

YFML-720、920、1200

Semi-automatic Hydraulic Laminating Machine

USER MANUAL

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PREFACE

Dear users:

Welcome to use our products!

Do read installation and operation manual before make use of it. Make sure it is normal operation and good in working condition.

1、 Profile

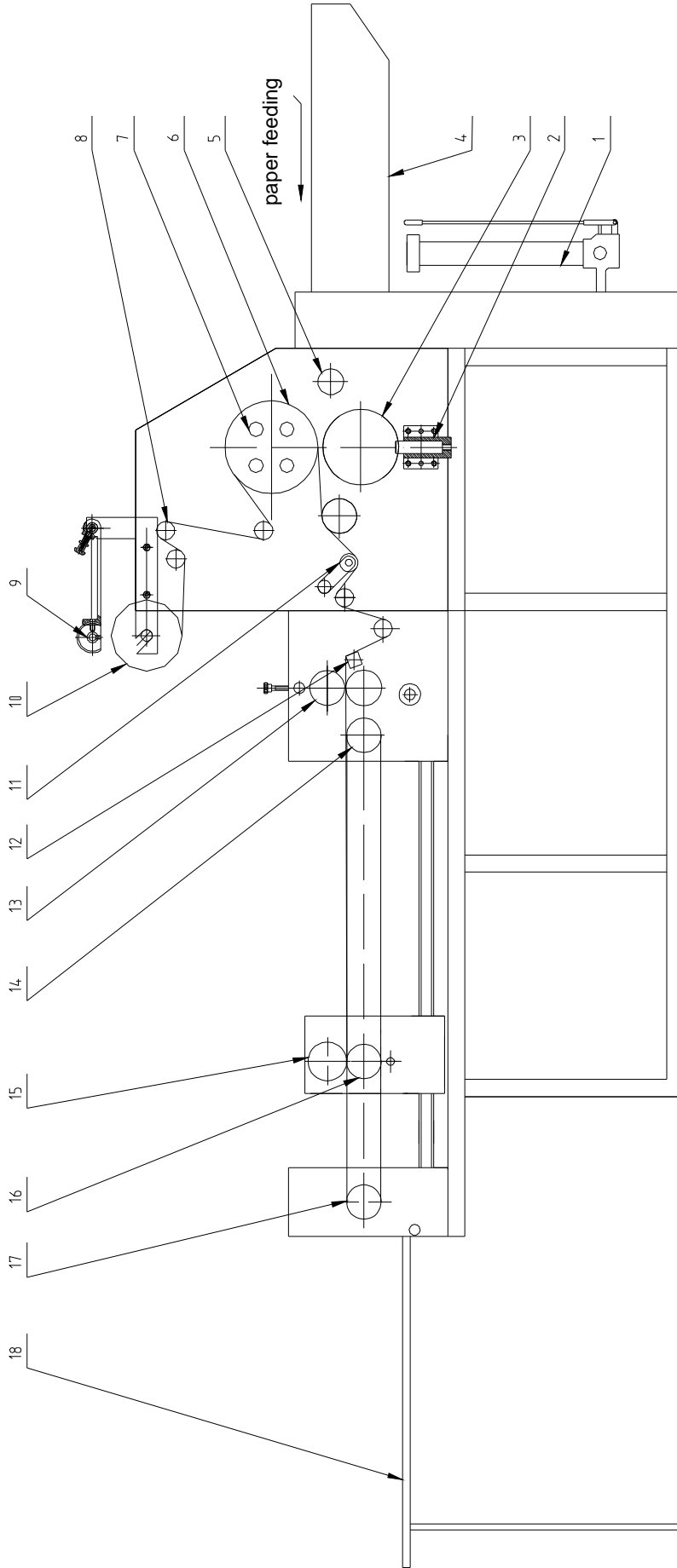
YFML-720、 920、 1200 semi-automatic hydraulic laminating machine is designed and developed by ourselves according to the market needs.

This machine stress the concept ‘based on human’, and is easy to test and operate. It adopts frequency conversion, with stable performance. This machine also equip with paper anti-curve device than can make the laminated paper smooth without curving. The hydraulic system adopts automatic oil supplying system, easy operation without need adjusting, also easy to maintain.

