INSTRUCTION MANUAL

（Please read it carefully before operation）

Model：S300

Manufacturer：

Suzhou Jiajun Auto-Well Industrial Automation Co,Ltd

SAFETY MATTERS

- Machine operation and maintenance personnel should read the manual carefully before using the machine !
- The machine operation must be in charge of the specially-assigned person who fully understand the characteristics and performance of the machine !
- All electrical equipment can not be immersed in water.
- When the machine is running, the machine must be grounded to prevent leakage !
- All tools and sundries shall not be placed on the machine before the machine is started !
- Do not close machine movement range, it is strictly prohibited to all parts of the body into the sports institutions !
- In the case of pneumatic machine maintenance, the operator must ensure that the pressure has been fully unloaded before maintenance to prevent bodily injury caused by the accident !
- Be sure to stop the machine and cut off the power when maintaining the machine and replacing wearing parts !
- All moving parts must be lubricated by appropriate lubrication in accordance with the maintenance checklist !
- The fasteners in the machine must be checked and tightened regularly !
- Non professional personnel shall not install, adjust and maintain electrical control equipment !

1 Overview

Online pallet wrapping machine is a kind of mechanical equipment in the field of packaging machinery, which is used for wrapping film on the goods of packing lines. Online pallet wrapping machine includes column, conveyor, rotary table,constant film delivery carriage, film clamping mechanism and film heating wire cutting mechanism. The articles are transferred to the online transmission turntable from the transmission line and rotate with the rotating mechanism. Before machine starts up, the wrapper is clamped by film clamping mechanism. At the last two rounds,the membrane clamping mechanism open and the film will be bounced and wrapped on the goods. After wrapping finishes, the film will be cut by heating wire cutting mechanism.The wrapper roll is installed on the film carriage, which is connected to the column lifting device. The column is hollow with the electrical parts inside.

2 Specifications and Configurations

Model	S300	Configuration parameter	
Packing diagonal （mm）	1690	**Sensor**	SICK（Germany）
Max packing height （mm）	2160	**Inverter**	Siemens（Germany）
Max packing weight （Kg）	1500	**Terminal row**	Weidmuller(Germany)
Packing circle (pallet/h)	30-40	**Man-machine interface**	Siemens / Wecon
Max conveying speed （M/min）	~15	**Conveyor motor**	SEW（Germany）
Max rotating speed (RPM)	~12	**Pneumatic components**	AirTAC（Taiwan）
Lifting speed （M/min）	~3	**Contactor**	Schneider(France)
Max film deliver speed （M/min）	~60	**24V Power supply**	Omron(Japan)
Film carriage standard pre-stretch rate	300%	**Lifting motor**	SMARTWASP
System pressure （Mp）	~0.6	**Film carriage motor**	SMARTWASP
Film Width （mm）	500	**Rope grip motor**	SMARTWASP
Wrapper tube inner diameter （mm）	76	**Rotary motor**	SMARTWASP
Wrapper outer diameter （mm）	~300	**Voltage**	220V
Rope grip lifting speed （mm/S）	100	**Frequency**	50Hz

Remark：The equipment is suitable for pre-stretch PE film.

Maximum film thickness 0.035MM when stretched tightly.

3 Equipment and working principle

The equipment is mainly used to match up production line and wrap the products, aiming at increasing production efficiency and decreasing production cost. The online pallet wrapping machine is composed of constant whole pallet rope grip film carriage, column, column transition seat, column fixed base, heat wire cutting film system, pneumatic clamping film system, rotary conveyor and so on.

Working principle is as follows：

After palletizing, cartons will be stacking on the pallets and conveyed to the online pallet wrapping machine by conveyor. Then the rotary system begins rotating, film carriage goes up for two laps and goes down with rope gripping. After a rope winded by film clamping mechanism, film carriage rise and film wraps on goods, when reached the top of the goods, it wraps two laps and the grip system releases the rope into film, then film carriage goes down. When the film carriage goes to the bottom and wrap for two laps, clamping system open.The film bounces to the goods, the left arm of clamping system stands at the last lap, and the right arm stands when rotating stops. Both the arms clamp the film as the heating wire cutting arm separate the film fro the goods. After goods put out, heating wire cutting film swing arm reset and enter next cycle.

3.1 Film carriage of online pallet wrapping machine

The film carriage is composed of ,top cover cap, driving device, door panel, rope grip system and anti dropping system. (picture 3.1.1）

A）The main body of film carriage adopts carbon-steel welding structure, which has strong rigidity and simple structure

B）The top cover cap is made of injection molding with beautiful shape.

C） The door panel includes door handle,door frame,non-powered roller,pressure sensing roller,organic observation board and pressure sensor.The film replacement operation is quite convenient:install film around the specified route and close the door panel.Non power roller put down to the film pulling roller with the film pulling direction to stretch the film by certain stretch rate. The pressure roller with the film laminate on the pressure sensor, the pressure value directly drive motor to change the speed of film, so as to improve the wrapping force around the film, and ultimately improve the quality and efficiency of wrapping package（picture 3.1.2）。

D） The transmission device includes film pre tension roller, transition driving device, tension sprocket group and film stretching roller etc.The film carriage pass force to transition gear by the motor of the diaphragm mounted on the lifting trolley, drive sprocket respectively pass force through a film stretching roller and pre tension roller, conveying out film pre tension in proportion to the state（see picture 3.1.3）

E）Automatic rope grip system includes mounting bracket, screw rod, linear guide rail, electric motor, synchronous belt wheel, synchronous belt, rope making slide block, moving rope roller, lower fixed rope roller, no power roller etc..The mounting bracket is fixed on the film base, by adjusting the position of the lower limit of the control rope, rope thickness; rope device, can enhanced bottom winding effect without increasing the film consumption; and when choose the whole pallet rope grip system, can add a certain strength to product .In some cases, can even replace the current strapping machine.（picture 3.1.4）

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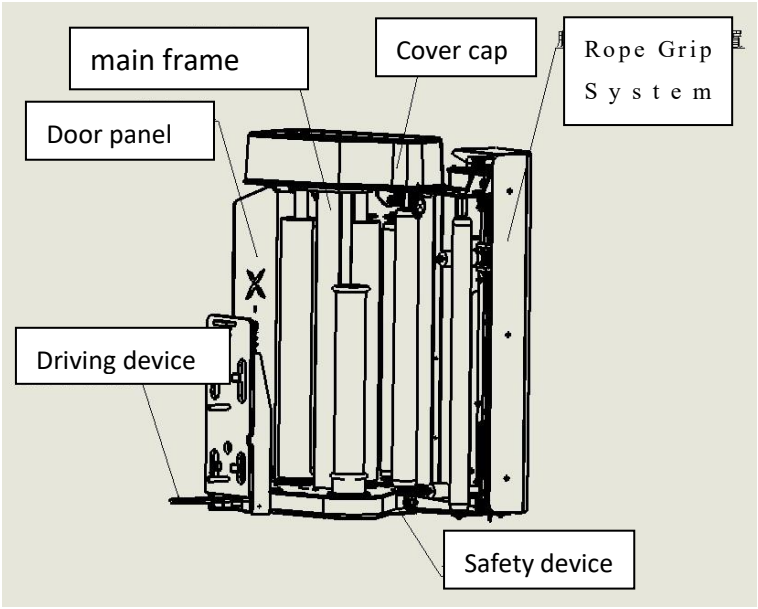
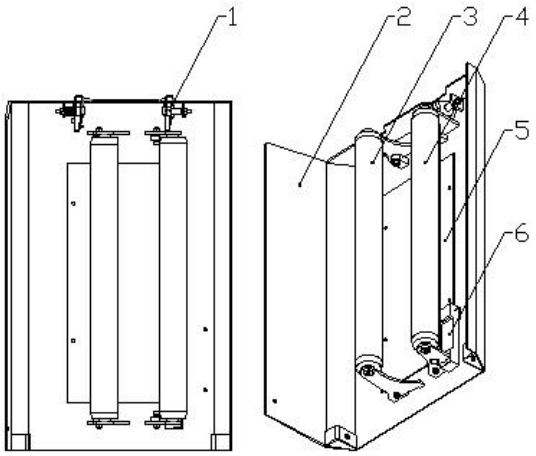


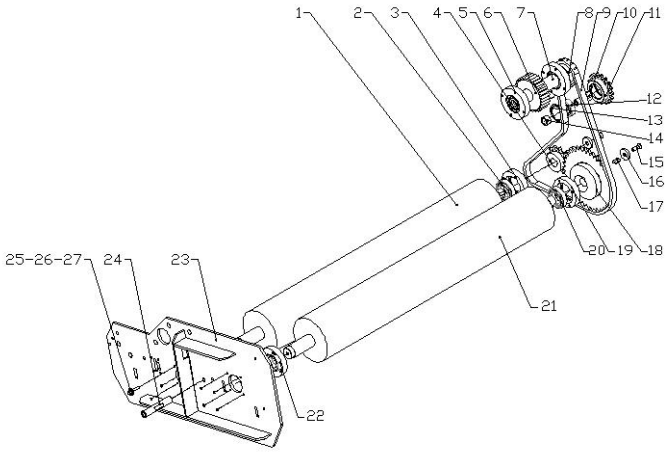
Picture 3.1.1

main frame



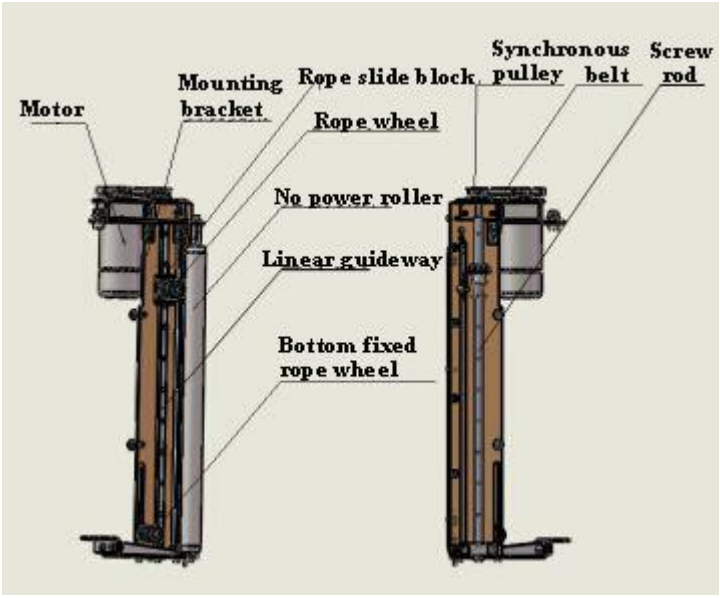
Picture 3.1.2

1 door handle, 2 door frame, 3 non power roller, 4 power pressure roller , 5 organic observation board, 6pressure sensor.



Picture 3.1.3

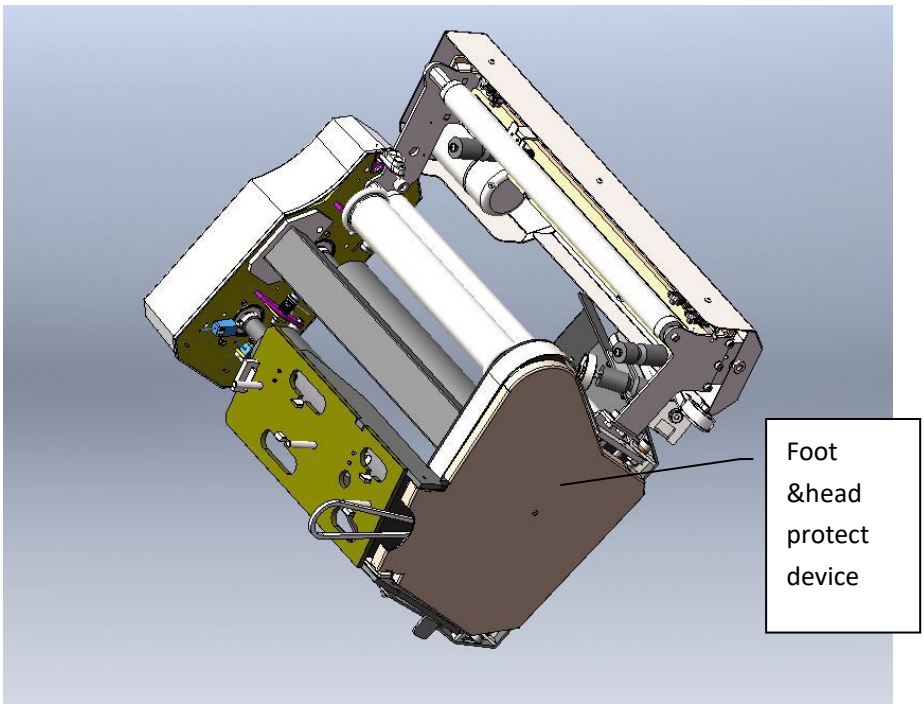
1pre stretch roller, 2 Deep groove ball bearing, 3 Bearing seat, 4 Chain sprocket, 5 Bearing seat, 6 gear, 7 Transmission shaft, 8 Transition sprocket, 9 chain, 10 Transition shaft, 11Chain tensioner, 12 bear, 13Shaft ring, 14 Sleeve, 15 bolt, 16 gland, 17 flat key, 18 Membrane sprocket, 19 Bearing seat, 20 bear, 21 film polling roller, 22 Bearing seat, 23 Upper cover, 24 Link axis, 25 bolt, 26 Flat pad, 27 Spring washer



Picture 3.1.4

Film Carriage Safety device instruction

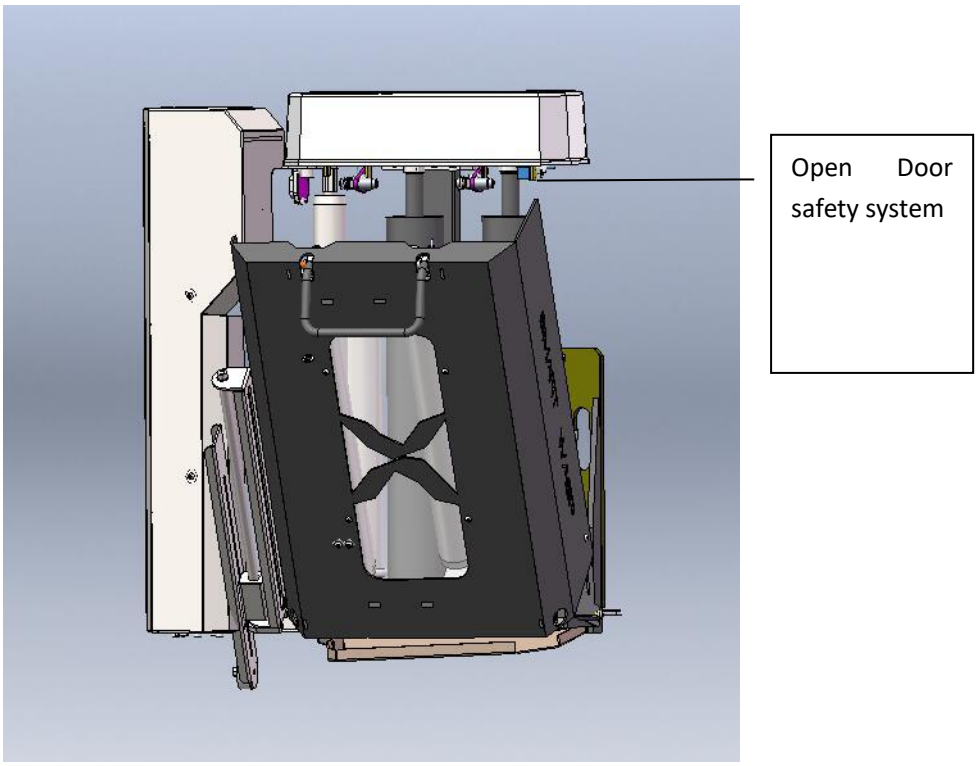
1.Feet &head protect system



Picture 3.1.5-1

Foot and head protect system is main for protect the operator safety ,if the film carriage go up over the operator head , if the operator in under the film carriage during the carriage do down ,if the film carriage touch the head of the operator ,the machine will stop work immediately and LED light will alarm at same time so that avoid the film carriage hurt the operator head , the film go down to to floor ,if the operator feet in under the potion of the film carriage ,when the film carriage touch the foot of the operator ,the film carriage will stop go down immediately and the LED light will alarm .in this way ,the film carriage will not hurt the operator ‘s foot. See picture 3.1.5-1

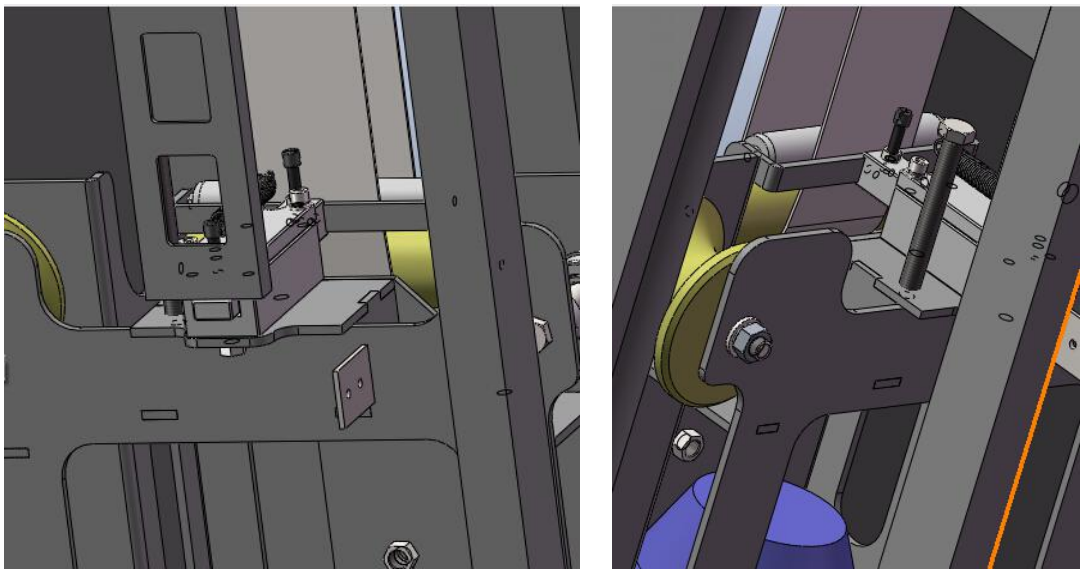
2.Open door safety system



3.1.5-2

Open door safety system is main for the safety of operator when replace new film or open door to fix machine ,after the operator open the door ,the machine will stop work ,and the machine can not start any more ,just when the operator close the door again and then can let the machine run again. See picture

3.Film carriage Anti dropping system

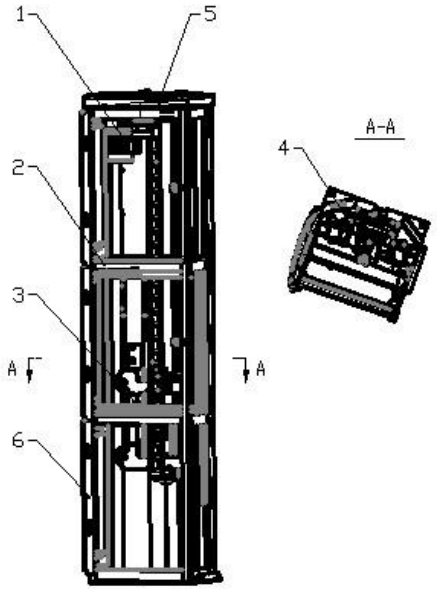


3.1.5-3

Film carriage Anti dropping system(safety device): if the drive belt loose or break, the anti dropping system will work immediately and lock the film carriage so that stop the film carriage fall down , in this way , if have worker under film carriage , this system will protect the worker do not get hurt. See picture

3.2 Column of online pallet wrapping machine

The column comprises an injection molded door panel, a column frame, an integrated man-machine interface, an electrical installation integrated bloc,a lifting driving device, lifting car, tape breaking device, ring lights and alarm system（Picture 3.2.1）； The lifting device driven by the motor belt wheel mode,the cloth pull lifting car do up and down movement, the lifting trolley is provided with a guide wheel and a guide wheel along the column membrane motor, the guide rod is equipped with electric slide and the upper and lower limit, safe and reliable. The anti dropping system using cotton tape in scalable pin device , once the tape break, pin card quickly enter uniform distribution of bayonet, thereby lifting car braking; integrated man-machine interface includes injection type outer frame shape and brand touch-screen, beautiful shape; the ring lights alarm system standby state display operation state display blue light, yellow light, red light and alarm status display with voice prompt function.

