
FLK120

Automatic Mask Producing Machine

Operation Manual

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I. Introduction

FLK120 consists of machine main body, conveying line and ear band welding unit. After raw material be cut, conveyor belt will transfer main body of mask to top of mask plate of the ear band unit. Then ear band unit will weld mask body with ear-band.



Machine with PLC, touch screen control, main conveyor belt adopts single-phase motor transmission, stepping motor transmission, control stability.

II. Features

High efficient production speed, up to 90-120 pcs/min, 24 hours continuous production;

Computer PLC programming control, servo motor, fast, smooth movement, high degree of automation;

Photoelectric detection of raw materials, avoid mistakes, reduce waste

Good welding effect, low failure rate;

Friendly human - machine interface, abnormal equipment and lack of materials alarm, screen guidance to quickly deal with the abnormal.

III. Device List

- 1-Mask body production machine;
- 2-Mask connection conveyor machine;
- 3- Mask ear band welding machine.

Technical specifications:

Working power: 220VAC \pm 5%, 50Hz; the power of the whole line equipment is about 8.8KW;

Compressed air 0.5 ~ 0.8MPa, after primary drying, filtering Use flow: about 400L / Min

IV. Working environment

Working temperature: 0 ~ 40 °C

Working humidity: 5 ~ 38% HR

No flammable gas, no corrosive gas, no dust in workshop (not less than 100,000 grade)

Production efficiency: 90-120 pieces / minute (one-for-one layout)

The overall size of the equipment is about 3400mm * 3800mm * 1700mm

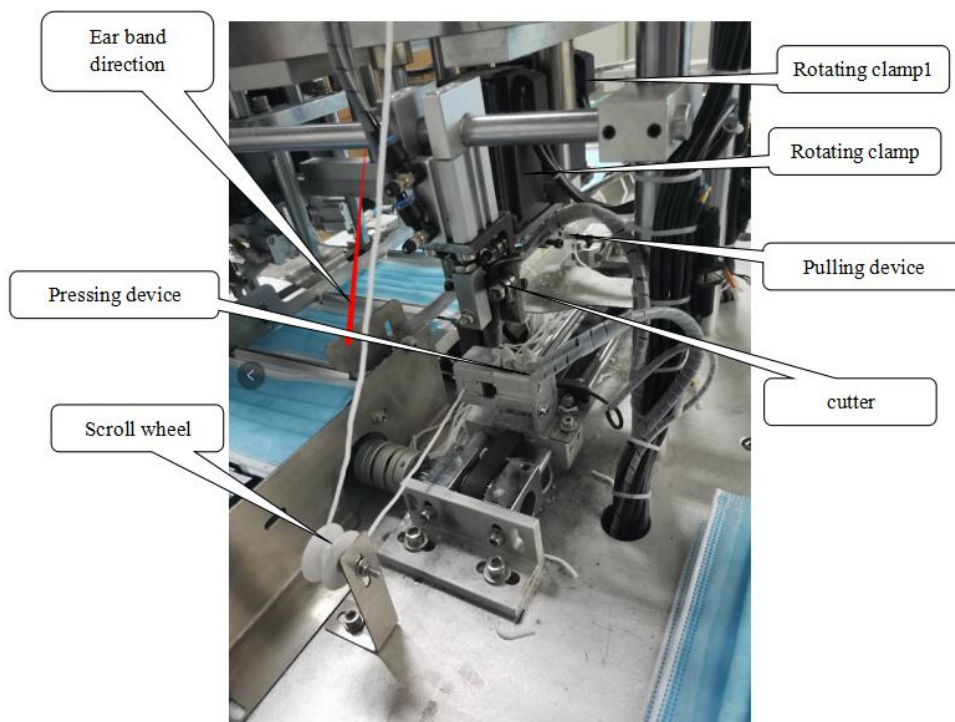
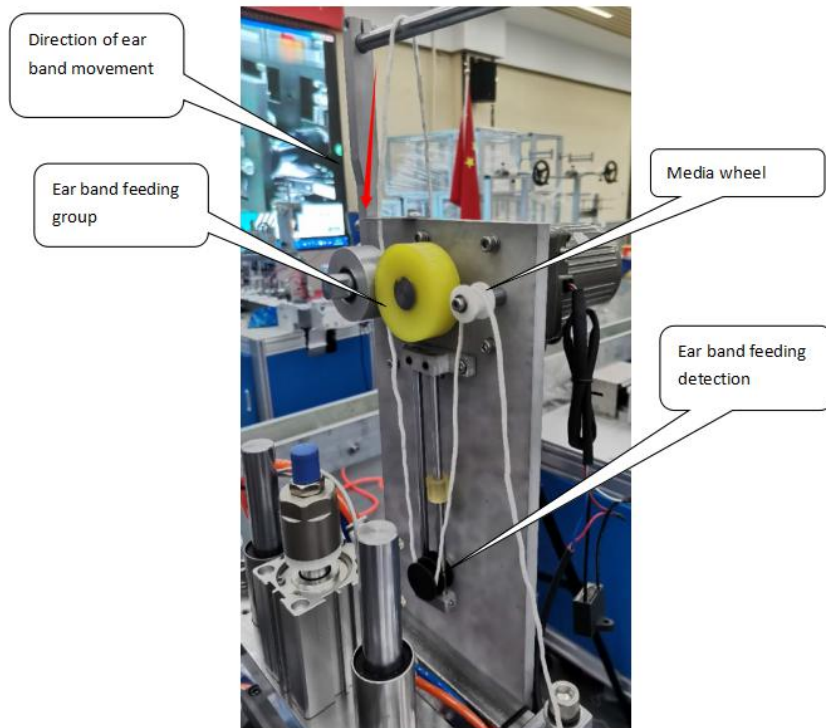