This machine mainly takes BOPP film as its material and compound with paper automatically. After laminating, the laminated products will be bright in appearance, excellent in color and meanwhile strong in intensity and waterproof and damp proof. So it is widely applied in covers of books and periodicals, maps, packaging boxes. This machine has advantages of big working pressure, fast temperature rising, high speed, low noise and even running. And compared with traditional lamination, there are no defects of snow spot and flog in laminated product with deep and special color, so it greatly decrease the loss rate, and improve the product level, and the greatly improve the working efficiency. Therefore, this machine is indispensable after-print equipment in modern printing industry.

2. Main Specification

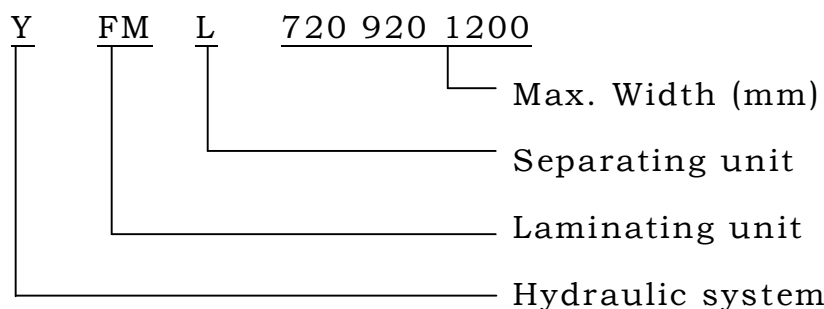
Model	YFML720	YFML920	YFML1200
Technical variables			
Max. paper (mm)	600X880	800X1040	1080X1040
Max. laminating speed (m/min)	40	40	40
Voltage (V)	380	380	380
Motor Power (Kw)	1.5	2.2	2.2
Heating power (Kw)	3	3.6	4.5
Weight (Kg)	500	600	700



1, Oil pump 2, Ram 3, Pressure roller 4, Feed table 5, Conveyor roller 6, Heating roller 7, Heating pipe 8, Film leader 9, Perforating knife 10, Roll film
 11, Self-respecting roller 12, Anti-bend roller 13, separating roller 14, Conveyor roller 15, separating roller 16, Conveyor roller 17, Conveyor roller 18, Delivery table

Drawing 1: YFML series semi-auto hydraulic laminator work schematic diagram

3、 Type Introduction



4、 Structure and Working Principle

This machine mainly includes laminating unit and paper separating unit. The laminating unit is consisted of heating roller, hydraulic system and film cutting and perforating device; and the separating unit is consisted of anti-curve device, paper separating unit and paper receiving table. (See the drawing 1)

Working principle: Feed the paper, and laminate with the heated film, get across the anti-curve device, then the laminated paper was separated by the separating unit and then finish the lamination process.

5、 Installation and Use of machine

5.1、 Please check whether each part of machine is all right when first time to use this machine, and the machine should be placed evenly.

5.2、 You should assemble the paper feeder and paper receiving table on the machine according to schematic diagram before using it, because the machine was disconnected when it was packed up.

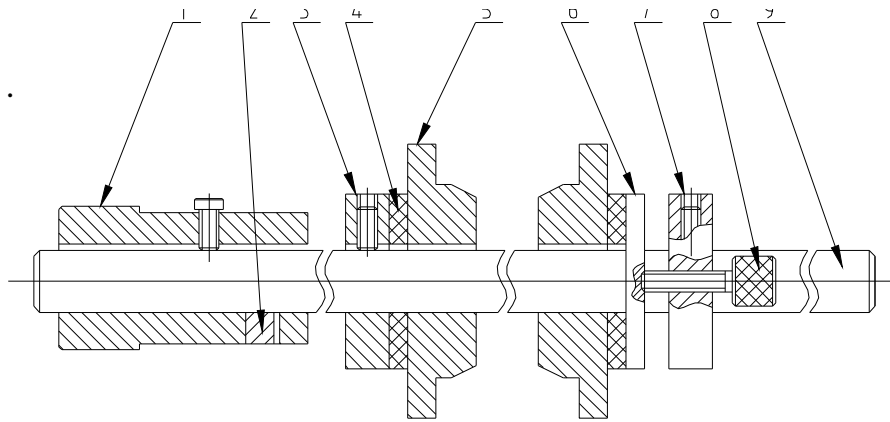
5.3、 This machine has itself oil-supply system, the oil tank should be filled with the oil before the machine being used, the oil should be chosen 46# in the summer, 23# in the winter, and the oil must be filtered by the air filter then filled in oil tank.

