

**FMJ-1700-F1**  
**Single-side Hot Laminator**

**Manual**

# Catalogue

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# 1 Preface

## 1.1 Description

This hot laminator has a wide range of application. Capable of 6 meter per minute lamination utilizing cold or hot laminating films with low or high heating, the 1600-F1+ is the ideal commercial laminating solution. Low heating cold lamination with cold films can improve the quality of films, which can absolutely avoid air bubbles and snow points. Hot laminating with hot films can reduce cost, in the meanwhile can absolutely avoid air bubbles and snow points. Easy operation and high efficiency. In order to make full advantage of the laminator, please read this manual carefully.

## 1.2 Parameter

Brand	
Max width	Up to 1630mm (64 inches)
Speed	Up to 7m/min
Laminating type	Hot and cold
Heating method	Heated upper roller
Roller diameter	130mm/5.1in
Max gap	Up to 20mm
Warm up time	10-15 min
Temp range (Cold lamination)	40°C - 50°C
Temp range (Hot lamination)	85°C - 95°C
Max temp	120°C
Volt	AC220V-240V / 50HZ-60HZ
Fixed power	2200W
Fixed current	12A
Motor power	60W
Reverse function	Yes
Size	85.6" x 29.2" x 23" (2140 x 730 x 575mm)
N.W.	440ib (220kg)

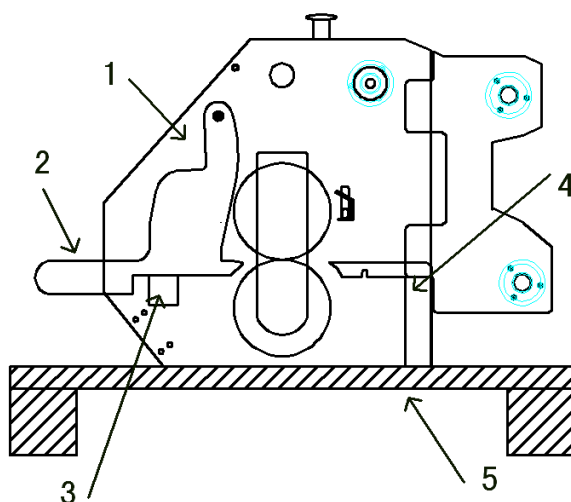
## 2 Installation

### 2.1 Notices

1. Carefully check the wooden case before open it, to prevent the machine being damaged during the delivery.
2. Check the accessories (Affix 1) are complete or not.
3. You should have enough tidy and clean space for installation.
4. The wheels on the machine are just for the short moving.
5. Please make sure the power supply is single-phase AC 220v-240v.
6. In order, not to damage the work table and the screw, please do not put heavy stuff on the work table.
7. When moving the laminator by forklift, please take some protective measures under the machine and hold by workers of both sides.



*Machine is heavy!  
Please be careful, when moving.*



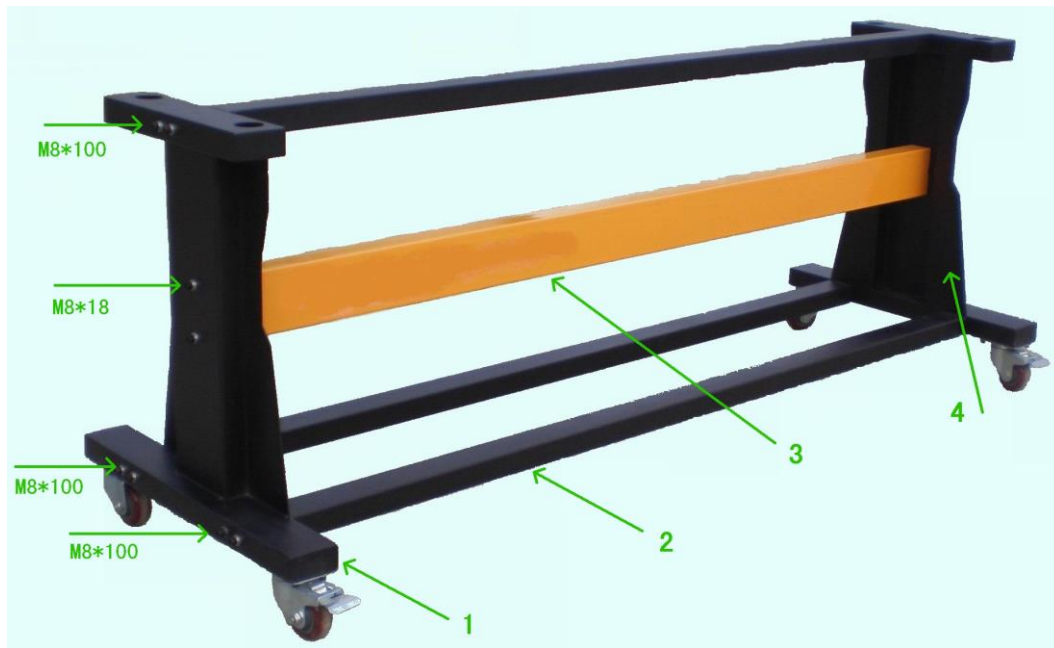
- 1.Main part
- 2.front tray
- 3.Front beam
- 4.Back beam
- 5.Cork base

