
WFQB1000/1300

AUTOMATIC SLITTING MACHINE

OPERATION MANUAL

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1. General Introduction

Model WFQB Series slitting machine is used to slit various web type materials such as plastic film, paper, cellophane, etc.

The machine combines mechanical, electrical and photoelectric system; it adopts high manufactory technology, high sensitive photocell to conduct tracking revise, magnetic powder brake and clutch tension control for unwinding and rewinding, meter counter, etc.

It has advantage of great precision, wide usage, stable function and easy operation etc. in order to help customers to understand operation and maintenance, we here by take model WFQB1000/1300 Automatic Slitting Machine as an example to briefly explain the specific steps of performance and enable customer to master the performance and operation.

2. Main Technical Specification

	Model	WFQB1000	WFQB1300
1	Max width of material	1000mm	1300mm
2	Max unwinding diameter	φ 600mm	
3	Max rewinding diameter	φ 450mm	
4	Reel Core	φ 76mm	
5	Slitting width adjustment	30mm-1000mm	30mm-1300mm
6	Slitting speed	220m/min	
7	Error of Deviation	±0.3mm	
8	Tension control	0-50N. m	
9	Power supply	240V 60Hz 3Phase	
10	Drive motor power	3.5kw/4kw	
11	Fan power	0.55kw	
12	Total power	4.8kw	
13	Overall dimension	2500X1600X1500mm	2800X1600X1500mm
14	Weight	2500kg	2800kg
15	Working temperature	0~55℃	0~55℃
16	Working humidity (no	10%~90%RH	10%~90%RH
17	Environment requirement	Without dust and statistics, and without strongly electromagnetic field radiation	

3. Installation and commissioning

The machine has been tested and adjusted strictly when dispatched from factory. It has passed the actual test and approved for delivery.

The machine should be installed on the level cement ground or firm ground, adjust the foundation adjusting bolts and check whether it is horizontal and longitudinal level.

Before commissioning, it is necessary to clean the antirust oil and wipe all parts, check all the screws and nuts of each parts whether they are loosened, fill up lubricating oil into each driving parts, and rotate the machine by manual for several times. If it runs smoothly and are all normal, it can be connected to power and start commissioning. At that moment, check the running direction of motor and blower to see whether it is correct and check the functions of photocell web guiding system and whether they are sensitive. Idle run the machine for a certain time (usually for an hour) and start production when all normal.

4. Operation and Adjustment

(1) Lay the web required for slitting according to the material route diagram, preset the unwinding and rewinding tension, and adjust the depth of handle wheel "B" in material route diagram to keep the unwinding shaft and rewinding shaft in parallel, otherwise the film material will be punctured during slitting.

(2) The (web guiding system) running edge web guiding is control by photocell, controller and drive unit, which can be controlled with either line tracking (LPC) or edge tracking (EPC).

(3) The rotating speed of main shaft is controlled by electromagnetic governor motor; it is adjusted to the speed adjustable potentiometer of main motor according to working requirements and indicated by tachometer.

(4) Tension control

a) Unwinding tension is controlled by means of sensor, microcomputer and magnetic powder brake. Keep both end pressure consistent by the means of adjusting the screw of sensor roller. The quantity of tension can be adjusted by the unwind tension adjust knob (11) which on the control case.

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- b) Rewinding tension control is fulfilled by means of magnetic powder clutch. The tension quantity can be adjusted by the upper rewind/lower rewind tension adjust knob (7)/(9) which on the control case.
- c) Adjust the slitting specification of straight blade (take the measuring scale on straight blade shaft as standard), then put down the straight blade to start slitting. The straight blade is suitable for the plastic films such as PE, PP and OPP etc, the round blade (optional for customer) is suitable for the harder materials such as paper and aluminum foil, etc.
- d) If there is too much deviation for original web, it's best to be rewound with slitting machine, then started to be slitted into finished products. If there is a splice or breakage in web, the web guiding will be out of control. At that moment, reduce the speed and readjust it.

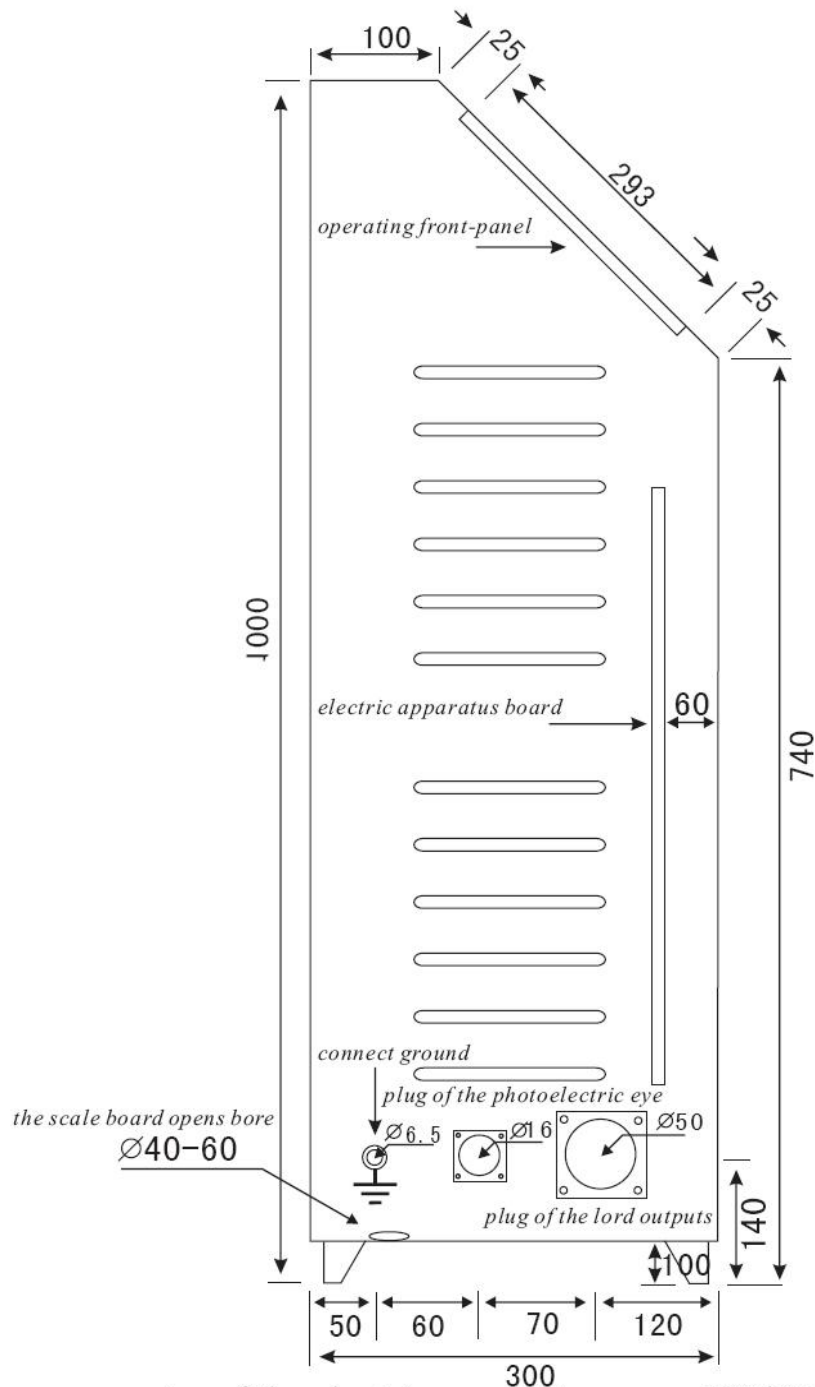


5. Control System

Control Case

Inform respectfully customer: You must read the manual first and connect with the machine well and connect earth wire of the electric apparatus case.