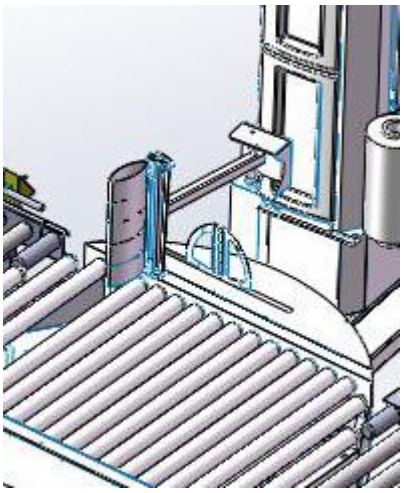


Picture 3.2.1 Column

1Lifting driving device、2 column frame、3 Lifting trolley、4 Tape anti dropping device、5 Alarm tricolor lamp belt 6 Injection door

3.3Rotary table for on-line pallet wrapping machine

The rotary table comprises a base fixing frame, a rotary conveying table, a rotating mechanism and a clamping mechanism（see picture 3.3.1）The base fixing frame is made of high quality carbon steel welding, rotating conveyor mounted on the eccentric load resistance gear rotary support, the utility model has the advantages of low noise, strong capacity of resisting eccentric load, roller conveyor with stainless steel power roller chain drive and brake device equipped with the motor, stop position accuracy；The clamping mechanism adopts the method of swinging the arm of the cylinder drive rod（see picture 3.3.2），The film is equipped with a loose clamping button, which is easy to install (see picture 3.3.3）



Rotary table picture 3.3.1

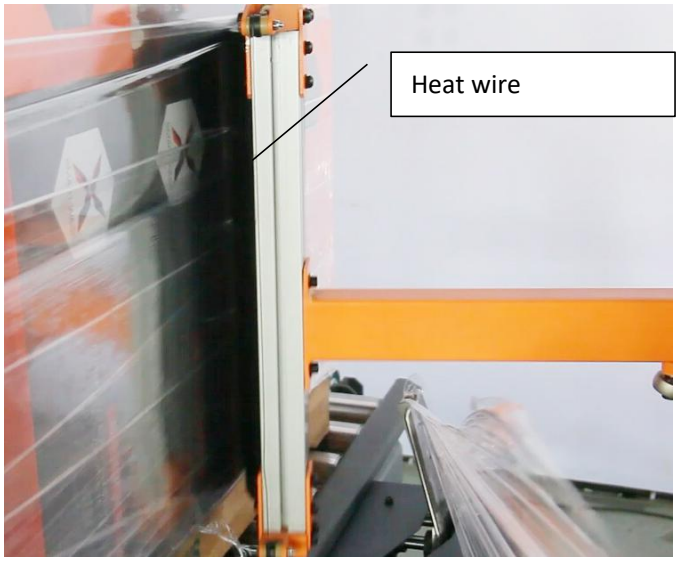
Clamping mechanism 3.3.1

Film installation button3.3.3

3.4Heating wire cutting film mechanism

The breaking mechanism of the heating wire is started when the turntable stops and the film is clamped，The swing arm of the heating wire is driven by a cylinder and the heating wire is heated and blown film simultaneously,the belt is pressed at the same time to attach the film to the cargo; the mechanism consists of a fixing bracket and a heating filament assembly, （Picture 3.4.2）heating wire swing arm, heating wire, cylinder, etc.，（Picture 3.4.1）。

Heating wire cutting device（Picture 3.4.1）



Heating wire fuse assembly（Picture 3.4.2）

4 Installation

4.1Preparation before installation

Please read the entire installation before starting, and then proceed to the installation step by step

Attention：

(1) Do it step by step !

(2) If you encounter problems during installation, see "Common faults and troubleshooting" to get help and find a solution

(3) Equipment has multiple security protection measures, in accordance with

the correct way of operation, can ensure the safety. Please pay attention to comply with all safety signs.Do not turn on the power before completing the installation

4.1.1 Regional preparation

The equipment installation area has to meet the following space requirements:

(1) The distance from the film carriage side to the wall is not less than 600mm;

(2) The distance from the column back to the wall is not less than 300mm;

(3) Please refer to Table 2.1 for the size of the equipment, installation area must be larger than machine size.

4.1.2 Ground confirmation

The ground must be able to withstand the weight of the equipment and the maximum load and the impact of the equipment，that is：

Ground bearing capacity≥（machine weight+ product weight）×1.5

4.1.3 Electrical confirmation

A single phase to ground power supply is required：

220VAC；10A；50/60Hz；1PH

Attention：**For specific electrical requirements, refer to the equipment identification label or electrical drawings**

Caution:

(1) The use of extension lines and any other changes may result in damage to the circuit or equipment performance, and may result in failure of the warranty.If you want to change, please call after service.

(2) To avoid damage to the equipment, check the voltage in the electrical drawings before starting the device.

4.1.4 Equipment, tools and personnel requirements：

(1) Online pallet wrapping machine 1

(2) Tool set (random toolbox), forklift 1

(3) Mechanical / electrical technician 1-2, operator 1

4.1.5 Equipment loading and handling

⑴ Main body loading and handling

Equipment need：forklift

Method：It is unloaded and transported to the installation position through the forklift

⑵ Other parts：

Before loading and handling main body, need to carry other parts manually.

4.1.6 General hardware fastening torque reference

Torque and performance specifications for fasteners used and recommended for this product is as chart 3.1 shows

Chart 3.1

Metric fastener torque gauge		
Nominal dimensions of fasteners	Performance grade	Torque（Nm）
M6	8.8	14
M8	8.8	24
M10	8.8	54
M12	10.9	102

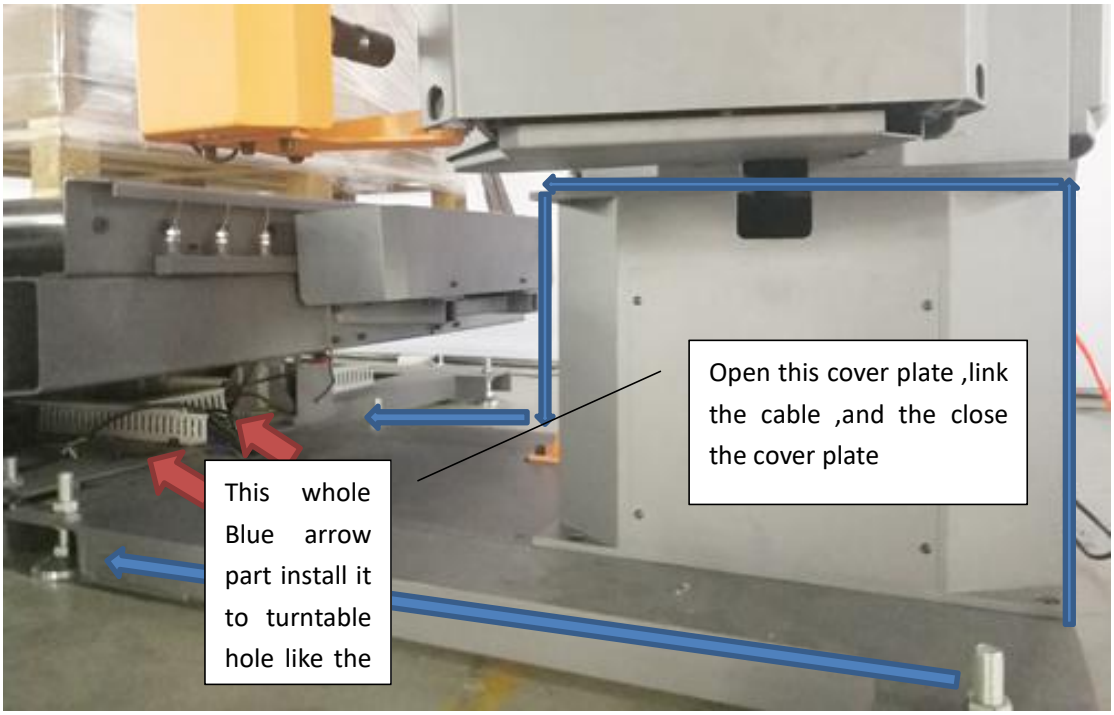
4.1.7 Installation conditions

Humidity≤98%　Temperature 0-40℃

4.2 Installation

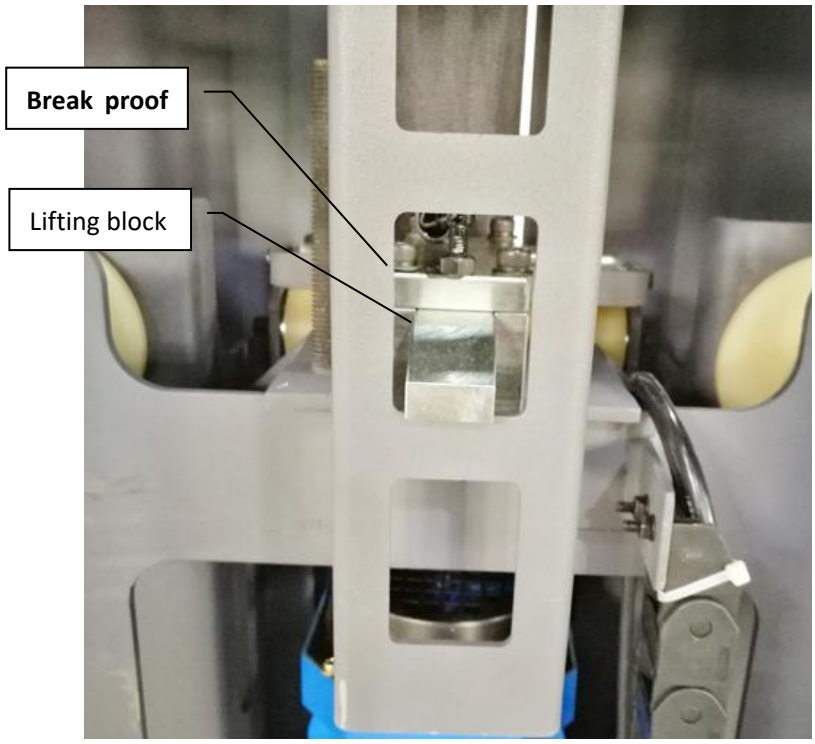
Installation preparation：

⑴ Move the equipment to the installation area with a forklift, remove the outer packing and strapping material, and fix the equipment。



(2) Take out random tools, check whether the equipment is complete, and placed neatly;

(3) The lifting body is removed and moved to the lower part of the upright column, and the lifting body hanging block is hung in the bottom anti breaking slot（see picture 4.1）



Picture 4.1

Attention：The lifting body hanging pieces hangs on breaking grooves, to prevent knock up in the process of lifting column body and the base and damaged parts.

4.2.1Installation of rotary conveying roller table

（1)straighten position between rotary conveying roller table and Front and rear transmission line, adjust the horizontal position of roller conveyor, conveyor rollers rotate according to the height adjustment work around the foot cup；

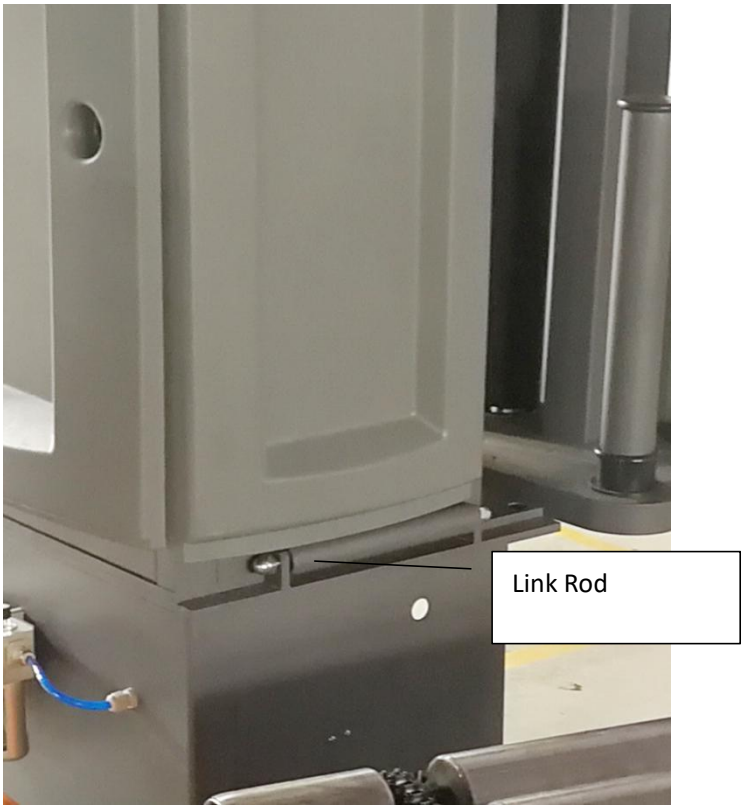
（2）The fixed base of the column is connected with the rotary conveying roller, adjust the height position of the column fixing base foot cup , and then fix the upright column and the heating wire breaking device.

4.2.2Column installation

（1）Upright column, pay attention to safety during the operation

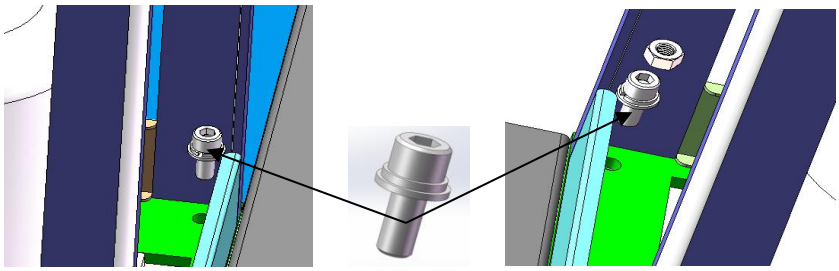
Attention：If the equipment is far away, or sent overseas, the column and the base are separately packed and transported. When installed, pay attention to the process of moving and avoid knocking the rotary table, in order to prevent damage to the parts (disc can be placed on soft materials, the placement process should be handled with care). The upright post rotating sleeve is placed on the base of two

column rotating shaft mounting block, and the center hole and hole alignment. The column axis of rotation (toolbox) inserted into the column rotating shaft sleeve, two M10 round head nut (toolbox) to the rotary shaft and then lock column.(see picture 4.2)



Picture 4.2

(2) Fixing the column to the chassis frame with a random tool.(see picture4.3)



Picture 4.3

（3）Fast insertion of motor line and quick connection of column

（4）Conveyor motor and column reserved quick plug connection

（5）The clamping device equipped gas pipe and a column quickly connect the plug connection

（6）Clamping device signal line and column reserved quick plug connection

（7) The heating wire swinging arm cylinder air pipe quick inserting reserved connection with a column

（8）Heating wire swing arm cylinder signal line and column reserved quick plug connection

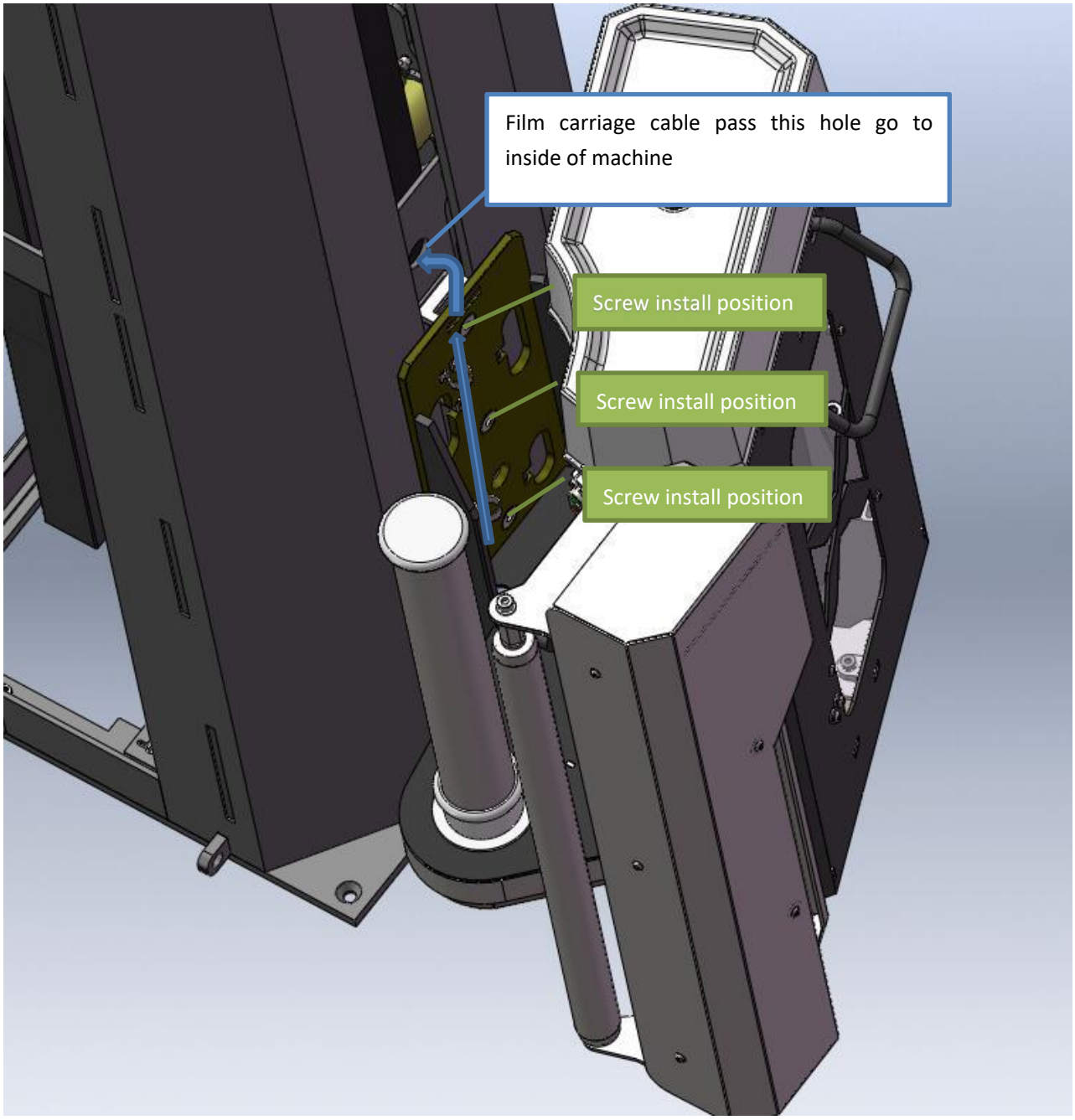
（9）Heating line and column transformer connection

