high or low, which affects the efficient use of the machinery.

Please operate this equipment according to the instructions in the manual, or guided by our technicians.

This technical manual dedicated to label machine T-300 double sides labeling machine(hereinafter referred to as the label machine). Its purpose is to ensure the normal use and adjust the equipment.

Ⅱ Manufacturer permissions

In order to ensure product's technology advanced and applicable, our company can change and upgrade the body parts, electronic components and software.But it does not promise to change the previous deliver products free of charge.

Our company has rights to protect the integrity of a machinery, under no guidance of the company technicians, users may not privately modify the mechanical structure, electronic components and control program. Otherwise, thus causing damage, modify party takes all the responsibility.

On the basis of this machinery, increasing printing or other features, our company provides configuration of technical guidance, but we are not responsible for the matching equipment.

The intellectual property rights of this machinery and the operating instructions are owned by our company, if you have copied, shall bear legal responsibility.

Ⅲ Safety matters

1.　Danger! Be sure to ensure that the ground wire is used to prevent electric shock.
2.　Danger! Be sure to ensure that the voltage is not over.
3.　Vigilance! The electric box part and the circuit part should be operated under the guidance of the electrician or the professional.
4.　Rotary parts need special attention to prevent the pressure injury.

Ⅳ Operating authorization

1.　Ensure that the operation, layout and maintenance of this equipment are finished only by trained and authorized personnel.
2. Only allow qualified professional personnel and equipment engineer to finish the layout.
3. Relating to the operation needs to ensure:
- Operator should be qualified after the professional training of manufacturers.
- The operator must have the basic knowledge of repairing unusual problems that appear in the process of operating the equipment operation.
- In the process of using the equipment, please work in accordance with the requirements of the requirements.

Ⅴ Operating environment

Please do not use in the following environment:
Temperature changes rapidly.
The humidity is so high that produces dew.
With great vibration or shock.

A place where there is dust, water, oil, chemicals, explosive or inflammable dangerous goods.

Ⅵ **Run-in period**

This labeling machine is customized according to customer demand, is not a standard product, and the operator has technical and experience requirements. It needs a run-in period of about one month. During run-in period, if equipment operation is not up to the technical parameters of the situation, you need to reflect to the manufacturers in a timely manner in order to obtain technical support.

Chapter Two: Product Introduction

Ⅰ **Basic usage**:

The labeling machine is specially designed, has a specific, dedicated to the plane labeling.

Ⅱ **Technical parameters**

Labeling accuracy: ± 1mm(excluding product, label error), the level of debugging significantly affect the labeling accuracy.

Labeling speed: 40-150 pieces per minute (depending on product label size).

Applicable product :according to the customer product
Applicable label size: Customer-supplied package labels
Machine size: about1609×600×1380mm (L× W × H)

for power: 220V 50 / 60HZ.

Machine weight: about 160Kg.

ⅢThe labeling process analysis: placing products →conveying → product testing → labeling → label covering→ products collecting.
1. Place the product along the conveyor belt.
2. Convey products.
3. Products driven by the conveyor belt, move to the right side of r labeling head.
4. Into the detection position, the product sensor detects the product, sending measured signal to the PLC.
5. The traction motor rotates and sends the label to the product, and stick it to the product.
6. Covering mechanism will cover the labeled product
7. Collecting products.

Chapter Three: Mechanism Section

Ⅰ Complete machine view: the mechanical structure of the labeling machine and the function of each part, as shown below

1) Conveyor: Convey the product to the labeling position, and then deliver it to the collecting mechanism after labeling.

2) Labeling head: the core part of labeling components to achieve labeling function.

3) label covering: Covering the label attached to the product

4) up and down adjustment mechanism: adjust the labeling head up and down.

5) back and forward   adjustment mechanism: adjust the labeling head back and forward.

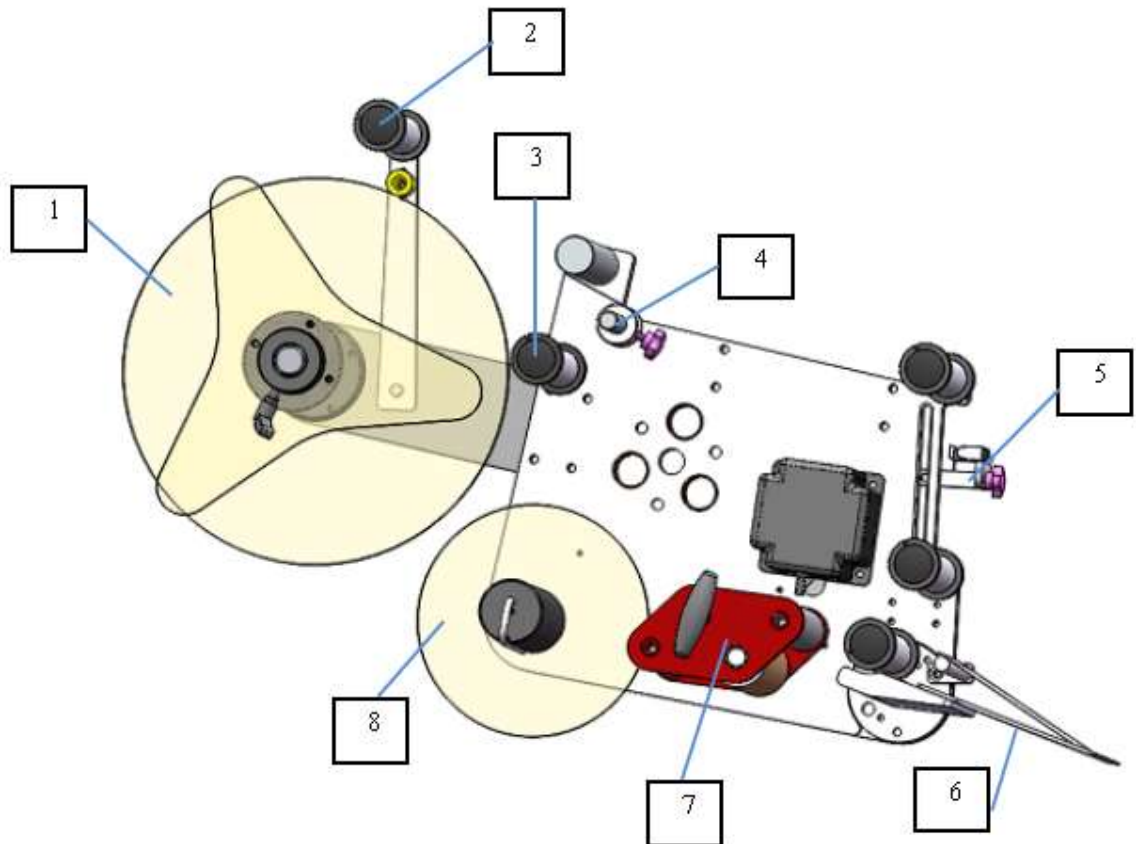6)Man-machine interface: man-machine conversation window carrying on all kinds of parameter adjustment.