One. Appearance of the electric apparatus case

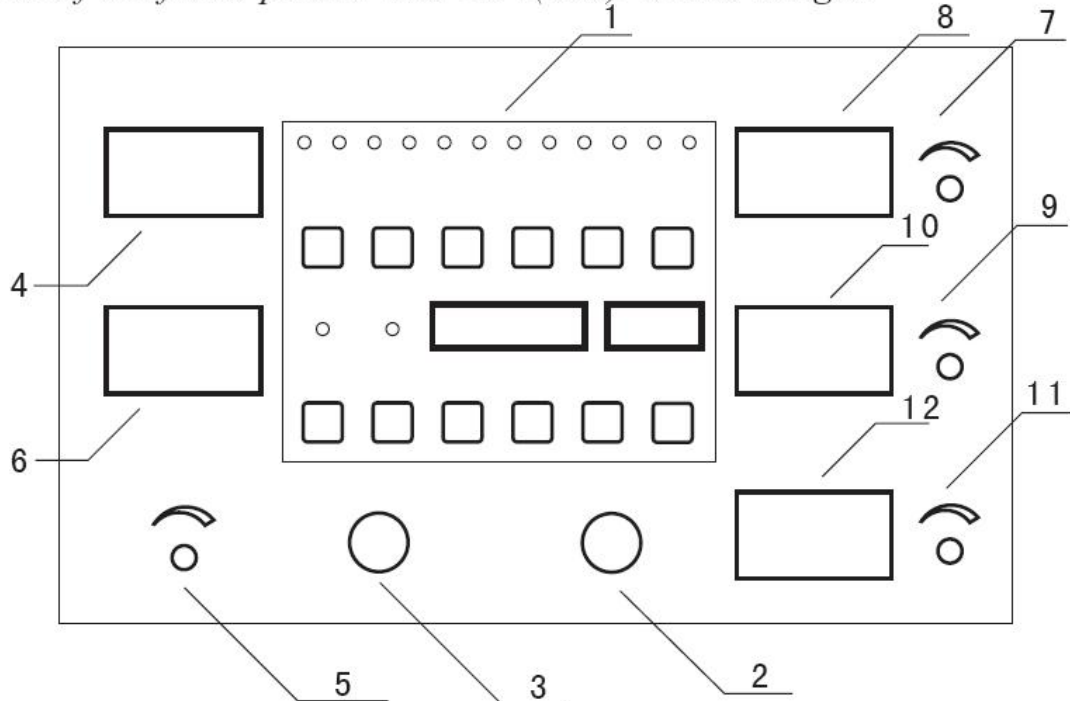


*appearance size of the electric apparatus case: 100*300*510(mm)*

*height*length*width*

*size of the front-panel window: 464*293(mm) width*height*

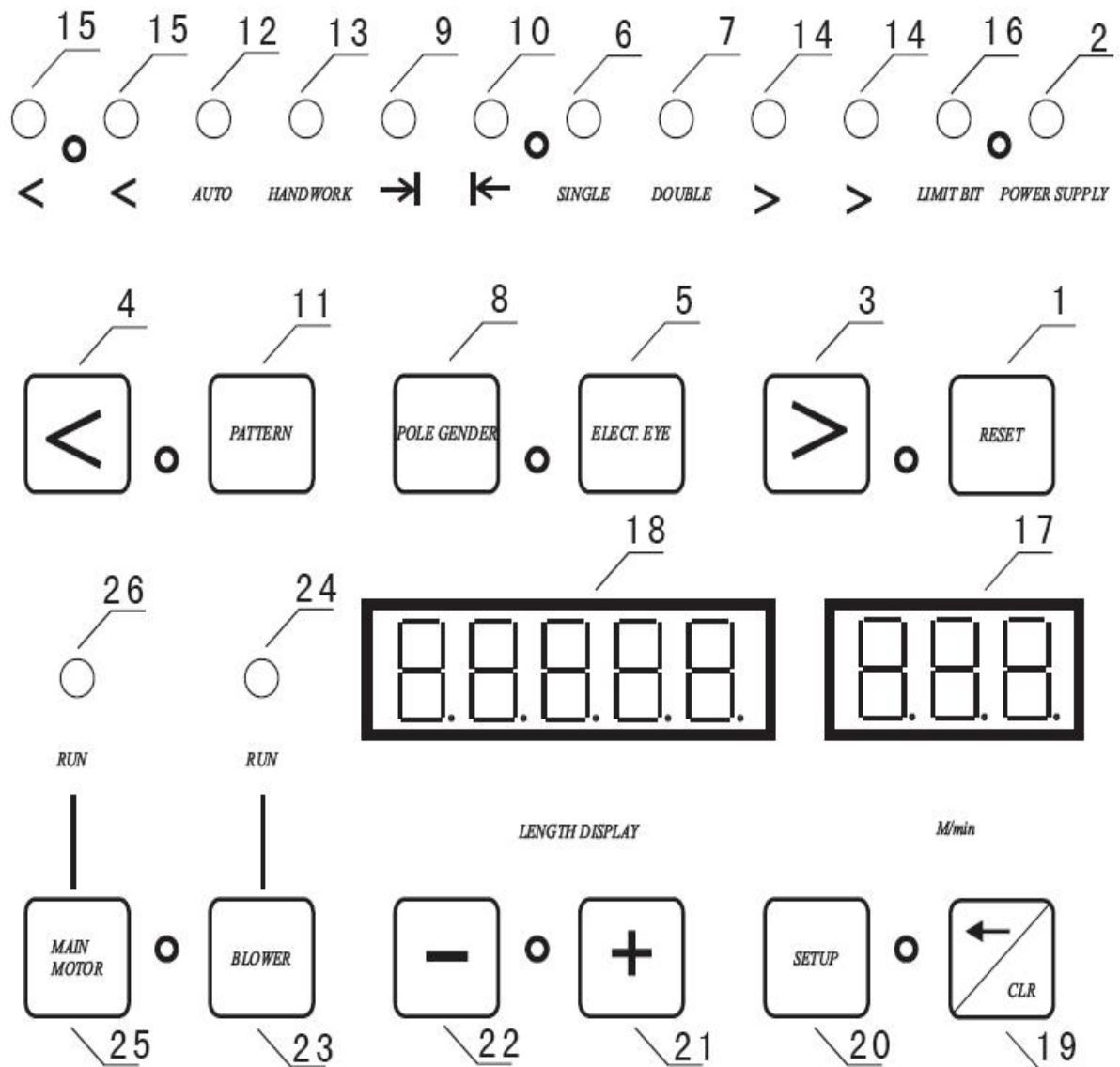
Two. Sketch map of the front-panel arranges
size of the front-panel: 460*290(mm) width*height