5.4、 Connect the power, and make sure the machine is in good grounding condition.

5.5 Installation of film (Drawing 2, see from back of machine)

5.5.1 The drawing2 is the film shaft; take down the two thimbles and press them into paper roll of film.

Drawing 2: Install film schematic



- 1、Seat ring 2、Installation frame 3、Seat ring 4、Friction disk 5、bolt
6、Back-up ring 7、Seat adjusting unit 8、Adjusting screw 9、roller for film

Drawing 2: Install film schematic diagram

5.5.2 According to film width, fix the seat ring on the left of the shaft, and fix the seat sleeve on the left of the shaft, insert the friction piece, and then put the film on the shaft.

5.5.3 Put on the second friction piece and gasket, then put the seat adjusting ring; and close to the gasket. Make the puller screw tightened, and then make adjusting screw tighten on the gasket. More tightly, more tension of the film, it should be up to the requirement.

5.5.4 Place the film shaft and film on the installation frame, each part should be placed in right position as drawing 2 views.

5.6 Use of film cutting knife

5.6.1 This machine adopts round cutting knife and it has been fixed on the tool carrier, and the tool carrier is fixed on the tool carrier shaft. Use stopper rings to fix onto the left and right of tool carrier.

5.6.2 Support the tool carrier by hand, pull up the pin of tool carrier, put down the tool carrier gently, and make the cutting knife piece press on the film.

5.6.3 Adjust the position of tool carrier according to the length of film need cutting, and then tighten the stopper rings. After this, use gummed tape to stick the film head, then the film will be cut separately with machine running. And the

film being cut will remain in the film roll.

5.6.4 If do not use for cutting film, only need to lift up the tool carrier up gently, and the tool carrier will automatically fasten to the cutter shaft without turning and falling.

5.7 The adjusting method of film perforating device is the same as the cutting device.

5.7.1 The perforating knife is placed in the edge of film about 1-3mm.

5.8 Use and control of hydraulic oil station

5.8.1 Please see its work principle clearly as the drawing 3.

5.8.2 Work principle: Motor drives the oil pump, the pump will suck the oil from the oil tank, and the oil will pass through hydraulic valve to do the pressure and direction adjustment. The oil will be transported to the oil cylinder through the oil pipe.

5.8.3 Set the system pressure. Start the oil pump, turn on the remote overflow valve, which outside direction means increase pressure, inside direction means decrease pressure, it can be set based on the pressure gauge.

5.8.4 There install a safe overflow valve on the oil tank, its set pressure is the system's max pressure, not allow adjusting during operation. Please make the hydraulic station stop working if the valve is abnormal. And ask professional technician to check it

5.8.5 The Max. Pressure is set at 21 Mpa; when the adjusted pressure is over than this pressure, the safe overflow valve will unload the pressure automatically to ensure the operation safety

5.9 Adjustment of separating unit

5.9.1 First should fix the declining wheel on the side of the perforating unit with the angle of 10--15 degree; the decline wheel also should be pressed on the delivery belt and make sure that it can move when the machine is running without paper. Adjust the pressure of decline wheel to make it wobble up and down, and let it touch the belt.

5.9.2 The distance should be more than one piece of paper's length between two cutting rollers. You can move the hand wheel to control the distance as the requirement.

5.9.3 The pressure (left and right side) of front separating roller should be well

adjusted, (generally, it has been set in the factory before sent to the customer) otherwise it will become deflective when laminating and make the separated paper bend.

5.9.4 The anti-curve roller of the machine is a square figure. Its direction could not be changed; otherwise it will make the separated paper bend.