（10）Transmission signal line and column reserved quick plug connection

4.2.3 Film carriage mounting

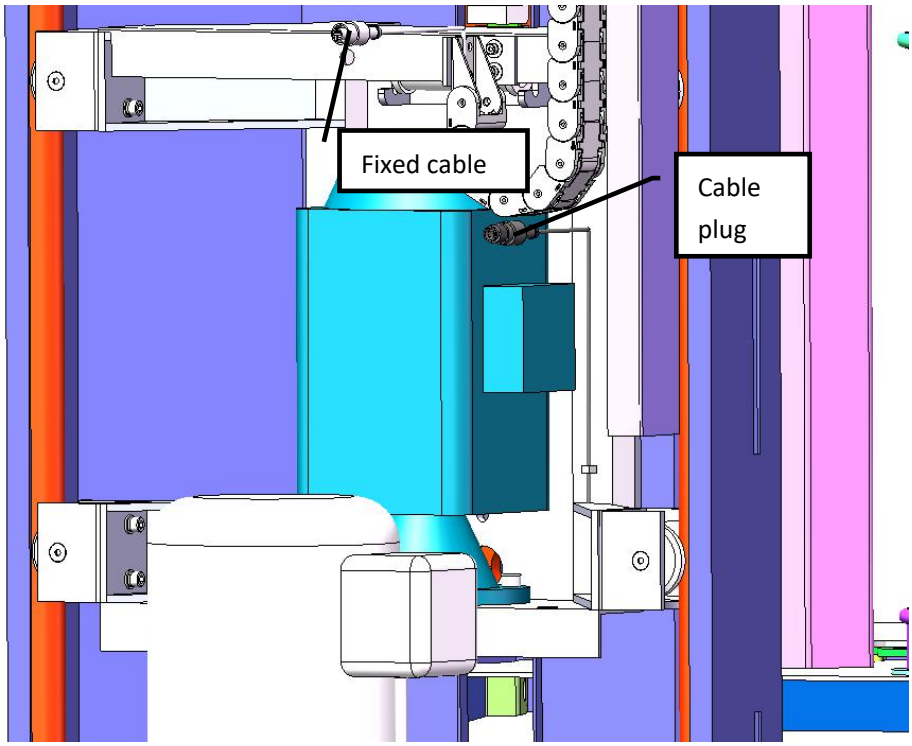
(1) The hanging body hangs in the bottom anti breaking slot(picture4.1）

(2) The film carriage is hung on the lifting body from the outside of the column manually （see picture 4.4），the connecting wire is connected to the lifting body through the hole inside the lower part of the hanging plate.Fix the film carriage and lifting body with corresponding mounting bolt. The bottom of the tensioned film carriage is tension bolt.


Film carriage cable pass this hole go to inside of machine
Screw install position
Screw install position
Screw install position

Picture 4.4

(3) The film base leads to quick connector and chain for quick connector connection（see picture 4.5)The cable is fixed to the lifting body by a tie band.



Picture 4.5

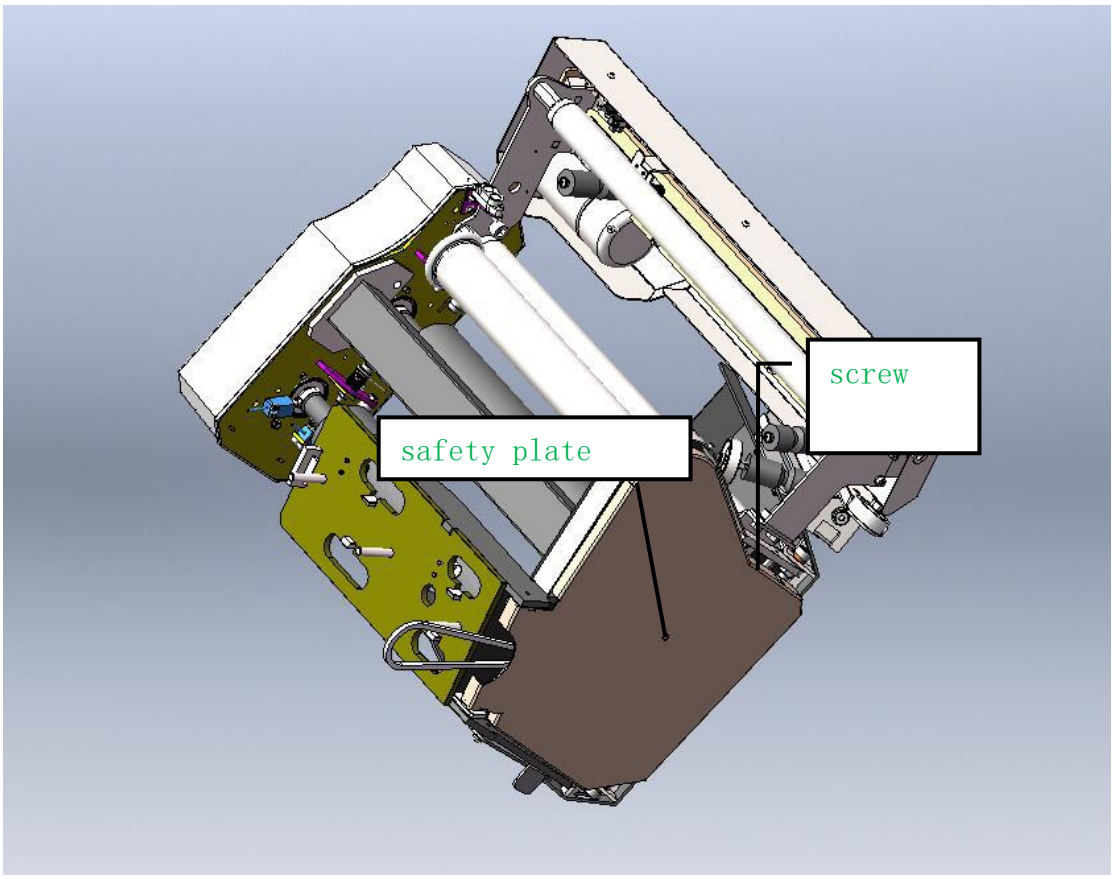
4.2.4Film carriage power connection

(1) Check the safety of all the wires of the equipment and confirm the connection of the equipment.Turn on the power switch

(2) After the machine starts, switch to the manual screen on the touch screen（see “5、human-machine interface introduction” picture 5.3 manual interface），click “rise”lift the lifting body together with the film carriage to a suitable height（About shoulder leveling, easy to install the bottom of the film carriage), click rise again.

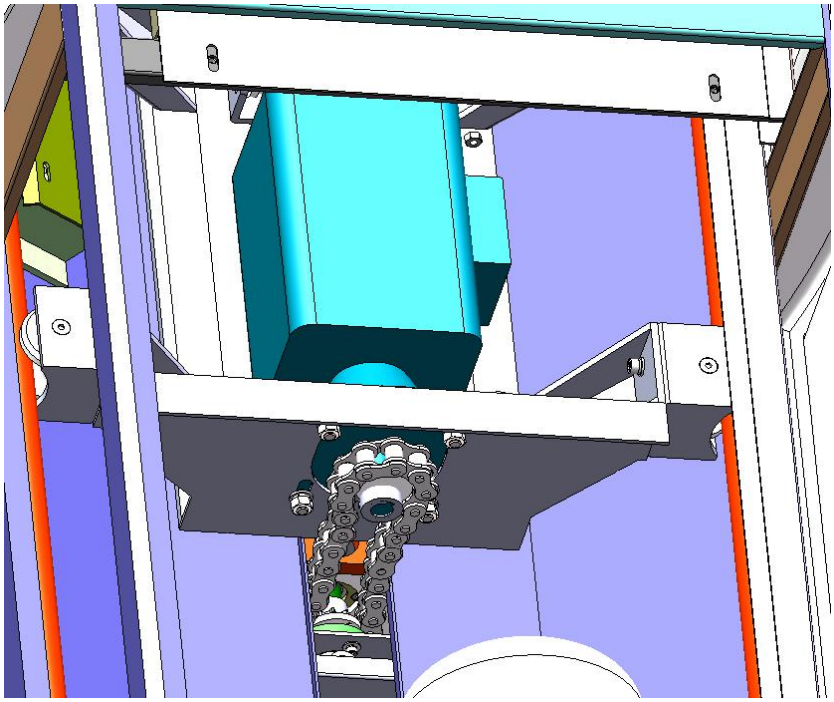
（Button change）stop it，see “Operating instructions”.

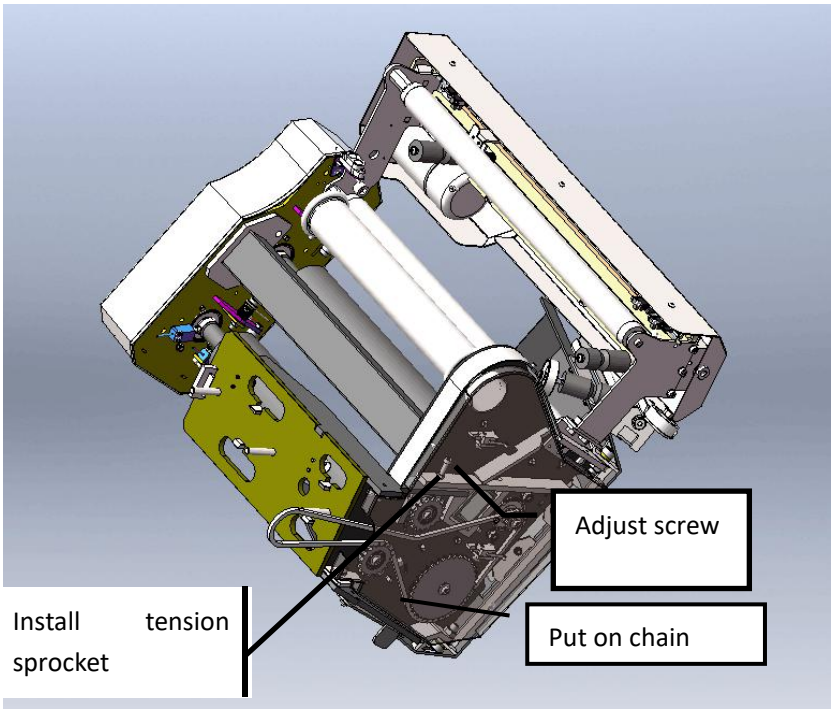
(3)Rotate the safety screw for the membrane compartment, open the membrane seat safety plate, and then tighten the fastening nut，(see picture 4.6，4.7)



Picture 4.6 Picture 4.7

(4) Put on the chain, install tensioning sprocket and adjust screw tightness as the following pictures show.





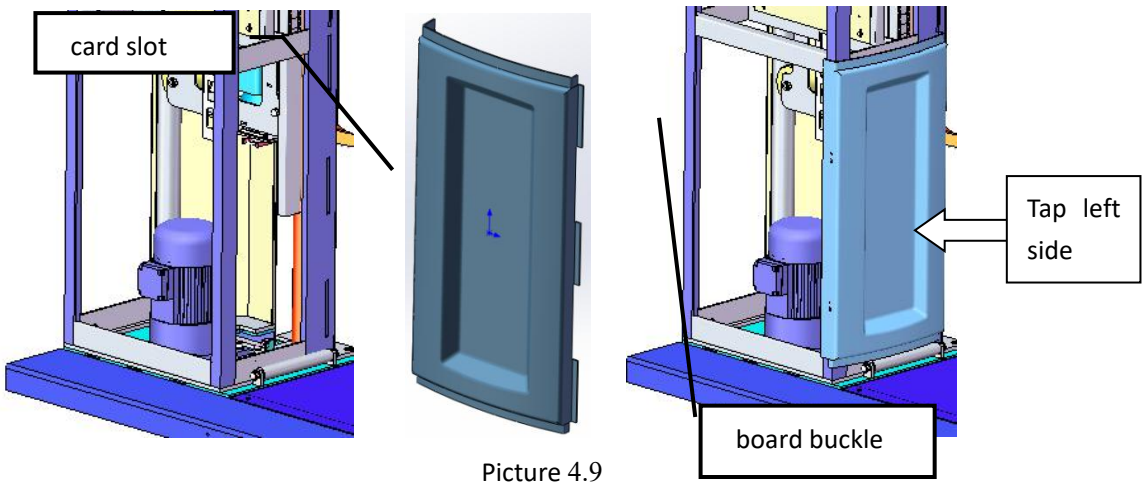
Close the safety plate of the film carriage, and turn the safety screw into the square hole

Decline the body together with the film carriage in a manual manner to a minimum

（same method as“rise operation”）and shut power supply.

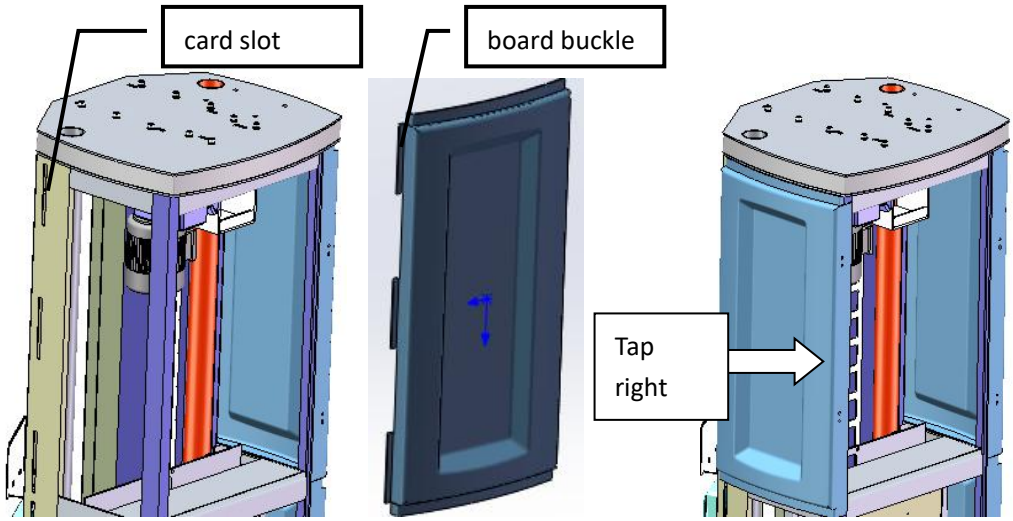
4.2.5 Door panel mounting

(1) Install front door. Install the front door panel should be installed from the bottom down, the installation of the front door card buckle into the column slot, tap the front door to the left side, done.



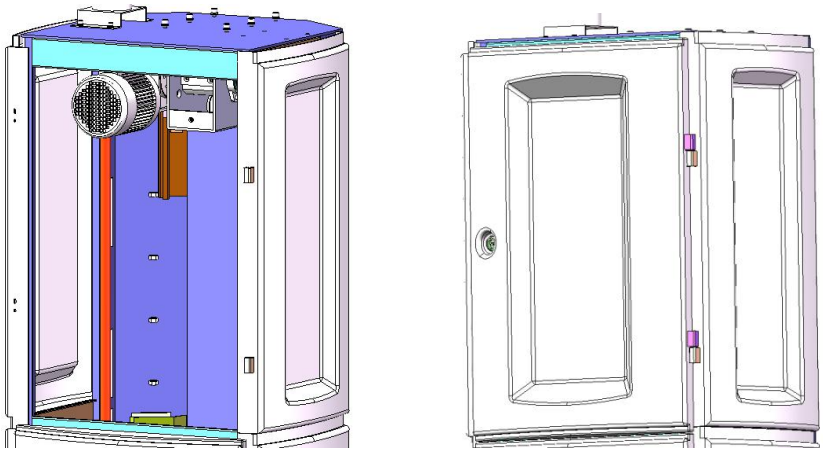
Picture 4.9

(2) Install front door. Install the front door panel should be installed from the top, the installation of the front door card buckle into the column slot, tap the front door to the right side, done.



Picture 3.10

(3) Side door installation. Insert the upper button into the lower clasp （see picture 4.11）。



Picture 4.11

4.2.6 **Wire organization**

Organize all the wires and fix them with random tie.

4.3.Equipment test

4.3.1 Matters needing attention

（1） Please confirm the power used by the machine, do not plug the wrong power supply. This machine adopts single phase AC220V, double color line as the ground wire, from the protective effect.

（2）When the machine is running, it is forbidden to put the foot on the machine.

（3） The machine is not allowed to be installed on the soft ground.

（4） When incident happens, press the emergency stop switch, disconnect the motor power supply, make the machine emergency stop。

（5） After the completion of the work, please clean the machine once.

（6） To ensure safety, please do not arbitrarily open electrical equipment.

（7） Only electrical technicians can repair electrical equipment.

4.3.2 Test preparation

(1) Check the correctness of electrical connections and make sure that the ground is safely grounded.