Three. Introduction to every part of the front-panel

1. Computer control system: It consists with automatic photoelectric correct controller, length controller which can preset control length to automatically stop, line speed instruments, main machine control switch and blower fan control switch (see in detail page elucidation behind).
2. Control switch of the power supply: It is used to open or close the control power supply of control box (notice: this switch closes control power supply only).
3. Power supply indicator: Indicating the power switch is placed in to open or closes appearance.
4. Voltmeter: Indicate electric voltage of the power supply inputs (normal value:180-245 V, please close the power switch when the input voltage is not on the normal value).
5. Potentiometer of main motor: Regulating it can change the speed of the main motor.
6. Tachometer of the main motor: It shows the speed when the main motor revolves.
- 7.9.11. Tension potentiometer: Adjust each of them can change the tension size of the magnetic-powder clutch or brake (7 is up winding tension, 9 is down winding tension, 11 is unwinding tension potentiometer).
- 8.10.12. Tension ammeters: They are indicate the value of electric current, 8 is up winding tension, 10 is down winding tension, 12 is unwinding tension.

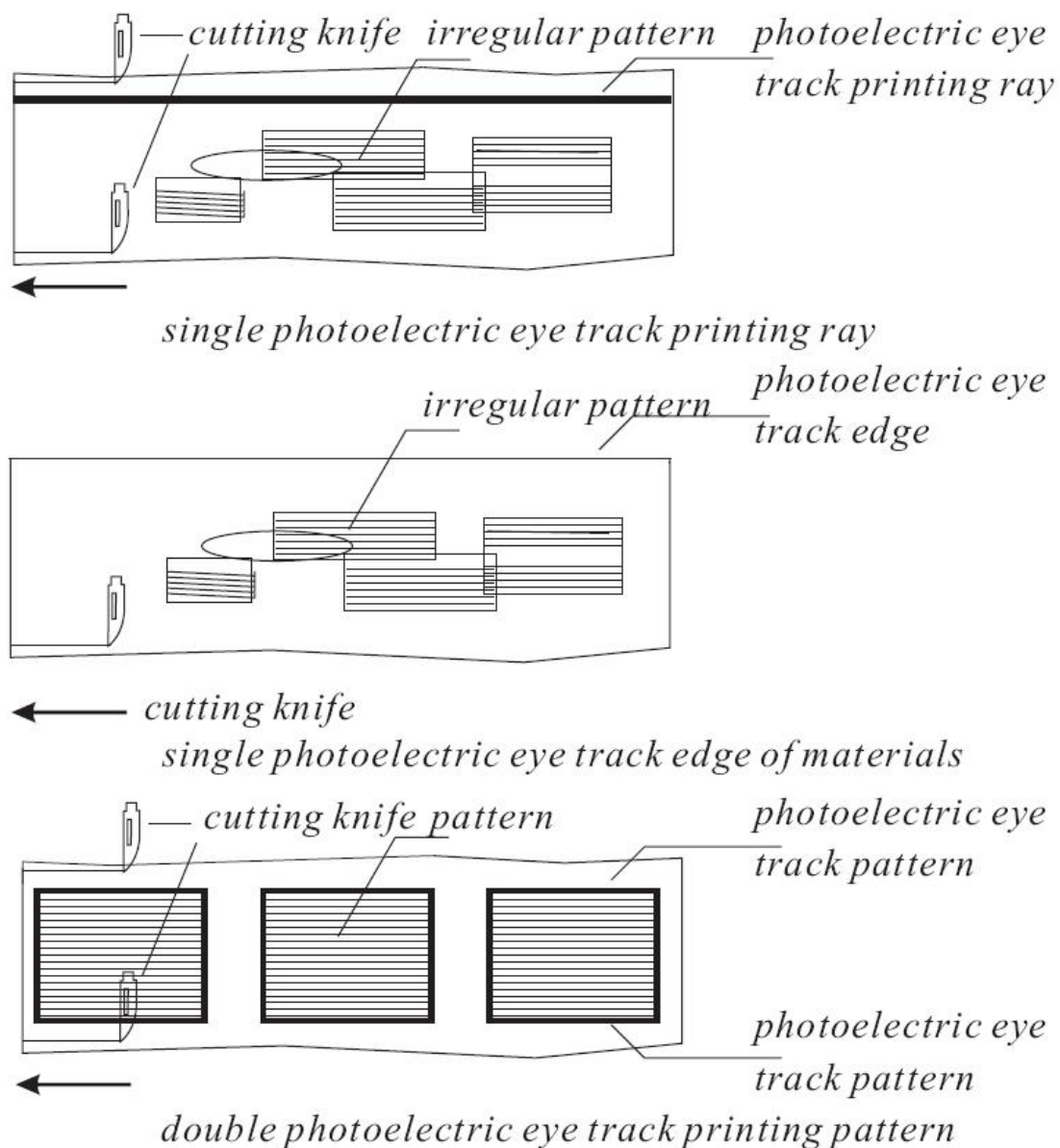
Four. Explain the control system of the computer



5-1. Part of correction control (control number 1-16):

1. Reset: Press it to make the computer initialization.
2. Power supply indicator: When the indicator bright means power supply of the computer parts are placed in power supply appearance.
- 3.4. Direction switch: Press homologous direction switch 3 or 4 will make the correction motor to be turning forward or backward that moving correct pole to adjust following position. In the meantime, according to the indicator 14 or 15

to indicates ambulation direction.



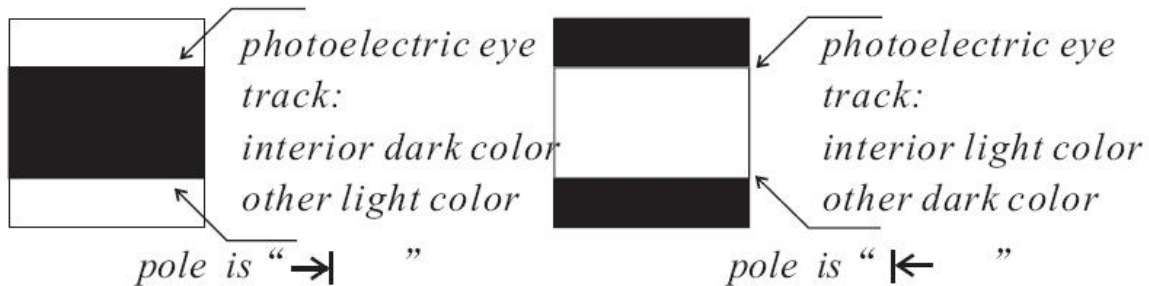
5. Switch of selecting photoelectric eye: Press it can select single or double photoelectric eye to track. It is single photoelectric eye when indicator 6 bright and it is double photoelectric eye when indicator 7 bright.