5.9.5 There is a leading roller near the anti-curve roller which can be adjusted, when find out the two side's pressure of the anti-curve roller is not the same or causing wrinkle because of paper deflecting, should adjust the position of this roller's handle wheel until the paper is correct.

5.10 Operation

5.10.1 Connect with power and turn it on, and the power indication light will be on.

5.10.2 Make sure the switch "No sheet stop" and "Broken sheet stop" is in "ON" position. Please turn the switch to "OFF" position when the machine becomes into normal working condition.

5.10.3 Press down the "START" button, then set the laminating temperature at 80 -- 100 °C on the temperature controller. Adjust the speed to let the machine run in low speed.

5.10.4 When the temperature rises to the laminating requirement, it can start to lead the film, the position of film please see the drawing 1.

5.10.5 When the paper is delivered to the heating roller, press down the "pressure up" button, the pressure roller will be raised to touch the heating roller because of hydraulic system. While start the hydraulic system, also should observe the indication of monometer. The pressure is relevant to the paper thickness; you can refer to the diagram 1. And also you can adjust this pressure as the method of 5.8.3 to reach its requirement value. There is equipped with time retarder, when press down the "pressure up" button, the oil pump will stop after running for some seconds then come into pressure keeping condition. If not need to keep pressure automatically, the user can press down "Keep pressure" button to be in pressure keeping condition.

This machine's automatic time retarder, which could adjust the time of keeping pressure, enlarge the time retarder if the pressure is needed bigger

Paper thickness	pressure
80~127g/m ²	2MPa
127~250g/m ²	4MPa
250~350g/m ²	6MPa
Over 350g/m ²	Over 6Mpa

5.10.6 If there is no show on monometer when press down the ‘pressure up’ button, please make sure that the running direction of oil pump motor is all right, normally it should run as clockwise. If the direction is converse, please exchange any two wires of three-phase power supply to connect.

5.10.7 Press down the “Inching” button, lead the laminated paper to the front separating roller, please see the drawing 1, then lift up the self-respecting roller to the same level, move the hand wheel of front pressure roller to press the laminated paper at last.

5.10.8 Place the decline wheel in right position as introduction of 5.9.1.

5.10.9 Adjust the distance between front and back rollers as introduction of 5.9.2.

5.10.10 Let the attached pressure bar press on the edge of paper, and makes paper come through the wheel easily.

5.10.11 Press on the hand wheel of back separating roller, the laminated paper will be separated automatically.

5.10.12 Adjust well the paper receiving table and ensure of the finished paper coming down into the table.

6. Maintenance

6.1 The pressure must be loaded after starting the machine, and unloaded after stopping.

6.2 The oil must be filtered before being injected into oil tank. Please do not to open the oil tank without permission.

6.3 The oil temperature is not allowed to excess too high lest the oil be (the range is 15--55 °C) damaged.

6.4 Please exchange the working oil every 6 months, and also clean the oil tank.

6.5 Please do not adjust the safety valve on the tank at random. It’s Max. Pressure is 21Mpa, adjusting this valve will change the Max. Pressure.

6.6 Please check the machine regularly, and should send the monometer to professional organization for inspection.

6.7 Also should add some lubrication for wheel chains and bearings.

6.8 If the machine is not used for a long time, please loose the pressure of the front and back two rubber rollers lest it be deformed because of being pressed for long term. Each metal part should be coated with anti-corrosive oil and covered by plastic bags lest it be damp.

6.9 Each roller must be keep clean. If dirty, please clean it with no water alcohol.

6.10 Familiar faults and solutions please see the form 2.

7. Electrical system

7.1 Electrical specification of YFML – 720, 920, 1200 see drawing 3

7.2 Attention notes

7.2.1 If the electricity is cut off by sudden, the oil station could not unload the pressure automatically; it should unload the pressure by manual as below: open the side door, there is a round wheel on the oil tank, lift and move the wheel to unload the pressure.