*Caution: The front and back beam should be the point of effort, when carry or move the machine.*

### 2.2 Steel stand installation

1. Take all the parts from the package.

2. As shown below.



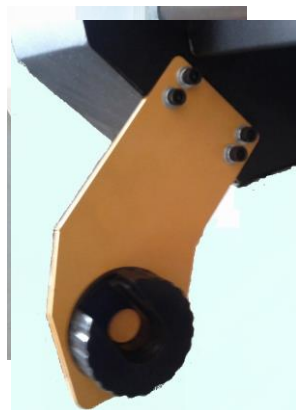
1 Left leg    2 Support beam    3 Middle support beam    4 Right leg

## 2.3 Installation of main part

1. Put the machine on steel stand.

*Caution: The front and back beam should be the point of effort, when carry or move the machine.*

2. Fix the pressure regulate wheel.
3. Fix left and right support onto reserved holes as followed.

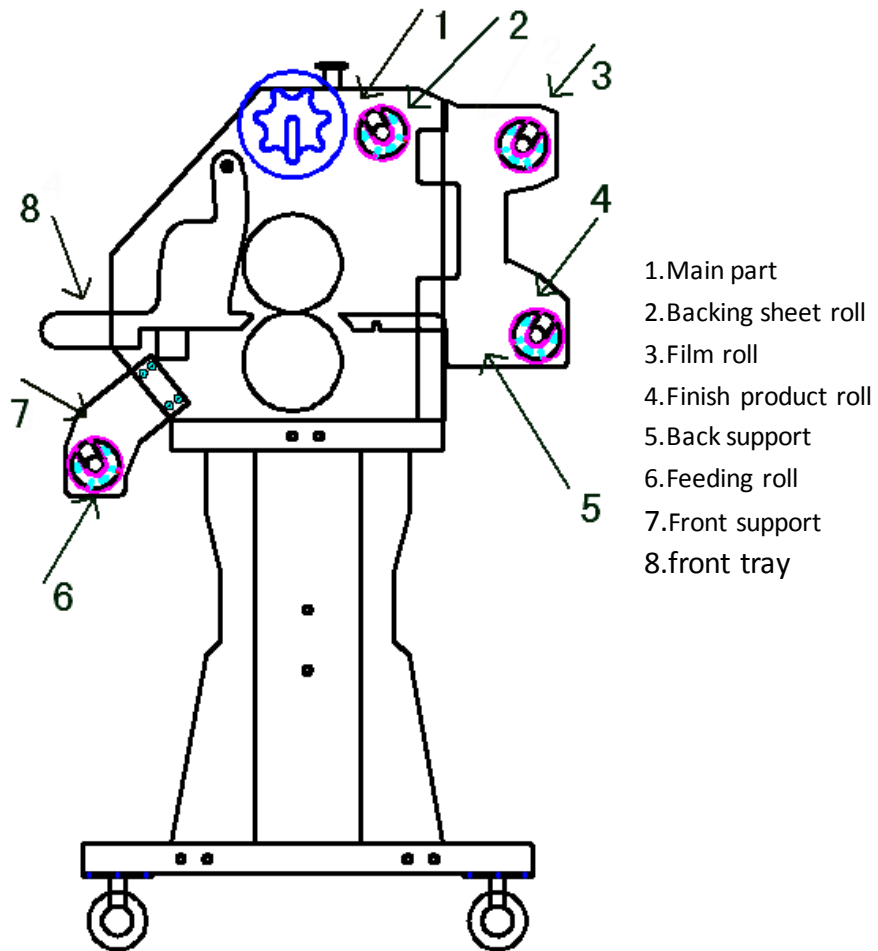