1. Control electrical box: labeling machine electrical control center arrangesa variety of controllers and PLC.

Overall dimension drawing:
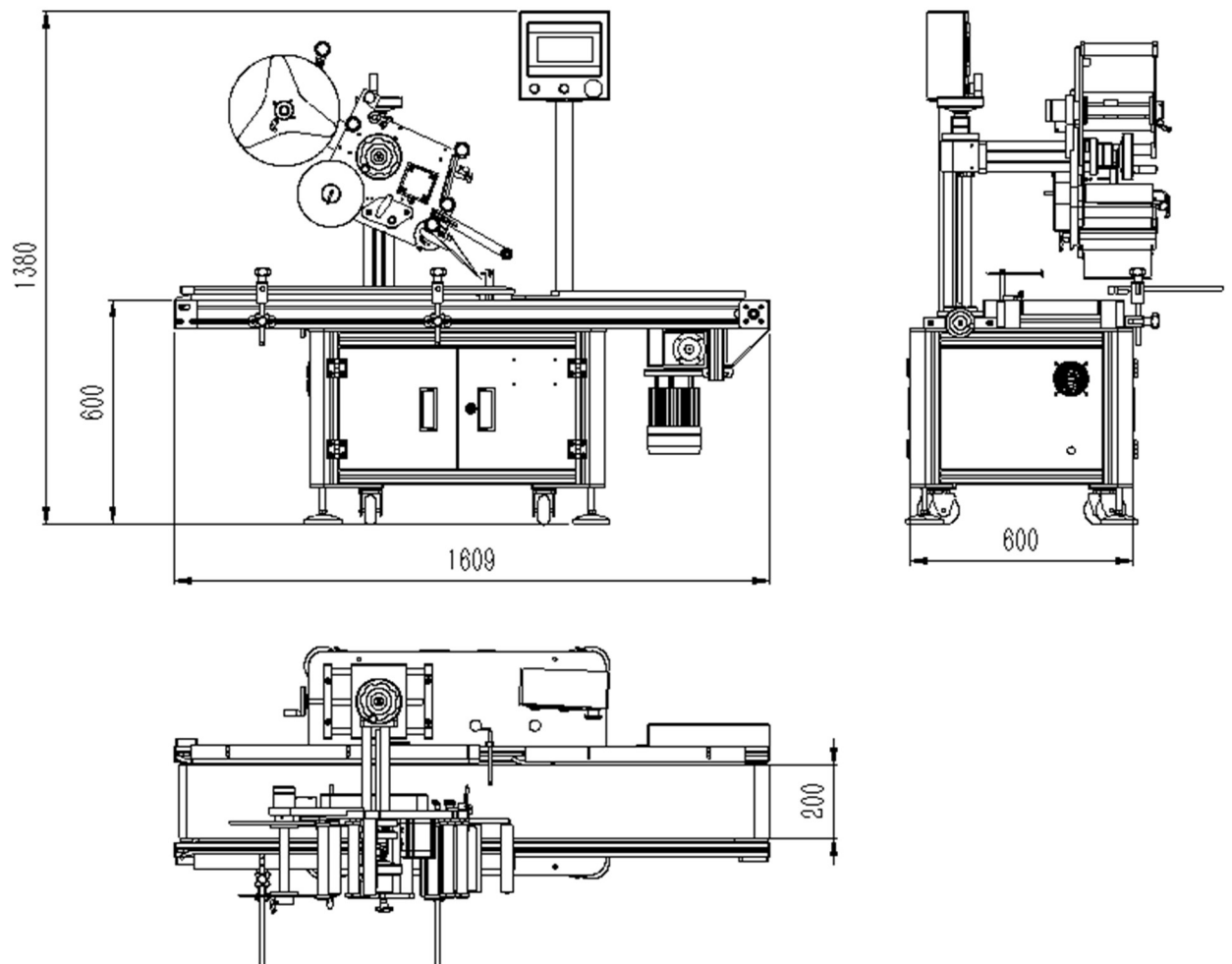
Ⅱ Partial views
1.Label head

