SADF-540
Automatic Laminating Machine

User manual

Preface

Dear users,

Welcome to select and use Guangming's products.

In order to ensure smooth operation and excellent working state to this laminating machine, please read the user manual carefully before you operate the machine.

Contents

1. Profile:

SADF-540 is small automatic laminating machine which newly designed to meet the market requirements in the laminating machine market. It is featured in the compact structure and humanized design

SADFM-540 is used for laminating thermal film and paper sheets. It is equipped with feeder automatic and automatic separating device, which are steady and highly active. The machine is also equipped SCHNEIDER、OMRON etc which is famous brand parts in order to make sure it is steadier and safer. The machine is automatic one, which is equipped with feeder automatic. Heating roller is equipped oil transfer device to guarantee the laminating temperature. In electrical system, there is PLC controller which makes the high precision of paper feeding smooth running long service life and easy maintenance. It is suitable for thermal film, especially for certificate cards book cover packing box and son.

Configurations and features of this machine:

A、 Automatic paper feeder adopts oil-free vacuum pump to feed paper automatically.

B、 Automatic paper feeding system is equipped with no paper protector and paper break protector, which are controlled by photoelectric and mechanical systems.

C、 Man-machine interface system: color touch screen simplifies

the machine operation. On the touch screen, as long as the operator inputs paper size, overlap length and working speed etc., the machine can realize completely automated operation. And on touch screen, working status of the machine can be checked at any time.

D、 High precision of chrome plated heating roller is equipped with built-in oil heating system, which has excellent performance to temperature control. The laminating temperature is adjustable upon applications

E、 Pneumatic pressuring system provides automatically stable pressure to guarantee good laminating quality. And the pressure can also be adjusted upon requests.

F、 Air expansion shaft releases film roll, and positions film roll more accurately, and also makes the loading and unloading of film roll more convenient.

G、 The combination of air expansion shaft and braking device can adjust film release tension and speed.

H、 Film cutter cuts film width to make it meet paper size.

I、 Serrated perforating wheel perforates film edge for the automatic cut of laminated paper.

J、 Anti-curvature device: when going though the anti-curvature device, the laminated paper shall be leveled at once and

won’t curve again after cut.

K、 Pneumatic separating system realizes automatic paper cut.

L、 After cut, the laminated paper will be sent automatically to vibrating receiving table and be put into order.

2. Description on marks

2.1. Warning marks

In this manual, there are two kinds of warning marks. One is precaution, and the other is prohibition.

Precaution: wrong operation is dangerous to equipments and humans.

Prohibition: improper operation might lead to injury or death.

Beware of crushing to your hand: improper operation might lead to crushing to your hand.

Beware of crushing to your hand: improper operation might lead to crushing to your hand.

No touch:

Don’t touch it for it is hot.

Caution, electrical hazard!

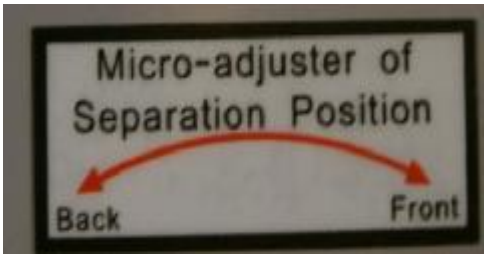
Beware of injury to your hand:

Beware of your hands:fot it is hot

2.2. Operation marks

Tension adjuster of traction rollers:

Turn manual wheel clockwise to increase clutch tension; Turn manual wheel counterclockwise to decrease clutch tension

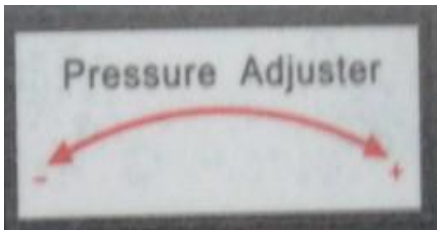


Micro-adjuster of separation position:

Turn the manual wheel to Front position, time of paper separation is brought forward. Turn the manual wheel to Back position, time of paper separation will be delayed.

Adjustment of anti-curvature device:

Turn the manual wheel clockwise when paper Is thin. Turn the manual wheel counterclockwise when paper is thick



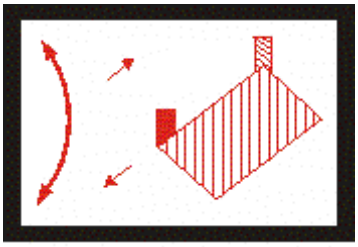
Separation pressure adjuster

Turn the manual wheel clockwise to increase the separation pressure; Turn the manual wheel counter clockwise to decrease the separation pressor

Before running the machine, please turn on the this switch. After the machine is stop, please turn off the this switch

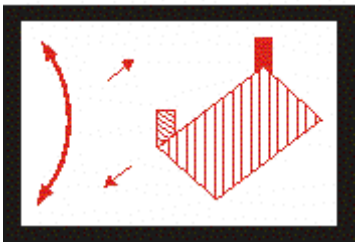
Button of emergency stop:

When the machine needs to be stopped immediately, please push this button.



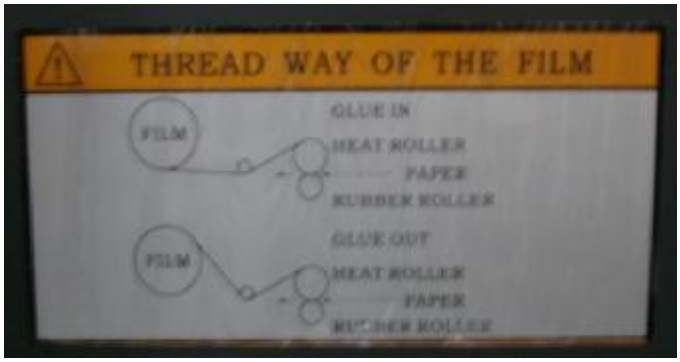
Left regulator of paper feeding:

To turn the handle bar clockwise, the distance between left & right regulators will be enlarged.To turn the handle bar counterclockwise, the distance between left and right regulators will be shortened



Right regulator of paper feeding:

To turn the handle bar clockwise, the distance between left & right regulators will be shortened. To turn the handle bar counterclockwise, the distance between left & right regulator will be enlarged.



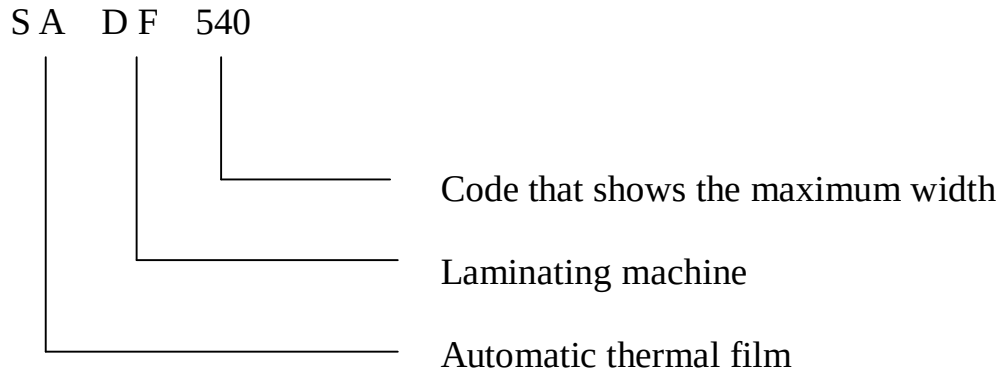
Guiding of laminating film:show you how guide the film

Power socket of motor in vibration table.

Power socket of vacuum pump

3. Technical parameters:

3.1 Description of model number



3.2 Main technical parameters:

1、Maximum paper sheet: 540X780mm

2、Minimum paper sheet: 290X290mm

3、Workable paper thickness:125-500g/m^2

4、Laminating speed: 0-30m/min

5、Heating power: 9kW

6、Laminating temperature: ≤130℃

7、Laminating pressure: 0.6－0.8MPa

8、Voltage: 380V 50HZ

9、Main power: 19KW

10、Overall dimension: 2300*1300*1625mm

11、Weight: 1000kgs

12、Noise: ≦70dB

13. Max. carrying capacity of the feeding table: 400KGS

4. Structure and working principle

The machine is composed of automatic paper feeding system, laminating system, oil heating system, paper cutting system, automatic paper collecting system and electrical and pneumatic control system. Please refer to the followings diagram 1!

Working principle : Paper sheets fed by automatic feeder are transferred to the front layfor the lamination with film. The laminated paper sheets go through anti-curvature device, and enter separating system for paper separated. The separated paper sheets are sent to vibrating receiving table to pile up.

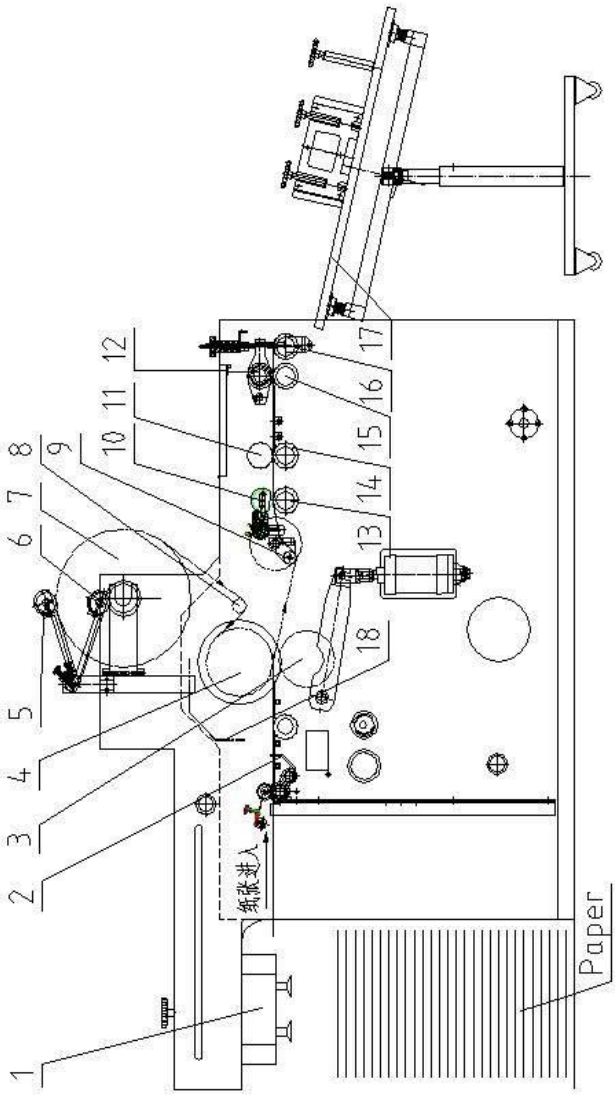


Diagram 1: Structure diagram

1. Feeder automatic
2. Front guide
3. Rubber pressure roller
4. Heating roller
5. Perforating device
6. Film cutter
7. Film
8. Film guiding roller
9. Anti-curvature device
10. Perforating device
11. Top traction roller
12. Top cutting roller
13. Bottom perforating roller
14. Bottom traction roller
15. Bottom cutting roller
16. Conveying roller
17. Vibrating receiving table
18. Protection cover

5. Installation and adjustment

5.1. Installation

5.1.1 Preparation: before the installation, please prepare a forklift truck with 1MT loading capacity. When the wooden cases are opened, please check carefully if all parts and accessories are packed in the packages.

5.1.2 After the wooden cases opened, Please check the followings parts carefully.

Main machine Air compressor Vacuum pump Vibration table for paper sheets collect

5.1.3 Please install the host unit on the flat ground. Adjust the height of foot screws to make the machine be stable and level.

5.1.4 Hoisting and carrying: the main machine need hoisting and carrying.

Move the air compressor, vacuum pump and vibrating receiving table toward the host unit of laminating machine. The layout of the whole laminating machine is same as below-mentioned diagram. When hoisting, please beware of ground and handle with care lest that the paint and the spare part in the machine is damaged.