1. Left front support



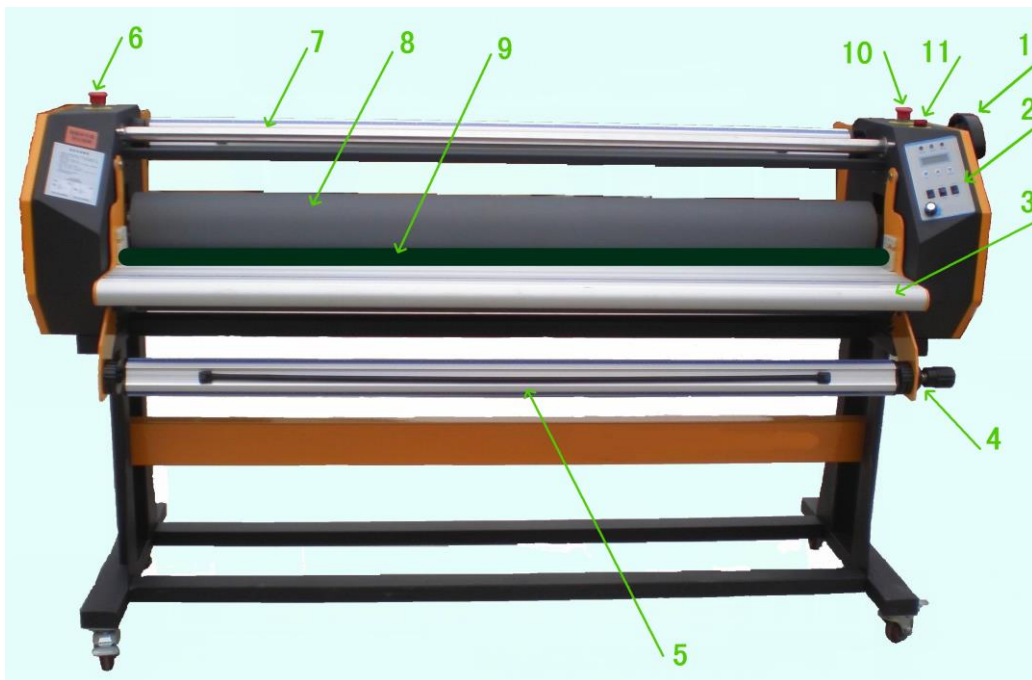
2. Right front support

### Right side of the laminator



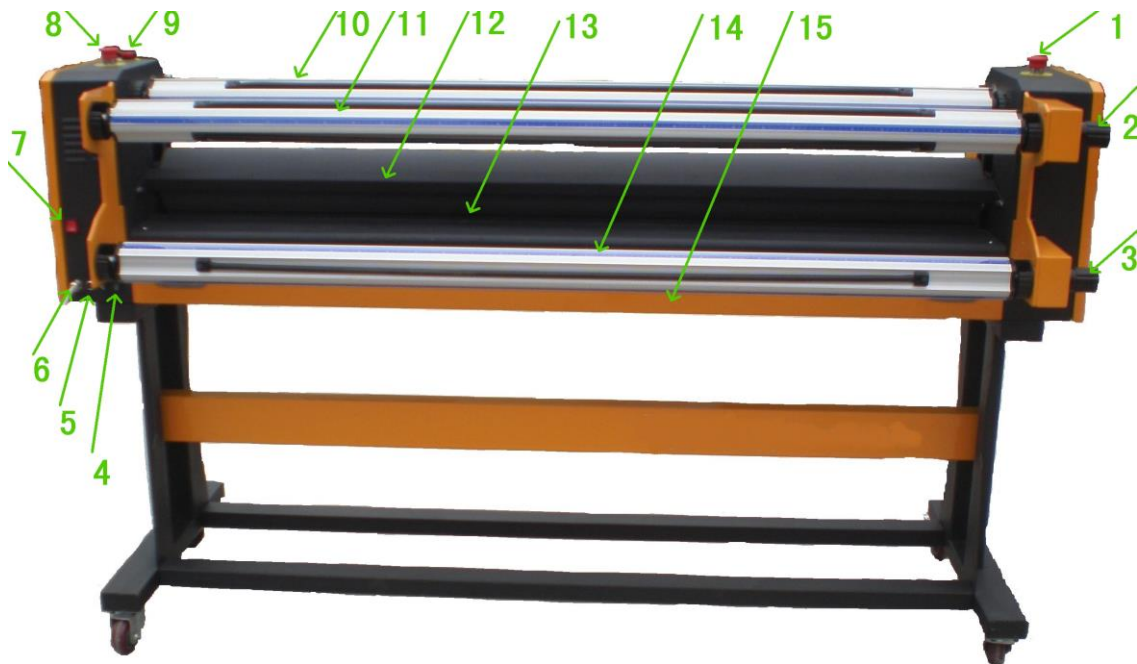
### 3 Names of parts

### Front of the machine



- 1.Hand wheel 2.Control panel 3. Front tray 4.Damping grip 5.Feeding roll  
6.Emergency stop button 7.Lift link 8.Upper roller 9.Black rubber beam  
10.Emergency stop button 11.Heating indicator

### Back of the machine



1. Emergency stop button 2. Damping grip 3. Damping grip 4. Fuse tube socket  
5. Foot switch interface 6. Power wire 7. Power switch 8. Emergency stop button