1)Discharge mechanism: for placing the package roll tag;
2)Brake: used to stop the label preventing the label release, to maintain the tension of the standard band;
3) Roller: bypass labels and automatically guiding label in order to prevent deviation;
4) Label pressing mechanism: press labels to ensure the tension of the label;
5)Label detection sensor frame: installation of Label detection sensor that can move forward or backward.
6) Peeling plate : peel off labels;
7) Traction mechanism: pull the backing sheet of labels, providing stripping power
8) Receiving mechanism: recycling the backing sheet of labels.
2.**Adjustment mechanism:**all adjustments are required to first loosen the relative locking screw, and lock screw, and keep it fixed after adjustment.
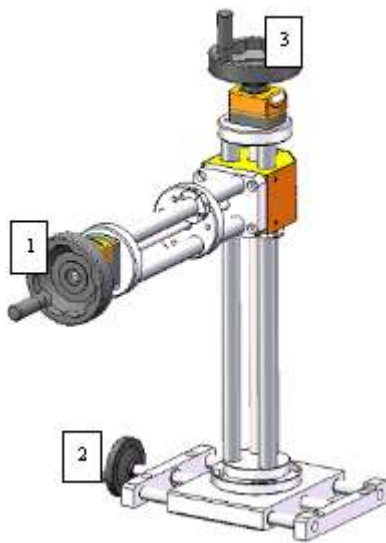
1) front and rear adjustment lever: adjust the end handwheel, adjust the position of the header before and after adjustment.

2) Left and right adjusting rod: adjust the end gripping wheel to adjust the position of the sticking head;

3) Up and down adjusting the whole rod: adjust the top hand wheel to adjust the sticker head up and down;

Chapter Four: Electrical part

Ⅰ **Electrical control principle:**inputting product detection, sticking detection, and label detection of three types of signal, there is the output of the traction motor control signal to complete the product labeling action after the PLC processing.

Label detect

Product detect

Traction motor

P L C

Conveyor motor

Ⅱ **Man-machine control interface**
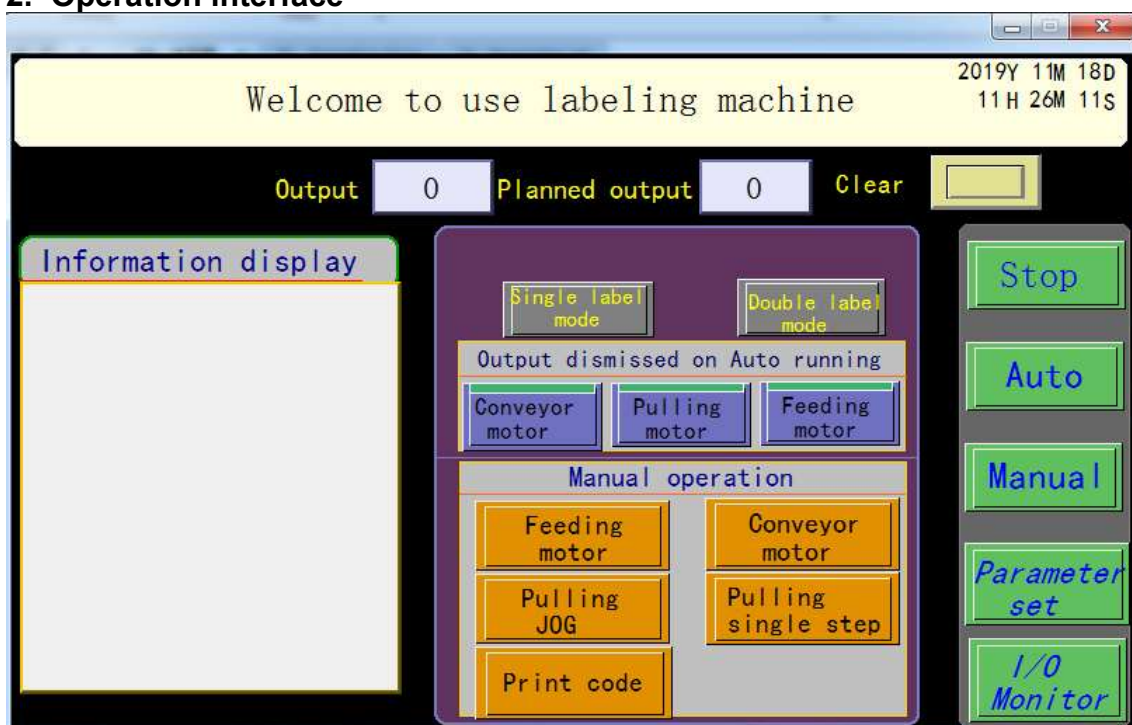
1．Start Page: Start the Labeler Touch Screen First enter this page.

Click "English" to enter operation face with English. Click "Chinese" to enter operation face with Chinese.