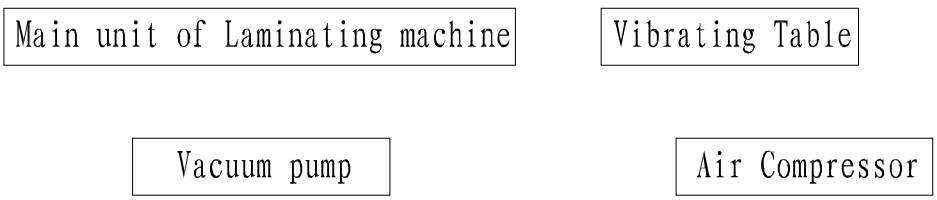


Diagram 2

5.1.5 Parts connection

5.1.5.1 Installation of vibrating receiving table: Collect together the parts of vibrating table showed respectively in following diagram,table board bracket, table board and 2 regulating plates (long and short regulating plates). Put the bottom supporter in the ground.On the bottom supporter, there is a fix screw.Install the table board into the bottom supporter. After adjusting the height,please fix the screw. Upon the size of lamination paper, choose the proper position to fix the long and short regulating plates

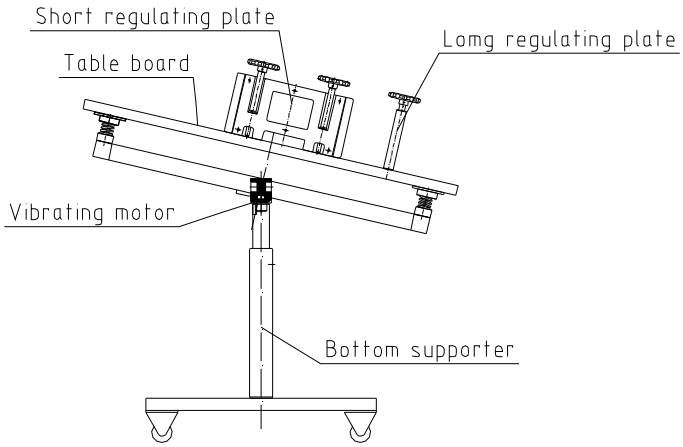


Diagram 3

5.1.5.2 Power connection and air pipe connection of air compressor: it is power socket of air compressor in diagram 4

Power socket of air compressor

Diagram 4

Please connect the air pipe joint of air compressor as diagram 8 with the air inlet of water segregator as diagram

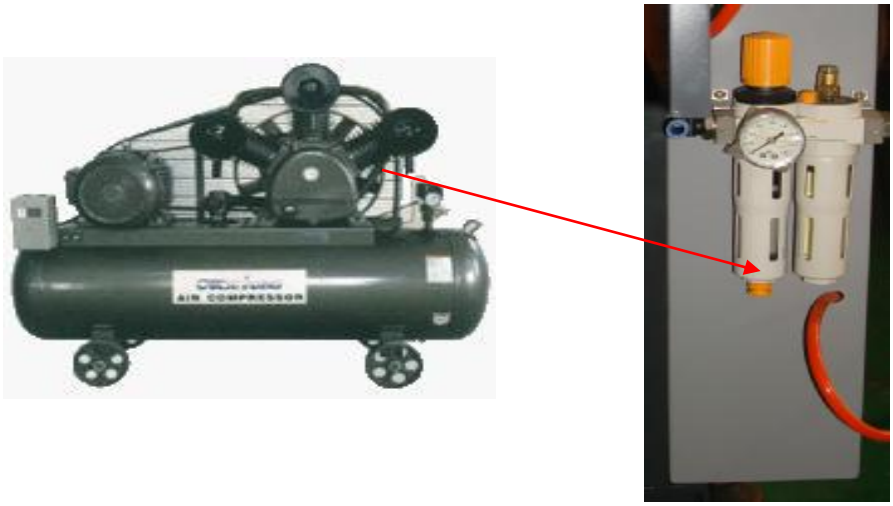


Diagram 5

5.1.6 Please connect all aviation plugs to the machine.

5.1.7 For safe operation, please make sure that the machine is well grounded.

5.2. Adjustment:

5.2.1 Adjustment of feeder automatic:

For the adjustment and usage of feeder, please refer to “Feeder User Manual”.

5.2.2 Front lay adjustment (See diagram 6)

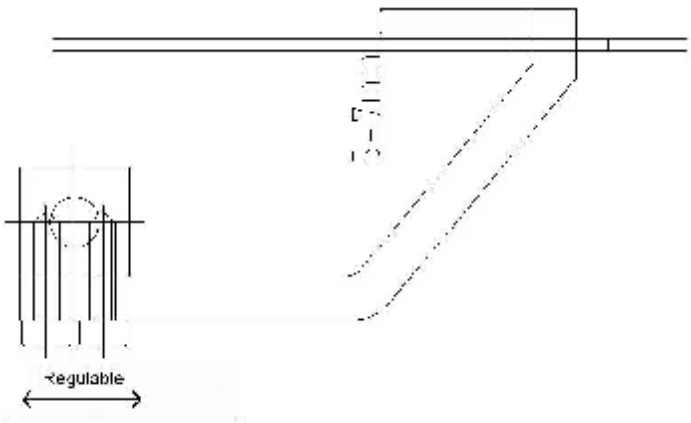


Diagram 6

5.2.2.1 If front lay are not collinear, paper sheets will be conveyed on the skew. Please adjust front layin time.

5.2.2.2 For the adjustment of front lays, please put a piece of paper to touch the front lays and check if the four front lays are in collinear. If one or some of front lays have deviated, please use a wrench to loosen the fix screw of front lay accordingly, and move front lay backward or forward to make all front lays collinear, and finally fix it.

5.2.2.3 Adjustment of front lay and press wheel

1) The adjustment to front lay and front press wheel is very important, and directly concludes overlap precision.

Descriptions to working principle: When paper is sent out and conveyed on conveying table, the first piece of paper might be skew for the suction of air aspirator. So please take away the first piece of paper from the conveying table as diagram 7.

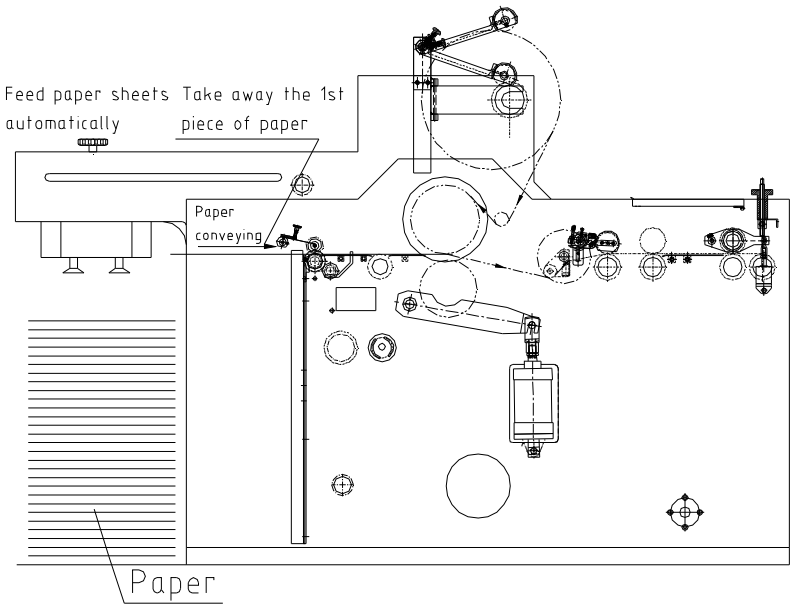


Diagram 7

The paper is kept conveying toward the press wheel. When it reaches a certain place, e.g. 3mm distance to the press wheel, the front press wheel will rise at once shown as diagram 8.

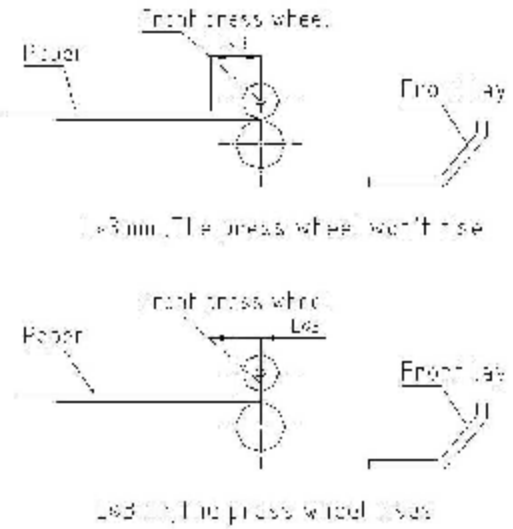


Diagram 8

2）During paper conveying, if it can't meet the requests indicated in diagram 8, please adjust the front press wheel. Adjusting method refer to the following.

①Please find the cam which drives the front press wheel shown in the following diagram 9

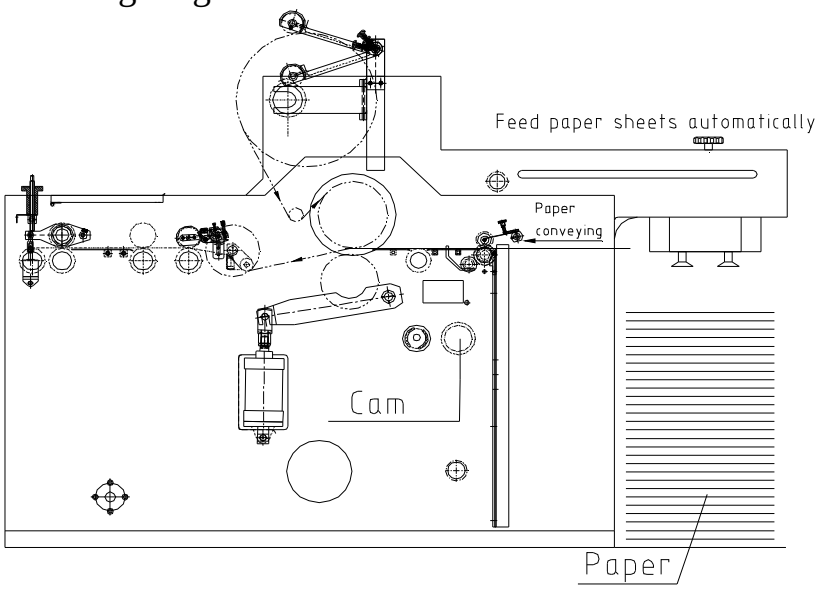
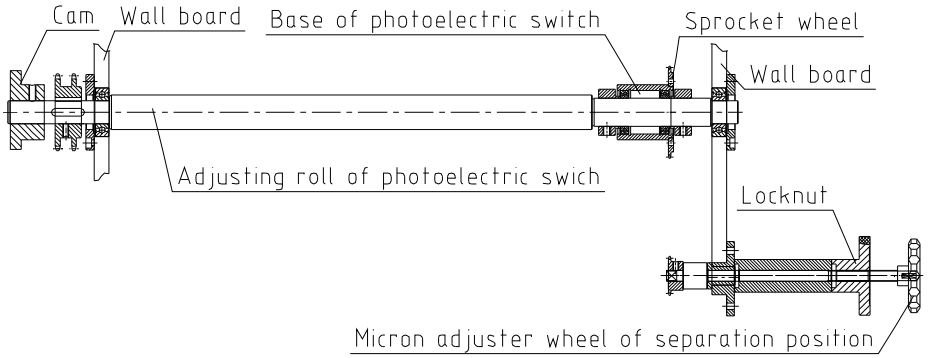
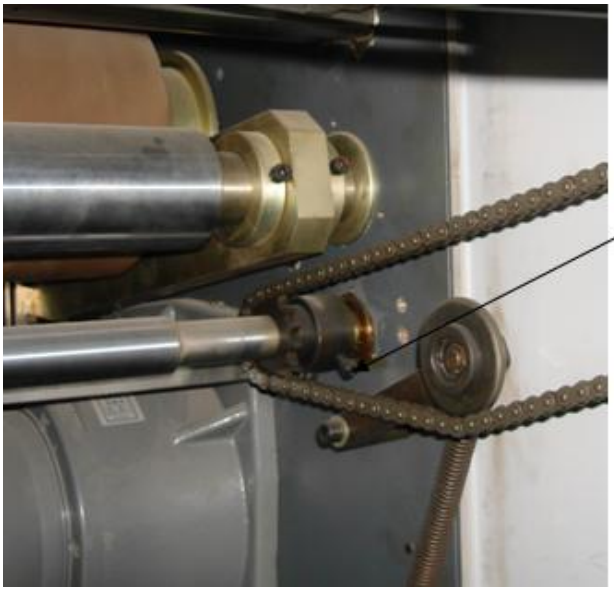


Diagram 9





Fix screw on the cam

Diagram 10

The automatic feeder is kept sending paper. When the paper reaches the place with 5mm distance to the front press wheel, stop the machine. Then loosen the fix screw on the cam shown in diagram 10, and press inching button of host unit. At this time, the feeding unit doesn't run, but the laminating unit runs. When the front press wheel starts to rise, loosen inching button at once. Then tighten the fix screw of sprocket wheel.

Front lay shall work in a harmony with front press wheel. When press wheel rises, front lay rises. If front press wheel drops, the front lay drops.

5.3. Overlap adjustment:

On touch screen, please input paper length and overlap length. If the overlap length after lamination is not same as input data, please correct it in overlap revision.

5.4. Usage and adjustment of film release device:

5.4.1 The film release device of this laminator is equipped with air expansion shaft. And the film release tension can be controlled by pneumatic clutch.

5.4.2 The shaft diameter without expansion is 74mm. When the shaft expands under air pressure, the diameter will become 76-80mm. Before loading film roll, please first press the exhaust button by one hand or other tools to decompress the shaft. Put thermal film roll on the shaft.

The film guiding modes are showed in diagram 11.