(2) Check the mounting bolt for any missing and confirm its tightness

(3) Ensure that the equipment is free of debris, tools and spare parts have been completed

(4) Make sure that the height detection is not more than the minimum product

4.3.3Equipment pre-test

 Attention:

To carry out any of the following operations, the other hand should be placed in the "emergency stop" button at the same time, the exception can be the first time to press the "emergency stop" and find the problem

(1) Connect the power supply and turn on the power switch

(2) Enter “manual interface”

(3) Click on the "turntable" button to try to turn the turntable to confirm the "turntable" easy to start and no abnormal sound and then click again to stop it

(4) Click on the "up" button to increase the film carriage, to be raised to the highest when the device will automatically stop, confirm

it runs smoothly without resistance

Attention: When the device is stopped, the lifter shall determine the proximity switch to the upper part (see picture 4.12)

图 4.12

(5) Click on the "down" button to decrease the film carriage, to be decreased to 1 meter high, confirm it runs smoothly without card resistance

Attention: After the stop, the elevator body should have touched the bottom of the proximity switch

4.4、Operation method

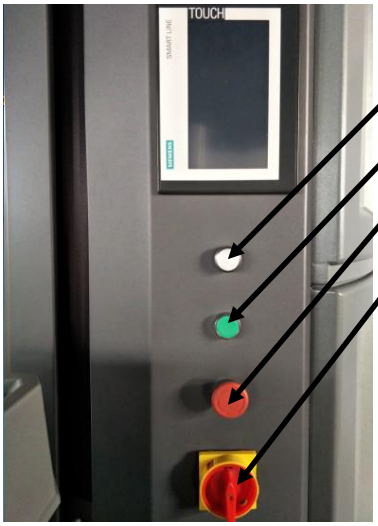
Be familiar with the operation panel before operating the equipment， And pay attention to the safety label of each position.After installing the film, turn on the power switch to initialize the operating system, to ensure that the film seat roller system is in the state of delivering film (emergency stop button is not pressed, no alarm)，pull out enough film. Then rotate the film clip button, film clip arm down, will be placed in the film clip film on the left arm, again rotating film clip button, right arm clip film together, clamp the membrane to be finished goods delivery to the stop position, the rotating mechanism starts, the entire film film rising film seat after two laps began to rise drop rope, a rope winding clip membrane, membrane seat up to the top two winding, winding goods after the film business began to release the rope rope into film, film and film base began to decline after winding, seat down, wrapping film clip for two laps after the open, membrane with rope a bomb and membrane attached to the goods on the last lap, left arm clamp membrane stand, with the rotation of the chassis,The film to stop after the film clip arm stand, while sandwiching the membrane, the heating wire broken membrane swing arm membrane and goods clipped off, goods transported out after the heating wire film broken arm reset, enter the next cycle

Attention： Reloading of goods or film case of accidental fracture need to manually stretch film and film clip is clamped on the goods after the film is wound! Automatic clamping and cutting off. Then, the operator can re loading the next operation cycle.

Safety matters：The automatic operation process, the operator and the surrounding personnel should avoid movement of equipment components cause personal injury. The device has multiple moving parts, the movable parts are affixed with safety signs, to attract the attention of the staff around!

Alarm：Please pay attention to the safety mark on the parts of the equipment

4.4.1. Control Button



Display lamp： Power supply on, display lamp lights

Start button： Control auto start

Emergency stop button： Emergency Stop

Stop button： Control auto stop

Attention： Quickly press the emergency stop button in the running process of equipment emergencies, to avoid personal injury or damage to the equipment. In addition, such as the need to shut down, restart the system or install the film roll, should press the emergency stop button (closed system).

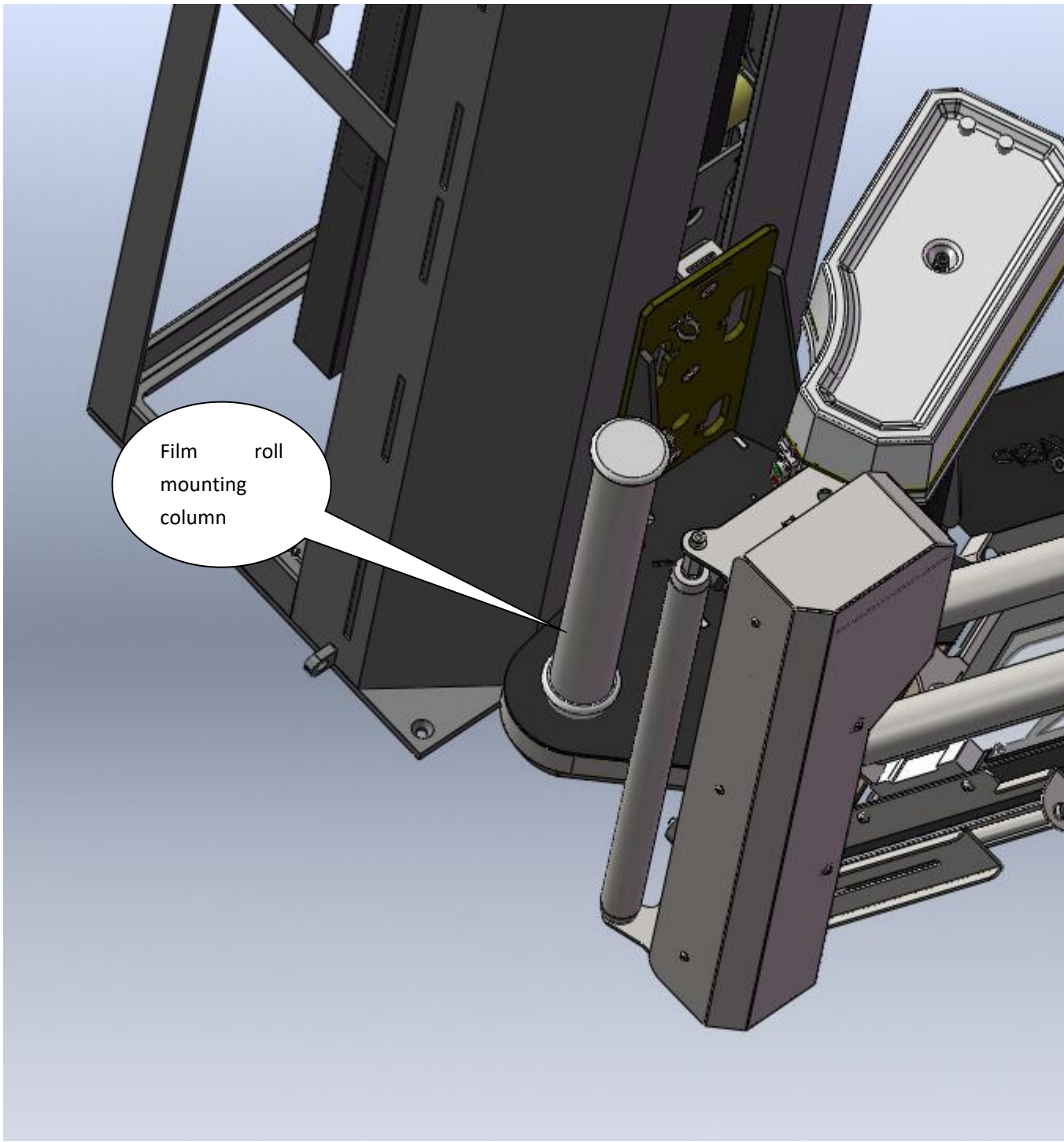
4.4.2.Film loading and unloading

4.4.2.1 Film unloading

（1）Film seat down to the lowest position；

（2）Open the film carriage door (pull up the door handle, and pull outward), and take out the film between the film carriage.

（3）Get out the film roll from the mounting column.



Picture 5.2

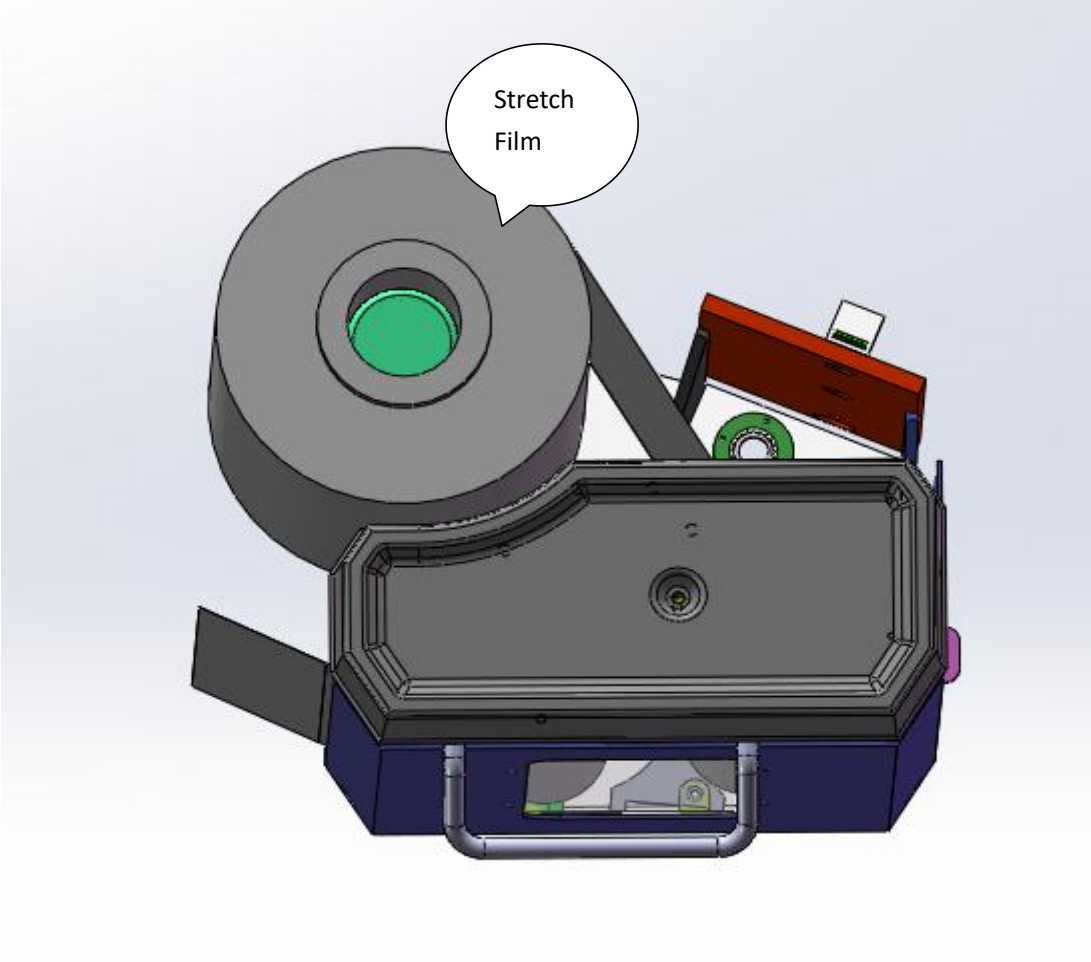
4.4.2.2Film load

(1) Take film roll, and make sure it is pre tensioned PE film. Our machine requires 25cm diameter film(max 30cm)， film roll inner diameter7.6cm，width 50cm.

(2) The film holder is lowered to the lowest position and press the

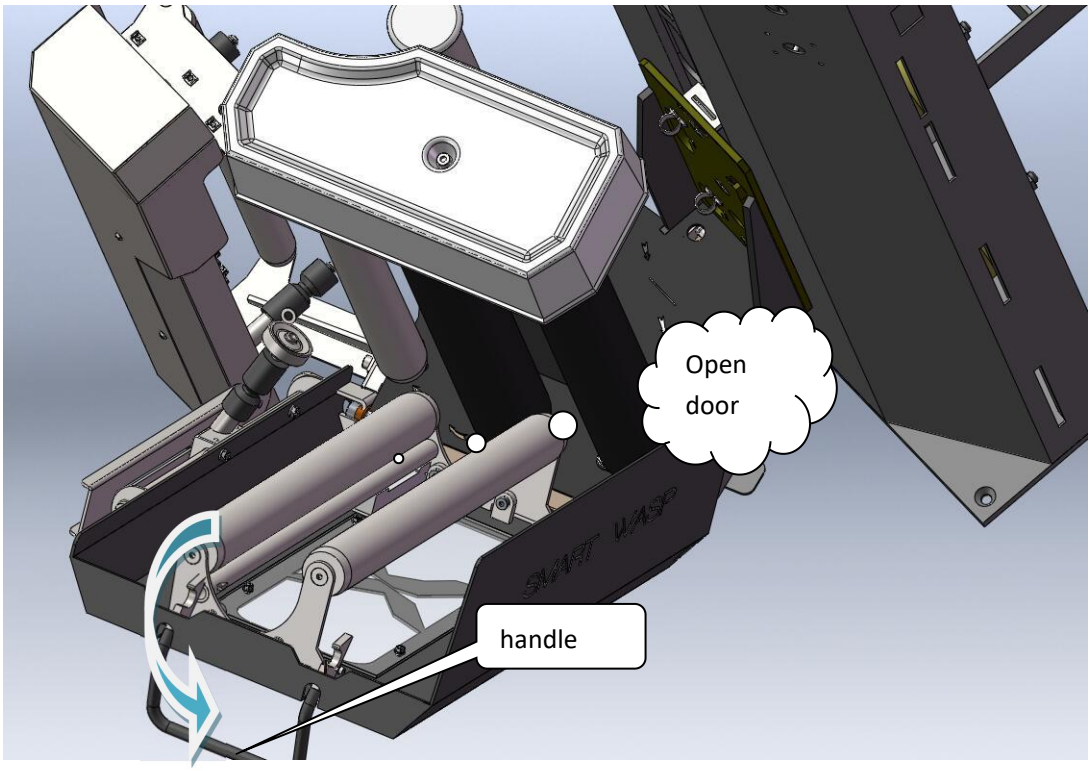
emergency stop button (turn off the power supply)；

（3）Confirm the direction of the wrap (picture is in the downward direction；



Picture 5.3

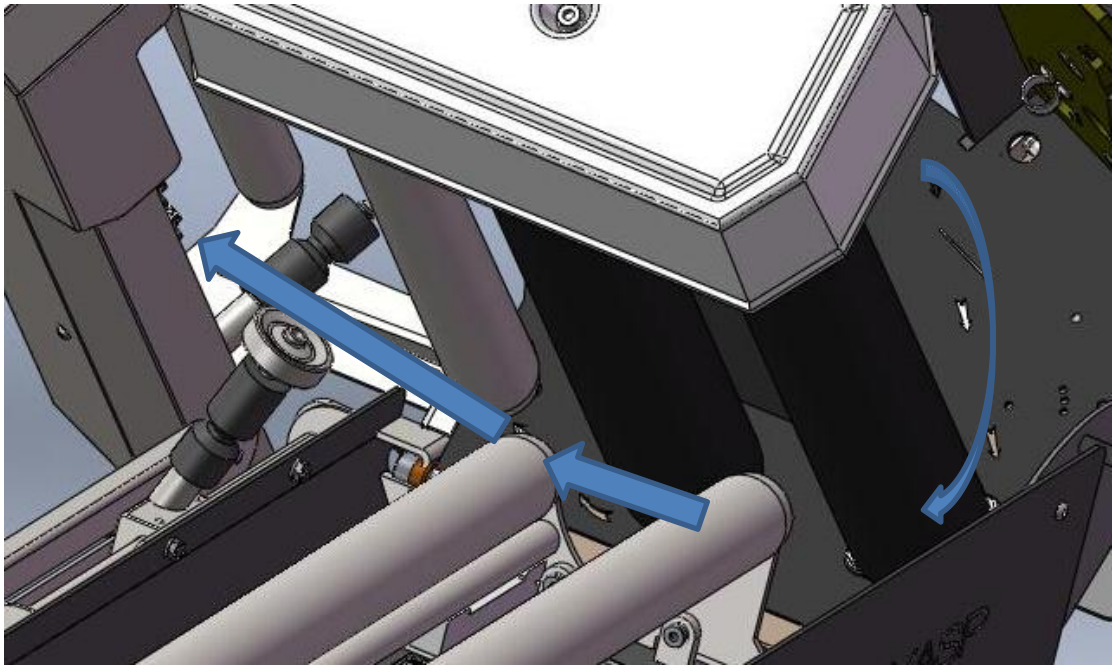
(4) Open film carriage door panel（Pull up the door handle and pull it out5.4）；



Picture 5.4

(2) Stretch the film by hand, stretch the length of about 90-130cm, and form the rope as much as possible；

(3) The direction of the rope film in the film carriage should follow the direction of the arrow on the bottom of the membrane body， see picture 5.5



Picture 5.5

⑷ Close the door；

⑻ Turn the emergency stop button, turn on the system power, stretch out the long enough winding film to reach the bottom of the goods

Attention：

①Relax the wrapping film at the door can reduce shut door force

②During the operation, the human body should be avoided to contact the moving parts in the film carriage.