Generally the single photoelectric eye is used to track line and the double photoelectric eye is used to track side (please reference the sketch map overleaf).

6.7. Indicator: Indicator 6 bright means choosing single photoelectric eye to work and indicator 7 bright means choosing double photoelectric eye to work. Single or double photoelectric eye is selected by the switch 5.

8. Switch of choosing pole: Press "pole" switch can choose black or white to

work, when indicator 9 bright is on black work, indicator 10 bright is on white work. Choose black or white work is decided by color of printing material or the photoelectric eye on the trail of position (saw page diagram).



9.10. Indicator: Indicator 9 bright means choosing pole "→", indicator 10 bright means choosing pole "←". Pole "→" or "←" is selected by the switch 8.

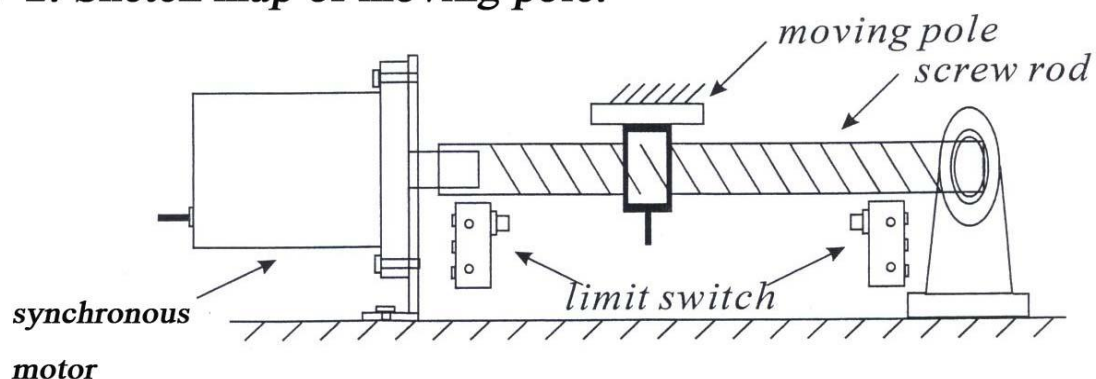
11. Switch of selecting pattern: Press it can select automatic or manual. When indicator 12 bright means the appearance of automatic and indicator 13 bright means the appearance of manual. Generally to operate the correct controller, please select the appearance of manual first according to the color and the type of the correction material to select pole and single or double photoelectric eye. Press the direction switch to adjust photoelectric eye to match precision the side or line of the track material and adjust the sensitivity of photoelectric eye, then press it to select automatic correction.

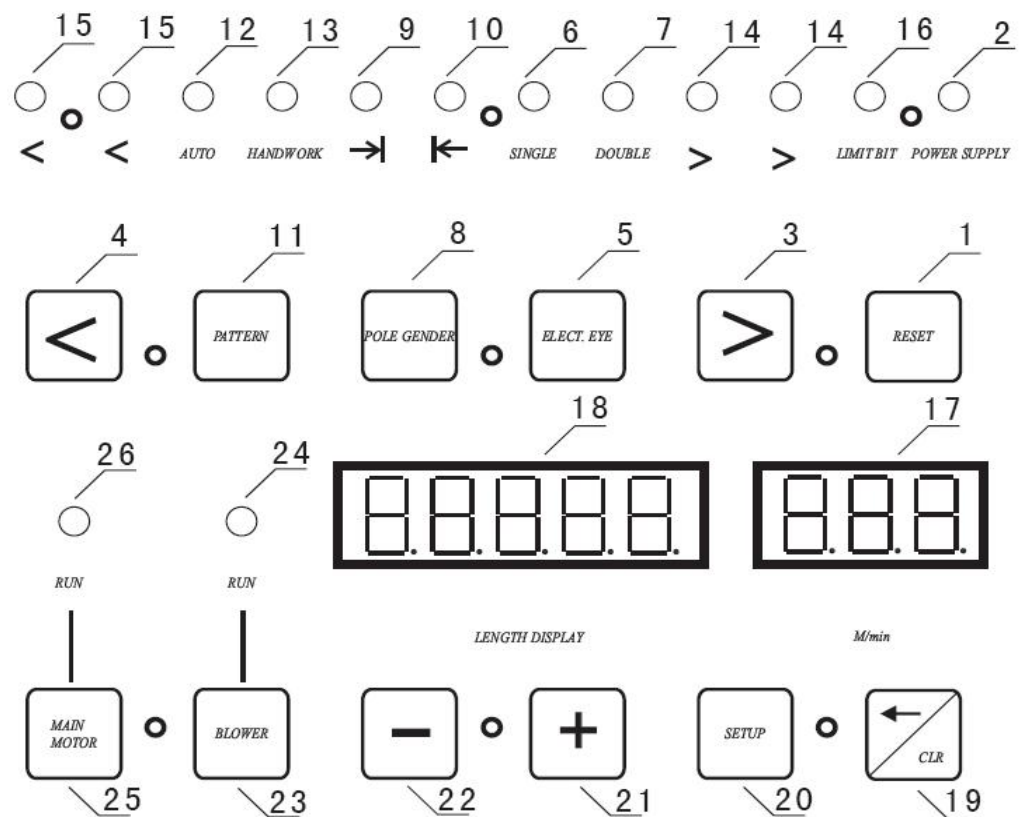
12.13. Indicator: Indicator 12 bright means choosing automatic and indicator 13 bright means choosing manual. Choose automatic or manual to work is determined by the switch 11.

14.15. Indicator: They are represented the running direction of the correction motor namely turning forward or backward.

16. Indicator: It is a limit indicator, it bright means the correct motor run to the limit of the two ports of the limit switch when the computer will shut the power supply of the correct motor and at meantime buzzer sends sound.

5-2. Sketch map of moving pole:





5-3. Part of length and pace measurement (number 17-22):

17. Window of pace shows: If main motor 25 is on, it shows cutting pace of the cutting machine (unit: M/min); If main motor 25 is off, it shows “-P-” which means the machine is stop; When it shows “-L-” means the computer is setting length.