V. Operation Method

1. Ear band thread method:

The ear band are correctly threaded as shown below.

When the ear band goes to the clamping group, the material pulling group pulls the ear band over, the rotating clamp 1 and the rotating clamp 2 respectively clamp one end of the ear band, the scissors cut down the ear band, and then rotate the clamp 1 and rotating clamp 2 send the two ends of the ear band to the mold and weld them to the mask.



2.External ear band control manual :

- ① Power indicator: when power on, the light will on.
- ② Power switch: Control the auricular band power.
- ③ Start : Control machine operation.
- ④ Stop: Control the machine to stop.

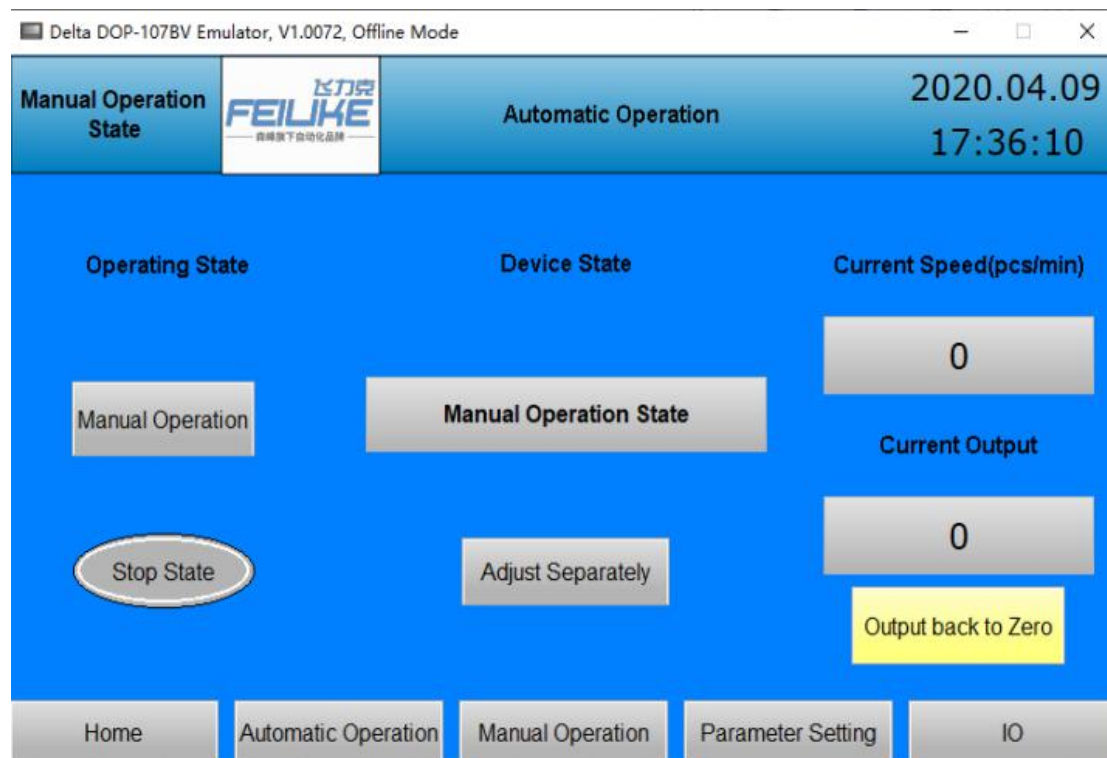
3.Introduction of touch screen:

3.1 Initial interface



When the power is turned on, the initial interface of the touch screen opens, click "Simplified Chinese" to enter the Chinese interface, and click "English" to enter the English interface.

3.2 Main interface



- A. Zero output: zero the total output.
- B. Current output: display the current number of masks produced.
- C. IO Status: Display the signal of each action point

D.Manual operation: Enter the screen 1, Manual control can be used to work at each station of the left welding lug group

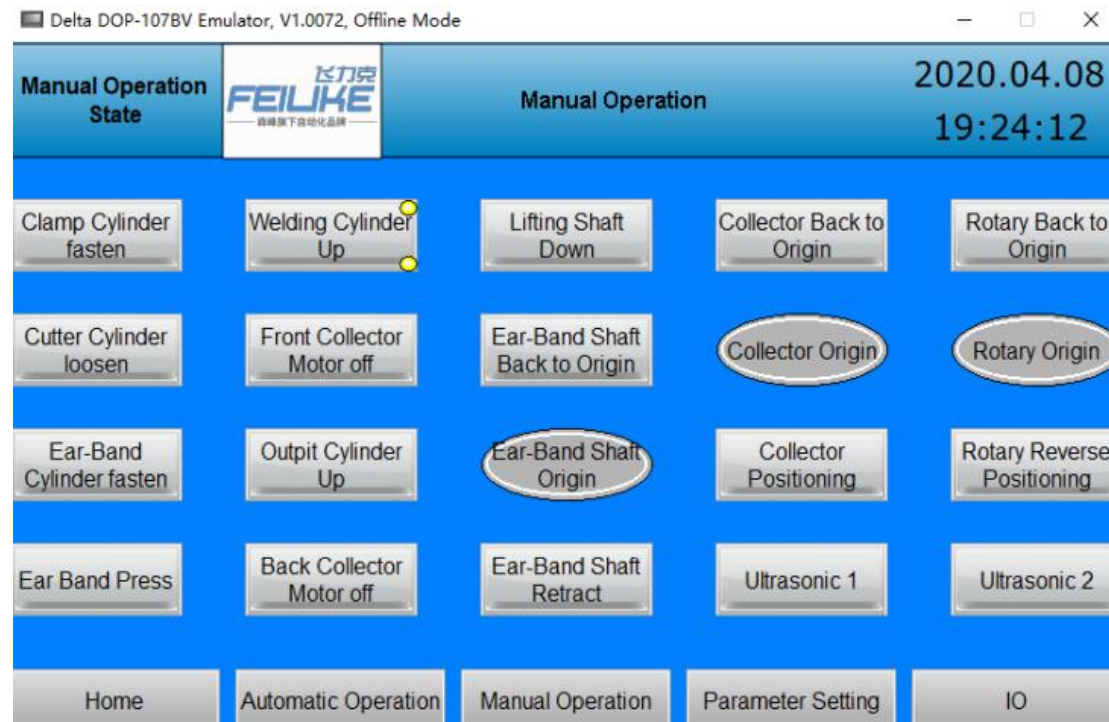
E.Parameters Setting:Enter the parameter setting screen to set the parameters.

F.Manual selection: set the machine to manual operation mode

G.Auto operation: set the machine to auto operation mode

H.Running status: displays the current operation as manual or automatic

3.3 Manual Operation



A.Welding cylinder up : Control welding head up and down.

B.Cutter cylinder loosen: Control scissors to cut.

C.Ear band Press : Control cylinder up and down to press ear band.

D.Double clamp cylinder close: Control cylinder clamp or loss ear band.

E.Clamp cylinder fasten: Control cylinder to clamp ear band.

F.Lifting shaft down: Control rotating clamping group up and down.

G.Rotary reverse positioning: Control rotating clamping group rotate 90 °.