- 9.Heating indicator   10.Backing sheet roll   11.Feeding roll   12.Infrared sensor beam  
13.Back work table   14.Finished products roll   15.Backjunction plate

## 4 Control panel



1. Hot lamination indicator
2. Cold lamination indicator
3. Prepare indicator
4. Real-time temperature
5. Temperature regulation
6. Hot/cold lamination switch
7. Forward/Backward switch
8. Continuous/Inching switch
9. Speed controller
10. Predetermined temperature

- Temperature regulation: Choose hot lamination function, the display screen will light up. You can adjust the predetermined temperature (See 10) through the following step. Firstly, press "■ set" button once. Secondly, press "▲ up "or "▼ down " once to adjust 1°C each time. Thirdly, press "■ set" button again to confirm the setting. The predetermined temperature is 90°C for hot lamination, 45°C for cold lamination. You can regulate a higher temperature for thick materials and lower temperature for thin materials.
- Machine can only be running forward under "Continuous" condition. The machine can run forward or backward under "Inching" function.
- Clockwise turn the speed controller can accelerate the speed and vice versa. In order to ensure the quality of lamination, please choose the proper speed. Please turn to "Inching" function, when finish the lamination. Do not use the speed button as the start or shut controller.



# **5 General function**

## **5.1 Power supply**

### **5.1.1 Power wire**

Please use the standard main leads and check your power supply are suit for the fixed power of the laminator.

### **5.1.2 Main switch**

Press the main switch on the back of the machine, the indicator will light up and power on and vice versa.

### **5.1.3 Fuse tube**

There are 2A and 7A protector tubes inside this laminator. 2A protector tube controls the circuit components and 7A protector tube controls the heater.

## **5.2 Foot switch**

Foot switch can control the motor. Please fix the screw of foot switch at the back of the machine before use. Choose "Inching" function and adjust the speed to "2" level, when you use the foot switch. Push the foot switch to make the motor running.

## **5.3 Emergency stop button**

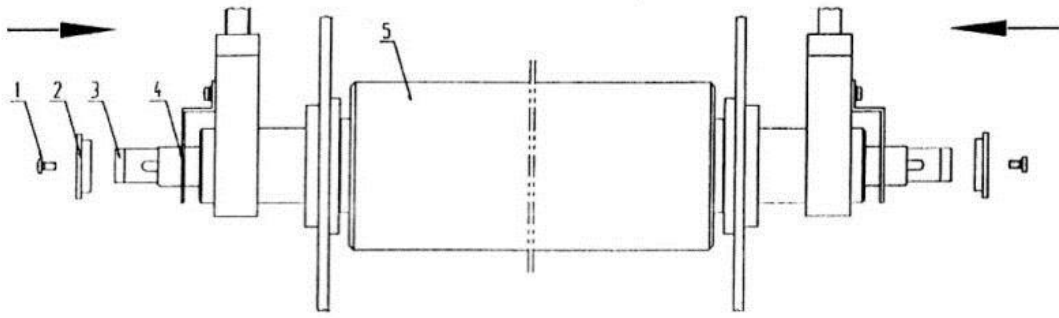
Press the emergency stop button to stop the laminator when there is an emergency situation. Then the machine will run again and the button will bounce up, when you clockwise rotate.

## **5.4 Rise up and down of the upper roller**

Clockwise rotate the hand wheel to rise up the roller and vice versa. When the two rollers joint together, you can feel the wheel at the pressure free position. Continue to counterclockwise rotate the hand wheel can increase the pressure, you can adjust the pressure depending on your material.

## **5.5 Heating pipe installation**

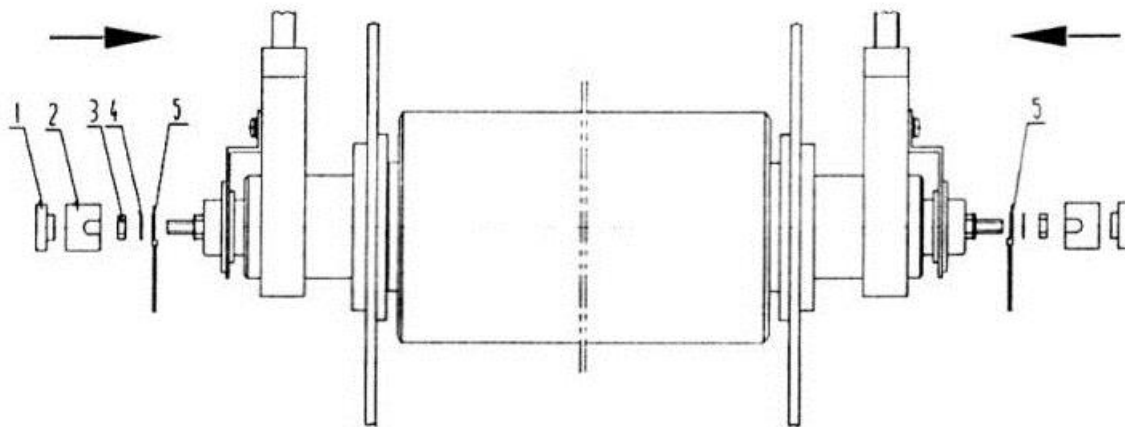
*Caution: Please shut down the power before heating pipe installation.*