③When the door is closed, it is best to press the handle down once to confirm the door is closed

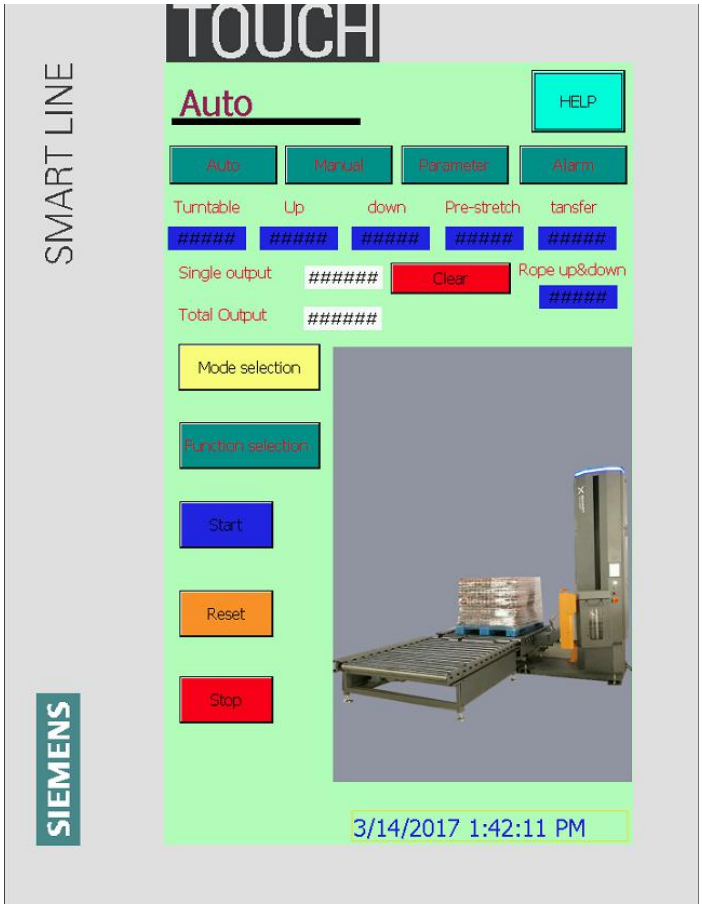
4.4.3Man-machine Interface Introduction

4.4.3.1.Start up interface

Click anywhere to enter， see picture 5.6

Picture 5.6

4.4.3.2.Automatic interface setting



Picture 5.7

Click “enter system”， see picture 5.7

Single output：Shows equipment output per shift,can be cleared

Output zero：Click to Zero

Total output：shows equipment total output

Turntable speed：Used to set the speed ratio when the chassis is running normally，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Up speed：used to set up speed ratio of film carriage，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Down speed：used to set down speed ratio of film carriage，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Pre-stretch speed：Used for setting the elastic ratio of the film carriage release film at normal operation，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed,film loose) Too tight leads to breaking directly without clamping, too loose may lead to incomplete broken film; generally set in 18%-40%,please according to the pallet object film toughness and the shape and size of fine-tuning.

transfer speed：used to set speed ratio of conveying，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Rope up&down ： used to set speed ratio of the film carriage when griping rope，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

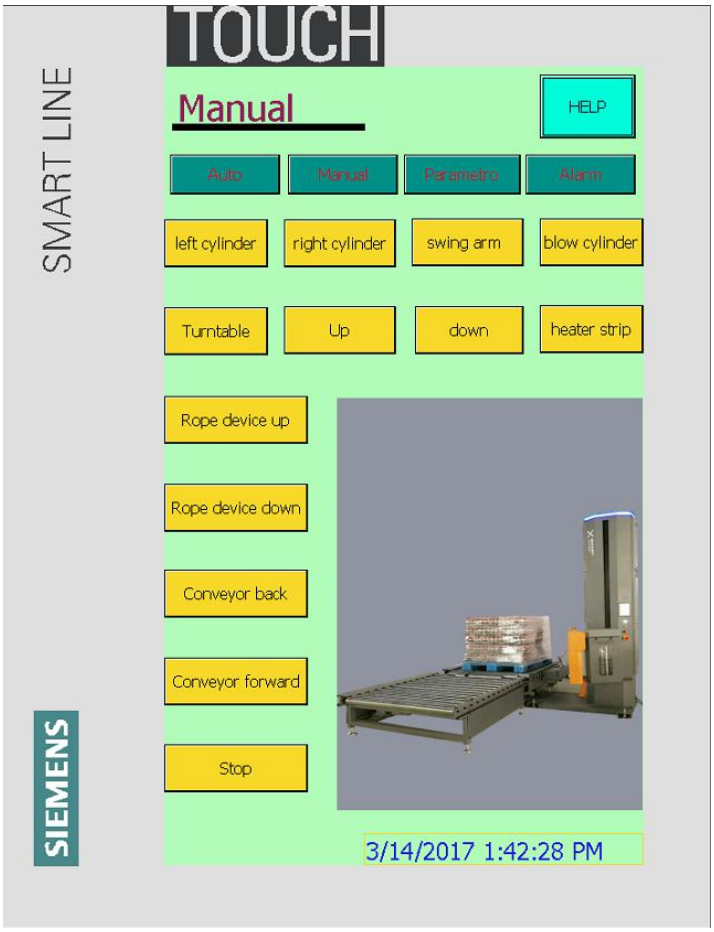
Remark：turntable speed, up-down speed and fpre-stretch speed can also be set in manual interface and setting interface. Set the parameter according to your goods characteristics(size, height, weight and other characteristics). The parameter can also be pre set in choice mode. Please refer to 5.3.5

Start：In the absence of any manual action, click to start machine automatically

Reset：Click to immediately stop the current action, and then lift and chassis reset to the initial position

Stop：Click to stop all current actions of the machine

4.4.3.3. Manual settings



Picture 5.8

Click“manual interface”to enter.

Left arm：In the automatic operation of the state, click, loosen the left arm and closed

Right arm：In the automatic operation of the state, click, loosen the right arm and closed

Arm swing：When it is not in the state of automatic operation, the hand holds the heating wire swing arm to turn on and off

Blow：In the automatic operation of the state, click blow, blowing stop release

Turntable：When not in a state of automatic operation, press turntable, the turntable is stopped

Up：When it is not in the state of automatic operation, press on up,the film carriage rise, if move your fingers, stop going up. When reached up limit, stop automatically.

Down：When it is not in the state of automatic operation, press on ,the film carriage goes down, if move your fingers, stop going down. When reached bottom limit, stop automatically.

Heating wire：When it is not in the state of automatic operation, press on,heating; or stop heating

Rope grip up：When it is not in the state of automatic operation, press on,rope grip up, or it stop. When reach up limit, stop automatically.

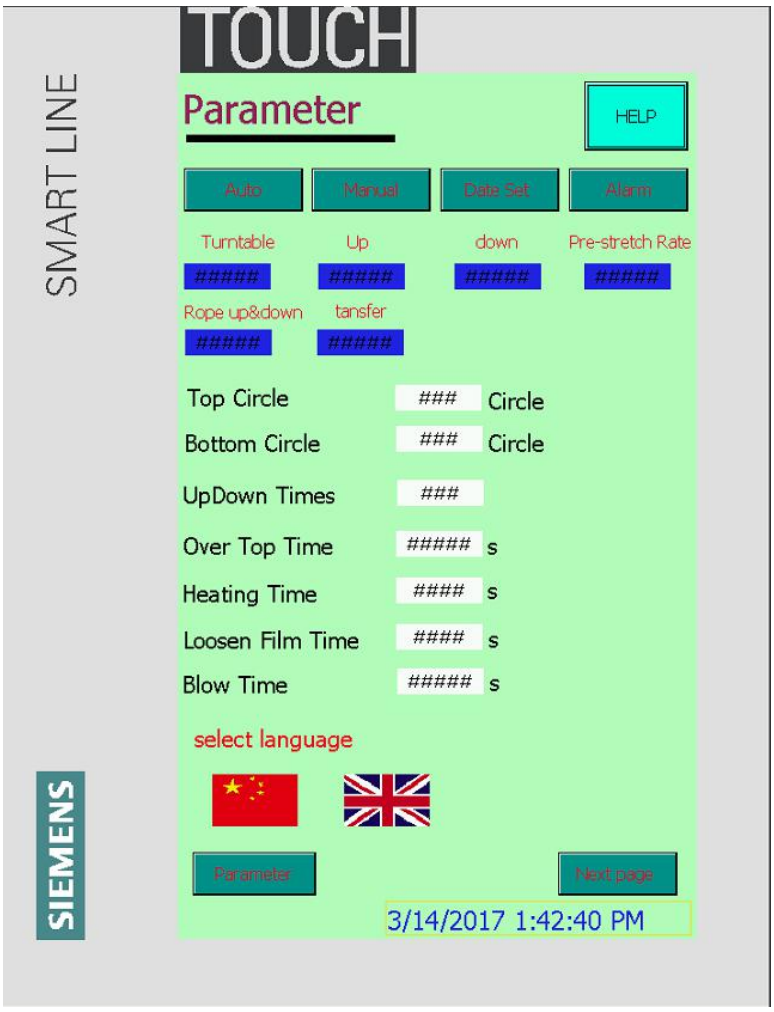
Rope grip down：When it is not in the state of automatic operation, press on,rope grip down, or it stop. When reach bottom limit, stop automatically.

Conveyor forward：When it is not in the state of automatic operation, press on,the conveying roller is in the state of forward conveying, or it stop. When reach stop bit, stop automatically.

Conveyor backward：When it is not in the state of automatic operation, press on,the conveying roller is in the state of backward conveying, or it stop. When reach stop bit, stop automatically.

Stop：Click to stop all manual actions

4.4.3.4.Setting interface



Picture 5.9

Click“setting interface”to enter

Turntable speed：Used to set the speed ratio when the chassis is running normally，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Up speed：used to set up speed ratio of film carriage，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Down speed：used to set down speed ratio of film carriage，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Pre-stretch rate ：Used for setting the elastic ratio of the film carriage release film at normal operation，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed,film loose) Too tight leads to breaking directly without clamping, too loose may lead to incomplete broken film; generally set in 18%-40%,please according to the pallet object film toughness and the shape and size of fine-tuning.

Transfer speed：used to set speed ratio of conveying，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Rope up and speed：used to set speed ratio of the film carriage when griping rope，0—100% correspond to 0—50Hz frequency（The bigger the percentage, the faster the speed）

Top circle：Set the number of coils wrapped around the top of the cargo

Bottom circle：Set the number of coils wrapped around the bottom of the cargo

Up down times：Set the number of goods from top to bottom

Over top time:Time of film wrapping over top of goods

Heating times：Set heating time

Film loose time ：Adjust clamping film time

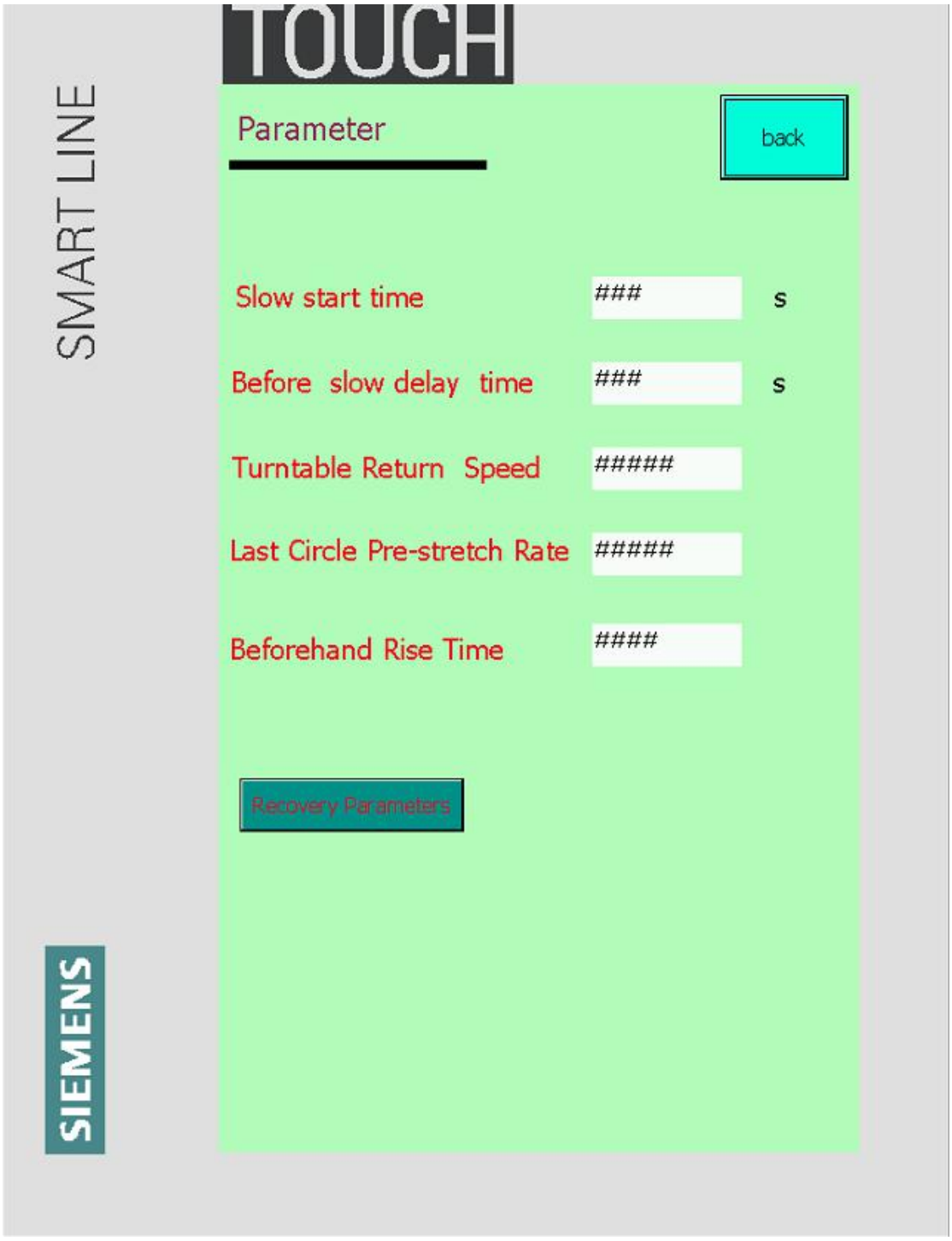
Blow time：Set blowing time

System parameter：system parameter setting interface，refer to 4.4.3.4.1

Next page：Terminal monitor interface，refer to4.4.3.4.2

Language：CHINESE/ENGLISH

4.4.3.4.1.System parameter setting interface



Picture 5.10

Slow start time：Used to set the chassis from the static start to normal running speed （The shorter the time setting, the greater the pull of the film on the disc at the start）

Before Slow delay time：Used to set the chassis into the film cutting preparation time（The shorter the time setting, the earlier the blocking action; the longer the time, the slower the blocking action)

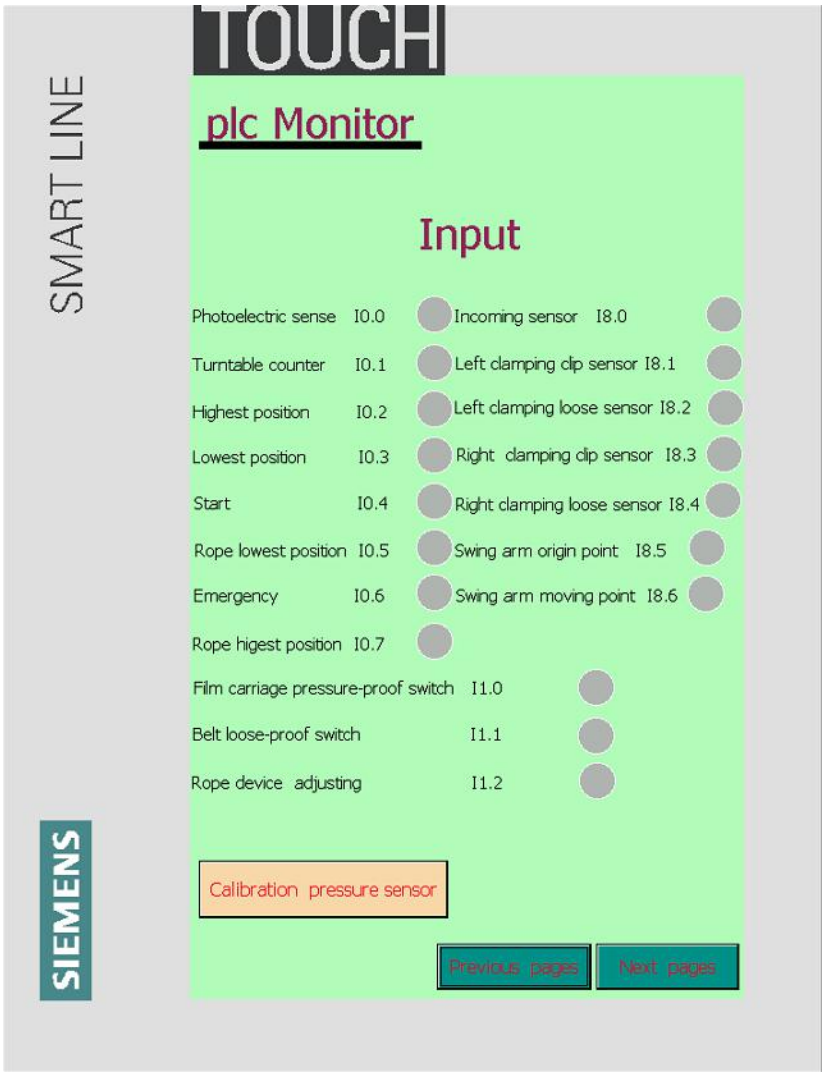
Turntable Return Speed： Used to set chassis breaking film to stopping speed （speed control, directly related to the initial position of the turntable accuracy; generally set in 20%~25%, set up after the customer does not easily change）

Last circle pre-stretch rate：Used for setting the elastic ratio of the film carriage release film at normal operation，0—100% correspond to 0—50Hz frequency （The bigger the percentage, the faster the speed,film loose) Too tight leads to breaking directly without clamping, too loose may lead to incomplete broken film; generally set in 18%-40%,please according to the pallet object film toughness and the shape and size of fine-tuning.

Before hand rise time：Used to set the time for the pre rising of the film carriage at the start

Parameter recovery：Click,restore parameters to factory setting option pops up

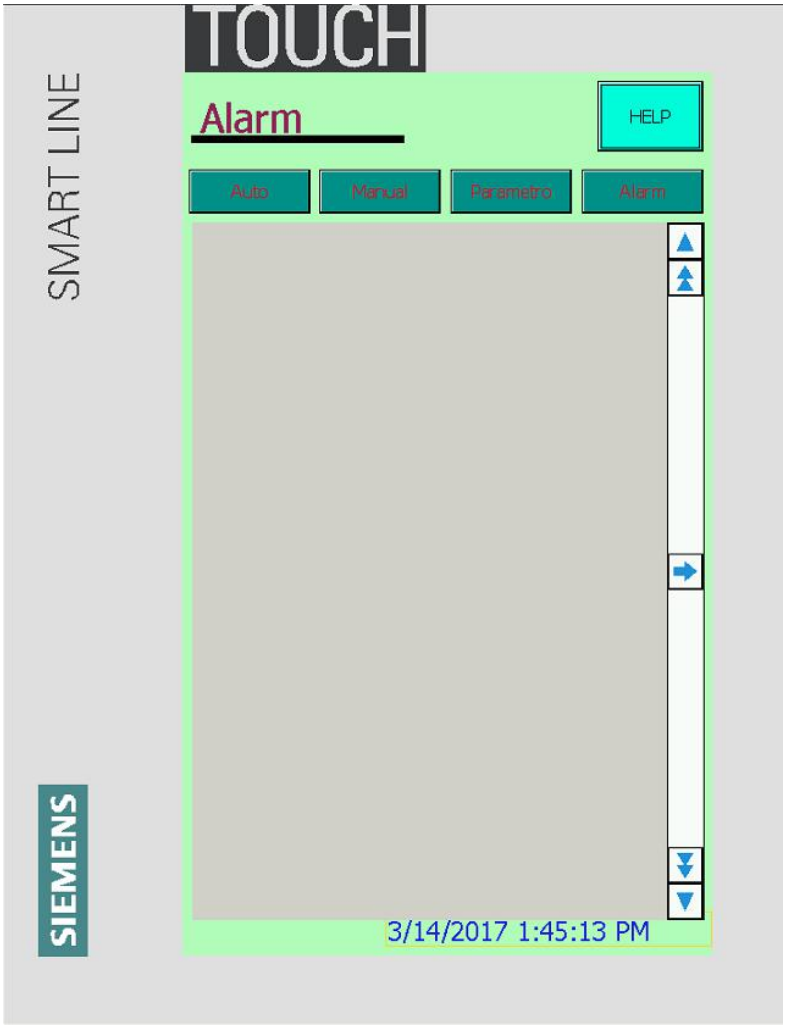
4.4.3.4.2.Terminal monitor interface



Picture 5.11

Click “next page” on setting interface to enter. Shows the real-time action of each point on the PLC.