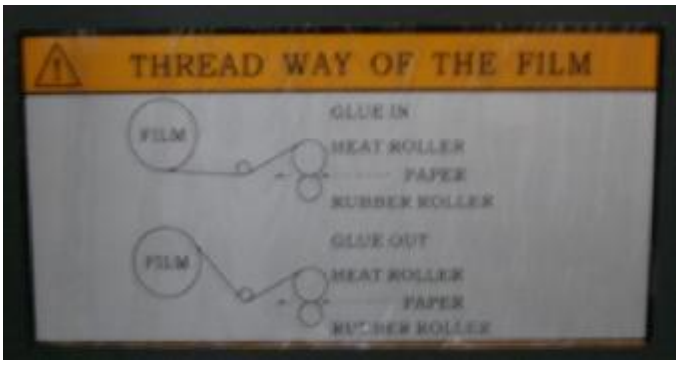


Diagram 11

5.4.3 When film roll is put on the shaft, please note the calibration on the two ends of the shaft, and try to make the position of film roll and paper position aligned. Then use inflatable gun to inflate the shaft. Please be well noted that pneumatic pressure in the shaft can not be too big, otherwise the valve core of air expansion shaft will be damaged. When the air expansion shaft expands, the film roll will be fixed. At this moment, if the position of film roll is not in accordance with paper position, please turn the manual wheel beside the air expansion shaft (as diagram 11-1) for micro-adjustment to film roll position. By the manual wheel, the film roll can move right or left 3-5mm.

Diagram11-1

5.4.4 About Usage of film cutter and perforating wheel, please refer to

the diagram15.The film cutter is a disk blade which is fixed on the support arm. And the support arm is mounted by a lock pin on a pole which has a slot. The two sides of the support arm are locked by two fix rings.

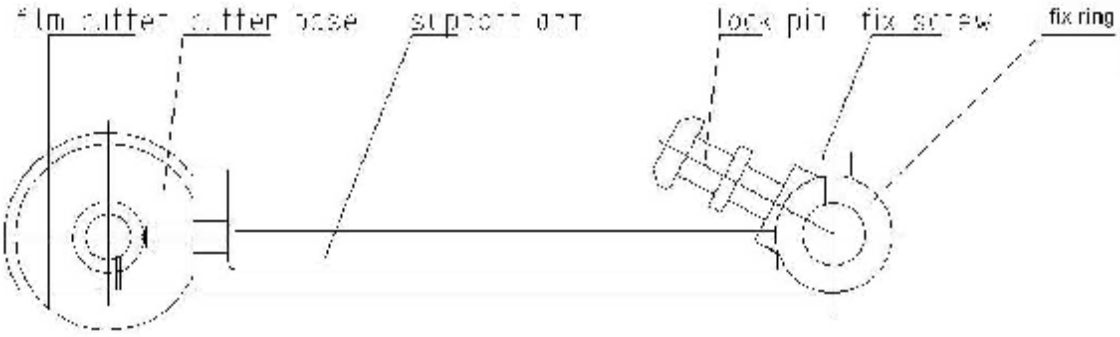


Diagram12

5.4.4.1When the film roll needs to be cut, please lift up support arm by one hand, and by the other hand pull up the lock pin on the support arm. Put down the support arm gently to make the cutter press the film roll.

5.4.4.2If users need to adjust requested film width, then please move the support arm right or left. The methods as bellow:

5.4.4.2.1 Loosen fix rings which fix the support arm.

5.4.4.2.2 Lift up support arm by one hand, and by the other hand pull up the lock pin on the support arm.

5.4.4.2.3 Move the support arm to the needed position. And then put down the support arm gently to make the cutter press the film roll.

5.4.4.2.4Fasten the fix rings again to fix the support arm.

When the machine starts running, the film roll will be cut, and the redundant film will be left on the air expansion shaft. Please attention: before the machine running, please use a small piece of adhesive tape to stick the end of redundant film, otherwise the left film roll will loosen.

5.4.4.3 If the film roll's width just matches paper width and film roll doesn't need to be cut, please lift up the cutter. And the cutter will be locked automatically on the support shaft.

5.4.4.4The adjustment of perforating wheel is same as adjustment of film cutter. On film roll, the perforating wheel is generally put on a place which has a distance 1-3mm to the edge of film roll.

5.4.4.5 Serrated perforating device: serrated perforating device (as diagram 13) is composed of serrated perforating disk, small cylinder and cylinder seat. The perforating pressure is controlled by small cylinder. When serrated perforating disk rolls on film roll, small holes will be left on the film. If laminated paper needs automatic cut, the serrated perforating device shall be put into use.

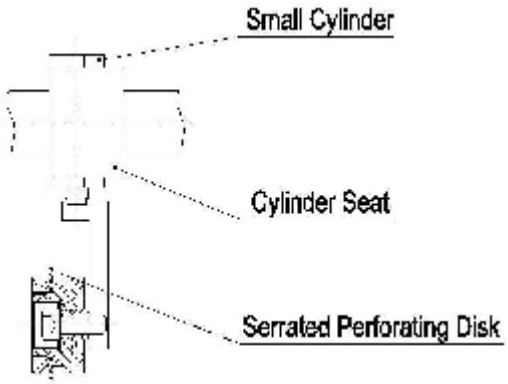


Diagram 13

5.5. Usage and adjustment of anti-curvature device

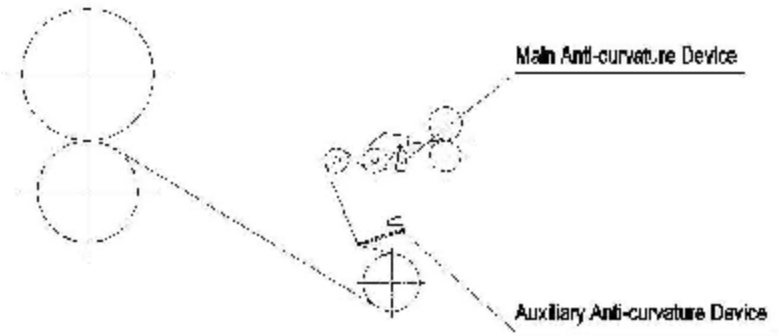


Diagram 14 Anti-curvature device

5.5.1When thin paper is laminated, please turn the manual wheel (showed diagram 14) clockwise to put down the anti-curvature device. That will make the device be in use.

5.5.2 When thick paper is laminated, please turn the manual wheel (showed diagram 14) counter-clockwise to pull up the anti-curvature device. That will decrease the function of anti-curvature.

5.6 Usage and adjustment of traction rollers

5.6.1 Working principle: Linear speed of traction roller group is faster than laminating speed. When laminated paper can’t pass the traction roller group and the lamination is keeping going, it means the friction of traction roller group is too small. If laminated paper sheets have been cut before going through traction roller group, it means the frication of traction roller group is too big. Under the two conditions, please adjust the friction of traction roller group.

5.6.2 How to adjust the traction roller: the friction of traction rolls is controlled by manual wheel shown in diagram 15. If the friction is too

low, please turn the manual wheel clockwise. If the friction is too big, please turn the manual wheel counter clockwise.

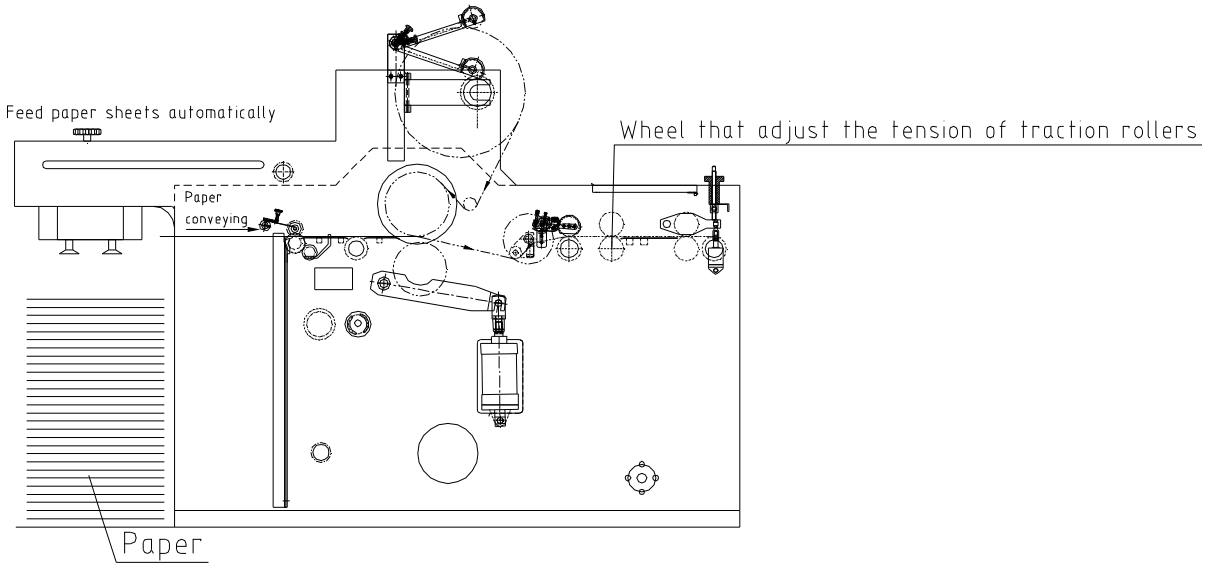


Diagram 15

5.7 Usage and adjustment of separating rollers:

5.7.1 At one end of cutting roller group, the gap between cutting rollers is controlled by adjusting screw (as manual wheel in diagram 19), and at the other end of cutting roller group, the bounce of cutting roll is controlled by swing arm of a cylinder. For automatic paper cutting, the film shall be perforated at its edge by serrated perforating disk. And the perforated film will be laminated on paper. When laminated paper goes through the cutting rollers, PLC system upon the signals transmitted

from photoelectric probe and encoder will control the bounce frequency of cutting roll. The linear velocity on cutting rollers is bigger than speed of traction rollers, so when the cutting rollers press together, the overlap of paper sheets will be separated, and the laminated paper is cut.

5.7.2 Please adjust the screw rod by turning the manual wheel as diagram 16 upon paper thickness. When thin or small paper is laminated, please turn the manual wheel clockwise to tighten the screw rod. If thick or big paper is laminated, please turn counter clockwise to loosen screw rod. In this way, it can decrease rough edges.

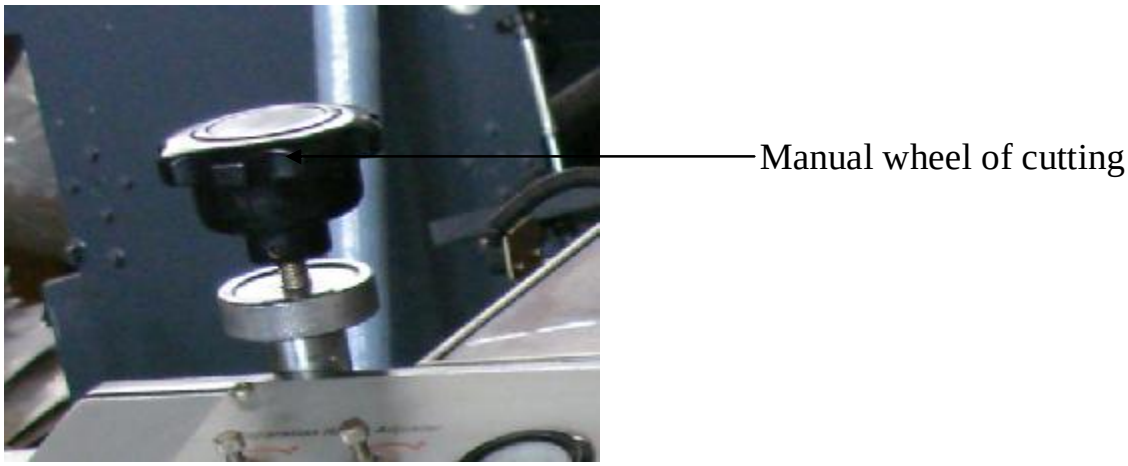


Diagram 16

5.7.3 The cutting roller group is used for the cut of laminated products. During cutting, please note the followings.

5.7.3.1The cut of laminated sheets shall occur when the overlap of laminated paper is between traction rollers and cutting rollers. Please refer to diagram 17

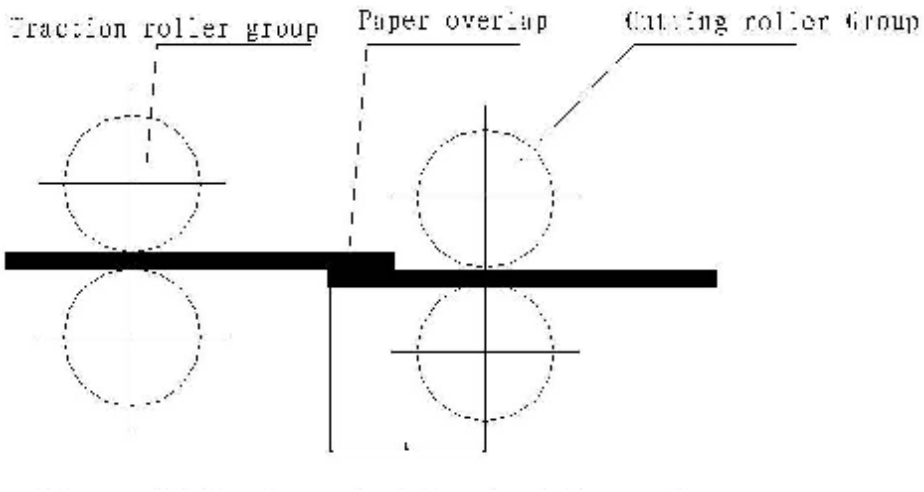


Diagram 17

5.7.3.2The position where paper cut occurs can be adjusted by turning the manual wheel showed as diagram 18-1. When the operator turn the manual wheel, the relative position of cutting positioning ring and screw nut on the sensor will be changed (diagram 18-2). And the change of the relative position can adjust cutting position of paper separation. When manual wheel is adjusted wheel, please tighten the fix screw nut as bellow.