2. Operation interface

★**Stop**：Push Stop button, device stop running；；

★**Auto**：Push Automatic button, device is ready on Auto model；

★**Manual**：Push Manual button；device is ready on Manual model；

★**Parameter**: Push Parameter set button, enter Parameter set page.；

★**I/O Monitor**: Push I/0 Monitor button, enter I/O monitor page。
★**Planned output**: Pre-set number of output labels;

★**Current output**：Summary number of output labels,， Max :9999PCS. Once current output reach planned output, device will stop. It need to clear before restart machine.
★**Clear**: Click to clear output label（please keep 1 second）；
★**Double label model**: Click to select single label model, which device will output one label by detecting object once；
★**Single label model**: Click to select double label model, which device will output two labels by detecting object once；

Output dismissed on Auto running

★**Conveyor motor**: Click to select ON/OFF Conveyor Motor on Auto model；

★**Pulling motor**: Click to select ON/OFF Pulling Motor on Auto model。

★**Overlay motor**: Click to select ON/OFF Overlay Motor on Auto model。

★**Front guiding motor**: Click to select ON/OFF Front guiding Motor on Auto model。

★**Rear guiding motor**: Click to select ON/OFF Rear guiding Motor on Auto model。

Manual operation

★**Pulling JOG**: Manual Model ,Click to run Pulling Motor by JOG;

★**Pulling single step**: Manual Model, Click to run Pulling Motor to output one label.；
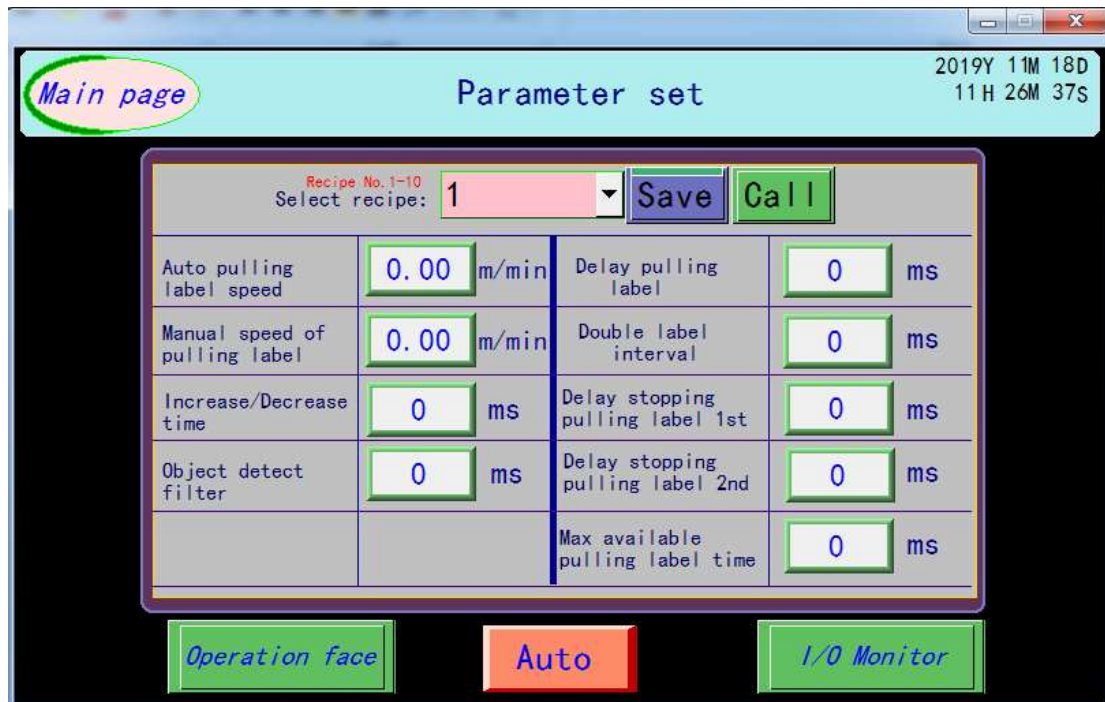
★**Overlay motor JOG**: Manual Model ,Click to run Overlay Motor by JOG;

★**Conveyor Motor**: Manual Model ,Click to run conveyor Motor;

★**Front guiding motor**: Manual Model ,Click to run Front guiding Motor。

★**Rear guiding motor**: Manual Model ,Click to run Rear guiding Motor。

4.Parameters page：

Main page — Parameter set

Recipe No. 1-10
Select recipe: 1 ▼ | Save | Call

Auto pulling label speed	0.00 m/min	Delay pulling label	0 ms
Manual speed of pulling label	0.00 m/min	Double label interval	0 ms
Increase/Decrease time	0 ms	Delay stopping pulling label 1st	0 ms
Object detect filter	0 ms	Delay stopping pulling label 2nd	0 ms
		Max available pulling label time	0 ms

Operation face | Auto | I/O Monitor

Select Recipe: Set different parameter, then save in different recipe No.；

Save: Click to save parameter value to recipe No.

Call: Click to call parameter value from recipe No.

Auto Pulling Speed: Speed of Pulling label in Auto model;

Manual Pulling Speed：Speed of Pulling Motor in Manual model，

Increase time: Pulling Motor spend time on increasing from initial speed to target speed.（Mix 5ms）；

Decrease time: Pulling Motor spend time on decreasing from target speed to zero speed.（Mix 5ms）；

Object detect filter of pulling: When detection object sensor in pulling get signal, keep some time to shield next signal；

Front guiding motor：Speed which front guiding motor running，

Delay pulling label：Time interval between detecting object signal on and pulling motor on；

Double label interval：By double model, Time interval from stopping pulling first label to start pull second label；

Delay stopping label 1：By Auto or single step model, time from detecting label by sensor to stopping pulling first label；

Delay stopping label 2：By Auto or single step model in double label model, time from detecting label by sensor to stopping pulling second label；

Max available pulling time: Max available time for running pulling motor to finish pulling one label

**Auto Overlay Speed:** Speed of overlay motor in Auto model;

Manual Pulling Speed：Speed of overlay motor in Manual model，

Object detect filter of Overlay: When detection object sensor in overlay motor get signal, keep some time to shield next signal；

Delay Overlay label：Time interval between detecting object signal on and overlay motor on；