1.Screw 2.Rubber mat 3.Heating pipe 4.Heating pipe bracket 5.Roller

### Step 1: Heating pipe installation (See above)

1. Open left and right case cover.
2. Remove the rubber mat from the bracket.
3. Put the heating pipe through the roller, put the rubber mat on the heating pipe, then use the screw to fix the heating pipe on the bracket.



1.Ceramic cap 2.Ceramic pipe 3.Hex nut 4.Flat mat 5.Lead wire

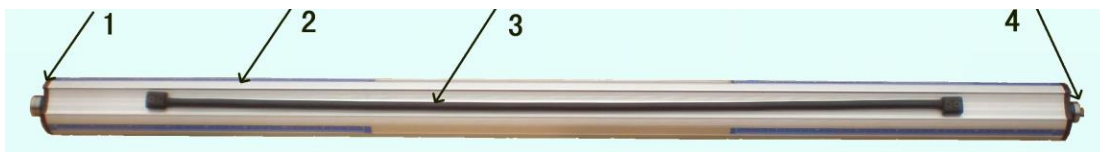
### Step 2: Lead wire installation (See above)

1. Please remove the ceramic cap, ceramic pipe, flat mat and hex nut of the heating pipe after the installation.
2. Put the lead wire around the ceramic pipe.
3. Install the ceramic cap, ceramic pipe, flat mat and hex nut see picture.

*Caution: Hex nuts must be tightened!*

## 5.6 Feeding roll, film roll, finished products roll and backing sheet roll installation

1. Feeding roll, film roll, finished products roll, backing sheet roll can assemble quickly. Put the liner shaft head to liner slot and fix another shaft head of the other side. There are three rubber strips on each a-alum roll that produce friction and prevent slippery. 3-inch inner diameter paper tube can be yoked outside the a-alum roll just tight.



1.Plug 2.A-alum 3.Rubber strip 4.Liner shaft head



1.Plastic lock cover 2.Plastic lock 3.Liner slot

### 5.6.1 Plastic lock

The new plastic can revolving around, please lock the a-alum rolls when laminating. This is very important to ensure the quality of lamination.

### 5.6.2 Feeding roll

In the front of the machine without power. The printings wrap around the 3-inch inner diameter paper tube, which yoked outside the a-alum roll. In order to ensure the quality and tighten the printings you can adjust the damping grip. Clockwise turn the damping grip can enlarge the fraction, vice versa.

### 5.6.3 Film roll and backing sheet roll

They are on the top of the machine without power. These two rolls are passive running when laminating. There are two damping grips on the chain box that control the fraction, which can adjust the speed of finished products roll. Clockwise rotate the grip can increase the fraction and vice versa.

### 5.6.4 Finished products roll

Finished products roll is at the back of the machine with power. In order not to harm the finished products you should put them away, when laminating a long printing. There is one damping grip on the chain box that control the fraction, which can adjust the speed of finished products roll. Clockwise rotate the grip can increase the fraction and vice versa.

*Caution: Please clean the iron damping and replace the rubber damping at a fixed period*

### 5.6.5 Parallelism and pressure regulation of the rollers

The parallelism of the rollers will affect quality and folds of laminating. We will fix the parallelism well before delivery, you should adjust it after a period of use.

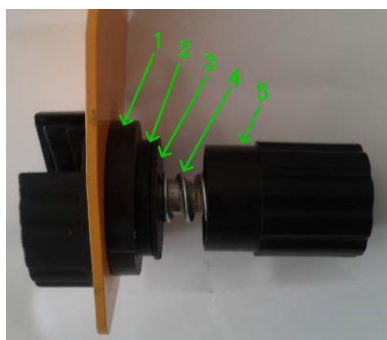
*Notice: Parallelism adjustment of the rollers should under running condition. In non-work state, the un-parallelism of the rollers may be occurred by the thread clearance of stroke adjustment.*

## 5.7 Damping maintenance

*Caution: Please clean the iron damping and replace the rubber damping at a fixed period.*