Diagram18-1

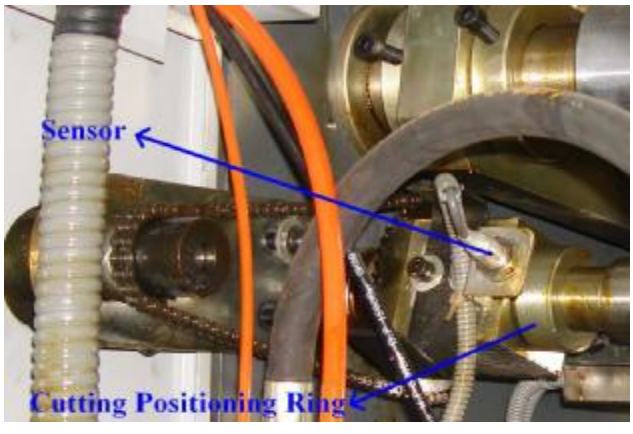


Diagram18-2

5.8 Adjustment of guiding wheels

Beside the cutting rollers, two guiding wheels (as diagram 19) are

equipped to skew laminated paper for smooth paper cut. The skew angle shall be 15-20 degree from the perforated edge. If the angle is too big, it might result in crinkles or irregular paper collection. In reverse, paper can't be cut smoothly.

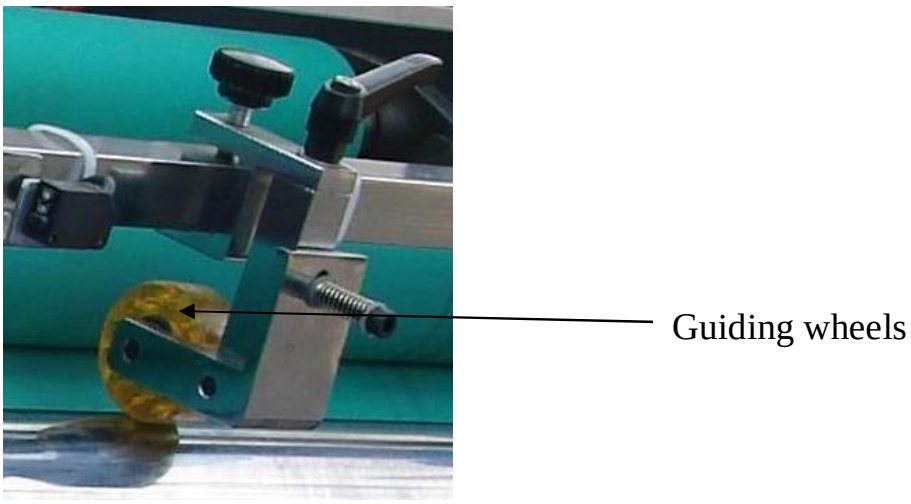


Diagram19

5.9 Setting and adjustment of touch screen

5.9.1 The start menu of touch screen as diagram 20

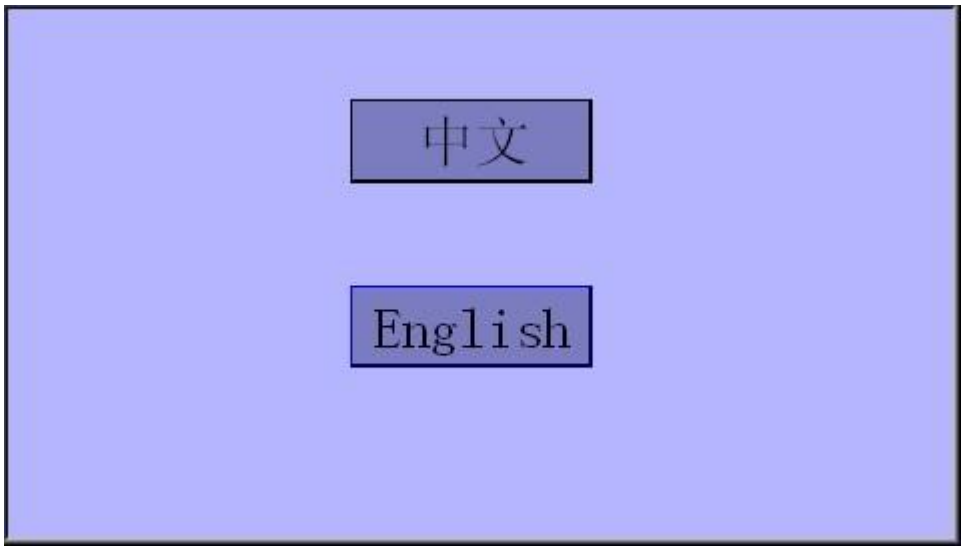


Diagram20

5.9.2 Please select the language (English) on the start menu to enter the next menu as Diagram 21

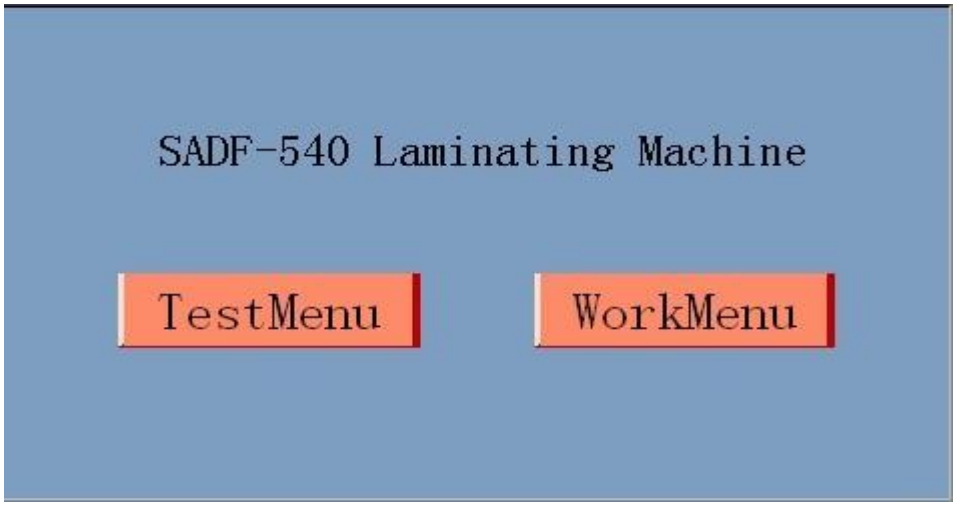


Diagram 21

5.9.3 On the menu as shown in Diagram 21, please select “WorkMenu” to enter the next menu as shown in Diagram 22.

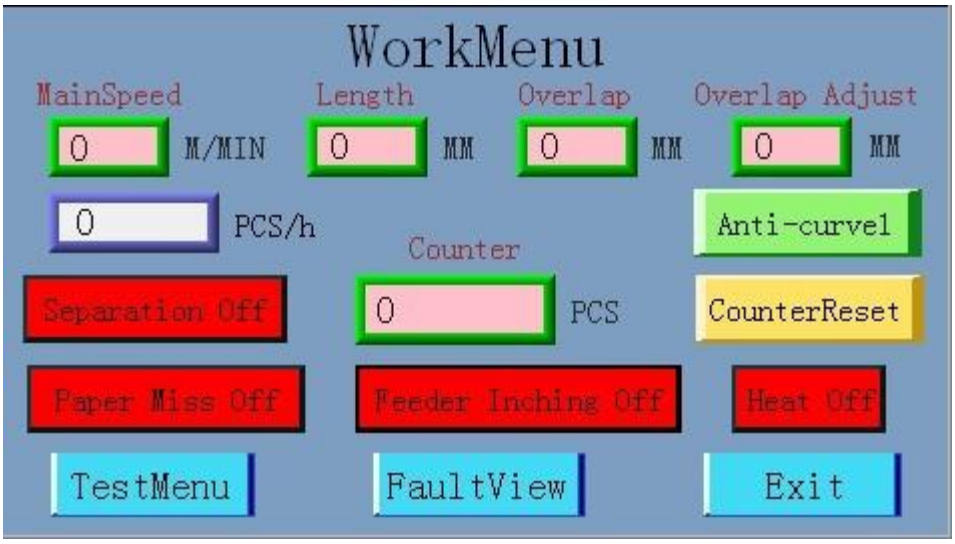


Diagram22

According to the actual needs in production, please input the parameters accordingly to obtain the most excellent production status.

5.9.4 On the menu as shown in Diagram 22 or in Diagram 21,it will enter to the next menu as shown in Diagram 23 if you touch the "TestMenu".

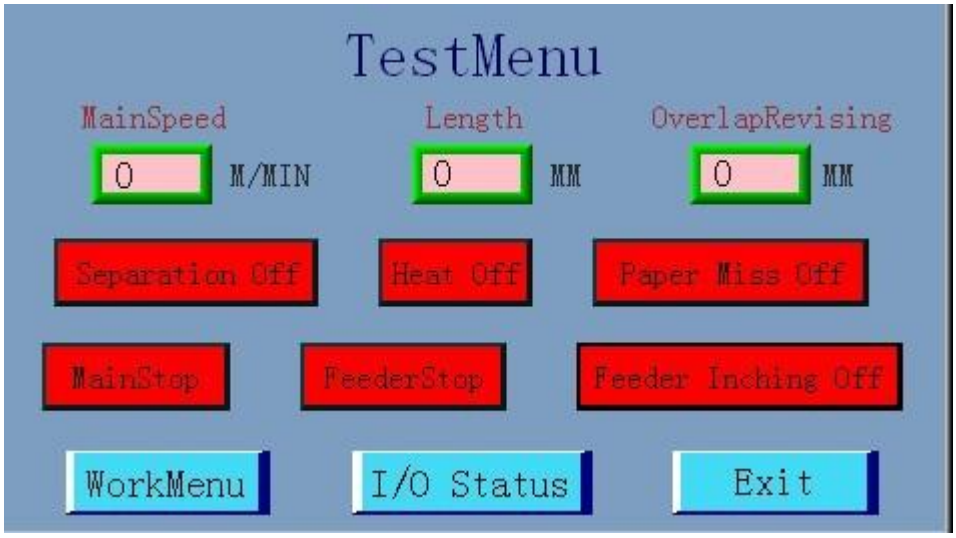


Diagram 23

Upon the actual needs of production test, please revise the relevant parameters to make the machine enter normal production status.

5.9.5 On the menu as diagram 23, if the button of I/O status is touched, the menu will be showed as diagram 24.

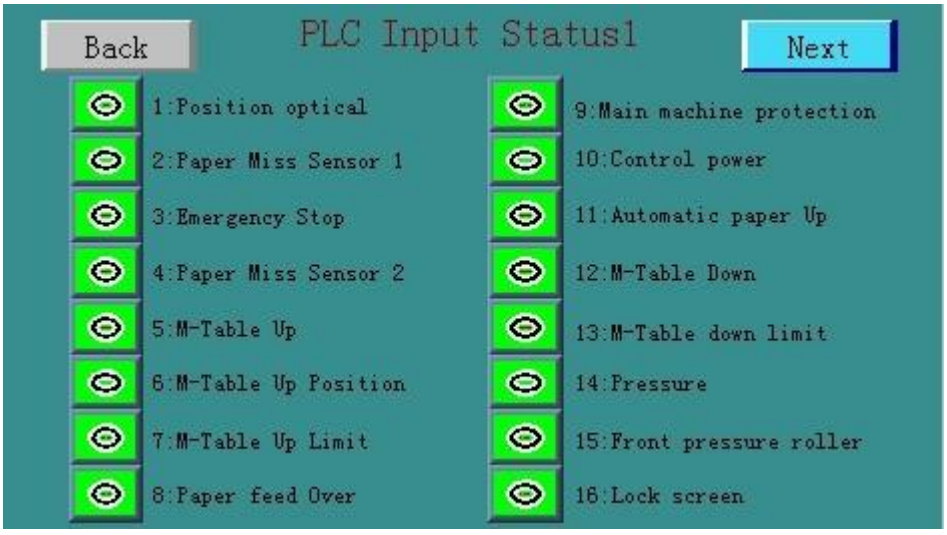


Diagram 24

If Back button on the menu is pressed, the screen will return to the previous menus.