Rear guiding motor：Speed which front guiding motor running，

5.Monitor page：
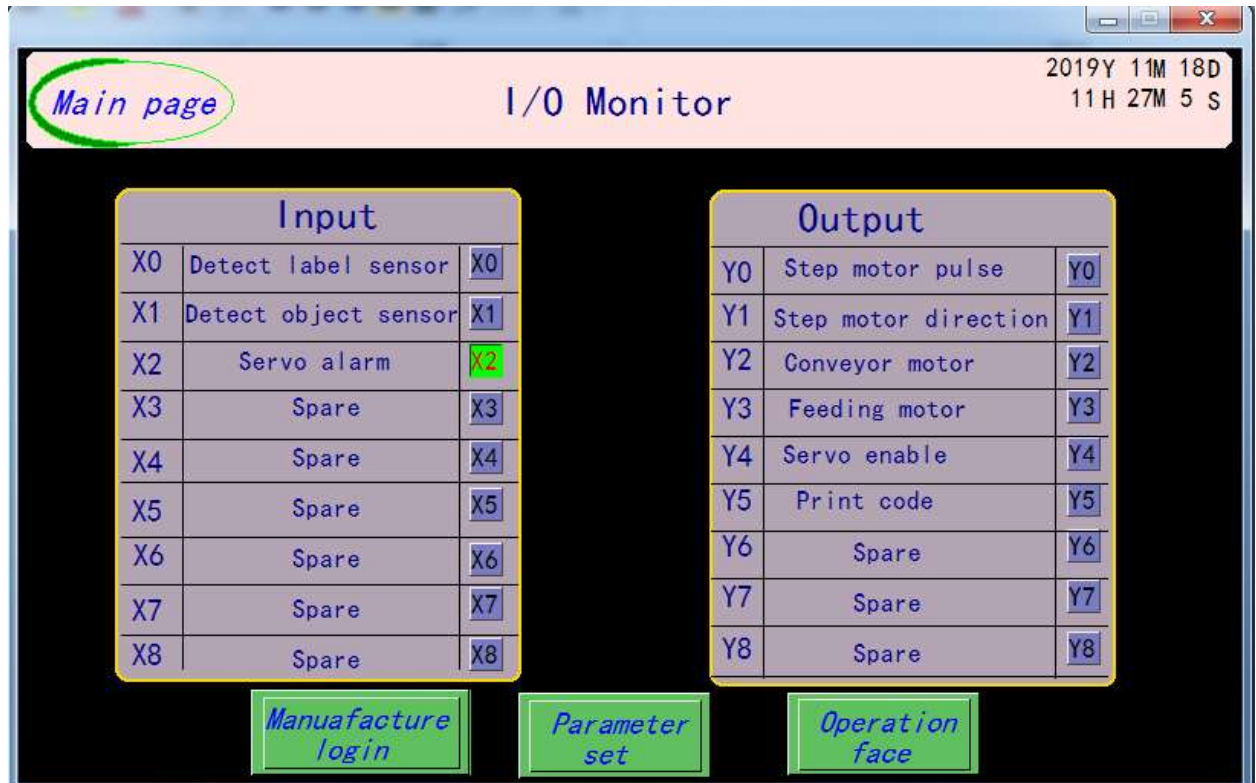
Chapter Five: Adjusting part

Ⅰ Mechanical adjustment

1. Guiding mechanism:According to the size of the products, the guide bar can move the guide bar to ensure the products can not run in the process of transportation. The products can be passed smoothly without offsetting more than 0.5mm on both sides.

2. Label covering mechanism:adjust the body to adjust the standard positioning and standard cylinder spacing, upper and lower position, to ensure that the product is positioned in the cylinder stopped when the standard mark to stay in the right position, the standard cylinder up and down the height of the appropriate location.

3. Label head: For each adjustment, loosen the corresponding locking screw, after adjusting, tighten the screw. Can be up and down by hand wheel, front and rear position adjustment can be adjusted to adjust the level of rotation to achieve the labeling position adjustment.

4. Stripping plate:unscrew the stripping board connection mechanism on the 7-word handle, stripping the board can swing a certain angle, matching the needs of the product. In different thickness, material of the label, it is possible to adjust the angle to achieve the smooth stripping of the label.

Ⅱ **Electric sensors adjustment**：The machine is equipped with 2sets of electric eyes, which are respectively named as object detecting electric eye and label

detecting electric eye. They need to be adjusted according to the actual need in product.

Position adjustment: For different products and labels, adjust the sensor front & back, up and down through the electric sensor frame. The adjustment method could refer to the introduction of mechanical adjustment.

2. Sensor setting:The standard sensor for this machine is Mitac type electric eye. Other options for labeling detecting sensor and object detecting sensor are available.

Label detecting sensor: Used to detect the label.(It's for illustration purposes only, not represent the configuration of this machine.)
As shown in the following figure: left for military, E2J3-29KB test ordinary label detection, right for HICK UFN3-70B413, test transparent label.
Here's how they adjust

2.1.1 Military Industry, E2J3-29KB(above left) adjustment:

Working principle: According to the thickness of the different to identify the gap between the labels.(by light penetrates where there is no label and where there is no label) apply to paper labels or other labels with a certain thickness.

Indicator description: The green indicator is the output signal indicator.

The red indicator is the status indicator.

V Adjustment button: used to set the detection of different labels.

V Method of using electric eye:

The V label passes through the u-shaped slot of the electric eye, as shown in the figure below.

V Press the button and hold it for 4 seconds, and the red light flashes once. At this time, the button is released and the product is in the operation state. At this time, the label under test is moved back and forth, and the product automatically records relevant parameters.After recording, the red light stops blinking and becomes steady on.