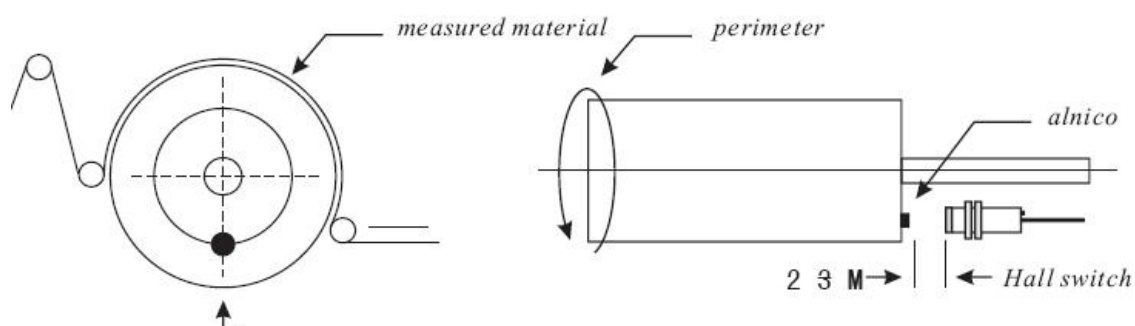
18. Window of length shows: It shows the cutting length (unit: M).

19. Zero clearing/ shift switch: Press it on the state of setting can move set position to change the data quickly. Normally to press it can clear the data of length.

20. Set up switch: Used to set the control length and the perimeter of roll.

21.22. Add and subtract switch: Used to adjust the setting data.

5-4. Method of length and pace measurement:



Length measure adopts Hall switch to pick up every pulse and get the length according to the preset perimeter cumulation method. Speed measure adopts frequency of Hall switch multiply the preset perimeter to compute the speed (see above sketch map).

5-5. Method of setting length and girth controlled

1. Set perimeter: Press the switch “set” tightly until the window of speed to display “-C-”, then loose. Now the window of length to display the storage perimeter data last time (unit: M) and scintillation to prompt change position, press “+” or “-” to adjust data and press “CLR/move” switch to move change position to arrive the data of perimeter needed and then perimeter set when the window of length to display “00000”.

2. Set the control length: Press the switch “set” a time, the window of speed to display “-L-” and the window of length to display the storage control length last time (unit: M) and scintillation to prompt change position. Press “+” or “-” to adjust data and “CLR/move” switch to move change position to arrive the data of control length needed and then press “set” switch, window of length to display “save”, it is finished the length set when the window of length to display “00000”.

Notice: Set the needed control length, the machine run to subtract speed automatically before 3 miles of the control length (speed is adjusted by the base potentiometer of the electronic board) and stop the machine when it runs to the preset length. It will not stop machine automatically when the control length is set 0.

5-6. Blower fan and main electric motor control

23. Blower fan switch: Press it can start or shut off the blower fan.

24. Indicator: It indicates the state of the blower fan work. It is on when the blower fan run and it is off when the blower fan is shut off.

25. Main motor switch: Press it can start or shut off the main motor. It will shut off then main motor automatically below two conditions:

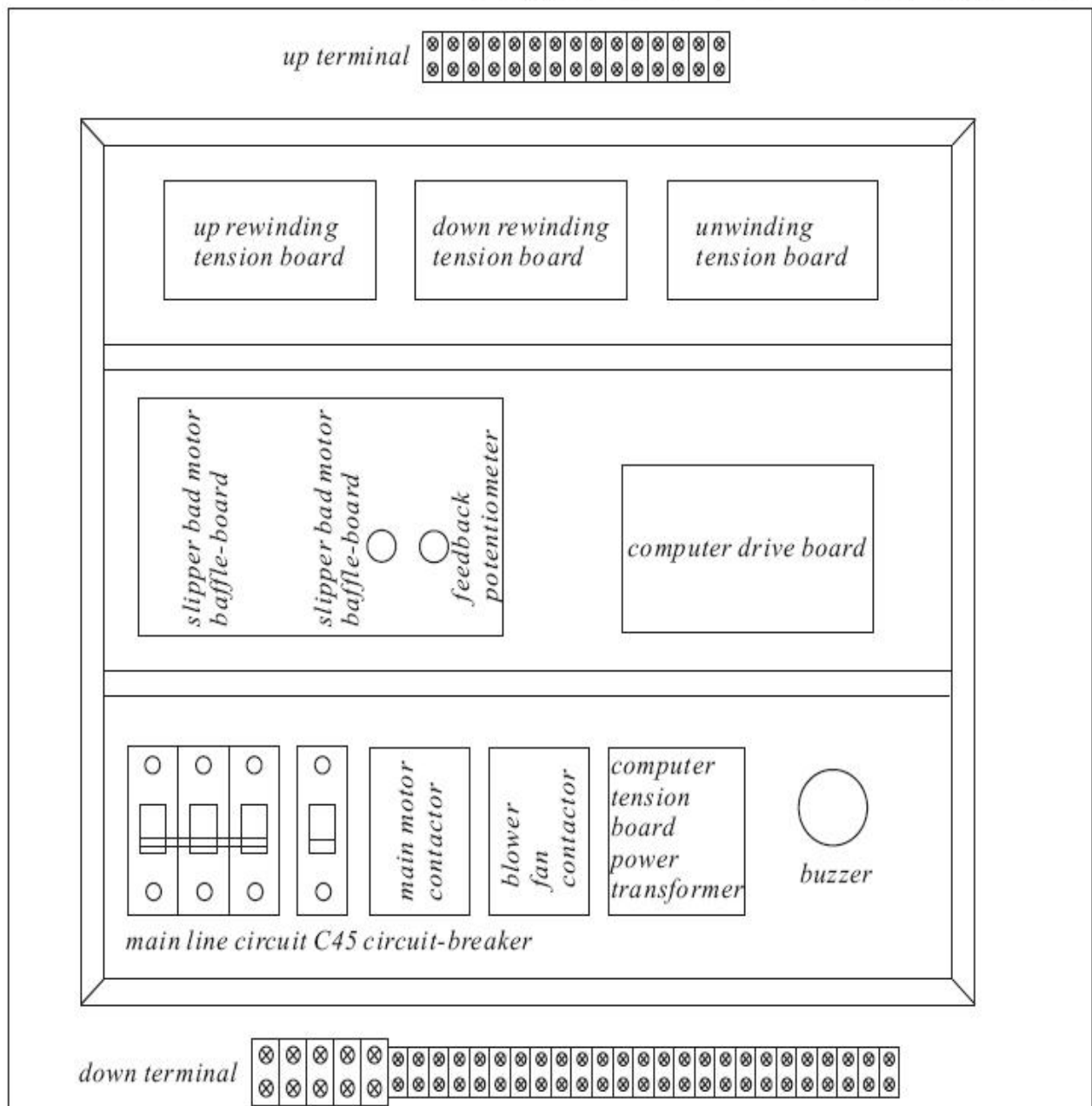
1). Correct motor runs to the limit, i.e. touch the limit switch.

2). The measured length arrives the preset control length.

26. Indicator: It indicates the state of main motor work. It is on when the main motor run and it is off when the main motor is shut off.