5.9.6 On the menu as diagram 24, if next button is pressed, the screen will show the menu as diagram 25.

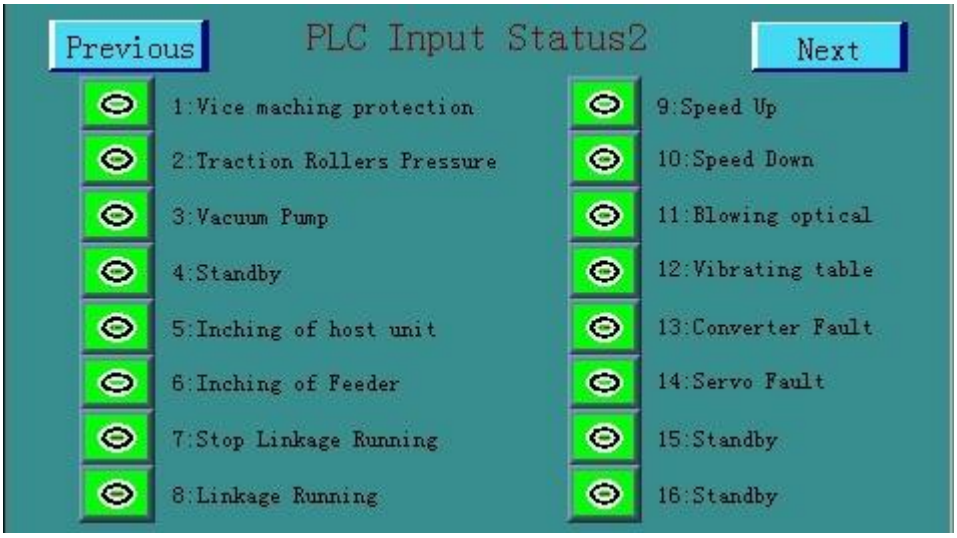


Diagram 25

Select “previous” button to return to the previous menu.

5.9.7 On the menu as diagram 25, select “next” button to enter next menu as diagram 26.

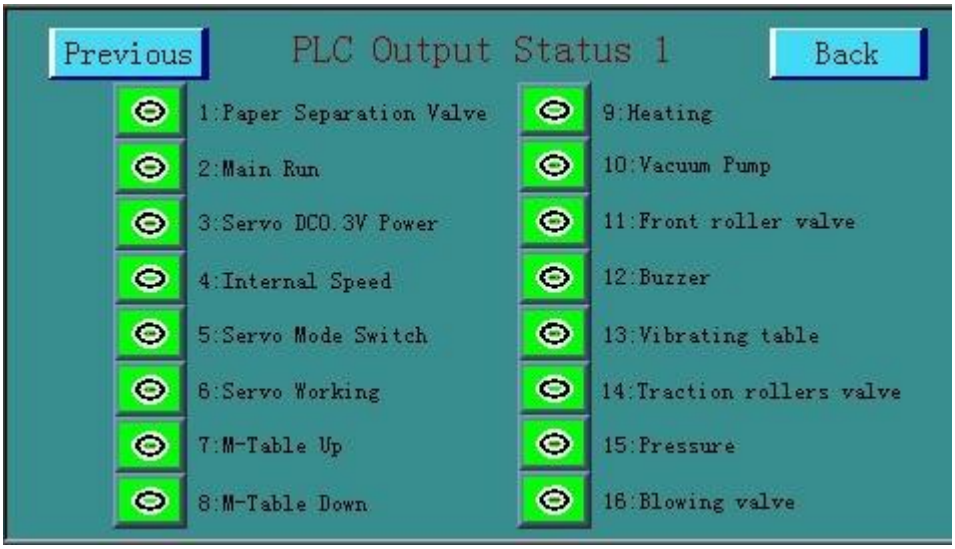


Diagram 26

On the screen showed as the above, the operator can check the working status of the machine any time.

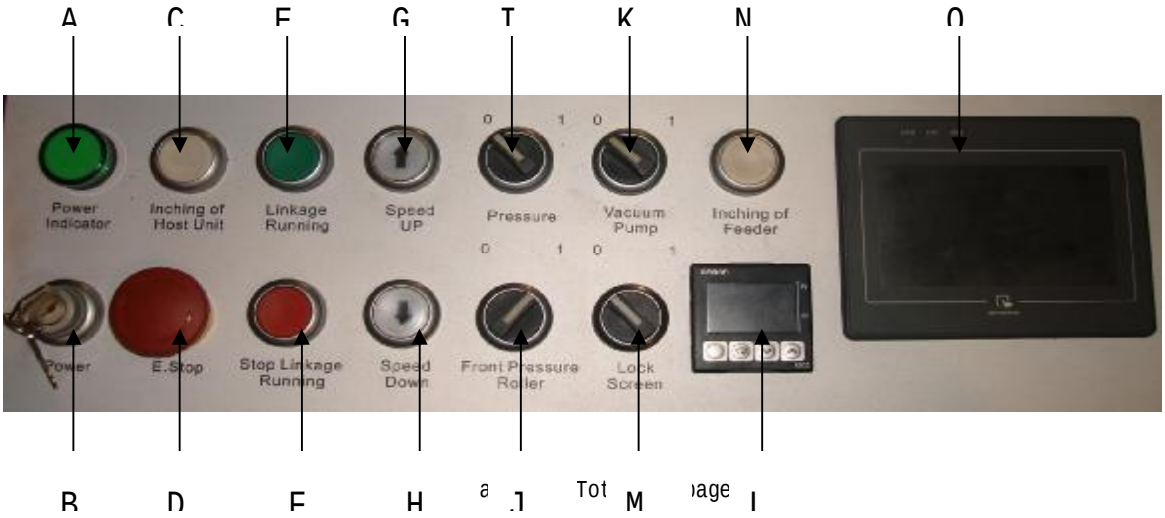
5.9.9 On the menu as diagram 22, if “Fault View” button is touched, the screen will show the menu as diagram 27.

Diagram 27

When any fault occurs on the machine, the machine will stop and a certain item showed in diagram 27 will become red, and the yellow alarm lamp on the feeder will keep flashing.

5.10 Descriptions to control panels

5.10.1 Description of control panel 1:



Control panel 1

A、Power indicator: power indicator that show if the power in on. If the green light is on, it indicate that the power in on. Meanwhile, the touch screen controlled by PLC is initialize as shown in Diagram 20.

B、Power: auxiliary power supply.Turn to right position, it will provide power for all the buttons.

C、Inching of Host Unit: Press this button and the machine will run slowly. On touch screen, if "Feeder On" is showed and when the operator presses "Inching of Host Unit", the whole machine can run synchronously and slowly.

D、E. stop: If the button is pressed, the whole machine will stop running. If the machine needs to start again, please firstly turn this button clockwise and loosen the button.

E、Linkage Running: when the button of Linkage Running is pressed, all units (feeding unit, laminating unit, cutting unit and collector) can run harmoniously.

F、Stop Linkage Running: when the button of Stop Linkage Running is press, the operator can only run a certain unit of the whole, e.g. feeding unit or laminating unit.

G、Speed Up: press button of increasing the speed.

H、Speed Down: press button of decreasing the speed.

When pressing the "Speed Up" ,the speed will increase. WhenPressing

the “Speed down”, the speed will slow down.When press the above-mentioned button once , it will increase or decrease the speed 1m/min every time.If pressthe buttons for 5seconds,it will inrease or drease the speed 5m/min

I、Presssure: switch of pressure rubber roller.when the switch is turned to “1”,the pressure rubber roller will rise.When it is turned to“0”,it will fall down.

J、Front pressure Roller: When the switch is turned to “1” position, the top roller of front pressure roller group in front of heating roller will drop and press the bottom roller.When the switch is turned to “0” position, the top roller of front pressure roller group will rise and not press the bottom roller again.

K、Vacauum Pump: When the switch is turned to “1” status, the vacuum pump will start to work. When it is on “0” position, the vacuum pump will stop running.

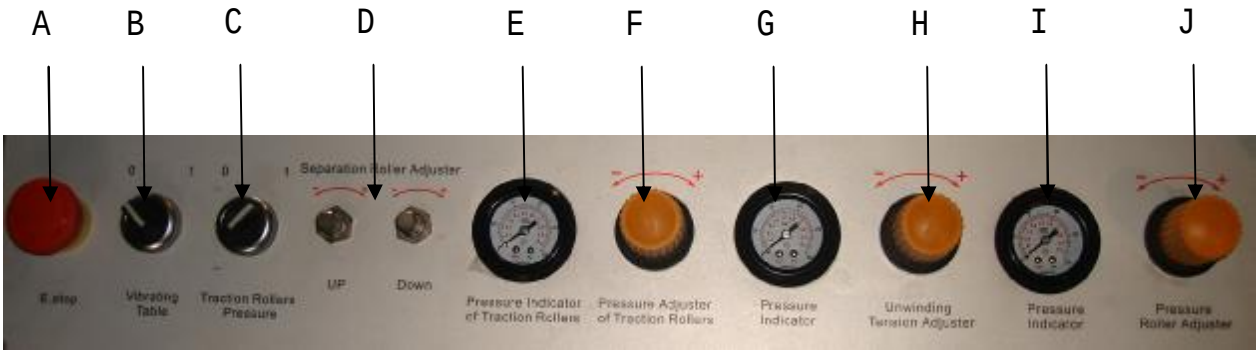
M、Lock Screen: switch that lock the touch screen.When the switch is tuned to “1”, the touch screen will be locked and can be operated. When the switch is turned to “0”, the touch screen will not be operated.

N、Inching of Feeder: If this button is pressed, the feeder will run slowing. On touch screen, if “Feeder Inching On” is showed, the feeder will keep slow running alone.

L、Temperature controller。

O、Touch screen

5.10.2 Description of control panel 2:



Control panel 2

A、E.stop: If the button is pressed, the whole machine will stop running.

B、Vibrating Table: When the switch is turned to “1” position, the vibrating table will vibrate at once. When it is turned to “0” position, the table will stop vibrating.

C、Traction Rollers Pressure: switch of traction rollers，when the switch of traction roller is turned to “1” position, the top roller of traction roller group will go down, and press the bottom roller. when the switch of traction roller is turned to “0” position,the top roller of traction roller group will go up and depart with the bottom roller.

D、Separation Rollers Adjuster: adjust the pressure of separation roller.

E、Pressure Indicator of Traction Rollers: show the pressure of traction roller group

F、Pressure Adjuster of Traction Rollers: turn the yellow knob and adjust pressure of Traction Rollers.

G、Pressure Indicator: show the pressure of air shaft.

H、Unwinding Tension Adjuster: when the operator adjust the knob, the pneumatic pressure between air baking cylinder and film unwinding shaft will vary, and then film unwinding tension will be changed.

I、Pressure Indicator:show the pressure of pressure rubber roller.

J、Pressure Roller Adjuster: turn the knob to adjust the pressure of pressur rubber roller.

6.Operation preocedures

6.1 Please check the oil level of oil tank. The heating roller is filled with 320# heat transfer oil. When the heating roller cools under normal atmospheric temperature, the oil level should be kept as about 2cm height, If the oil level is too low, the heating roller might suck air. If air enters the heating roller, the oil might spill for air expansion when the heating roller is heated. If the oil level is too high, the hot oil is also easy to spill. The two conditions are dangerous to the users. Please be well noted.

6.2 Before the machine is operated, please check and make sure that no any spare part is loose or damaged. And please note especially that pipes and joints of heat transfer oil can not have any spilling or leakage.

6.3 Do cleaning to the whole machine, and take away all tools from conveying table and lifting table.

6.4 Make the machine be power on, and ensure that emergency switch

and other switches are in normal status.

6.5 If the machine is operated first time, please press “up” button and “down” button of automatic feeder to check if the rise and drop directions are in accord with the directions of indicated arrows. If the working directions of lifting table don’t meet the indicated arrows, then it means the power wires for lifting table are connected wrongly. Then please change the connection of power wires.

6.6 Set the temperature on temperature controller as shown in the following diagram 

6.7 Put paper on automatic paper feeder, and regulate the paper stack and ensure it aligned on the front, back, left and right sides. Lift the lifting table until the suction nozzle of automatic paper feeder can touch the paper stack. Adjust automatic paper feeder upon the user manual of paper feeder.

6.9 Put the film roll on air expansion shaft. Adjust the position of film roll upon paper position, and then inflate air expansion shaft by pneumatic gun.

6.9.1 Put down the film cutter upon paper width.

6.9.2 Film guiding: please guide film upon the film guiding diagram shown on the machine body. Then draw out some film, and use a piece of paper to press the film end. And then push the

paper toward heating roller.

6.9.3 Adjust the film release tension

6.9.4 Press the button of linkage running as shown on control panel 1.

6.9.5 Turn the switch of Vacuum Pump that is shon in control panel 1 to 1 status. And make the automatic paper feeder start to feed paper.