V Press the button and hold it for 4 seconds, the red indicator light will blink once, hold the button down state for 8 seconds, the indicator light will blink again, the output state of the product is switched between normally on and normally closed.Note: The output of this product has been switched on before the factory, general customers do not need to choose this function.

If you pull the label, the green signal light will turn off and turn on in the interval between the label and the label. If it turns on where the label is, it means normal and can be used directly.

body paper
Mark magic eye
signal light
status lamp
The set up button
label

2.1.2 Sick UFN3-70B413 electric sensor adjustment:

Principle: The presence or absence of labels is detected by the difference in the amount of transmitted light, which is suitable for labels with different materials for bottom paper and labels.

Principle of detection: The slot type electric sensor emits a light beam on one side and receives the light on the other side. When there is a label in the middle, the received light quantity changes and the label is discriminated by setting the threshold value.

1. 将标签或基底置于槽型传感   2. 将多个标签穿过槽型传感器
   器的有效区域
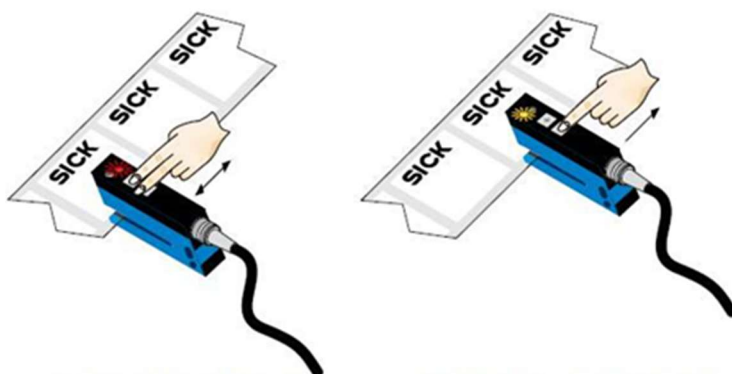
同时按下 "+" 和 "-" 按钮，
并按住 1 秒以上，然后释放自学习
按钮。红色 LED 灯闪烁。

按 "-" 按钮，完成自学习过程。

At the same time, press "+" and " – " button and hold it for more than 1 second, then release the self - learning button. Red LED light is flashing.

2.Multiple labels will be through the slot type sensor.

Press " – " button to complete the self-learning process.

Notes:

Switching threshold adjustment:

When turned on, only the first self-learning process will be permanent preservation. Learning can be repeated. When learning, you can switch the output.

⊞
⊟
    Upon completion of the learning process, you can use the "+" and " − " buttons at any time to adjust the switching threshold. To fine tune, you need to simply press the "+" or " − " button. For quickly setting, more time to press the "+" or " − " buttons.

±^{Ơ/Ө}_{3s}   While holding down the "+" and " − " buttons (3 seconds), you can lock the device, and prevent the unexpected action.

±^{L/D}_{6s}   While holding down the "+" and " − " buttons(6 seconds), you can define the switching function(Light On or Dark On). Standard setting: Q = Light On

Self-learning (static): No need to move the label to set the switch threshold. Please refer to the operation guide.

2.2Object electric sensor:(here only for illustrative purposes, does not mean that customers purchase models configuration)

2.2.1FX-301series electric sensor connection method: The electric sensor of the test object must ensure the correct installation to use, "IN" with black line, "OUT" with silver line, as shown below:

2.2.2Detection of electric sensor detection principle: measuring the electrical sensor is based on the amount of light to identify objects. The electric sensor emits light to the object, and the object reflects a certain amount of light back to the sensor. When the quantity of light reflected by the object reaches the set value, the electric sensor signal changes and sends a signal to the control system.

2.2.3Status switching: Pressing the "MODE / CANCEL" key, the green light switches between the "RUN", "TEACH", "ADJ", "L / D", "TIMER" and "PRO" Of the working state.

    "RUN"indicates the running status

"TEACH"for the teaching state;

"ADJ"for the adjustmentstate;

"L/D"is the up or downsignal state;

"PUSH"key Press to confirm, and toggle between left and right for fine adjustment.

2.2.4Measurement of electrical sensor settings::

Before setting up the amplifier, if it is for the radio sensor, first with the electric sensor alignment, to obtain the maximum amount of light.

A. Press the "SET" button to display the green "L-ch", the digital display box displays a red value, this value is the current light-emitting amount, "L / D "," CUST "," PRO "in the flash

As shown in the figure below, "1667"

Then press the "-" shown below

To be displayed after flashing as follow

As shown above, the red word 1633 is the current amount of light, the green word is the threshold (very sensitive) when the number of red is less than the green value, the amplifier has a signal output (decided in the L / D in what mode)

After the above steps, if the effect is not ideal, manually adjust the sensitivity, press the "+" green value increases, sensitivity increases, press the "-" value decreases, the sensitivity becomes smaller.

Adjust the L / D mode

L / D mode, that is, when the amount of light output exceeds the threshold or lower than the threshold to the signal output or no signal output.