### 5.7.1 Damping system of feeding roll

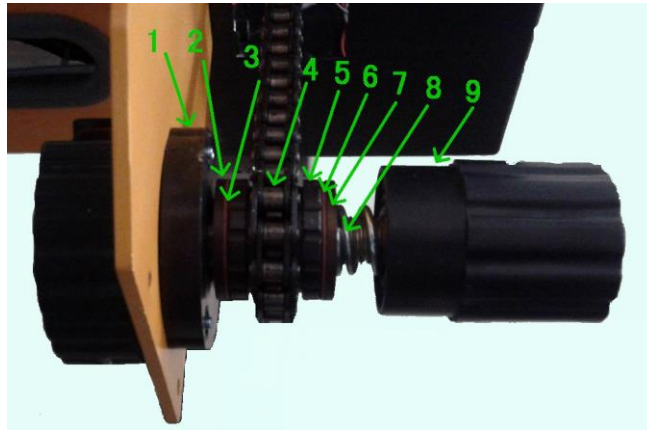
The rubber mat will occur wear after a period use that cannot produce friction for rolls, this way, you should replace it as followed. Take the grip, spring, iron plate down and replace a new rubber mat.



1. Bearing bush
2. Rubber mat
3. Iron plate
4. Spring
5. Grip

### 5.7.2 Damping system of backing sheet roll and finished products roll

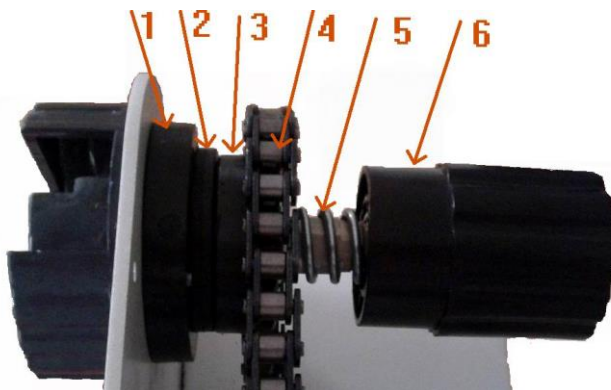
You can find them in the chain box or the case, which should clean and lubricate at a regulate time.



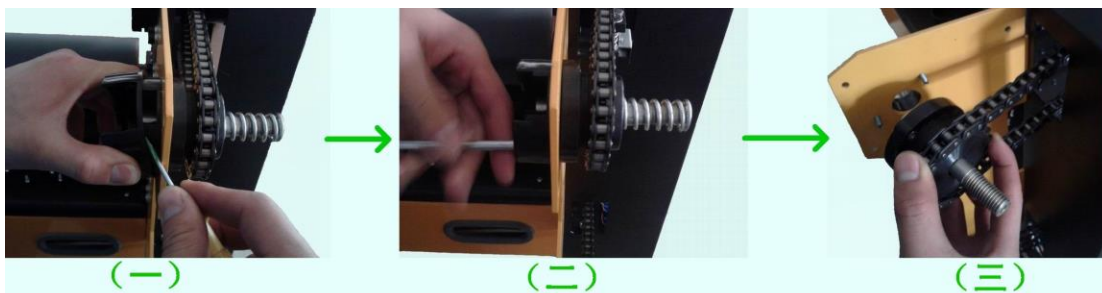
- 1.Bearing bush
- 2.Rion plate
- 3.Damping mat(Red)
- 4.Chain
- 5.Chain sheave
- 6.Damping mat(Red)
- 7.Rion plate
- 8.Spring
- 9.Grip

### 5.7.3 Damping system of film roll

You can see it in the chain box at the side of the film roll. The rubber mat can produce frication, but it will occur wear after a period use that cannot produce frication for the roll, this way, you should replace it as the following steps.



- 1.Bearing bush
- 2.Rubber mat
- 3.Chain sheave
- 4.Chain
- 5.Spring
- 6.Grip



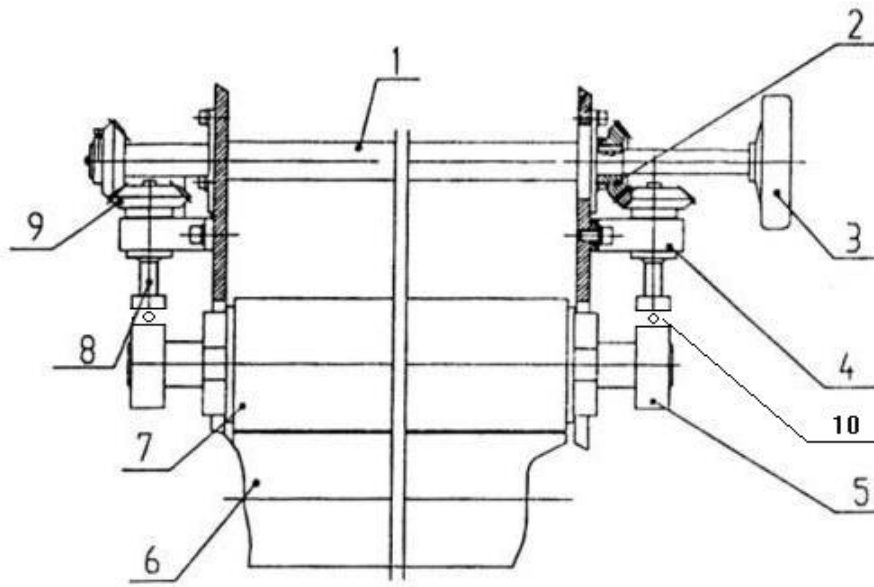
### Steps:

1. Take the grip, spring, plastic lock cover down. You should remove the dowel first when you take the plastic lock cover down.
2. Remove the 3 screws (Picture 2).
3. Remove the chain and replace the rubber mat.
4. Check the chain and fix all parts.

## 5.8 Pressure regulation of the rollers

The pressure even or not can affect the quality of lamination. We will fix the pressure well before delivery, you should adjust it after a period of use.

*Notice: Pressure adjustment of the rollers should under running condition. In non-work state, the un-parallelism of the rollers may be occurred by the thread clearance of stroke adjustment, which cannot affect lamination.*



Right and left case of the machine

- 1 lifting link   2 Transversal bevel gear   3 Height/Pressure regulate wheel  
4 Pressure regulate bracket   5 Pressure regulate iron   6 Upper roller  
7 Lower roller   8 Pressure regulate locating shaft   9 Vertical bevel gear   10 Spring

### 5.8.1 Check-up

1. Open the left and right cases.
2. Check left and right pressure regulate bracket are loose or not and fix them well.
3. Check the vertical bevel gear loose or not of both sides. If the left side is not tight, you should remove the transversal bevel gear of left side fist, then the screw. Tighten the

screw on top of the vertical bevel gear, then put all parts back. If the vertical bevel gear of right side is not tight, you should not remove the transversal bevel gear, just following the steps of the left side.

### 5.8.2 Gap regulation of the rollers

1. Rises the upper roller, then fix the four springs of same height, in the meanwhile there should 2mm gap between spring and pressure regulate iron.
2. Put the upper roller down and left a tiny gap, then check the left and right.
3. If they are not the same, you can remove the left transversal bevel gear and revolve the vertical bevel gear according to reality.
4. Put all parts back.

## 6 lamination process

Lamination is an extremely delicate and technical work; the beginner should be supervised under an experienced worker. The following are the general methods for lamination.

### 6.1 Preheating

1. Lift the upper roller down.
  2. Press the "continue" and "forward" switch, then adjust the speed to "1" level.
  3. Power on.
  4. Press "hot" button and set the temperature according to your needs. Usually, 45°C for low heating cold lamination and 90°C for hot lamination.
- Fix the film and drag some out, in the meanwhile, use the damping grip to regulate the proper tension.
  - Fix the printings and the damping grip.

### 6.2 After preheating

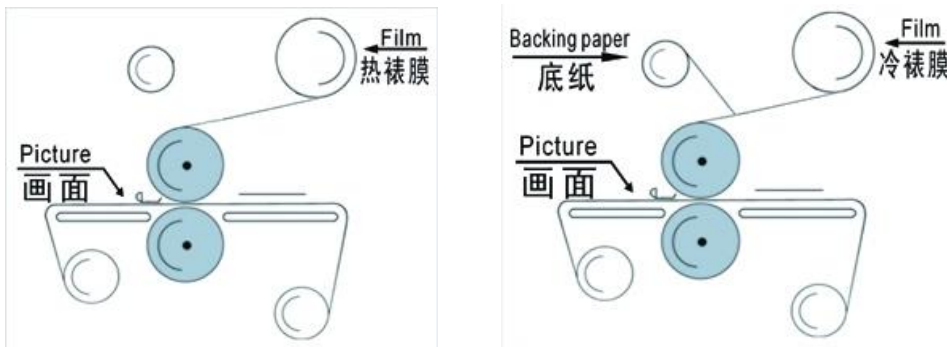
1. Choose "Inching" function to make the rollers stop running.
2. Rises up the upper roller and remove the black rubber beam.
3. (For cold films) There are absolutely no air bubbles and snow points through low heat. So, cold lamination will have the best quality between 40°C-50°C. Tear the film off the backing sheet and drag some film out through the rollers, then fix the film on the finished products roll (Just for beginner). Or the machine slowly running at the beginning, someone drag the film at the back of the machine. He can tie the finished products on the finished products roll.

*Notice: Please keep the cold film tension and flat.*

4. (For hot films) Drag some hot film out through the rollers, then fix the film on the finished products roll (Just for beginner). Or the machine slowly running at the beginning, someone darg the film at the back of the machine. He can tie the finished products on the finished products roll.
5. Fix the printings and darg it onto the steel work table. Put the printings in the middle of the rollers.