7.2.2 The machine must be connected well and in good grounding condition before starting the machine.

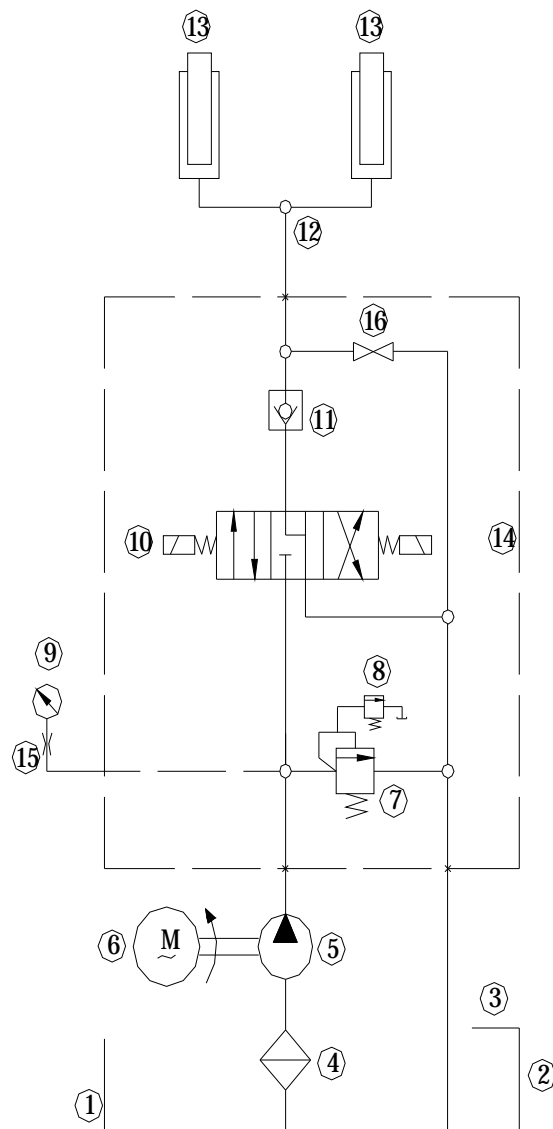
7.2.3 Please check the position of hydraulic oil, generally the oil should be the 3/5 of the gauge position.

7.3.4 Please do not enlarge the capacity of air switch, user should be responsible for the damaged accident if change the capacity by oneself, and also not belong to the range of warranty.

8. Accessories list

“—“	shape screwdriver	1
“+”	shape screwdriver	1
14-- 17	hand wheel	1
17—19	hand wheel	1
300x36	driver	1
Inner M5\M6\M8	angle hand wheel	each 1
Big, small	oil sealed ring	2
Bottom	metal sets	

Faults	Cause	solution
Machine can't start	1. Air switch is off 2. Voltage abnormal	1. Exchange fuse 2. Check whether power and voltage is normal
Temperature rises too slowly or can't rise	1. Electrical heat pipe is damaged 2. Temperature controller is out of control	Exchange or repair the electrical heat pipe and temperature controller
Fog or white spot on the face of laminated product	Temperature set too low	Raise temperature
Sticking force between film and paper is not strong enough	Pressure of pressure roller is not enough	Enlarge pressure
There is a big difference between Real temperature and set temperature	The sensor not touch the roller well	Replace it and touch the roller well
There is no shows in monometer	1. Wrong operation, overflow valve isn't loaded. 2. The core of overflow valve is jammed. 3. Oil pump sucks empty 4. The monometer is damaged	1. Read the user manual carefully 2. Wash the valve core 3. Fill in oil 4. Exchange monometer and wash the circuit of monometer.
Paper is curved after separation	1. Anti-curve roller is not in the right position. 2. The self-weight isn't lift up	1. Adjust the anti-bend roller position. 2. Lift up the self-weight roller and press on the paper.
Paper can not be separated after lamination	1. Check the film perforating device. 2. Check the skew wheel.	1. Put down the perforating device 2. Place the skew wheel on the right position.