H.Pull the ear-band: Control the front and back extension of the clip ear strap set.

I.Collector back to original: when the power suddenly power off or the work is interrupted for other reasons, the feeding tray return to the center of 2 welding heads.

J.Output cylinder rises: press the finished mask to the finished conveyor belt.

K. Front collector off: control the conveying belt before receiving and convey the finished mask to the discharging cylinder.

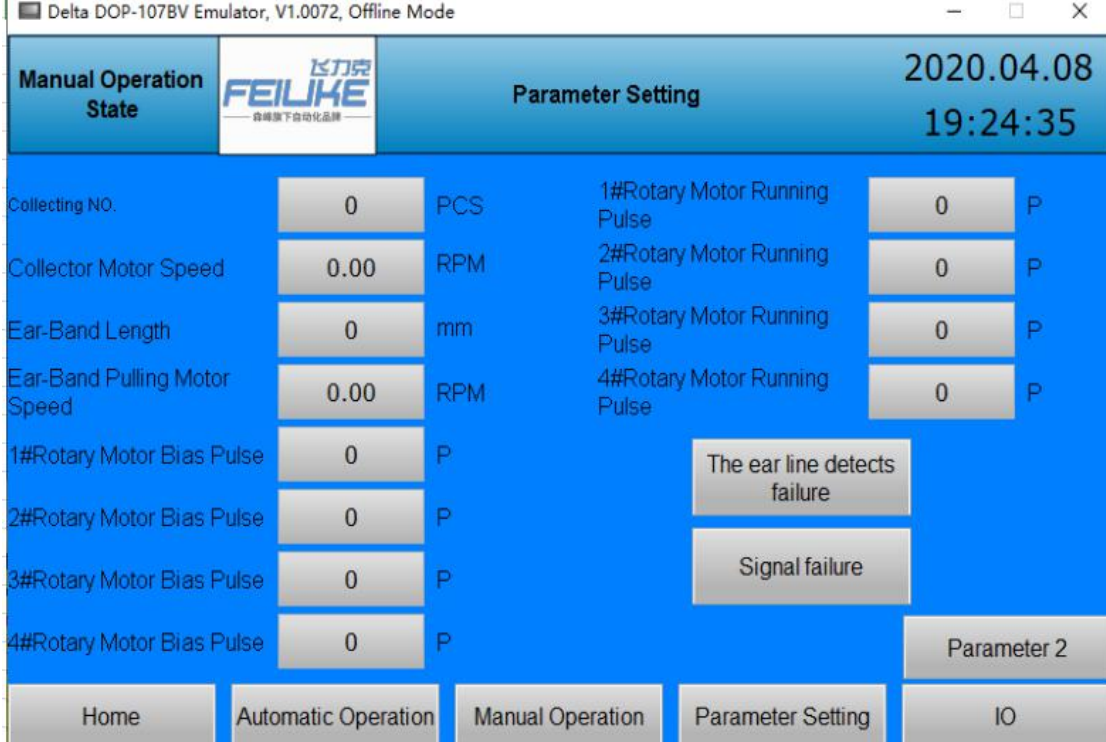
L. Back collector motor off: control the finished product conveyor belt, and transport the finished mask to the package group

M. Rotary back to the original: when the power is suddenly cut off or the work is interrupted for other reasons, control the double-clamp cylinder to return to 0° state.

N. Ear-band shaft back to origin: when the power is suddenly cut off or the work is interrupted for other reasons, control the ear band pulling cylinder to retract.

O. Collector positioning: the mask tray advances by one tray.

3.4 Parameter



a. lick the box of the parameter item to enter or change the parameters required by each parameter Item.