*Notice: The sides of the printings and the rollers should be vertical.*

6. Lift the upper roller down and anticlockwise turn the hand wheel to impending state.



- Press "continue" button to start laminating.

*Notice: If the film is not had the proper tension, please clockwise turn the damping grip to increase the fraction.*

- Clockwise turn the speed button to a proper speed.

*Notice: The more faster speed the more heat dissipation, so please choose the proper speed and temperature of laminating.*

- If there have folds of the finished products, please cut away and restart the lamination.

## 6.3 Notices

1. The finished products should tie around the finished products roll.
2. The printings should tie around the paper tube and fix on the feeding roll, then the printings should snap to the films.
3. The printings should tighten tie around the paper tube. In order not to go tilt the sides of the printings and the rollers should be vertical.
4. If the printings still go tilt under the right procedure, you should press the winkled printing to increase the fraction slowly.
5. Please keep the proper fraction of feeding roll, film roll, finished products roll to ensure the quality of laminating.



## 7 Safety rules and notices

1. In order to make a full understanding of the machine, please read this manual carefully before operation.
2. The power supply should meet the requirement of the machine.
3. In order not to hurt people, please shut down the power, when you repair the machine.
4. Please do not put the wire on the sidewalk or put any heavy stuff on the wire.
5. The work place should be dry and ventilated. Do not use this machine near water source or wet ground. In the meanwhile, do not close to combustible and explosive goods.
6. Press the "emergency" button to stop the machine, when there is an emergency situation.
7. The roller is hot during working, please do not touch it, in case of scalded or bruised.  
*Notice: In order not to catch fire or over heat of the roller, someone should watch the machine during preheating.*
8. In order not to hurt the rollers, please do not put any hard stuff on the machine.
9. Do not use water to clean the machine in case of short circuit, electric shock or rust.
10. Use 80% alcohol, detergent or eraser to clean the rollers after lamination, which can lengthen the rollers' life.
  - (1) The temperature of the roller should under 40°C and stop heating.
  - (2) Do not focus on one point.
  - (3) Clean the residuum in time, otherwise it will affect the yields.
11. Check the wheelwork at a regular time, clean and lubricate.
12. Check the power supply and the foot switch at regular time to prevent leakage.
13. The rollers are mine parts of the machine. Damage of the rollers will affect the yields. Please rise the upper roller up after lamination, in case of the deformation of the lower roller under long time weight.

## 8 General problems and methods

Problems	Reasons	Methods
Control panel dead fault	Power or emergency button shut down	Check power supply or emergency button
	Fuse burn down	Replace
Cannot running	Too much pressure between the rollers	Rises up the upper roller
	Too much fraction of the rolls	Regulate the fraction
	Loose or fall off of chain wheel key on the motor shaft	Fix or regulate
	Motor or speed controller breakdown	Replace the motor or the speed controller
Snow points	Not enough temperature	Rises up the temperature
	Dusts on printings	Clean
	Films' problems	Replace
Air bubbles or folds	Uneven or too much pressure of the rollers	Adjust the pressure
	Printings is not flat	Make the printings flat
	Speed too low or temperature too high	Improve speed or lower temperature
	Beam weight	Put the beam weight on printings
Printings go tilt	Uneven pressure of the rollers	Regulate the pressure as above
	The printings and the rollers are not vertical at the beginning	printings and the rollers are not vertical in the beginning
Folds of films	The film is too loose	Regulate the film roll's fraction
	Too high temperature	Lower the temperature
Finished products are too curled	Too tight of the film	Regulate the tension
	Too tight of the reception roll	Regulate the tension
Folds of hot film	Too loose of the film	Regulate the tension
	Temperature is not enough	Rises up the temperature
Hot film doesn't cover steady on the printings	Printings is wet	Make it dry
	Printings is too dark	Use cold films under low heating cold condition
	Too low temperature or too much speed	Regulate proper temperature or speed

# Appendix

**Table 1: Accessories**

Term	Quantity	Notice
Foot switch	1	
Backing sheet reception roll	1	
Feeding roll	1	
Film roll	1	
Black rubber beam weight	1	
Finished products roll	1	
Hand wheel	1	
Rubber mat	1	
Left support of feeding roll	1	
Right support of feeding roll	1	
Fuse tube	4	2A/7A
Video	1	

**Table 2: Steel stand packing list**

Item	Quantity	Notice
Steel beam	3	
Middle steel beam	1	
Left leg	1	Foot wheels contained
Right leg	1	Foot wheels contained
Hex screw M8*80	4	
Hex screw M8*100	12	
Flat mat $\phi$ 8	16	
Bounce mat $\phi$ 8	16	