- 1 Oil tank[20L]
- 2 Content gauge
- 3 Air filter
- 4 Oil filter
- 5 Oil hydraulic cylinder
- 6 Motor
- 7 Flooding valve
- 8 Flooding valve
- 9 pressure watch
- 10 Magnet-valve
- 11 Backpressure valve
- 12 oil pipe
- 13 Oil hydraulic cylinder
- 14 Oil line integration
- 15 Piezometry unit|PT-1|
- 16 Baffler

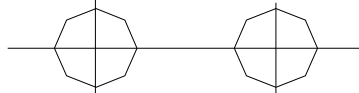
Technical variables

1. Rated pressure $P=21\text{MPa}$ rated flow $Q=1.5\text{L}/\text{min}$
2. Motor power $N=0.75\text{KW}$ Motor speed $R=1450\text{r}/\text{min}$
3. Oil cylinder thrust $F=1.7\text{T}/\text{pc}$ Oil cylinder protrude $V=20\text{mm}/\text{s}$

YFML series Semi-automatic hydraulic laminator

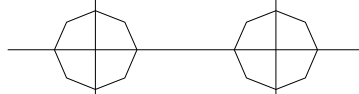
Power switch power indicator

OFF ON

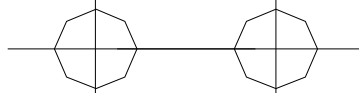


Broken sheet stop No sheet stop