4.4.3.5.Alarm interface



Picture 5.12

Click “alarm interface” to enter.Display alarm information of the equipment.

Emergency stop alarm: When the abnormal situation, press the emergency stop button, there is an emergency stop alarm, the alarm indicator lights. Loose emergency button, alarm release.

Lack of material and film alarm: When the equipment is running, if there is no film or film is broken, material shortage alarm, alarm indicator lights up.Manually connect the broken ends of the film to the product, click on the start and then release the alarm

The wrong direction of the film carriage going down alarm: When there is rope winding error or up down direction error of film carriage caused by other

reasons, for example film carriage goes down while touched top limit,the wrong direction of the film carriage going down alarm .Change the lifting motor wiring, the lifting direction reversed, press the reset button, alarm release.

The wrong direction of the film carriage going up alarm：When there is rope winding error or up down direction error of film carriage caused by other reasons, for example film carriage goes up while touched bottom limit,the wrong direction of the film carriage going up alarm .Change the lifting motor wiring, the lifting direction reversed, press the reset button, alarm release.

5、Maintenance

Maintenance plays an important role on the life of the machine parts, equipment performance, production efficiency and safe operation **Maintenance of equipment is strictly prohibited when two or more people operate the machine**。

5.1.Preparation before maintenance

⑴Maintenance workers do safety protection,safety helmet, safety shoes, gloves

⑵ Make sure to cut off the power before maintenance (press the emergency stop button)

5.2.Equipment daily maintenance

（1）Check whether the fasteners are loose；

（2） Check whether the speed reducer oil leakage (rotary speed reducer, membrane seat reducer, lift car reducer)；

（3） In the running process function, confirm whether there is abnormal sound；

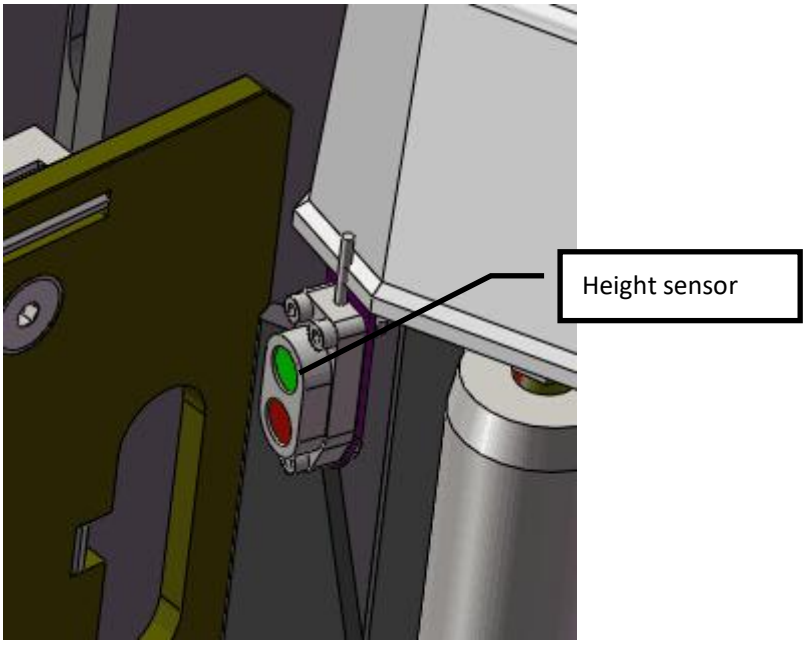
（4） Check whether the lifting belt of the film carriage is loose or damaged；

（5）Whether cable is loose or off；

（6）Whether the button is loose or failure, whether button light is normal；

（7）Whether blocking electromagnet is normal；

（8）Check the cargo height sensor (Picture 6.1) is normal:



Picture 6.1

（9）Apply the lubricant to the die seat chain: open the bottom plate of the film carriage，refer to picture 4.8；

（10） Keep the machine clean and tidy

5.3.Equipment checklist

5.3.1.Daily checklist

Suzhou Jiajun Auto-Well Industrial Automation Co,.Ltd		Brand :Smart Wasp		Model: S300	
Department	year	daily maintaince check record			
Equipment no.	mouth				
No.	Check Item	measures	status	examiner/date	Confirmor/date
1	Overall structure without looseness, motor without loose				
2	Indicator is normal, the PLC has signal input, sensors positioning sensor is normal				
3	The line doesn't fall off not loosely, the button is normal, the button and the movement conform to the inspection				
4	whether The motor is normal				
5	Equipment without a abnormal voice and smell				
6	Weather clamp film device works ok				
7	whether cutting film system working smoothly				
8	Heat wire weather have film residue				
No.	Breakdown contents	Maintenance countermeasures		Maintenance people	date

5.4Common faults and troubleshooting

Here list the problems that may occur during the daily use and maintenance of the equipment. Please refer to the equipment manual (electronic version) or contact our service personnel for any problems that may not be addressed or resolved

5.4.1.Host part

Problem description	Possible cause	Terms of settlement
No response from power switch	Power not connected	Plug the power plug
	Emergency button on	Switch emergency button

Press "start" button no response	Power not connected	Plug the power plug
	Emergency button on	Switch emergency button

5.4.2.**Base part**

Problem description	**Possible cause**	**Terms of settlement**
Turntable not rotate	Power not connected	Check power
	Emergency button on	Switch emergency button
	Control button failure	If the wiring is loose, the connection line will be fixed again. If the button is damaged, the button will need to be replaced
	Turntable speed too small	Adjust the speed of the turntable to the right speed (Professional)
Turntable hard start	Cargo overweight	Loading the goods in accordance with the weighing requirements
	Ground not flat	Place the equipment on the flat ground and ensure the floor is clean

5.4.3.Film carriage and lifting part

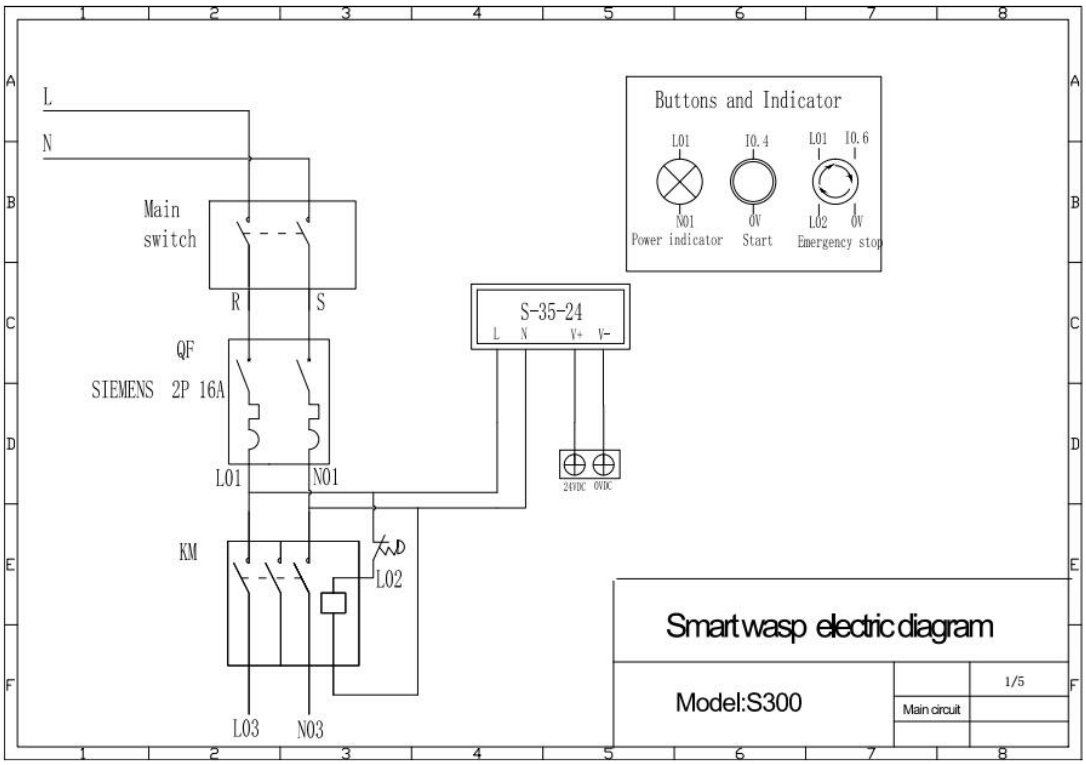
Problem description	**Possible cause**	**Terms of settlement**
No up-down action in automatic or manual interface	Emergency button on	Switch emergency button
	Lifting speed parameter too small	Adjust the rotary speed to the right speed
	lifting belt stuck	To determine the lifting belt without stagnation
	Limit switch or chassis count switch failure	Replace switch
	Power not connected	Check power
Failed to rise to the top of the cargo	Goods height sensor detection error	Adjust the height sensor detection distance
Cargo rise above set height	Goods height sensor detection error	Adjust the height sensor detection distance
No deliver film by film carriage	Power roller (plastic) rotation is not smooth	Check whether the power roller debris stuck, or poor bearing rotation
	The film velocity coefficient is too small	Set the appropriate film release speed
	No power roller rotation	Check whether the power roller

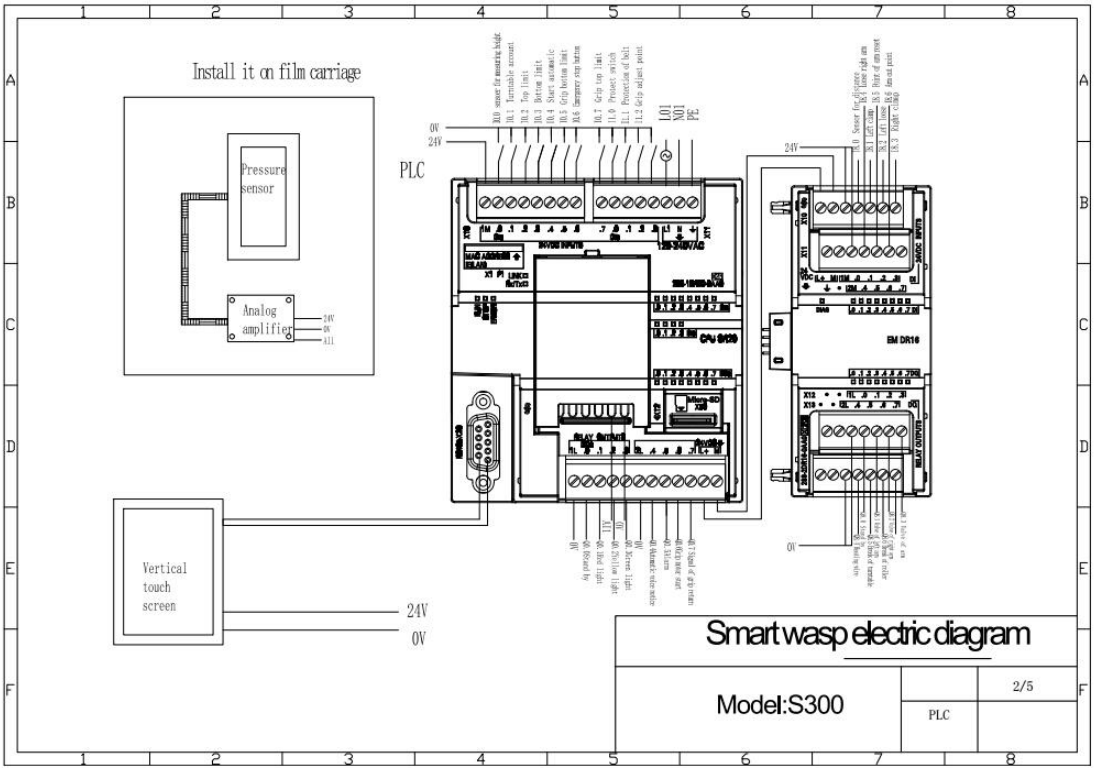
	is not smooth	debris stuck, or poor bearing rotation
	Film roll rotation is not smooth	Adjust the film roll installation to ensure smooth rotation

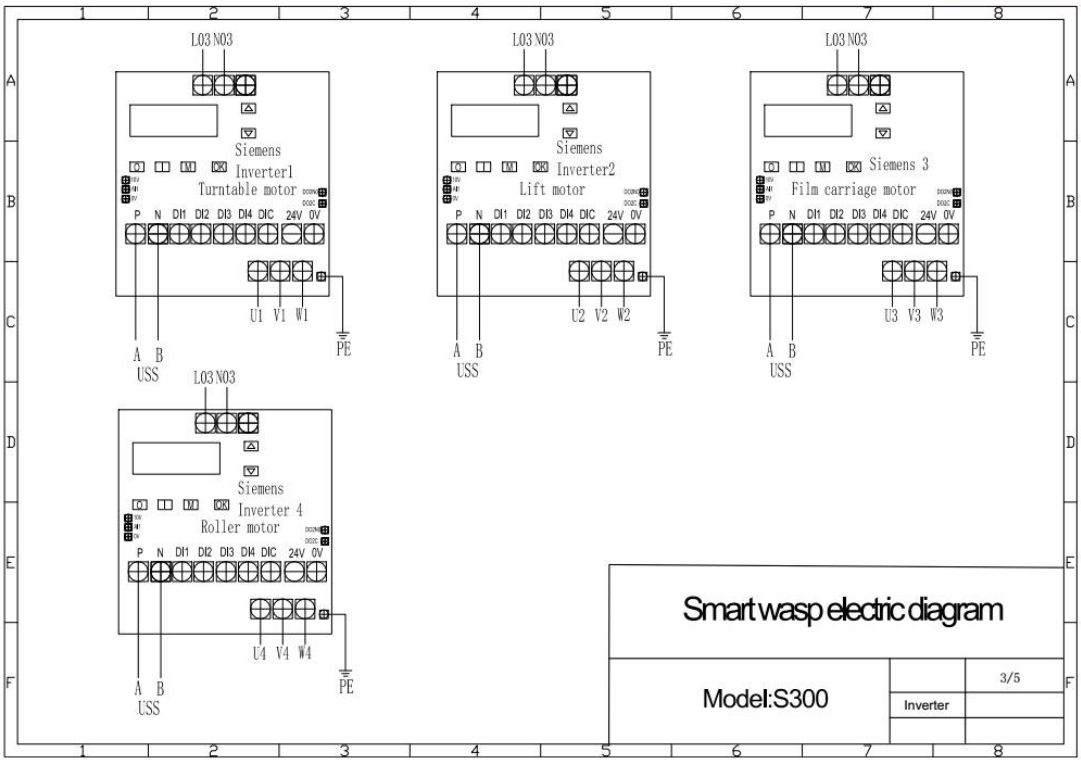
5.4.4.Film delivery system

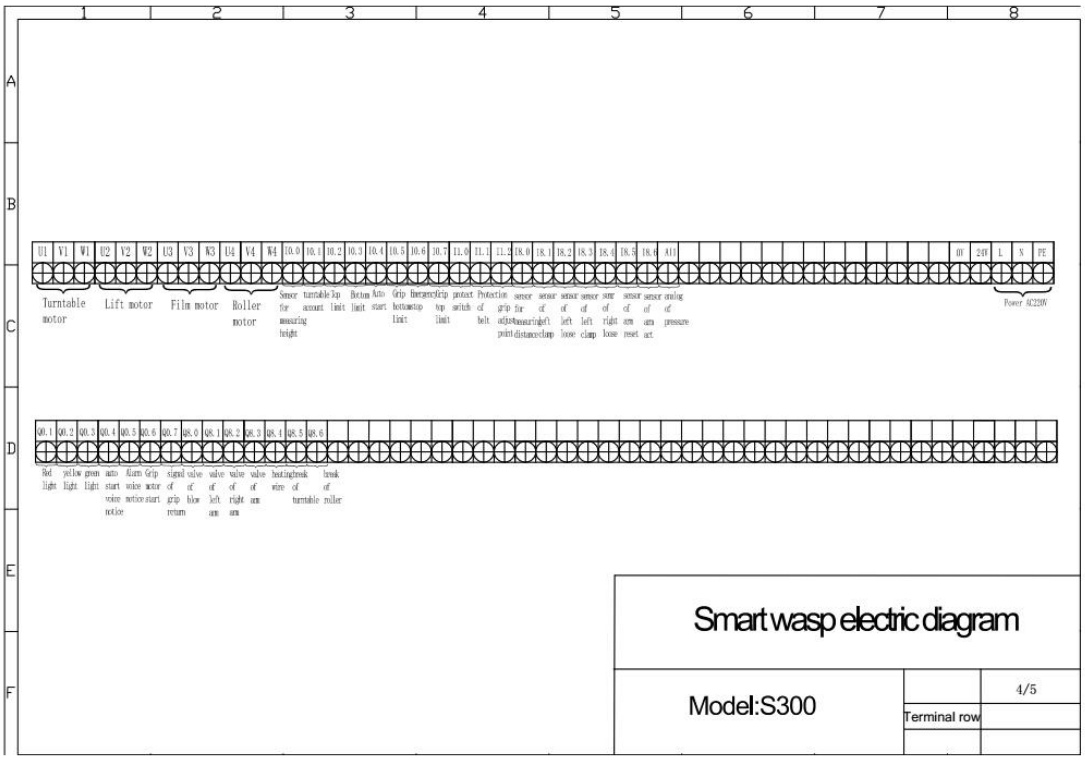
Problem description	Possible cause	Terms of settlement
Film break	Film roller has debris	Use compressed air to clean up the debris and other debris (prohibiting the use of knives and other sharp instruments rub drum)
	Goods with a sharp edge	Increasing film feeding speed
	Excessive tensile force	Increasing film feeding speed
	Wrapping film is not correctly installed	Refer to 2.5
	Film roll rotation is not smooth	Adjust the film roll installation to ensure smooth rotation
Too small wrap force	The film velocity coefficient is too large	Set the appropriate film release speed
Film seat power roller back film (Wound around a roller with film)	The film speed is relatively too fast to the speed of the turntable, and the film is wrapped on the roller	Remove wrapping film (prohibiting the use of knives and other sharp instruments rub roller, roller damaged)