Five. Sketch map of the electric apparatus board arranges

size of glue wooden board:580*490 (mm) height*width

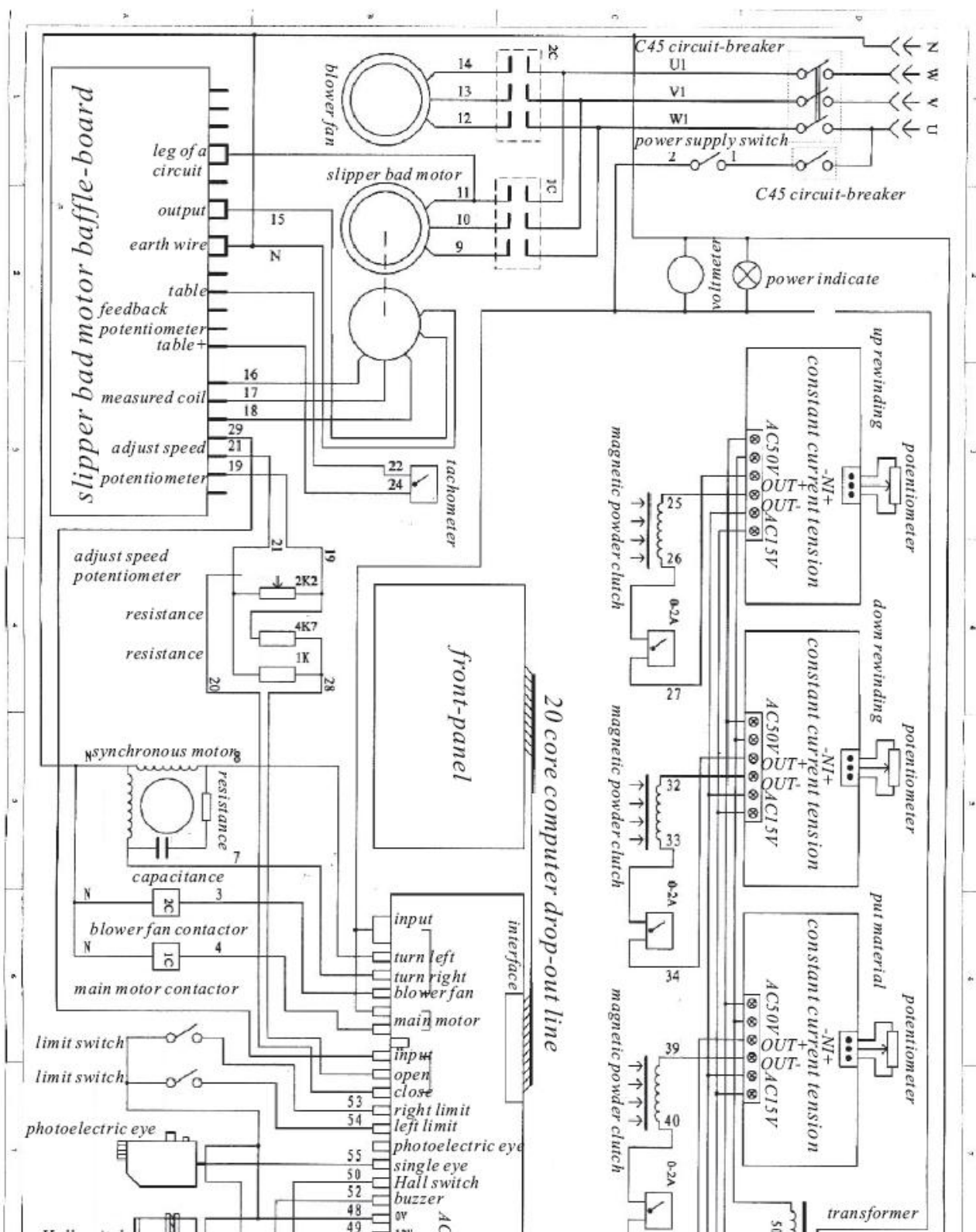


Six. Plug number of the main aviation

<i>plug number</i>	<i>wiring number</i>	<i>instruction</i>
1.	N	synchronous motor total(earth wire)
2.	7	synchronous motor turn forward (right)
3.	8	synchronous motor turn opposite(left)
4.	9	main motor
5.	10	main motor
6.	11	main motor
7.	12	blower fan
8.	13	blower fan
9.	14	blower fan
10.	15	excitation of main motor
11.	N	excitation of main motor(earth wire)
12.	16	coil of main motor measure speed
13.	17	coil of main motor measure speed
18.	33	coil of main motor measure speed
14.	18	coil of main motor measure speed
15.	25	magnetic powder clutch of up winding-
16.	26	magnetic powder clutch of up winding+
17.	32	magnetic powder clutch of down winding magnetic
18.	33	powder clutch of down winding+
19.	39	magnetic powder brake of unwinding-
20.	40	magnetic powder brake of unwinding+
21.	48	0V electric power supply
22.	49	12V electric power supply
23.	50	input the signal of Hall switch
24.	53	right limit switch of correction
25.	54	left limit switch of correction
26.	48	0V electric power supply

Seven. Plug number of the photoelectric eye plug number wiring number instruction

1. 49 12V electric power supply
2. 55 input single of photoelectric eye
3. 48 0V electric power supply



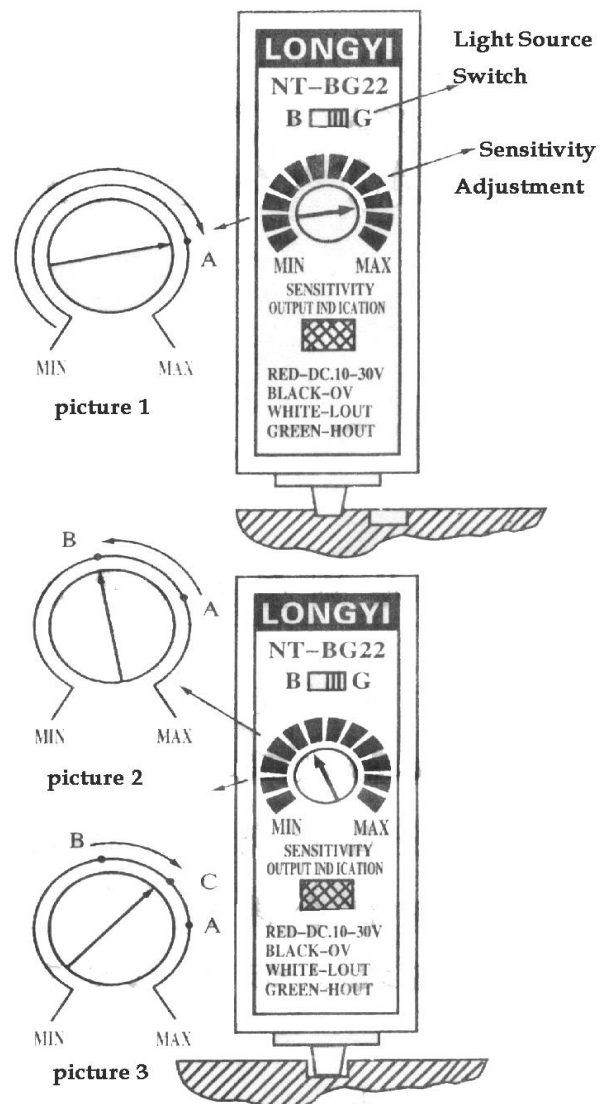
Photocell Adjustment

Turn on the power switch of photocell web guiding controller; adjust the position of photocell, until the light point of photocell is most clear and light. Adjust the sensitivity of photocell: (no matter the area which light point focus on is dark color or light color, turning the switch in clockwise will lighten the green light (OUT2), and anticlockwise turning will lighten the red light (OUT1)).