6.9.6 Turn the switch of “Pressure” to “1” as shown on control panel 1, and adjust the pressure between rubber pressure roller and heating roller.

6.9.7 Guide laminated paper to pass anti-curvature device. The first one or two pieces of laminated paper might be crinkled or disordered, so shall be torn out before going through anti-curvature device.Guide laminated paper to pass traction roller group separation roller group and guiding wheels.

6.9.8 Drop perforating wheel, and put the perforating wheel on a place with 2-5mm distance to film edge, and tighten the fix screw.

6.10 On touch screen, touch “Separation Off”, and make it show “Separation On”.Under this status, the machine can realize automatic cut to laminated paper.

6.11 Adjustment during running

6.11.1 Pressure adjustment between heating roller and pressure roller

The pressure shall be adjusted upon paper thickness. If crinkles are found on laminated paper, the pressure should be decreased. If film can not be laminated tightly, the pressure should be increased.

6.11.2 Film position adjustment

During lamination, if film roll deviates paper position, please turn the manual wheel beside air expansion shaft to adjust the position of film roll.

6.11.3 Anti-curvature adjustment

Adjusting methods can be found in

6.11.4 Tension adjustment of traction roller group

If the tension of traction rollers is adjusted improperly, two kinds of status will occur.

1) Before entering traction roller group, the overlap of laminated paper is broken.

2) The overlap can’t pass the traction roller group, and the traction rollers stop running.

When the above two conditions happen, please adjust the tension of traction rollers. The adjusting methods can be found in 5.6

6.11.5 Adjustment of cutting rollers

Adjusting methods can be found in 5.7

6.11.6 Guiding wheel adjustment

Adjusting methods can be found in 5.8

6.12 Increase the working speed to make the laminator run in a normal speed. The maximum working speed is 30m/min. If the laminated paper is thin and small, please decrease the working speed accordingly.

6.13 If the laminating work is finished, please release the pressure on all rolls. When the temperature of heating roller is less than 60℃, please turn off the general power switch.

7、Safety precautions

7.1 Users shall examine carefully the new machine, and ensure no any connector is loose or detached and electrical grounding is in good status. Please learn well about machine operation. The machine can't be used for normal production until it is adjusted and tested well.

7.2 When the machine runs no-load, the machine shall run stably, quietly and smoothly.

7.3 When users do cleaning to the machine, please do not put hands on rollers to avoid injury to hands. If necessary, please press inching button for cleaning.

7.4 When the machine is running or it just stop, please don't open the shield. The heating roll is very hot. And please beware of your hand.

7.5 During the machine's running, please do not open the glass shield. It is forbidden to stretch your hand into the cutting unit. Beware of crushing to your hand.

7.6 During the machine working, the exposed oil tubes and joints are

very hot. No touch, please!

7.7 The frequency converter will still be power on for some minutes even if the machine is power off. So when the machine is power off, please don't open immediately the electric cabinet to do machine examination. Beware of electrical hazard.

7.8 Before installation, please inspect carefully all electrical and pneumatic parts. And fasten all conductor terminals. Connect all aviation plugs well, and ensure good electrical earthing.

7.9 The laminator adopts the power of 4-wire 3-phase. The machine should be well grounded.

8、Maintenance

8.1 Maintenance to heating system

8.1.1 In daily applications, generally it needs about 20 minutes to get the set temperature value. If the temperature rises too quickly or slowly, please stop running the machine. And then check heating system. Generally this status results from the spare parts faults of heating systems.

8.1.2 When the machine runs one year, please change new heat transfer oil.

8.1.3 If no oil or low level oil, it is forbidden to run the machine.

8.1.4 It is forbidden to stop the machine when the machine is on pressure and temperature is over 100℃.

8.2 Maintenance to laminating machine

8.2.1 Clean the machine one time everyday.

8.2.2 Add new grease to transmission unit every month.

8.2.3 Add lubricant to transmission parts of rollers every two months.

8.2.4 All rollers shall be kept clean, and must be prevented any damage by metal tools and others.

8.2.5 Clean water of water separator regularly and add oil to oil fogger regularly.

8.2.6 Air compressor should be added oil per half of year, and water should be cleaned every 3 days. The details please refer to user manual of air compressor.

8.2.7 Please check and ensure rotary joint of heating roller doesn’t have oil leakage. Rotary joint might be worn after one year. If oil leakage is founded, please replace the original rotary joint by a new one.

8.2.8 Connectors of air pipes shall be changed at once if they leak.

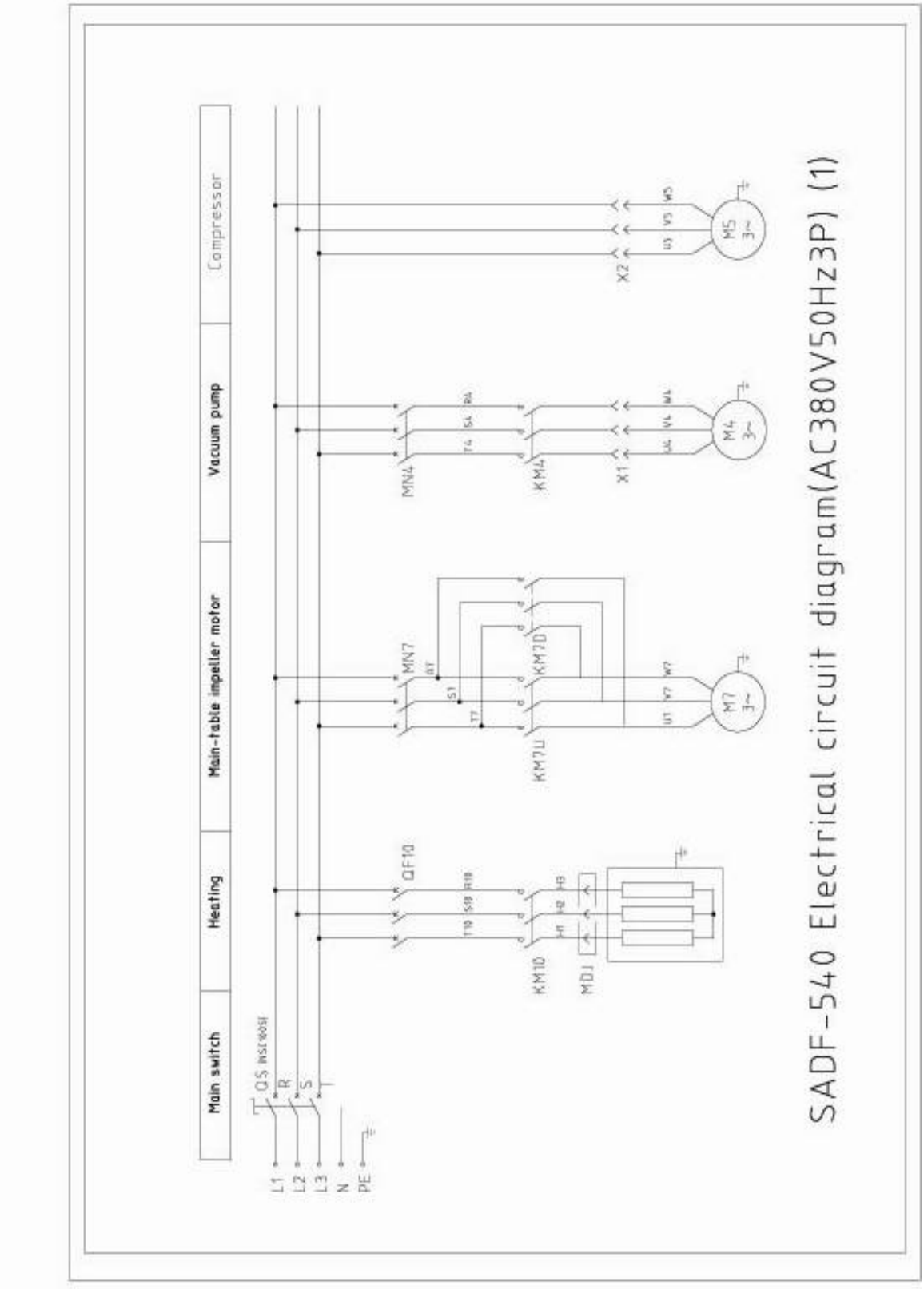
9、Common faults and solutions

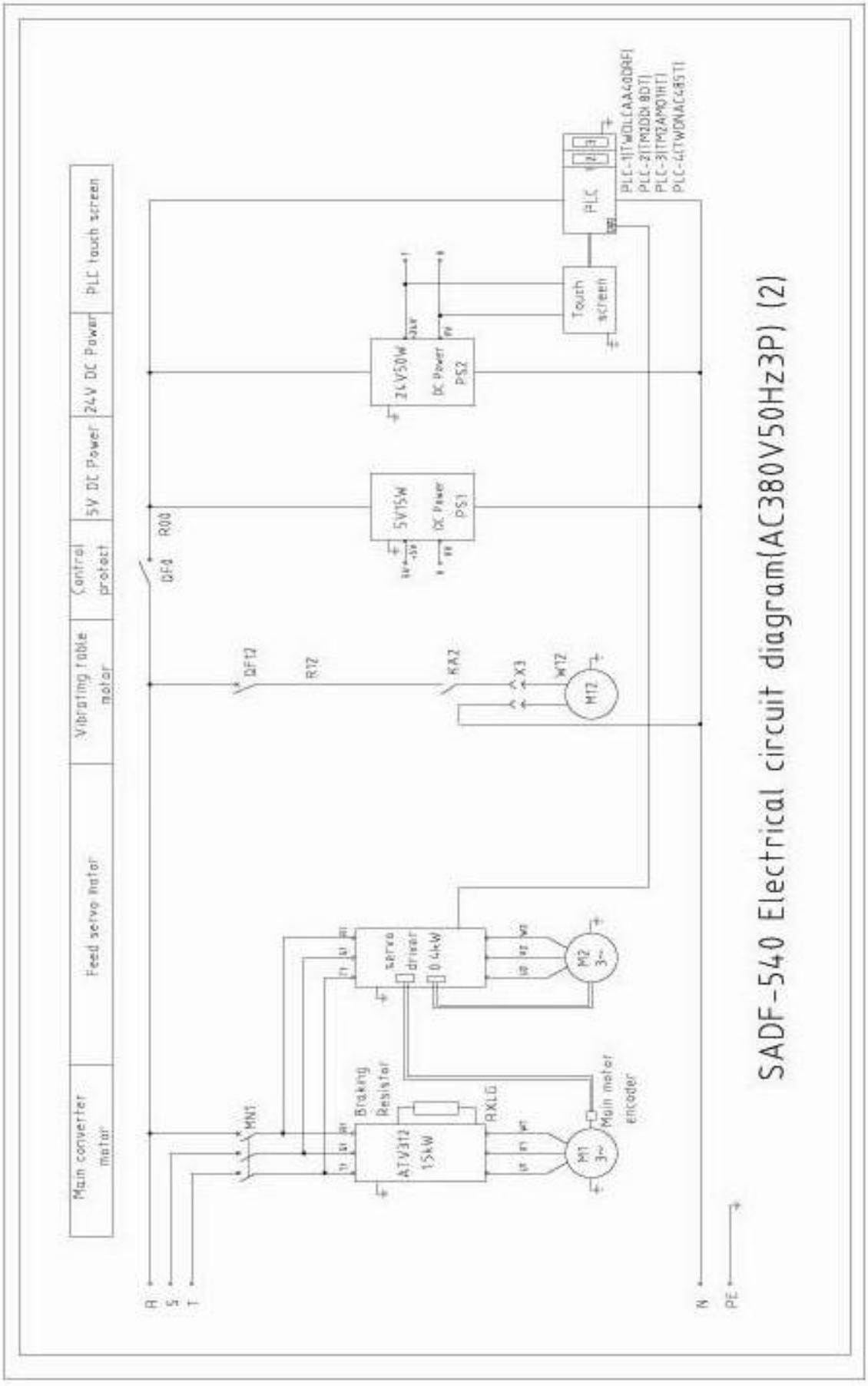
Faults	Causes	Solutions
The machine can not start	1. Fuse wire burns out 2. Voltage is not normal 3、oil tank is not start	1. new one to replace it 2. Check the power voltage 3、start the oil tank
Slow temperature rise or no termperature rise	1. Electric heating tube damaged 2.Temperature controller is out of work	1. Replace electric heating tube 2.Repair temperature controller
Crimple on the surface of laminated paper	1. tension on the two sides of film roll are unbalanced. 2. Improper adjustment of pressure roller and heating roller	1. Adjust air expansion shaft and change film.2、 2.Adjust pressure roller to make pressure proper
Haze or small white dots on paper surface	1、 Temperature is too low 2、 Speed is too fast	1.raise temperature 2.decrease running speed
Film and paper are adhesive badly.	1、 Laminating pressure is too small. 2、 Poor surface of printed	1、 increase pressure 2、Clean dust on printing surface; dry paper printing.