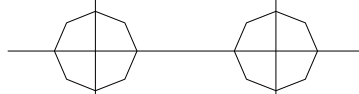
OFF ON OFF ON



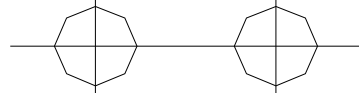
Load indicator Unload indicator



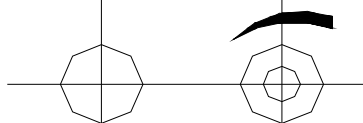
Load pressure Unload pressure



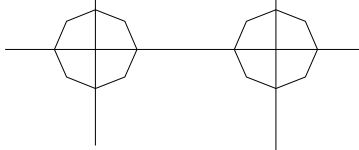
JOG Keeping pressure



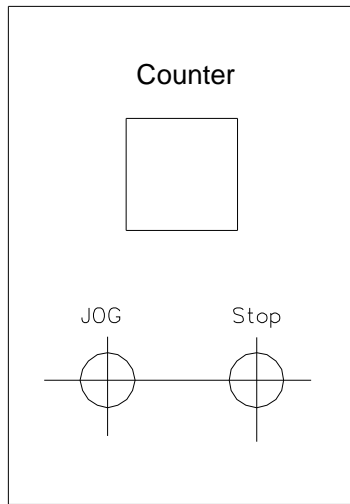
Indicator Speed



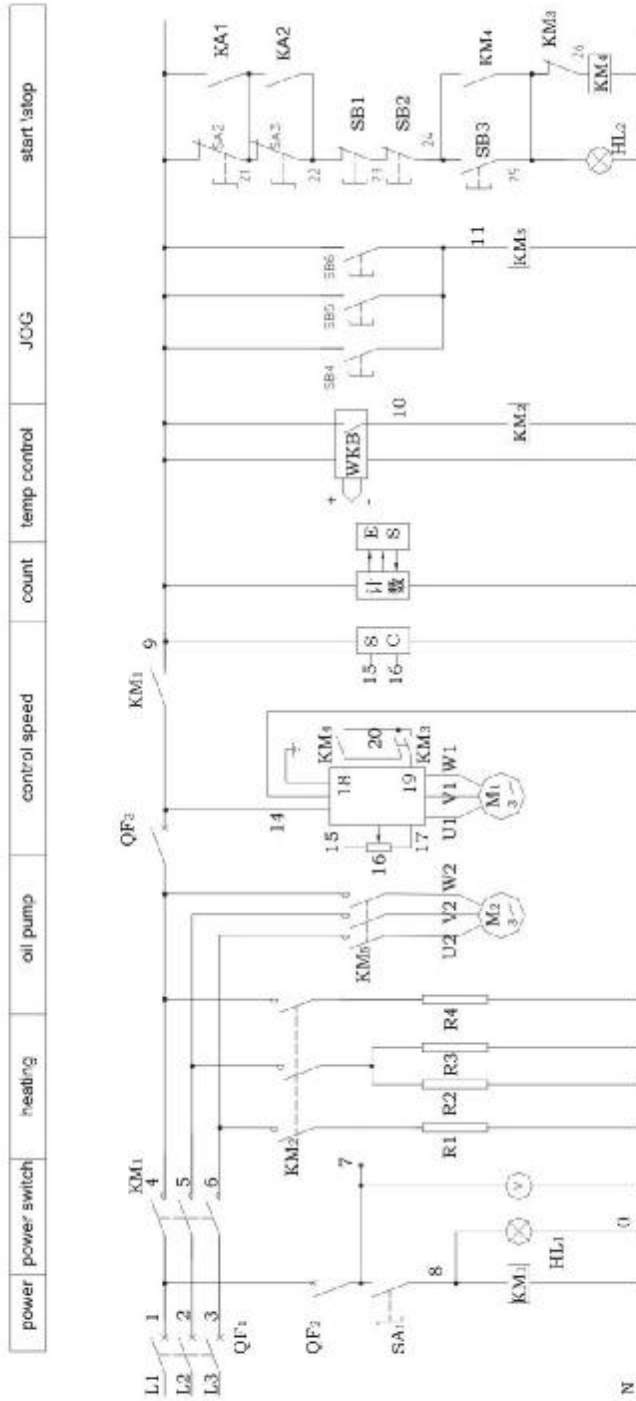
Start Stop



Main electrical control face plate

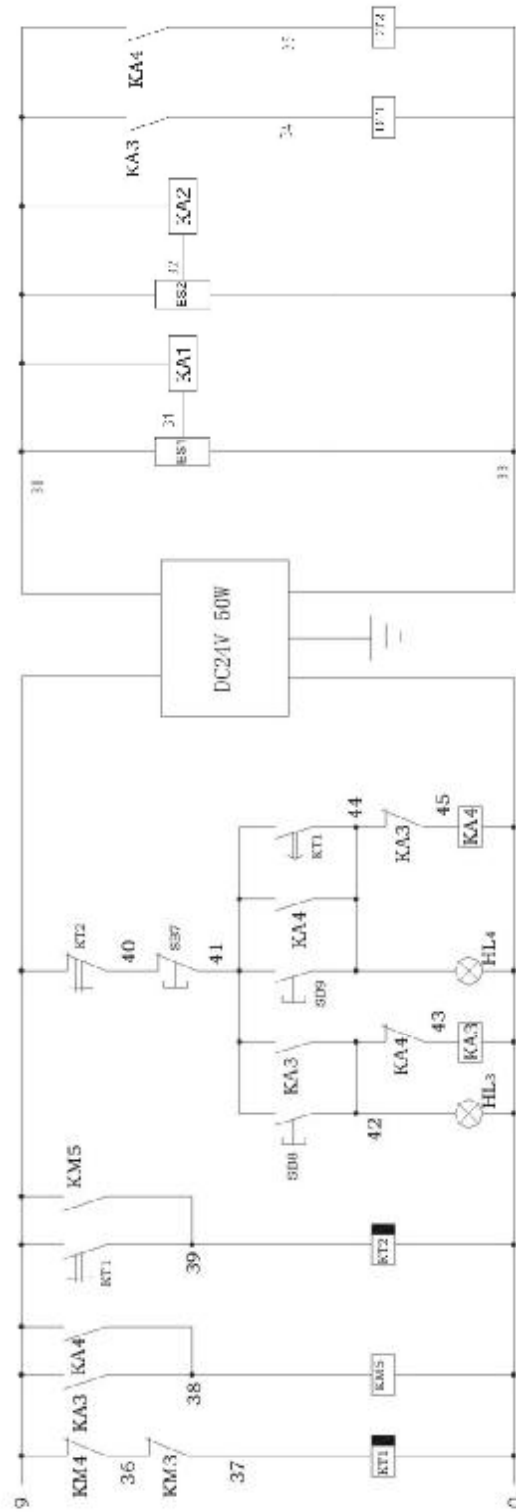


Electric face plate 2



YFM Electric specification 1(380V 50HZ)

unload pressure	oil pump	size of making pressure	load pressure	unload pressure	DC power	No sheet protect	motion sheet protect	stop structure	noise protection
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YFML Electrical specification 2 (380V 50HZ)