Step 1: let the light point focus on dark place of material (normally called color mark/printed mark), adjust the sensitivity switch, let the green light under the state of "off", remember the position of switch (suppose it is Mark A)

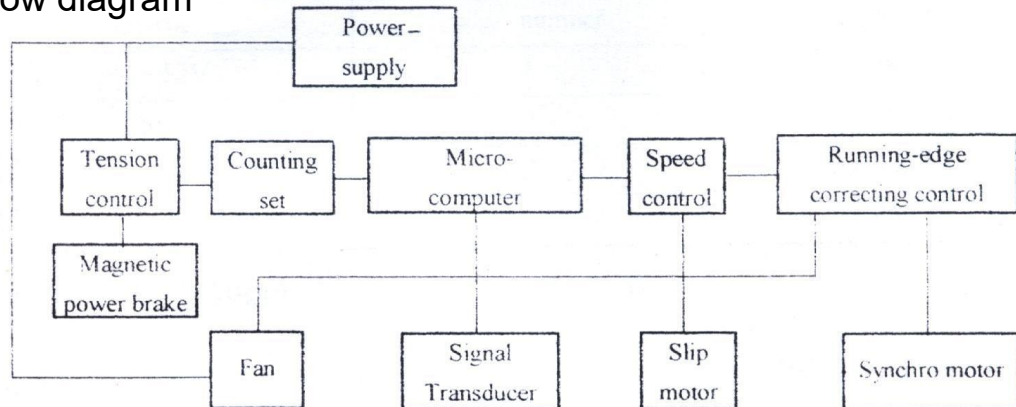
Step 2: then let the light point focus on the light place of material (background color) anticlockwise adjust the sensitivity switch, let the green light under the state of "Off", remember the position of switch (suppose mark B).

Step 3: Adjust the switch on the center of A and B, Beside remembering the position of A and B, multi circle potentiometer also need to remember how many circle after turning from A to B, and return to the middle circle quantity from A to B.



Electric Control System

A. Electric flow diagram



B. Out wiring: 26-core comprehensive plug diagram

Instruction		com number	wire number
Drive motor three-phase output wire		1、2、3	9、10、11
Fan motor three-phase output wire		4、5、6	12、13、14
Drive motor exciter		7、8	
Drive motor test speed generator		9、10、11	16、17、18
Synchro motor	Zore line	12	0
	Ppositive turn	13	7
	Back turn	14	8
Up tension output		15、16	25、26
Down tension output		17、18	32、33
Brake tension output		19、20	39、40
Counting set	Proximity switch ov	21	48
	+12V	22	49
	Signal	23	50
spacing contral	Ov	24	48
Left and right limited signal		25、26	53、54

C. 4 core-photocell diagram

Instruction	edge number	Wire number
+12V	1	49
Signal	2	55
Signal	3	empty
Ov	4	48

Power supply input: Live wire U1,V1, W ZeroN

Points for attention

- 1) Checking the connection of input wire of power, phase wire and zore wire are correct. Start the machine only all correct, otherwise the control case will be damaged.
- 2) Check all fuses whether they are in good condition.
- 3) Check whether the external wiring of control box is correct or loosened.
- 4) It should be maintained by a professional electrician or contact with us if occurs troubles.

6. Maintenance and Safety Production

- 1) The machine must be cleaned the dusts before operation;
- 2) Each running parts should be filled up lubricating oil once or twice a shift and greased once a month.
- 3) It should be usually oiled with heat-resistant oil(industrial grease) at the parts between rubber bakelit wheel and friction plate on upper and lower rewinding shafts.
- 4) The magnetic powder brake should prevent from oil, water and other corrosive medium so that keep the magnetic powder from moisture and avoid function loosing.
- 5) The machine mustn't to be cleaned, wipred and oiled during running.
- 6) If repairing or adjusting the parts, it must be done when the machine is stopped, and the main power should be switched off.
- 7) It should be strictly adhering to operating regulations for electric maintenance.