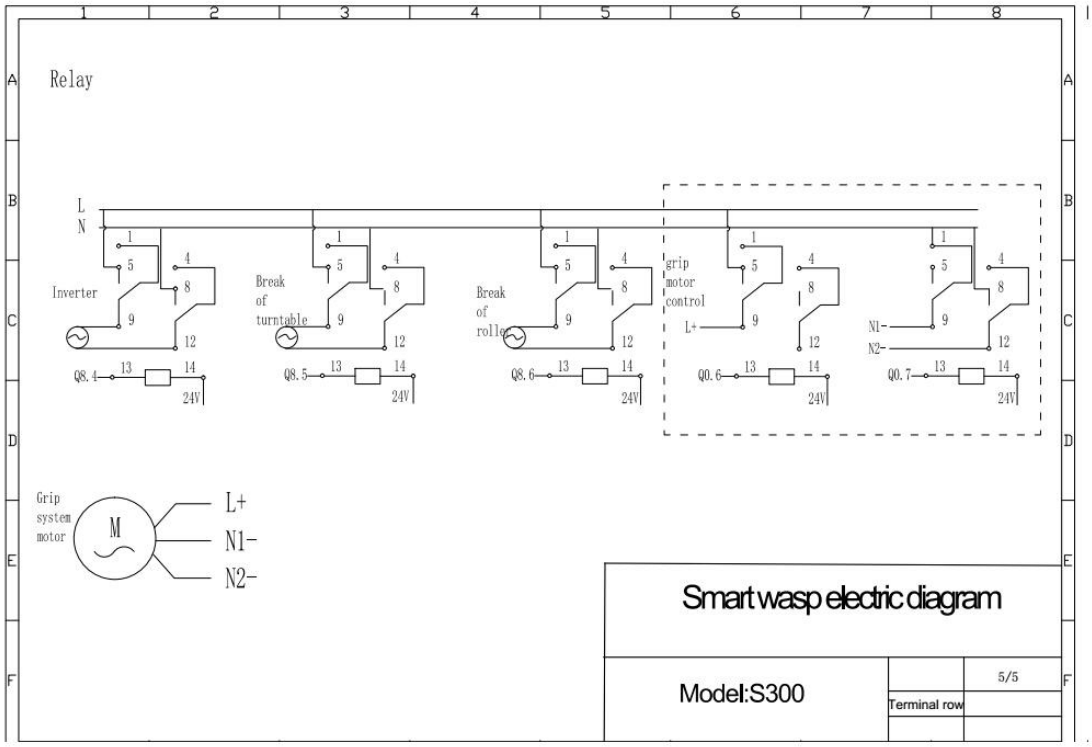
5.5 electric diagram

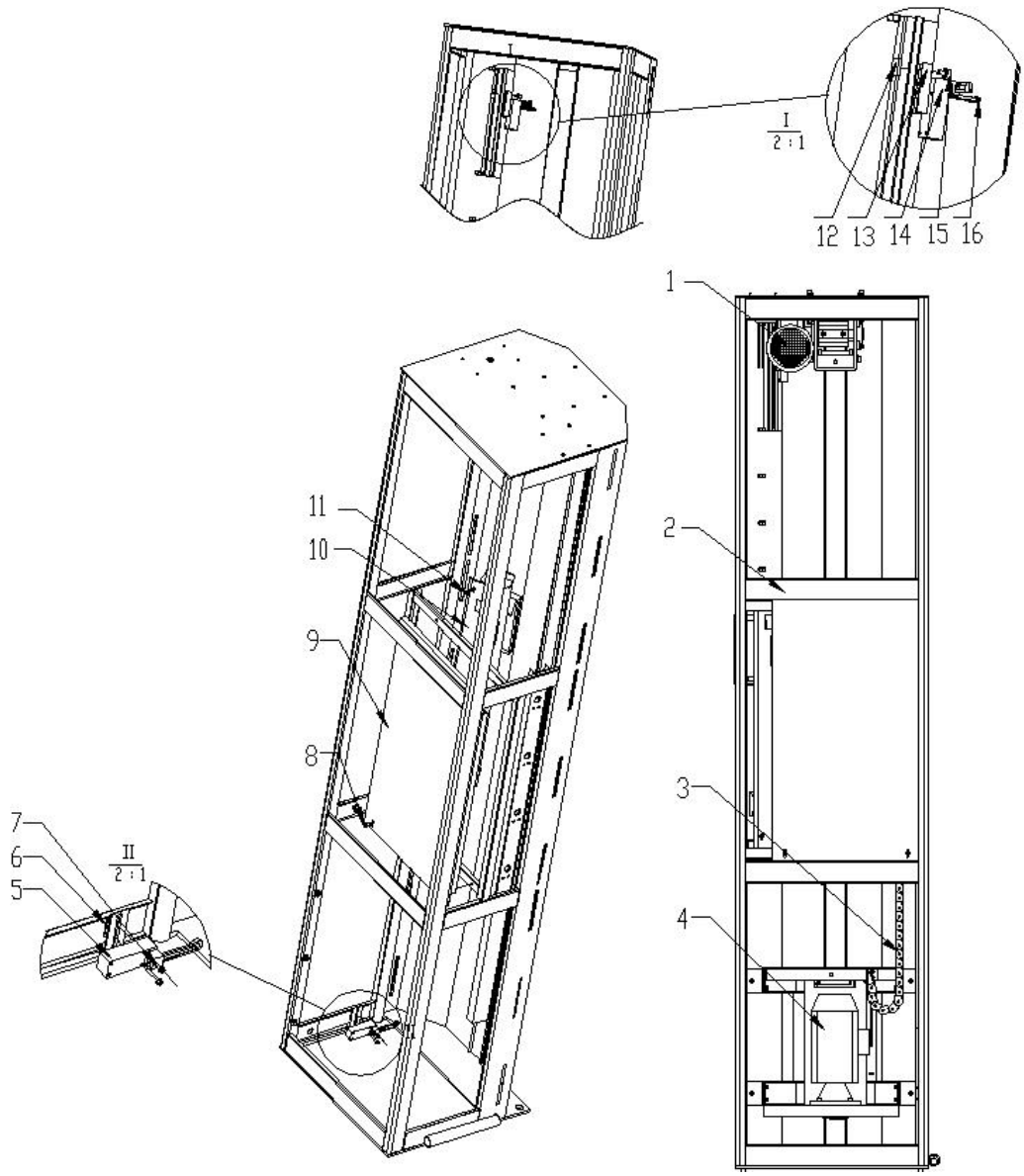



Install it on film carriage
Pressure sensor
Analog amplifier
PLC
Vertical touch screen
24V
0V
Smart wasp electric diagram
Model:S300
2/5
PLC


L03 N03
Siemens
Inverter1
Turntable motor
Inverter2
Lift motor
Siemens 3
Film carriage motor
Inverter 4
Roller motor
P N DI1 DI2 DI3 DI4 DIC 24V 0V
U1 V1 W1
U2 V2 W2
U3 V3 W3
U4 V4 W4
A B
USS
PE
Smart wasp electric diagram
Model:S300
3/5
Inverter

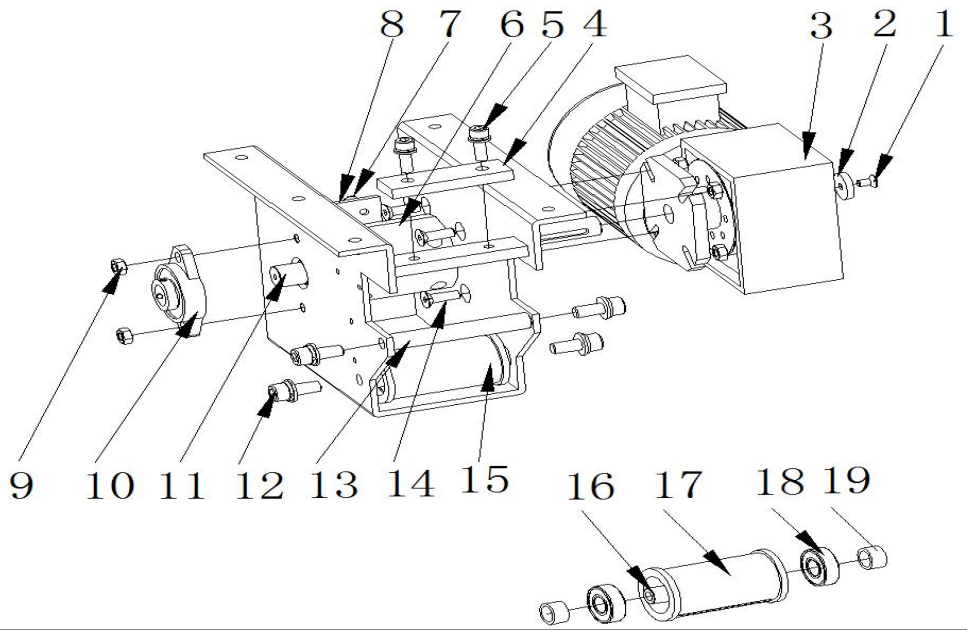

Turntable motor
Lift motor
Film motor
Roller motor
Power AC220V
Smart wasp electric diagram
Model:S300
Terminal row
4/5


Relay
Inverter
Break of turntable
Break of roller
grip motor control
Grip system motor
L+
N1-
N2-
24V
Smart wasp electric diagram
Model:S300
Terminal row
5/5

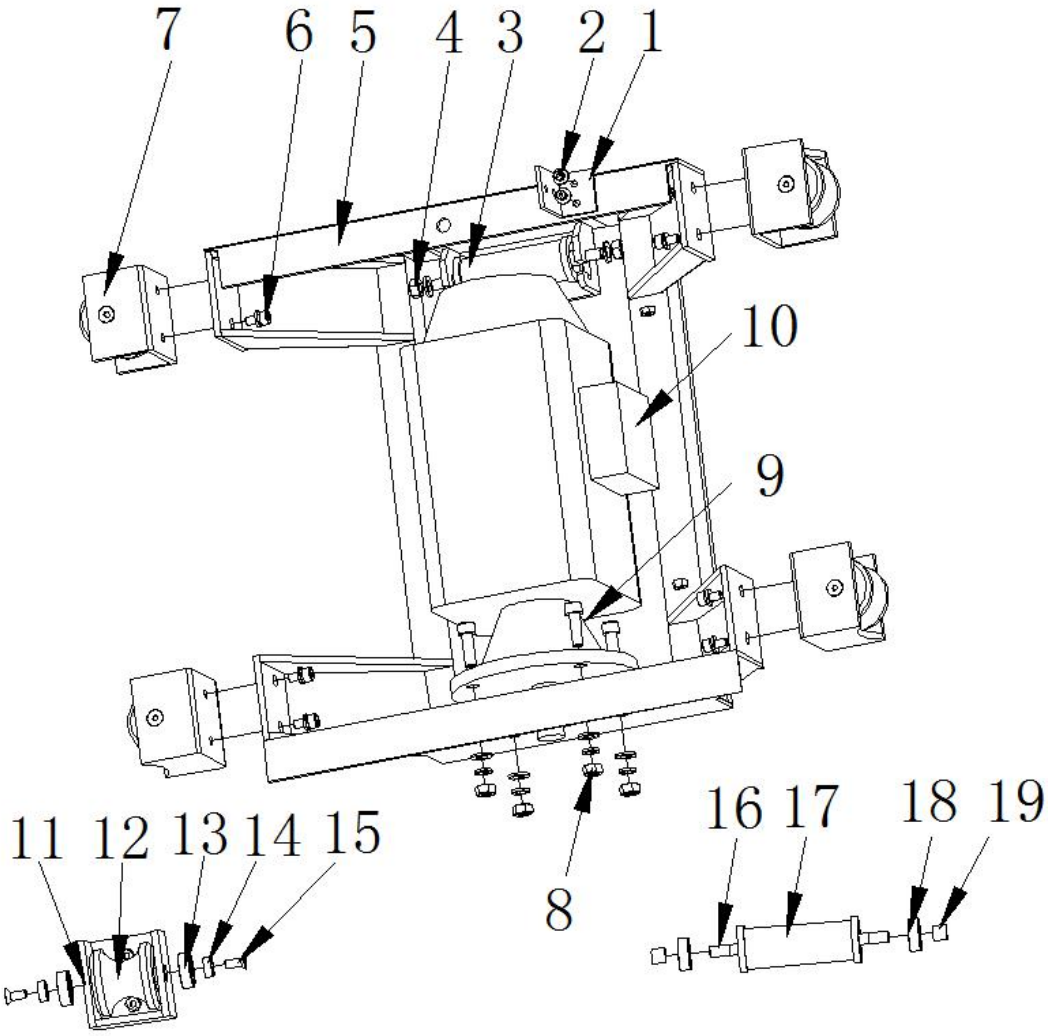


Serial no.	Part name	Drawing no.	no.
1	Up&down power unit	916B-0201-QA02	1
2	columns	916B-0201-PA01	1
3	Up&down Tank chain		1
4	Up&down install	916B-0201-QA04	1
5	Micro switch		1
6	Micro switch Fixed nut	916B-0201-N013	8
7	M4*30 screw/Spring gasket/Flat gasket		4
8	M5*12 screw/Spring gasket/Flat gasket		2
9	Distribution board	916B-0201-P006	1
10	Electrical shield plate	916B-0201-P007	1
11	M5*12 screw/Spring gasket/Flat gasket	916B-0201-Q011	4
12	Travel switch positioning nut	916B-0201-P019	1
13	Travel switch positioning board	916B-0201-P018	1
14	Micro switch		1

15	M6*12 screw/Spring gasket/Flat gasket		1
16	M4*30 screw/Spring gasket/Flat gasket		1

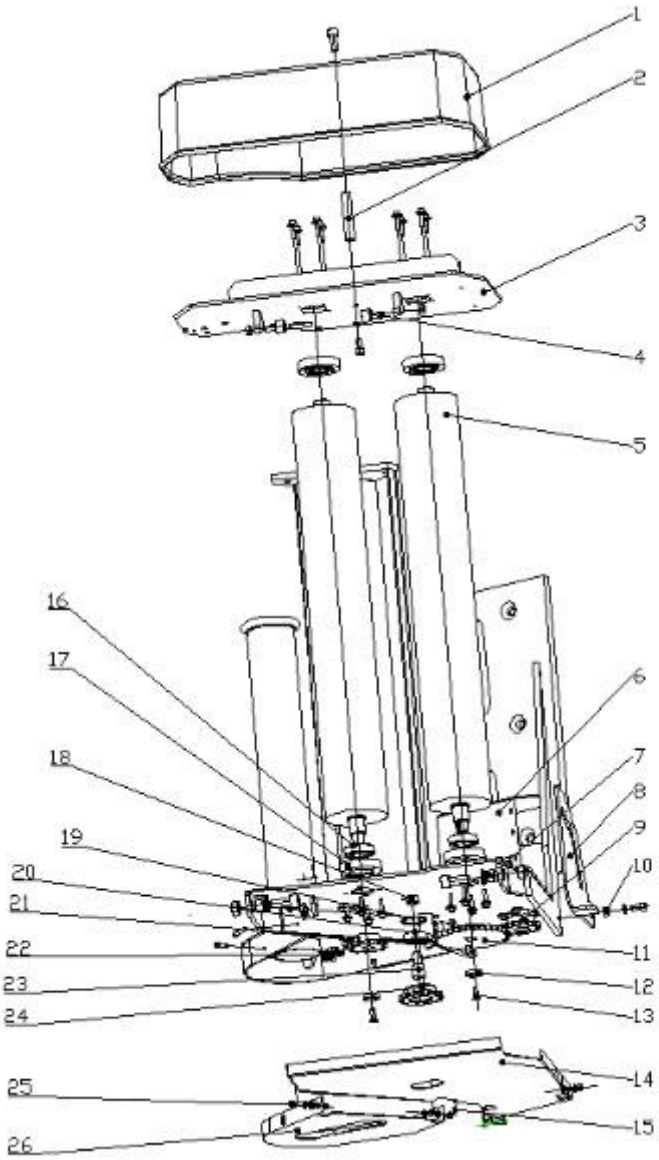


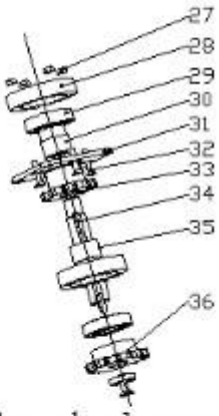
Serial no.	Part name	Drawing no.	no.
1	M6*15 Flat head screw		1
2	Limit piece	916B-0201-Q014	1
3	Up&down motor	916B-0201-Q030	1
4	Bag keep plate	916B-0201-Q013	1
5	M8*25 screw/Spring gasket/Flat gasket		2
6	Receives the belt clamp cover	916B-0201-Q018	1
7	M6*15 flat screw		2
8	Top belt Guide shaft	916B-0201-Q012	1
9	M8 NUT		6
10	bearing block	916B-0201-Q032	1
11	Take-up shaft	916B-0201-Q019	1
12	M10*25 screw/Spring gasket/Flat gasket		4
13	Top belt Guide shaft	916B-0201-Q021	1
14	M8*25 Flat head screw	916B-0201-QA03	6
15	Receives the belt fixed pulley group		1
16	Top fixed axle	916B-0201-Q024	1
17	Top fixed body	916B-0201-Q020	1
18	Take-up with bearing	916B-0201-Q034	2
19	Top fixed axle sleeve	916B-0201-Q025	2



Serial no.	Part name	Drawing no.	no.
1	Leather belt activity end fixed plate	916B-0201-Q011	1
2	M4*12 screw/Spring gasket/Flat gasket		2
3	Up&down Hook the wheel	916B-0201-QA05	1
4	M8 screw/Spring gasket/Flat gasket		2
5	Up$down body	916B-0201-QA07	1
6	M6*12 screw/Spring gasket/Flat gasket		8
7	Guide wheel installment	916B-0201-QA06	4
8	M8 screw/Spring gasket/Flat gasket		4
9	M8*25 screw/Spring gasket/Flat gasket		4
10	Up&down motor	916B-0201-Q031	1
11	Guide wheel rack	916B-0201-Q011	4
12	Guide wheel	916B-0201-Q029	4
13	Guide wheel bearings	6000	8
14	Guide wheel axle sleeve	916B-0201-N028	8
15	M8*15 head screw		8
16	Up&down wheel axle	916B-0201-Q023	1
17	Up&down wheel body	916B-0201-Q022	1