b. Parameter 2: Enter parameter 2 screen

3.5 Parameter2



A. Click on the box of parameter items to enter or change the parameters required for each parameter item.

3.6 IO State

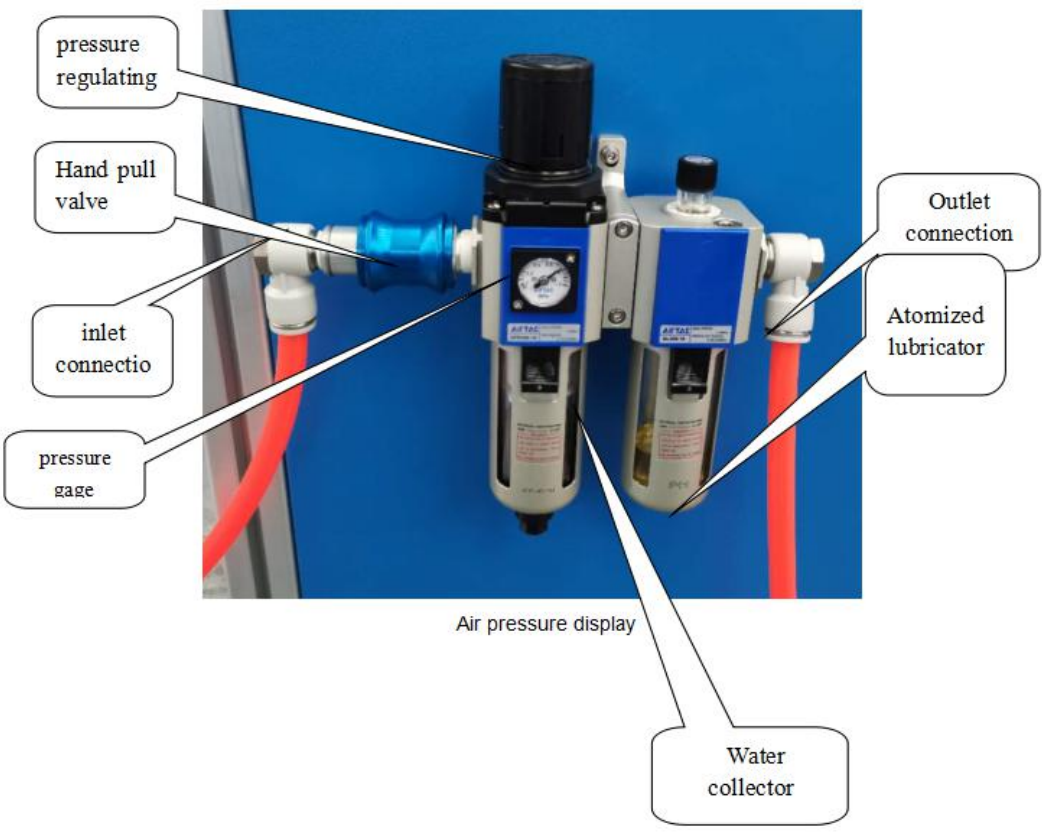


a. Displays the status of each signal receiver

VI. Instrument

1. Description of gas source usage:

This equipment uses pneumatic components, please connect the gas source to the local "air filter cup" before use, and connect the gas source to the air intake interface. To ensure the normal operation of this machine, please check whether the pressure gauge pressure reaches 5~8 kgf, as shown below:



2. Supersonic Debugging Steps

2.1 toggle the "power switch" and turn on the power supply. at this time, the power indicator light above the power switch is lit, indicating that the power supply has been turned on, and the next operation can be carried out.

2.2 when the overload lamp is not lit, look at the amplitude table. If it is not around the 0 position, then you need to adjust the adjustment knob of the FM coil. Adjusting counterclockwise is to increase the frequency, and adjusting clockwise is to decrease the frequency. First adjust the knob counterclockwise to see if the pointer of the amplitude meter becomes larger or smaller. If it is larger, adjust the frequency adjustment knob clockwise. If the overload light is on during the adjustment process, let go of the sonic test button, then press the sonic test button after the adjustment, and repeat the above process until you reach the minimum of the amplitude meter. Note: During the above adjustment process, the maximum time for pressing the sonic test button should not exceed 3 seconds. If the time is too long, the electric box will easily cause burn-in under the non-resonant state.

2.3 After the amplitude meter is adjusted to the minimum, press the sonic test button to see the current of the ammeter.

The current usually does not exceed 0.6A without the mold installed. If the current is too large, then there is something wrong with the machine and it needs to be repaired before use. When the mold is installed, the current usually cannot exceed 1A

2.4 In addition, if the empty machine debugging is normal, but it can't be adjusted well after the mold is installed, or it is overloaded, or the current is too large, the mold must be damaged and cannot be used. If it is used reluctantly, the machine will be damaged.