The adjustment is as follows:

D mode setting

D mode, the light output is less than the threshold value of a signal output. Equivalent to the normally open signal;
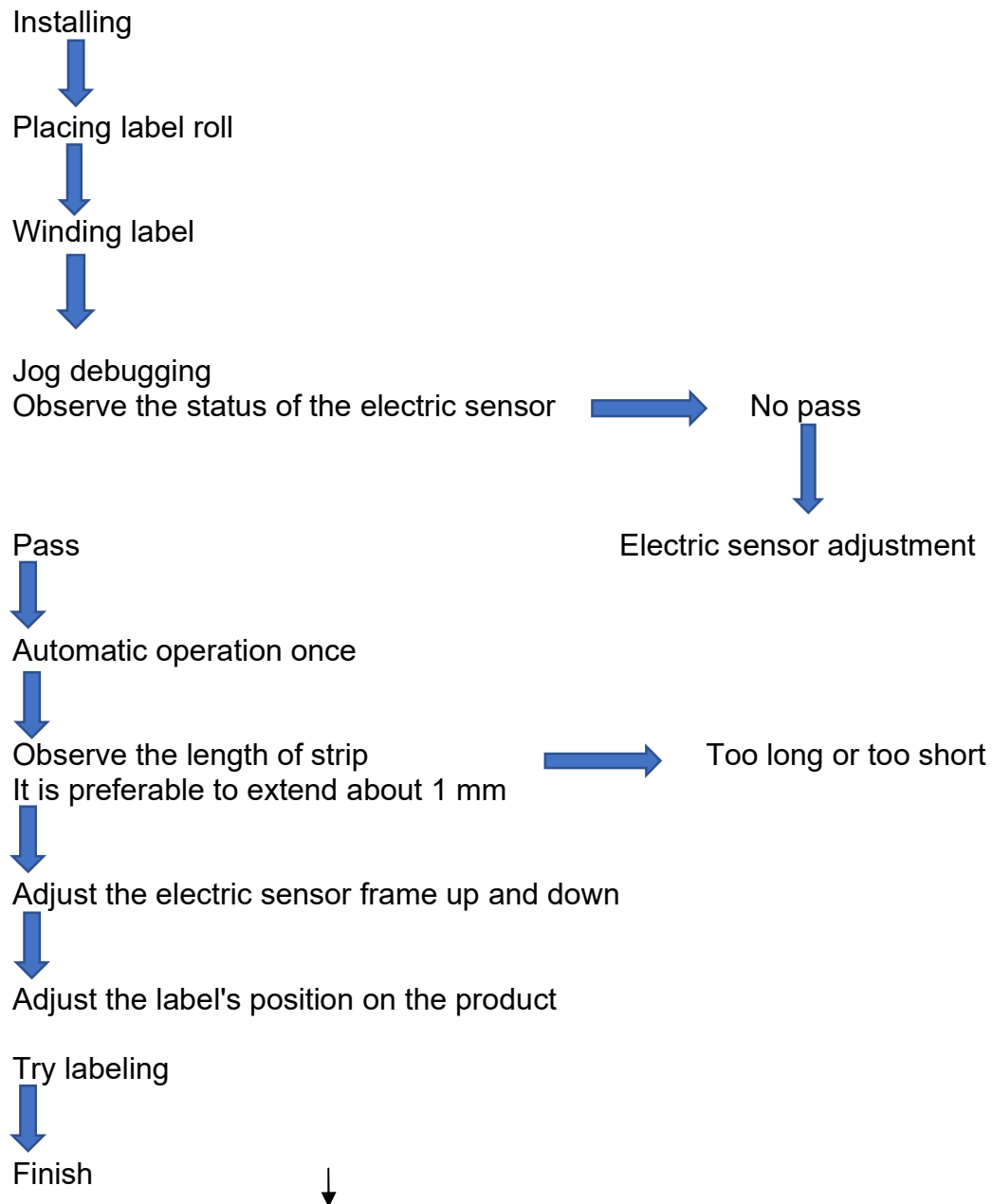
1. Press "MODE" and "L / D" lights, press "+" to display "d-on" Press "SET" to finish setting, press MODE to exit to normal,
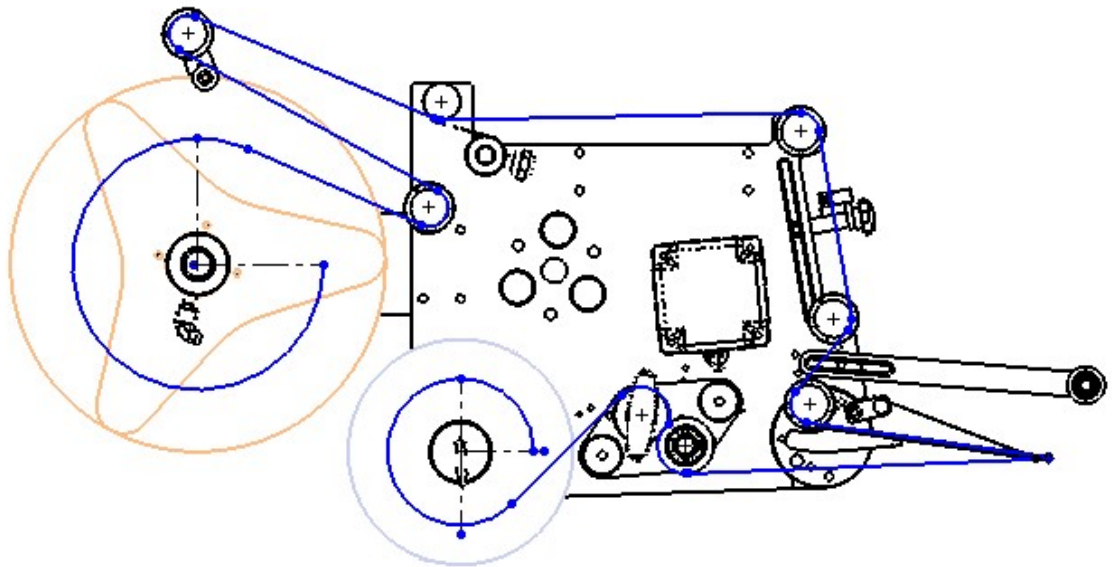
L mode setting