18	Bearings for lifting hooks	916B-0201-Q035	2
19	Lifting wheel axle sleeve	916B-0201-Q026	2

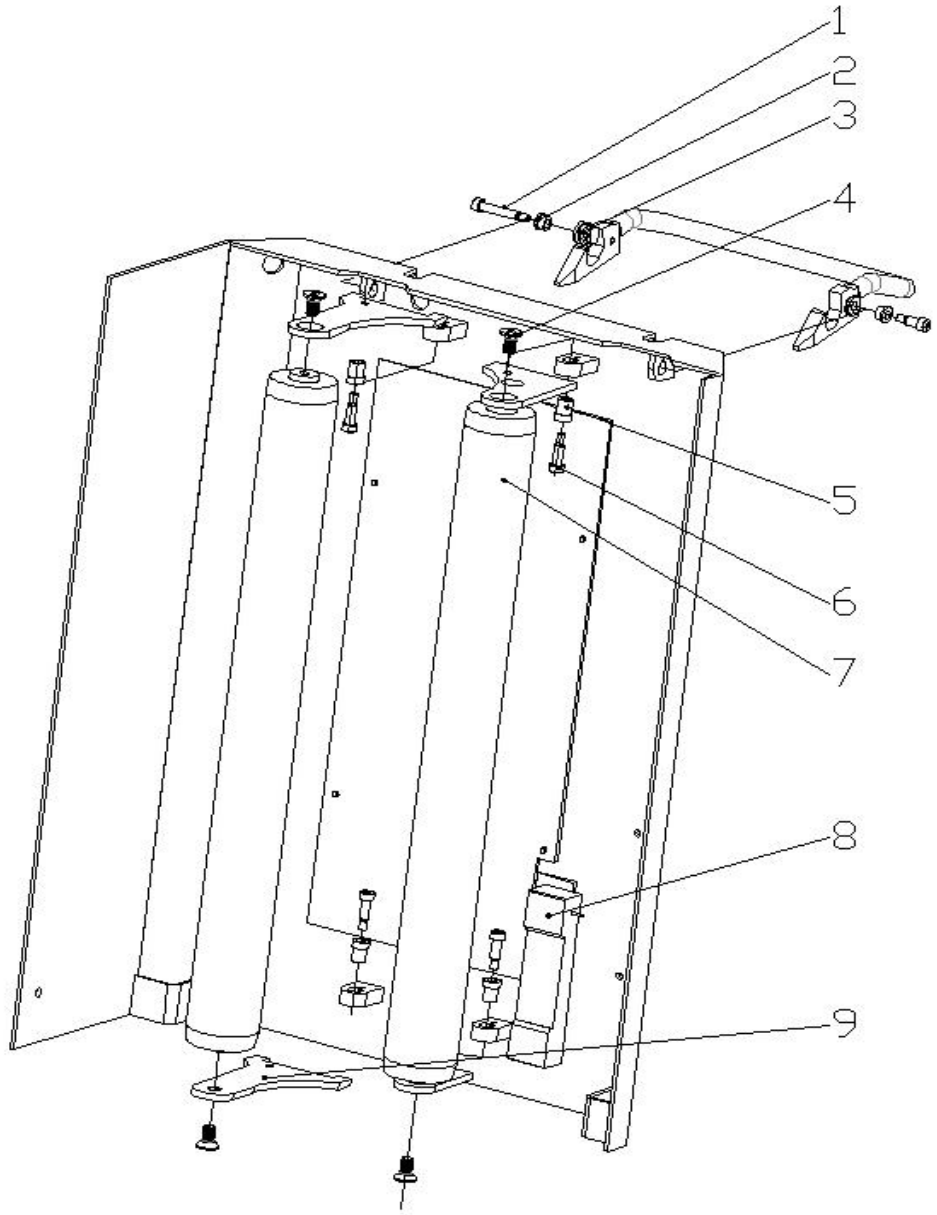




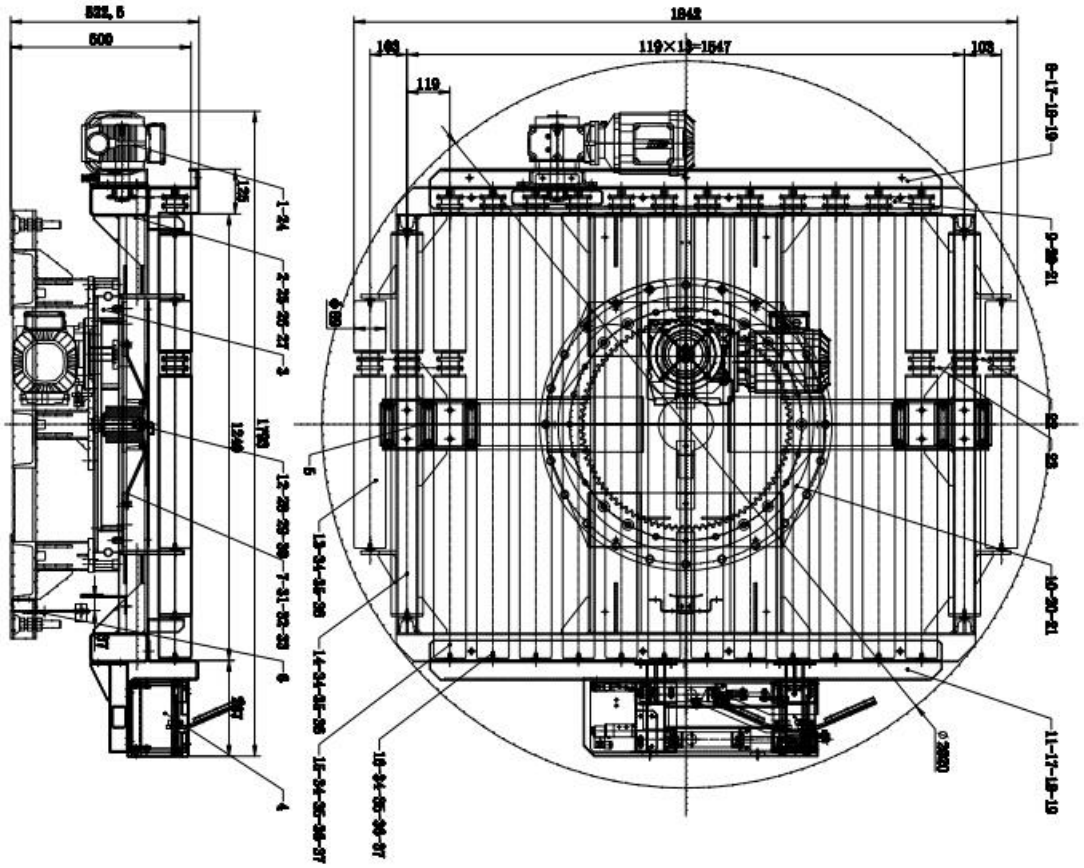
Excessive wheel group

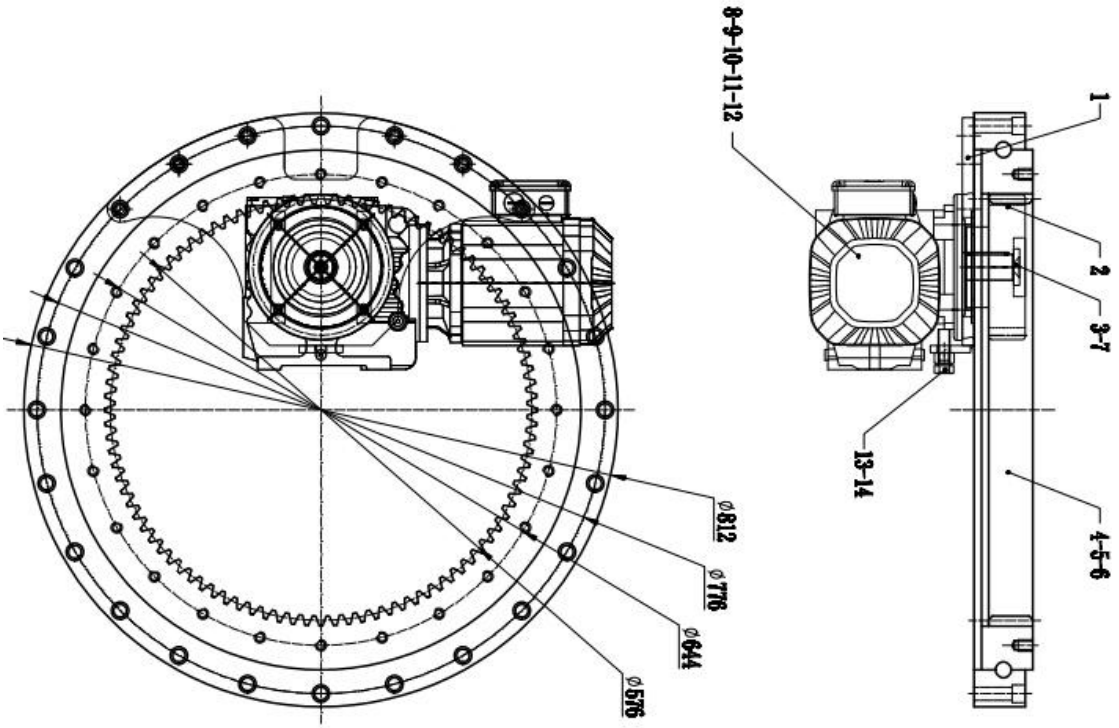
Serial no.	Part name	Drawing no.	no.
1	Mold shield	S022	1
2	Mold shield fixed column	S023	1
3	Mold shield fixing plate	SA04	1
4	Guide wheel	S039	2
5	Pulls the membrane drum	S048	2
6	Film frame transmission cover	S014	1
7	Membrane holder with steel bushing(Door pivot point)	S025	2
8	Open the door limit board	S024	1
9	Transition wheel group	SA15	2
10	Membrane holder with steel bushing(door limit board)	S025	2
11	Transmission driven sprocket	S051	1
12	pressing plate	S047	3

13	M5*16 flat head screw		3
14	Safety plate	S047	1
15	Safety plate torsional spring	S062	2
16	Bearing-61904		4
17	Pulls the membrane drum fixed stand	S046	4
18	Tightens the axle sleeve	S050	1
19	The hole uses the circlip (D=30mm)		1
20	Bearing -6200		1
21	Transmission drive sprocket	S044	1
22	Micro-switch D3M-01K2		2
23	tension shaft	S049	1
24	tension sprocket	S052	1
25	Safety board shaft sleeve	S065	2
26	Safety board 2	S058	1
27	M4 nut		24
28	Pulls the membrane drum fixed stand	S046	1
29	Bearing-61904		2
30	Transition shaft roof section	S045	1
31	mounting plate	S050	1
32	M4*20 flat head screw		4
33	Producing membrane driven sprocket	S042	1
34	Flat chain		2
35	Transition shaft main parts	S043	1
36	driven sprocket	S044	1



Serial no.	Part name	Drawing no.	no.
1	M5 Contour bolt	S140	1
2	Film carriage copper bushing(Hand left axis)	S025	1
3	Door handle reset spring	S038	1
4	M8*16 flat head bolt		4
5	neck bush	S25	4
6	M5-15 Contour bolt		4
7	No power roller installation	SA19	2
8	Pressure Sensor		1
9	Separating roller fixed piece	S034	1

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13-14
4-5-6
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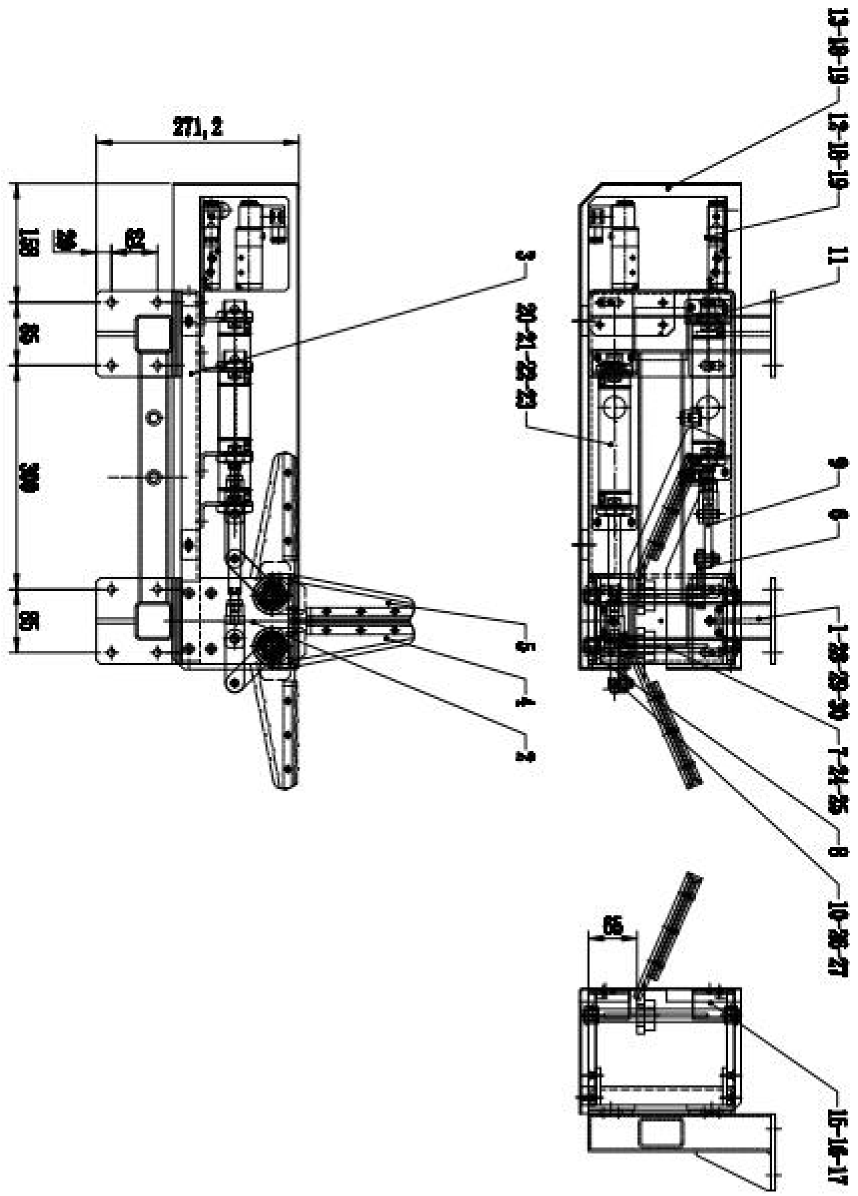
ø776
ø644
ø576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2
13-18-19
12-18-19
11
9
6
1-28-29-30
7-24-25
8
10-26-27
65
15-16-17

37		GB/T 70.3-2000	screws	12	M12×15		purchased part
36		GB/T93-1987	spring washer	20	M12		purchased part
35		GB/T 95-2002	flat washer	20	M12		purchased part
34		GB/T 70.1-2000	screws	20	M12×15		purchased part
33		GB/T6170-2000	nut	2	M8		purchased part
32		GB/T 95-2002	flat washer	4	M8		purchased part
31		GB/T 70.1-2000	screws	4	M8×20		purchased part
30		GB/T 70.1-2000	screws	4	M5×15		purchased part
29			through connector	1	1/4"-φ8		purchased part
28			90° push connector	1	1/4"-φ8		purchased part
27		GB/T 95-2002	flat washer	4	M16		purchased part
26		GB/T93-1987	spring washer	14	M16		purchased part
25		GB/T 70.1-2000	screws	14	M16×30		purchased part
24		GB/T1243-1997	chain	1条	10A-1×42（含链扣）		purchased part
23		GB/T1243-1997	chain	12条	10A-1×28（含链扣）		purchased part
22		GB/T1243-1997	chain	2条	10A-1×26（含链扣）		purchased part
21		GB/T 95-2002	flat washer	9	M6		purchased part
20		GB/T 70.2-2000	screws	9	M6×10		purchased part
19		GB/T93-1987	spring washer	8	M10		purchased part
18		GB/T 95-2002	flat washer	8	M10		purchased part
17		GB/T 70.1-2000	screws	8	M10×20		purchased part
16	SB-ZX02	BA0009	power roller D	10			purchase by drawing
15	SB-ZX02	BA0008	power roller C	2			purchase by drawing
14	SB-ZX02	BA0007	power roller B	2			purchase by drawing
13	SB-ZX02	BA0006	power roller A	2			purchase by drawing
12	SB-ZX02	BA0005	fixed flange	1	A3		machining part
11	SB-ZX03	BA0005	lead rail 2	1	A3		welding part
10	SB-ZX03	BA0004	dust cover	1	A3		welding part
9	SB-ZX03	BA0003	chain cover	1	A3		welding part
8	SB-ZX03	BA0002	lead rail 1	1	A3		welding part
7	SB-ZX03	BA0001	folded plate	2	A3		welding part
6	SB-ZX03	BA6000	rotary reset sensor	1	/		subassembly
5	SB-ZX06	BA5000	support wheels	2	/		subassembly
4	SB-ZX06	BA4000	pneumatic clamp	1	/		subassembly
3	SB-ZX03	BA3000	rotation	1	/		subassembly
2	SB-ZX06	BA2000	roller racle	1	/		weld assembly
1	SB-ZX06	BA1000	powered conveyor	1	/		subassembly
NO.	Mold NO.	Workpiece NO.	name	qty	material&spec	weight	Remark

NO.	Mold NO.	Workpiece NO.	name	Q	materials&spec	weight	remark
1	8B-ZX06	BA4100	mounting rack	1	/		weld assembly
2	8B-ZX03	BA4200	standing plate	2	/		weld assembly
3	8B-ZX03	BA4300	fixed seat	1	/		weld assembly
4	8B-ZX06	BA44000	clamping arm A	1	/		subassembly
5	8B-ZX06	BA45000	clamping arm B	1	/		subassembly
6	8B-ZX03	BA4600	crank throw	2	/		weld assembly
7	8B-ZX03	BA4001	axle	2	45#		machining part
8	8B-ZX03	BA4002	copper bush	4	tin bronze		machining part
9	8B-ZX03	BA4003	connecting rod	B2	A3		machining part
10	8B-ZX03	BA4004	pin roll A	2	tin bronze		machining part
11	8B-ZX03	BA4005	fixed trestle	4	A3		stamping part
12	8B-ZX03	BA4006	mounting plate	1	A3		stamping part
13	8B-ZX06	BA4007	shield A	1	A3		stamping part
14							
15	8B-ZX03	BA4009	folded plate	2	A3		stamping part
16		GB/T70.3-2000	screws	2	M4×10		purchased part
17		GB/T70.2-2000	screws	4	M4×10		purchased part
18		GB/T70.2-2000	screws	8	M6×10		purchased part
19		GB/T95-2002	flat washer	8	M6		purchased part
20		MA-40×100-S-CM	airtag	2			purchased part-Airtac
21		F-M12125YA	Y joint	2			purchased part-Airtac
22	8B-ZX03	BA4010	thin serrated nut	2			purchase by drawing
23		DS1-M-020-S40	induction switch	4			purchased part-Airtac
24		GB 894.1-86	ring shield	4	d=15		purchased part
25		GB/T1096-2003	flat key	2	5×140		purchased part
26		GB/T 95-2002	flat washer	2	M10		purchased part
27		GB/T 91-2000	cotter A	2	3.2×16		purchased part
28		GB/T5783-2000	bolt	16	M8×15		purchased part
29		GB/T95-2002	flat washer	16	M8		purchased part
30		GB/T93-1987	spring washer	16	M8		purchased part

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