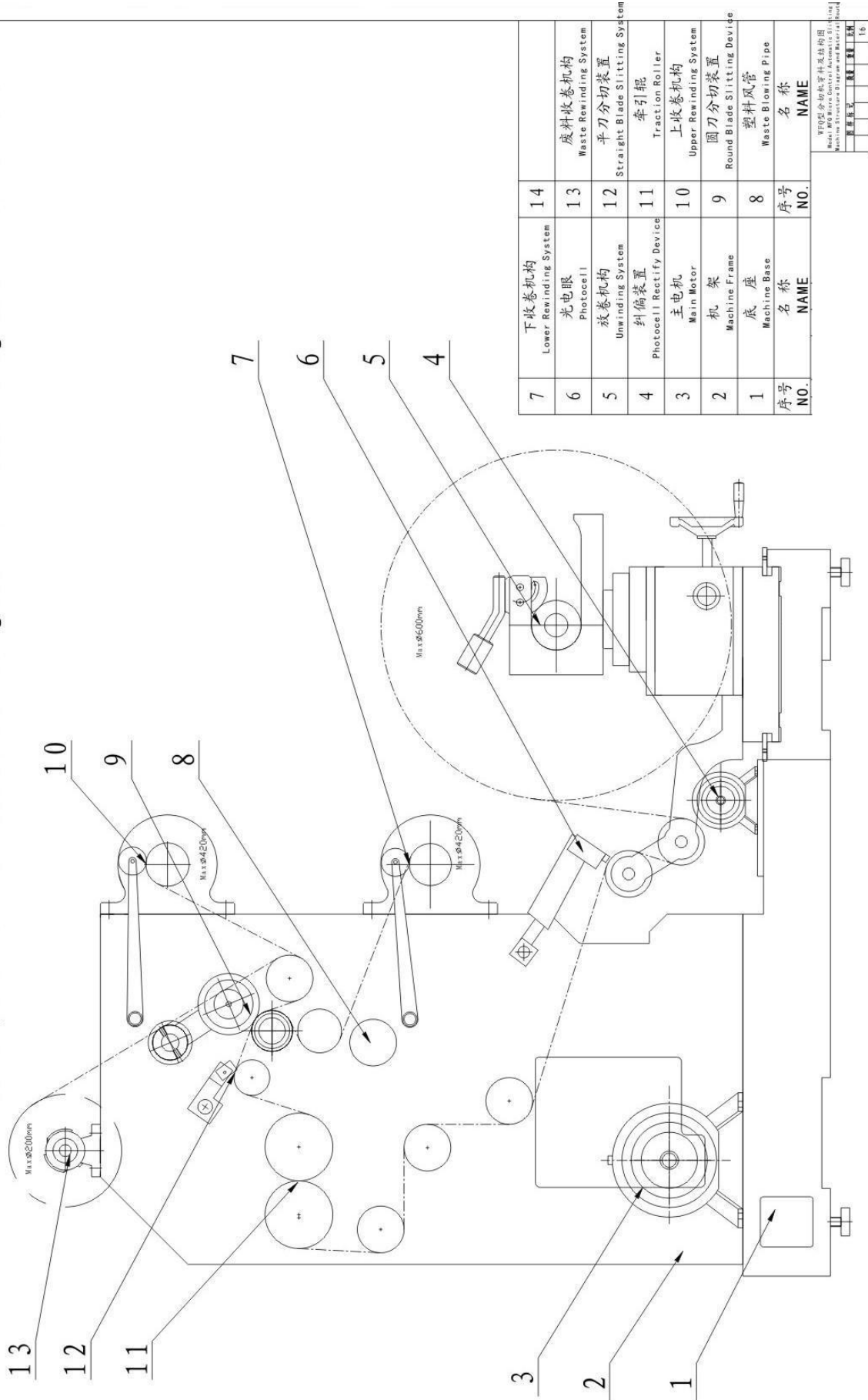
7. Trouble and Troubleshooting

No	Trouble	Reason	Troubleshooting
1	When the power is switched on, the indicator light does not lighten	1.The power hasn't been connected; 2.Indicator light is broken; 3.The breaker of control box is unconnected.	1.Connect the power; 2.Replace the indicator light; 3.Connect the breaker.
2	The main motor doesn't work	1.The control button is broken; 2.Thermal relay is break off; 3.The feed line is disconnected; 4.One phase line of 3 phases is turnoff. 5.The frequency or voltage of power supply incorrect.	1.Replace the button; 2.Reset the thermal relay; 3.Check the voltage between each wire; 4.Check each phase, and current; 5.Check the voltage and frequency
3	When adjust the speed adjuster, the switch can't be turned	1. The power switch of controller doesn't connect; 2. The adjuster not has been returned to zero.	1. Turn on the switch; 2. Return to zero, then process speed adjustment.
4	The REV speed of speed adjust motor (main motor) lost control and increase	1.Feedback quantity adjusting potentiometer is broken; 2.Feedback circuit bad contact or element damaged.	Checking the connect element of feedback circuit, replace the damaged element.
5	Tension adjust switch without tension output, and the tension indicator without current output	1. Breaker open circuit; 2. Brush broken; 3. Audion on control circuit board is broken; 4. Coil turnoff.	1. Connect the breaker; 2. Replace element and coil; 3. Examine and repair the power
6	Meter counter not count	1.Power turnoff; 2.Meter counter broken; 3.Hall switch broken; 4.Mounting distance of the approach switch is not within the range of 5mm.	1. Check the circuit; 2. Replace the counter; 3. Replace the hall switch.
7	When waste blower turn on, doesn't work	1.Main motor not start; 2.Break turnoff; 3.Circuit not connects.	1. Start main motor; 2. Connect the breaker; 3. Checking the circuit
8	Web-guiding not work	1. Photocell is broken; 2. Web-guiding controller broken; 3. The power switch not turn on; 4. Not properly adjust the focus.	1. Replace the photocell, 2. Replace the controller; 3. Turn on the switch, check the power; 4. Proper adjust the focus according the operation instruction of photocell
9	Slitting tension	1. The working surface of magnetic brake	1. Polishing the working surface;

	uneven, and wrinkle	part is damaged; 2. The magnetic powder is deperoprate and tied.	2. Replace the magnetic powder.
10	Not good accuracy of slitting	1. Photocell tracking failure; 2. Tension not good adjusted; 3. Rewinding shaft deflect; 4. Uneven speed.	According each point to adjust and solve them
11	When rewinding the material is tensile failure	Two much rewinding tension	Properly adjust the tension
12	Lengthways tearing	1.Blade dull; 2.Not properly choose the slitting blade.	1. Replace the blade; 2. Choose the slitting blade (straight blade or round blade according the material)
13	When the automatic key of the web-guiding controller is pressed down, it can't track normally	1. When two colors of the photocell head change, the indicator light of photocell head doesn't lighten, it indicates that the photocell head or its sensitivity hasn't been regulated well; 2. When two colors change, the indicator light of photocell head flickers, but the indicator light of the signal wire isn't connected or its connector is damaged; 3. Press the automatic and right or left key, the indicator light doesn't lighten, it indicates that the connector and lead wire are damaged; 4. When two colors change, the computer has no output on automatic tracking but the indicator light flicker alternatively; it indicates the computer is damaged.	

WFQ型微机控制自动分切机穿料及结构图

Model WFQ Micro Control Automatic Slitting Machine Structure Diagram and Material Route



7	下收卷机构 Lower Rewinding System	14	废料收卷机构 Waste Rewinding System
6	光电眼 Photoceell	13	平刀分切装置 Straight Blade Slitting System
5	放卷机构 Unwinding System	12	牵引辊 Traction Roller
4	纠偏装置 Photoceell Rectify Device	11	上收卷机构 Upper Rewinding System
3	主电机 Main Motor	10	圆刀分切装置 Round Blade Slitting Device
2	机架 Machine Frame	9	塑料风管 Waste Blowing Pipe
1	底座 Machine Base	8	
序号 NO.	名称 NAME	序号 NO.	名称 NAME

WFQ型分切机穿料及结构图
Model: WFQ Micro Control Automatic Slitting Machine
Material Route and Structure Diagram

图号	图名	比例	日期	制图	审核	批准

Accessory List

**Q
U
A
L
I
T
Y**

No	Name	Specification	Quantity
1	Hexagon ring spanner	5#,6#,8#,10#,	1 set
2	“ + ” & “ - ” screw driver		1 set
3	Oil gun		1 piece
4	Adjustable spanner	8”	1 piece
5	Potentiometer	4.7KΩ	1 pcs
6	Air connector		1 piece
7	Three head air connector	3×Φ10	1 piece
8	Straght blade		several
9	Operation Manual	English	1 copy

CERTIFICATION

PRODUCT NAME: _____

PRODUCT MODEL: _____

SERIES NUMBER: _____

DELIVERY DATE: _____

APPEARANCE QUALITY-----PASS EXAMINATION

CHECKER:

ELECTRIC CONTROL -----PASS EXAMINATION

CHECKER:

MACHINE RUNNING -----PASS EXAMINATION

CHECKER:

**THIS MACHINE HAS PASSED EXAMINATION AFTER CHECKING, AND
BEEN QUALIFIED FOR DELIVERY.**

INSPECTION DEPARTMENT