L mode, the light output is greater than the threshold value of a signal output. The equivalent of normally closed signal;

1. Press "MODE" and "L / D" lights, press "-" to display "L-on" and press "SET". Press MODE to exit to normal,

Chapter Six: Machine debugging part

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Installing

↓

Placing label roll

↓

Winding label

↓

Jog debugging
Observe the status of the electric sensor → No pass

↓

Pass　　　　　　　　　　　　　　　　　Electric sensor adjustment

↓

Automatic operation once

↓

Observe the length of strip → Too long or too short
It is preferable to extend about 1 mm

↓

Adjust the electric sensor frame up and down

↓

Adjust the label's position on the product

Try labeling

↓

Finish　　　　　↓

↓

Ⅰ Label tape surrounding

1. Twist loose triangular tray adjustable handle, the triangular tray out;
2. According to the icon shows the direction of the label, the label roll into, and then put the triangle plate and tighten tight;
3. In the clockwise direction, the T-handle on the traction mechanism about twist half circle, traction two axes release interval, and then the two pressing label manganese tablets are also released;
4. According to the direction of the red arrow to the label around the label (note that the entire band as far as possible to ensure that the parallel does not skew), and then press the label Manganese tablets , lightly against the label tape, then pull the handle on the T word clockwise twist about half a circle, feeling pressed down position can be, then the process of winding label is completed.

Ⅱ **Mechanical operation**: In the case of connected power supply, do it first in the manual state with the relevant action to adjust.

1．Conveyor: Adjust the conveying mechanism to ensure the smooth transportation of the product to the labeling position, and send out smoothly. Place the products to be labeled on the left and right sides of the conveying mechanism for minor adjustment. For the specific operation method, please refer to the "Part 5 Adjustment" The same method is used for chapter, section, and delivery adjustment.

2．Labeling position adjustment: place the product to be stripped next to the stripping target board, up and down, front and back, left and right adjust the labeling head to ensure that the label stripping parts at the labeling position, adjust the guiding body to ensure that the label affixed to the product specified location, The above two methods to adjust.

Ⅲ Electrical operation

Turn on the power → Open the two emergency stop switches, and start the labeling machine → man-machine interface setting → start labeling.

Chapter Seven: Repair and Maintenance

Equipment installation environment: the requirements of the room temperature, not easy to regular high temperature, humid acid-base environment, so as not to affect the equipment life, efficiency and accuracy.

Keep it clean: Clean it after handling the equipment, such as the friction roller, the electrical box and so on. You can use alcohol or commercial neutral cleaning solution for cleaning and maintenance.

3. Cleaning Precautions.

   Do not use cleaning tools that will damage the mechanical surfaces.

   Do not use corrosive plastic utensils

   Do not use acid solution.

4 Regular inspection and maintenance: to deal with the cycle of the machine inspection, in order to maintain the normal operation of the machine, including but not limited to the following aspects:

   Clean up debris and waste paper

   Remove oil from the drum and the edge

   With a soft brush or cloth to clean up the sensor lens.

   Replace the fuse on a regular basis, the equipment used to AC power, need to use the fuse to   prevent overload

   Spray rust proof oil to all stainless steel and iron parts, and wipe evenly with a soft cloth gently, recommending the use of Oh, -40 anti rust oil.

Chapter Eight: Common problems

Bottom paper break: The three factors are closely related to bottom paper breaking, the quality of the bottompaper of the label, the scraping of the label in the label's traction, and the adhesion of the label.

a. check whether bottom paper cutting situation, if there is a cutting of bottom paper, you need to replace the quality of the bottom paper. Recommend the use of Gelaxindi paper and label supplier control cutting depth, can not hurt bottom paper.

b. bypass check labels winding, eliminate scratch factor.

c. such as the label adhesion, easy to tear off the label. Under the control of an output of the label length, to ensure that no adhesion to the label can be affixed to the product.

Labeling deviation exceeds the accuracy requirements: the label deviation and the standard deviation, the direction of the standard belt and the product is not parallel , the traction wheel skid, product positioning detection are not allowed, the label is not attached to the product along the standard roller, product error etc,check the above factors, and then targeted to solve.

Standard deviation, relaxation traction, pull back and forth about the label, let it automatically go positive. After the label is running, clamp both sides of the limit ring and guide the label.

a.the direction of the tape is not parallel to the direction of product transportation, by adjusting the tilting of the labeling head can be achieved parallel.

b.traction wheel skidding, traction wheel wear, traction wheel locking screw loosening, for two reasons can tighten the traction wheel locking screws.

c.product error, product manufacturing process, the edge of the error will cause the label deviation, and only good control of product quality can be resolved.

3. Continuous label output and runaway of label stopping

a. Mostly because there is no proper setting of detection electric sensor, reset the electric sensor can be solved.

b. The electric sensor does not apply to the detection label, need to replace the applicable electric sensor.

c. The electric sensor is damaged; need to replace the electric sensor.

d. Multiple stepping on the pedal switch to complete a labeling. The reason is that there is signal interference in label sensing electric sensor, electric sensor need to be reset.
e. Confirmed that the label is through inside the inductive slot of electric sensor.
4、 the bottom paper relaxation under the stripping plate
The relaxation of the base paper is related to the low traction speed and the slip of the traction mechanism. If the traction speed is too low, it can improve the speed of the traction.

a.If the traction mechanism is slipping, tighten the locking screw to the traction roller can not slip bottom paper.

b.In addition, behind the material receiving shaft ,make a check whether the transmission belt is broken.