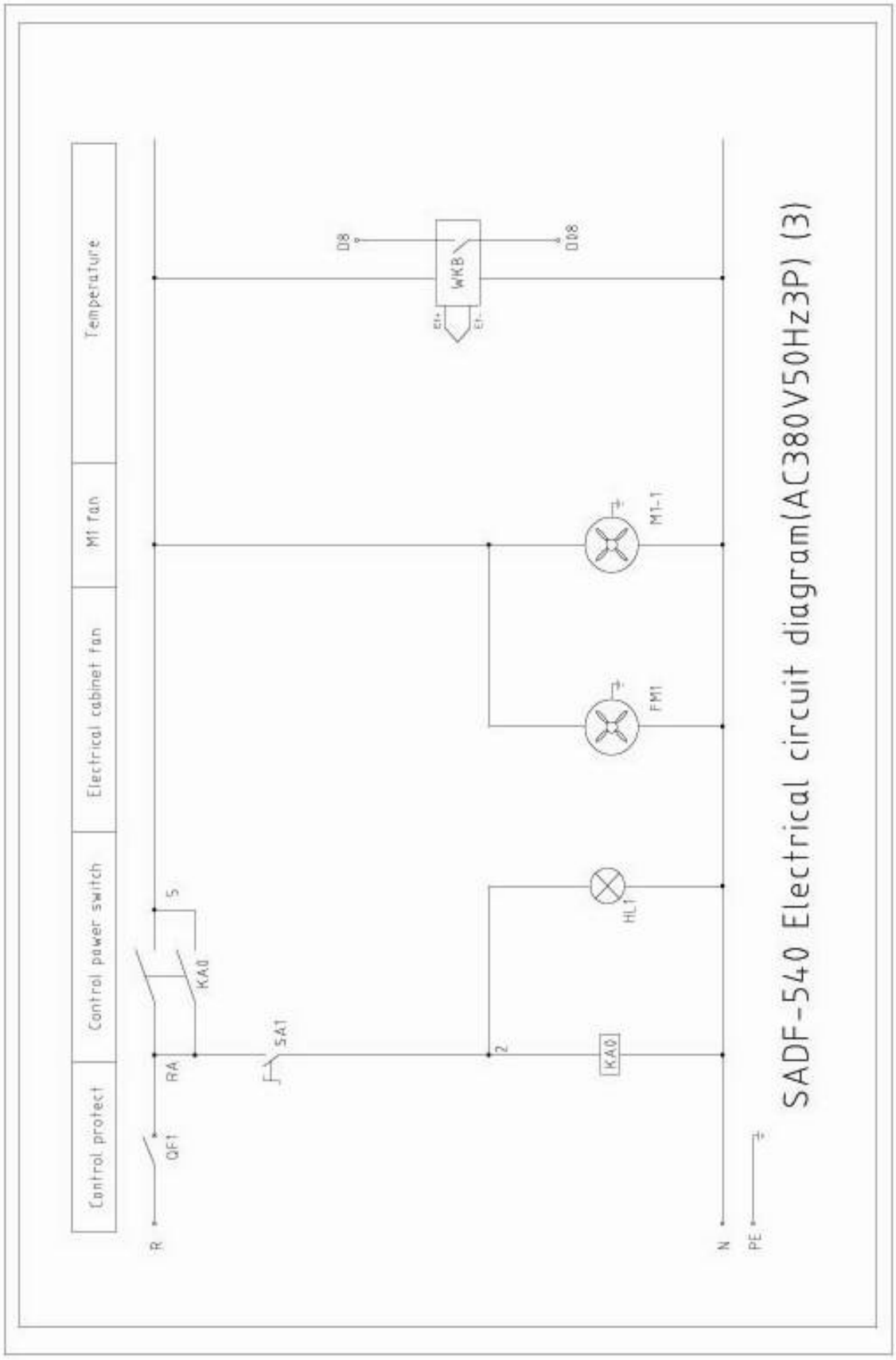
	paper, e.g. powder on surface, too thick printing and wet printing etc.	
Laminated products curl	1Anti-curvature device is adjusted improperly 2、 Unbalanced tension. 3、 Too big laminating pressure or too high temperature.	1、 Adjust anti-curvature device. 2、 Adjust film release tension 3、 Decrease laminating pressure properly; reduce laminating temperature.

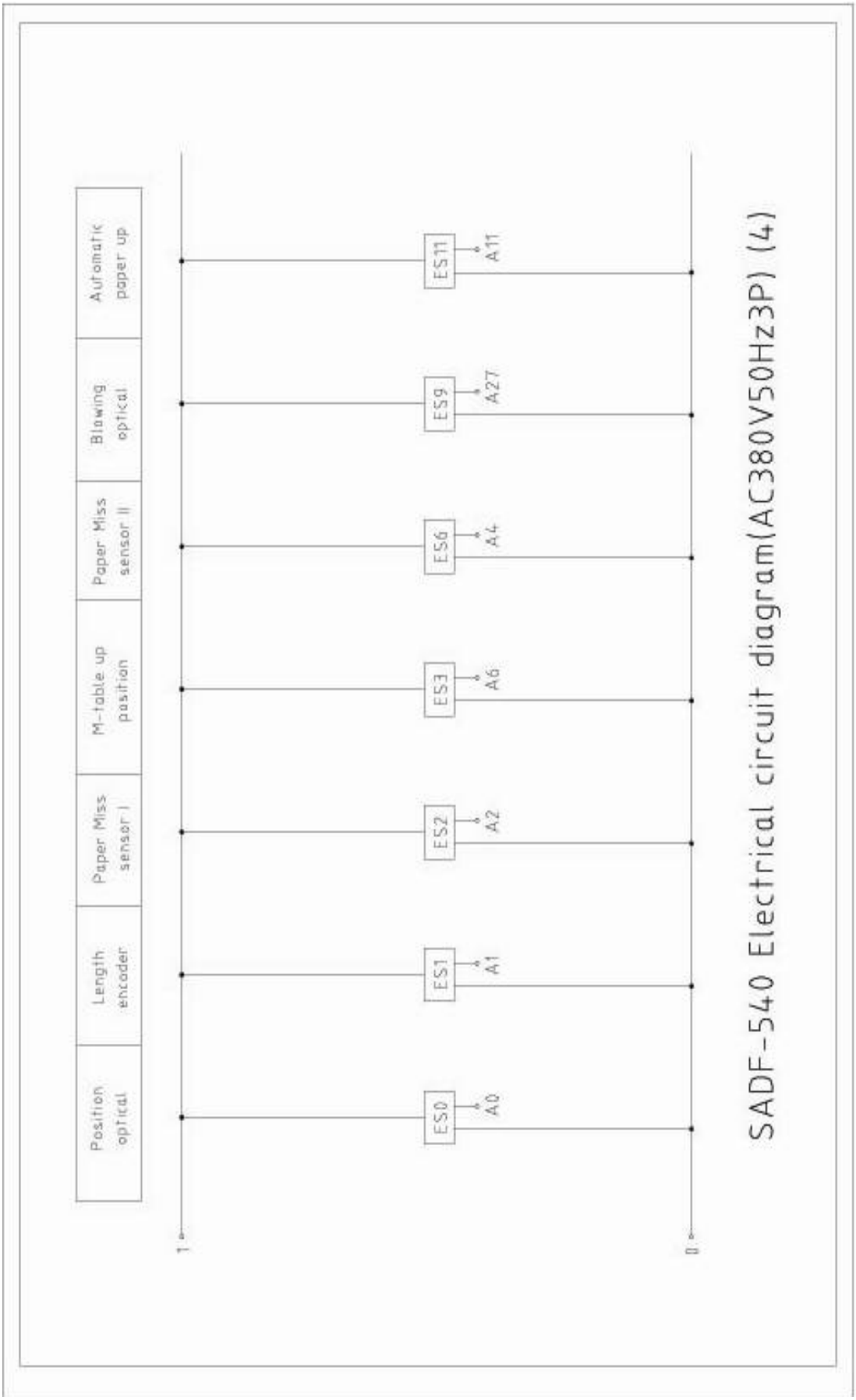
10.Electrical system

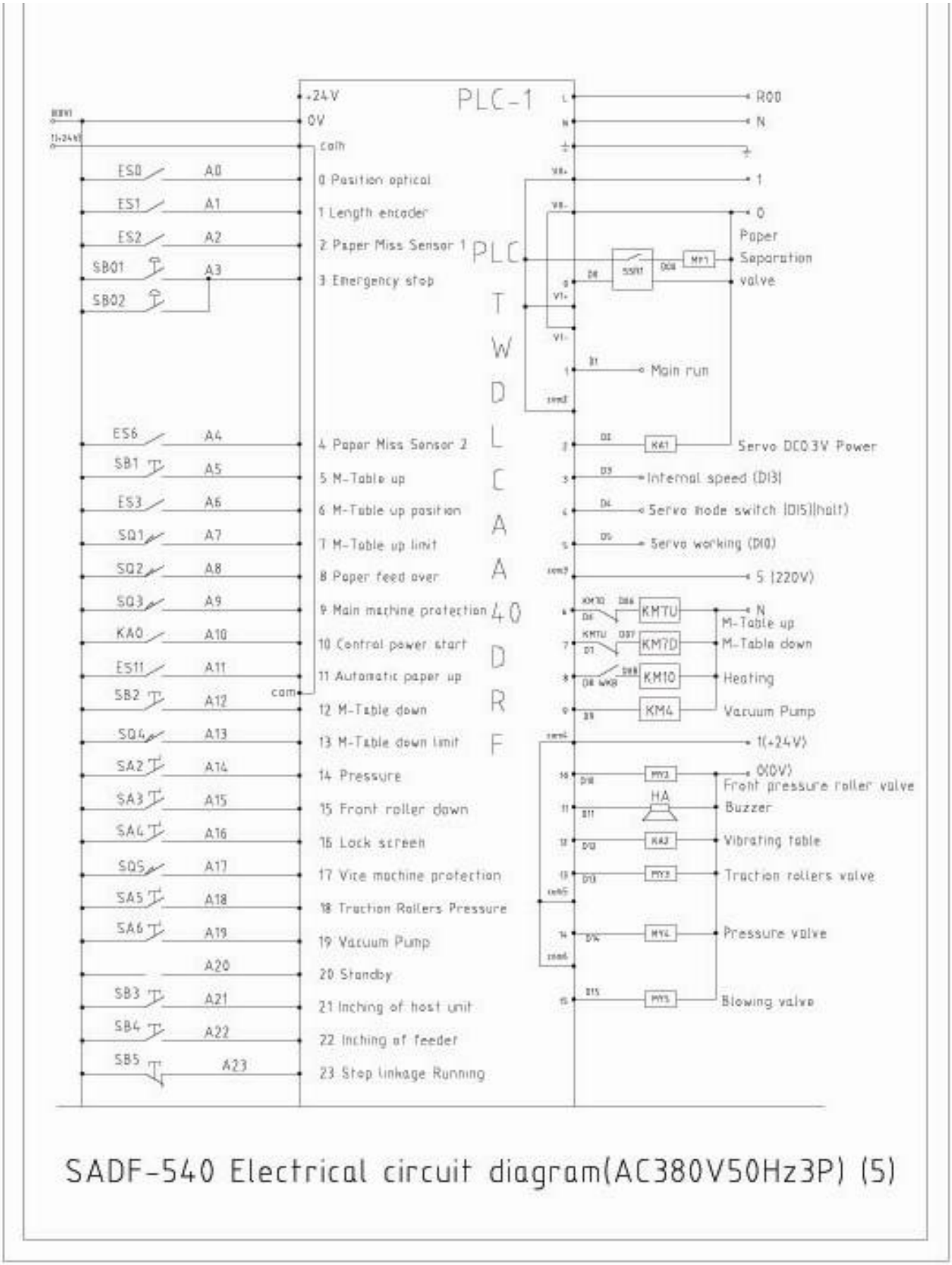
10.1 Electrical circuit diagrams(total 7 pages)