VII.Common Faults and Treatment

Fault	Cause of Fault	Trouble shooting
No power indication	1.The plug is not inserted well	1.Insert the plug well
	2.Fuse blown	2.Change the fuse with same specifications
	3.Power switch is damaged	3.Switch the power switch
	4.Others	4.Contact the manufacturer for repair
Over welding	1.Too much pressure	1.Adjust welding hand wheel to reduce pressure
Insufficient welding	1.Too little pressure	1.Adjust welding hand wheel to increase pressure
	2.Poor welding performance of materials	2.Switch to materials with better fusion properties
Uneven welding	1.Uneven lower mold	1.Adjust the lower mold
	2.Uneven upper mold	2.Adjust the upper mold
Surface damage	1.Mold temperature rise	1.Check whether the upper die screw is loose, suspend work, and cool by air.
Ultrasonic output but no welding	1. No contact between mold and mask or pressure is too low	1. Adjust the mold height and mechanical pressure
No ultrasonic	1.Power supply, control element, circuit damage	1.Check the components and repair

VIII. Maintenance

In order to maintain the mechanical performance, work safety, and improve the production speed, please do the following maintenance frequently:

1. Apply gear butter to each gear part, and add or replace gear butter;
2. Remove dirt and debris between the wheels;
3. Avoid loosening of the joint nuts and screws between the institutions, especially the screws of the adjustable parts;
4. Pay attention to the amount of oil in the oil mist device and fill the oil in time;
5. Check whether the switch indicator on the operation panel is abnormal. If there is anti-rust oil on the machine, be sure to remove it. The transmission parts requiring lubricating and oil injection parts should be regularly filled with lubricating oil to maintain a good operating state;
6. The machine needs to be connected to the power lines, please refer to the electrical circuit diagram for assembly;
7. Ensure the machine shell is effectively grounded to prevent static electricity or leakage, and prevent personal safety accidents.

IX. Regular inspection

During the operation, the machine is inspected once a week. In addition to the daily inspection items, the following inspections are required:

- 1) Inspection of external electrical wiring: whether the external power supply is deformed, damaged, leaked or short-circuited;
- 2) Check the operation panel switch: whether the buttons and contacts on the panel are connected, and whether there is oil contamination
- 3) Whether the contacts of the relay in the control panel are good;
- 4) Inspection of the servo system: The servo system should avoid dust and corrosive substances, and the ambient temperature should be kept appropriate;
- 5) Gear and sprocket wear inspection: whether there is wear on rotation and movement, whether there is oil adhesion, and whether the contact part is worn;
- 6) Check whether there is any air leakage in each gas pipeline.

Ten, matters needing attention

1. When there is a problem with the machine, immediately turn off the power switch to avoid damage to the electronic components and related subprogram configurations in the electronic box, and contact our after-sales service department in time
2. Never open the electronic box by yourself, if the electronic box is disassembled by yourself, all losses arising therefrom shall be borne by the user;
3. When moving the machine, it needs to be handled gently, and the installation should be stable, so that the machine can work under the best conditions;
4. Pay attention to maintaining the cleanliness of the machine and wipe it gently with a clean soft cloth. Do not use chemical raw materials and hard objects to clean and wipe the electric box and the body. The surface of the body is baked with electrostatic powder. Once damaged, it can be repaired by non-paint;
5. It is strictly forbidden to operate with electricity during the maintenance of the machine to avoid endangering personal safety;

6. When the machine is working, it is strictly forbidden to touch the cutter and mold with hands to avoid high temperature scald and crush injury;
7. Machine parts shall not be added and removed at will, and shall not be replaced or replaced with other inferior parts, so as not to affect the normal state after being debugged;
8. No matter under normal working conditions or in standby, it is strictly forbidden to put your hands under the cutter blade to avoid endangering personal safety;
9. For termination of work or adjustment of some devices, be sure to turn off the power first;
10. If repairing the air pressure device, please stop the air compressor and remove the residual air first;
11. If you overhaul or adjust the electromagnetic, pressure devices, starters, etc., it must be operated by professionals.

11. Delivery Instructions

During the current epidemic situation, there are many special temporary situations in the market, such as large deviations in the incoming material specifications, and the fact that the operator cannot be in place normally. As a result, the automatic belt intermediate belt line transfers jammed materials or skews, etc., which affects the efficiency and leads to lower production capacity and wasted raw materials.

12. After-sales service

Please refer to the above operation instructions for operation. If there are other quality problems, please call the manufacturer to get better service.

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