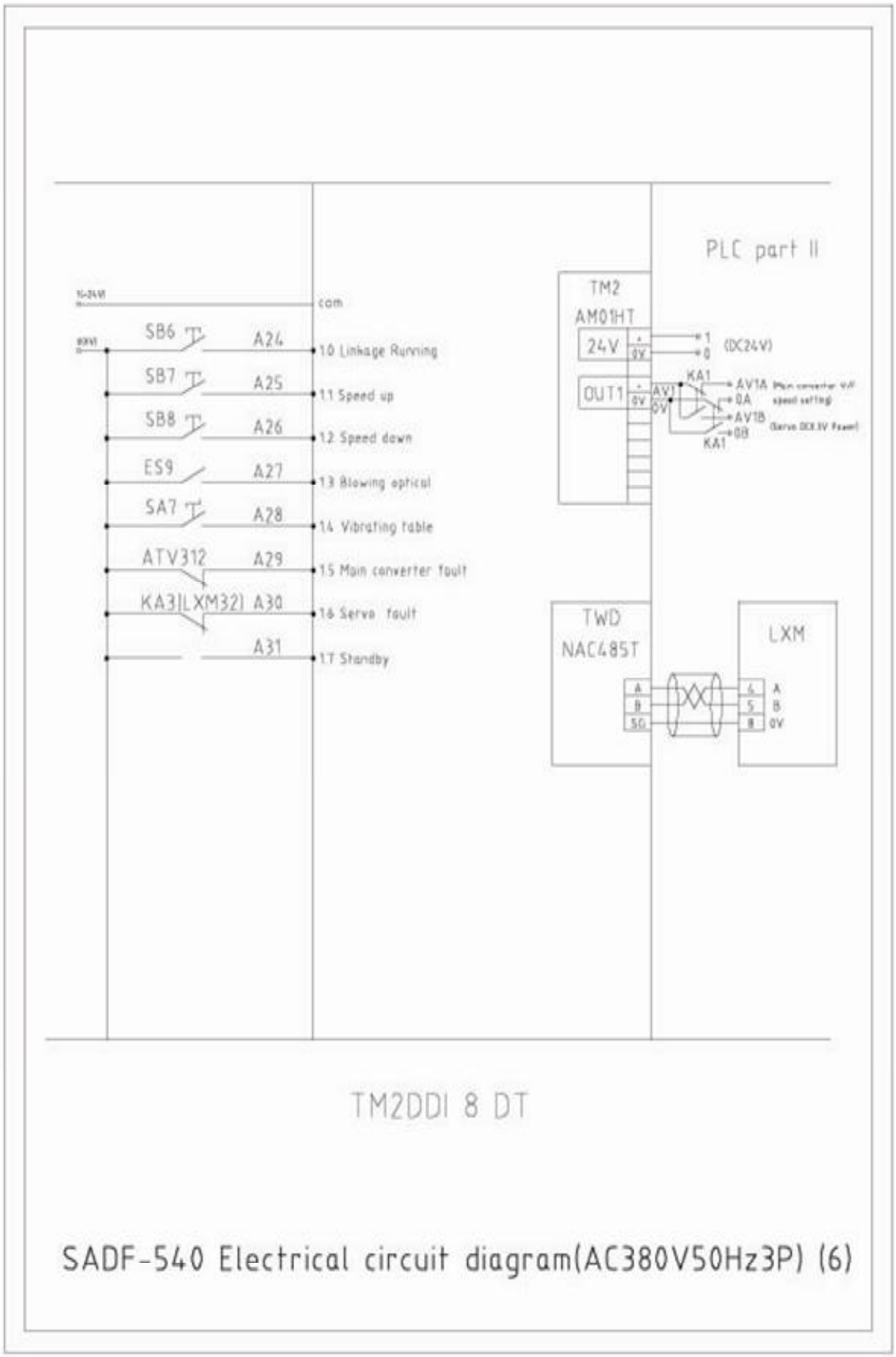


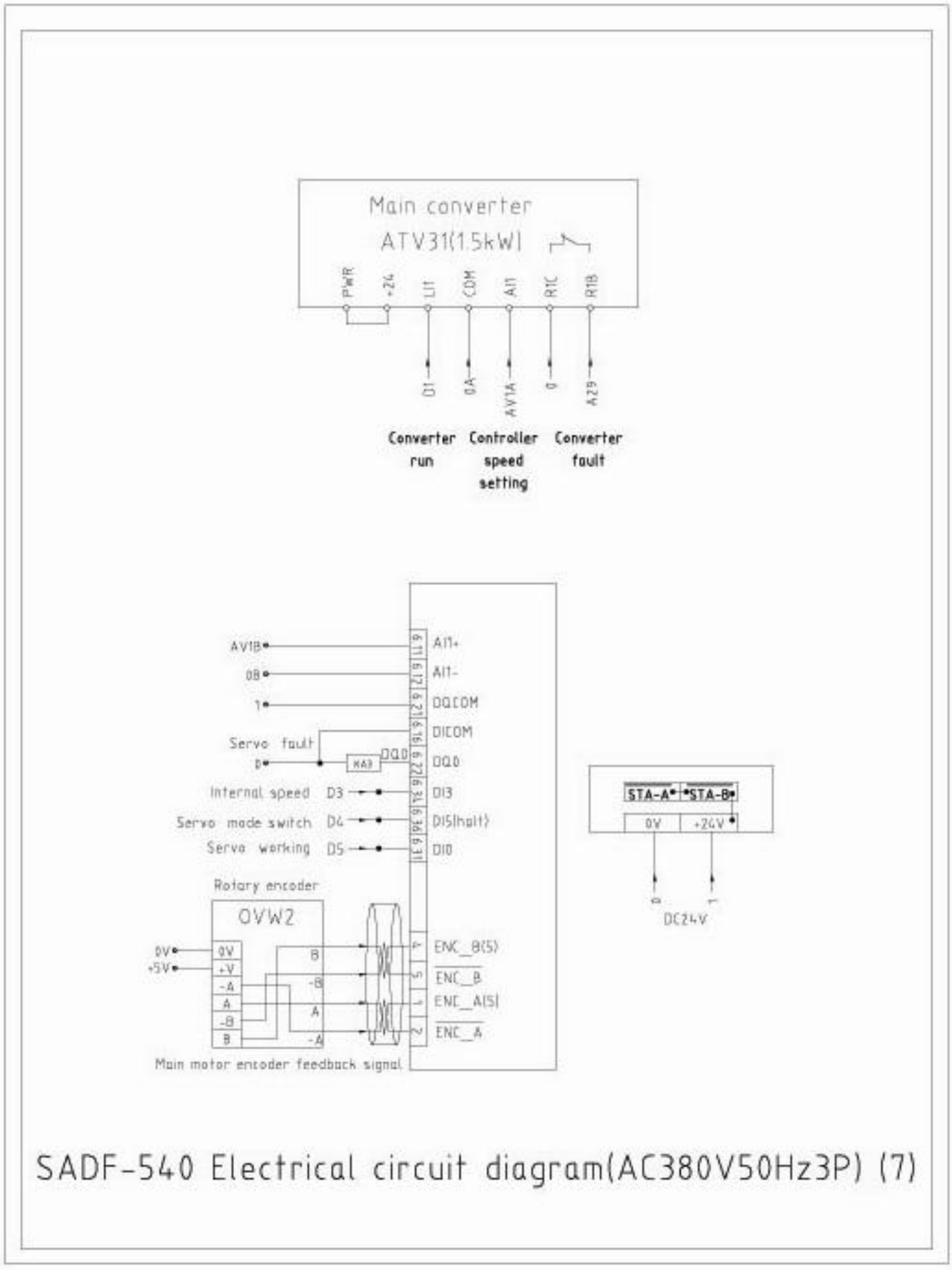






SADF-540 Electrical circuit diagram(AC380V50Hz3P) (5)





11Electrical parts list

SADF-540 Electrical parts list

N0.	Name	Type/specifications/parameters	Qty	Code no.
1	General switch	NSC100S	1	QS
2	Circuit breaker（protector of heater）	DZ47-60(D25AQA/3P)	1	QF10
3	AC contactor(for heat)	LC1D32 M7C 220V50/60Hz	1	KM10
4	Slip ring(for heat）	25*60*46	1	MDJ
5	Heating tube	6×2kW 220V/50/60Hz	1	H1 H2 H3
6	Aviation plug(for vacuum pump)	RSS-114	1	X1
7	Aviation plug(for air compressor)	RSS-114	1	X2
8	Motor(in air compressor)		1	M5
9	Motor protector (main table)	GV2 PM07C	1	MN7
10	A/C contactor (rise of main table)	LC1D12 M7C 220V50/60Hz	1	KM7U
11	A/C contactor (drop of main table)	LC1D09 M7C 220V50/60Hz	1	KM7D
12	Motor (rise and drop of main table)		1	M7
13	Motor protector (protecter for feeder vacuum pump)	GV2 PM14C	1	MN4
14	A/C contactor (feeder vacuum pump)	LC1D12 M7C 220V50/60Hz	1	KM4
15	Motor (feeder vacuum pump)		1	M4
16	Motor protector (main frequency converter)	GV2 PM10C	1	MN1
17	Main frequency convertor	ATV312HU15N4A	1	ATV312 1.5kW
18	Main motor		1	M1
19	Breaking resistor	RXLG-200W-100R-J	1	RXLG
20	Servo driver	LXM32CD12N4	1	Servo driver
21	Servo motor	BSH0701P11A1A	1	M2
22	Encoder cable	VW3M8102R30	1	

23	Drivers cable	VW3M5101R30	1	
24	Circuit breaker (protection of vibrating receiving table)	DZ47-60(D3A/1P)	1	QF12
25	Intermediate electric relay (vibrating receiving table)	MY2NJ DC24V	1	KA2
26	Power socket and plug of vibrating table	（118-714）+ （T3-10）	1	X3
27	Motor of vibrating table		1	M12
28	Circuit breaker(protector of control system)	DZ47-60(D5A/1P)	1	QF0
29	5V DC power	S-15-5	1	PS1
30	24V DC power	ABL 2REM24045	1	PS2
31	Touch panel	MT6050i	1	touch screen
32	Communication cable	MT6050i-1	1	
33	PLC	TWDLCAA40DRF	1	PLC-1
34	Extension module	TM2DDI 8DT	1	PLC-2
35	Analog qty module	TM2AOM 1HT	1	PLC-3
36	Communication module	TWDNAC 485T	1	PLC-4
37	Circuit breaker (protector of control system)	DZ47-60(D5A/1P)	1	QF1
38	Option switch (control system power)	TN2KS22 1A 3131	1	SA1
39	Electromagnetic relay (control system power)	MKS3P(AC220V)	1	KA0
40	Seat of electromagnetic relay	PF113A-E	1	KA0-1
41	Signal light (control system power)	AD62-22D/S AC220V	1	HL1
42	Fan of electrical cabinet	SF11025AT	2	FM1
43	M1 Fan	YL15050HBL	1	M1-1
44	Temperature controller	E5CZ-R2MT	1	WKB
45	Temperature measuring sensor	WREM-201 E	1	ET
46	Position sensor	E2E-X2E1-Z	1	ES0
47	Rotary encoder	E6B2-CWZ6C(1000P/R)	1	ES1
48	Photoelectric switch of	E3Z-R61	1	ES2

	paper loss 1			
49	Presetting photoelectric switch of main table rise	E3F3-R61	1	ES3
50	Photoelectric switch of paper loss 2	E3Z-R61	1	ES6
51	Photoelectric switch of blowing for paper collection	E3Z-R61	1	ES9
52	Sensor for paper sheet rise	E2E-X2ME1-Z	1	ES11
53	Emergency stop	TN2BK 1A	2	SB01 SB02
54	Rise button of feeder main table	TN2BF P39 1A	1	SB1
55	Rise limit sensor of main table	SND4162-SP-C	1	SQ1
56	Protection switch of over-height of feeding paper	XZ-15GW2-B	1	SQ2
57	Protection switch for protection cover before heating roller(optional)	YBLX-19/001	1	SQ3
58	Drop button of feeder main table	TN2BF P39 1A	1	SB2
59	Limit switch of feed main table down	SND4162-SP-C	1	SQ4
60	Switch of pressuure rise	TN2SS2 1A	1	SA2
61	Switch of roller before heating roller.	TN2SS2 1A	1	SA3
62	Switch for locking touch screen	TN2KS22 1A 3131	1	SA4
63	Protection switch of protection cover in cutting unit	YBLX-19/001	1	SQ5
64	Switch of traction roller	TN2SS2 1A	1	SA5
65	Switch of feeder air pump	TN2SS2 1A	1	SA6
66	Inching button of main machine	TN2BF 1A	1	SB3
67	Inching button of feeder	TN2BF 1A	1	SB4
68	Stop button of leakage runnng	TN2BF 1B	1	SB5
69	Start button of leakage	TN2BF 1A	1	SB6

	running			
70	Button of speed up	TN2BF P39 1A	1	SB7
71	Button of speed down	TN2BF P39 1A	1	SB8
72	Switch of vibrating table	TN2SS2 1A	1	SA7
73	Solid-state switch	G3FD-102SN	1	SSR1
74	Magnetic valve for paper separation		1	MY1
75	Intermediate rely (For power of servo DC3.0V)	MY2NJ DC24V	1	KA1
76	Magnetic valve for front roller down			MY2
77	Buzzer	HRB-PS30 DC24V	1	HA
78	Magnetic valve for traction rollers		1	MY3
79	Magnetic valve for pressure rise		1	MY4
80	Intermediate rely (For air suction of paper sheets)		1	MY5
81	Intermediate rely(for servo fault)	MY2NJ DC24V	1	KA3
82	Base	PYF08A	4	
83	Wiring terminal	JF5-10/15	1	
84	Wiring terminal	JD20	1	
85	Wiring terminal	TC604	1	

Note：used for AC380V50Hz3P