

# *FMJ-DM Series Laminator*



**Single - side Low Heating Cold Laminator**

## *Manual*

*Please read this manual carefully before operation*

# Preface

This low heating cold laminator has a wide range of application. Capable of 6 meter per minute lamination utilizing cold laminating films with low heating the MF1600-M1+ is the ideal commercial laminating solution. Low heating cold lamination can improve the quality of films, which can absolutely avoid no 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. Specifications & features

Model	FMJ-1600-DM / FMJ-1700-DM
Maximum laminating width	1520mm / 1620mm
Speed	0m/s-6m/min
Laminating type	Cold (Low heating)
Heating method	Heated roller
Diameter of upper roller	130mm
Max thickness	23mm
Warm up time	5-10 min
Temp range	40°C-50°C
Max temp	60°C
Fixed Volt	AC220, 50Hz-60Hz
Fixed power	1400W
Fixed current	9A
Motor power	60W
Reverse function	Yes
Size	680mm x 1860mm x1140mm
N.W.	160kg

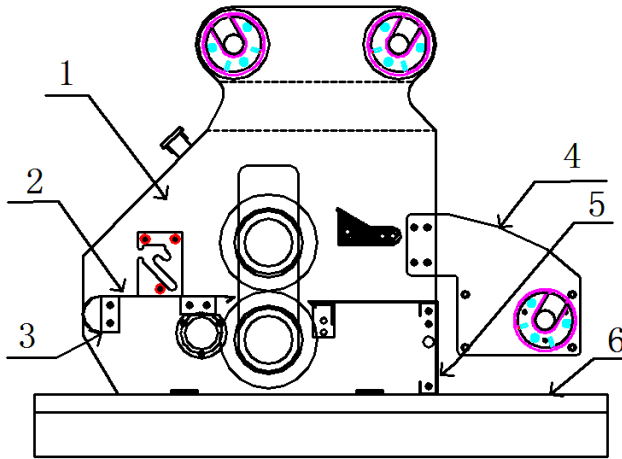
## 2.Installation

### ● Notice

- 1.Carefully check the wooden case before open it, in case of damage 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.*

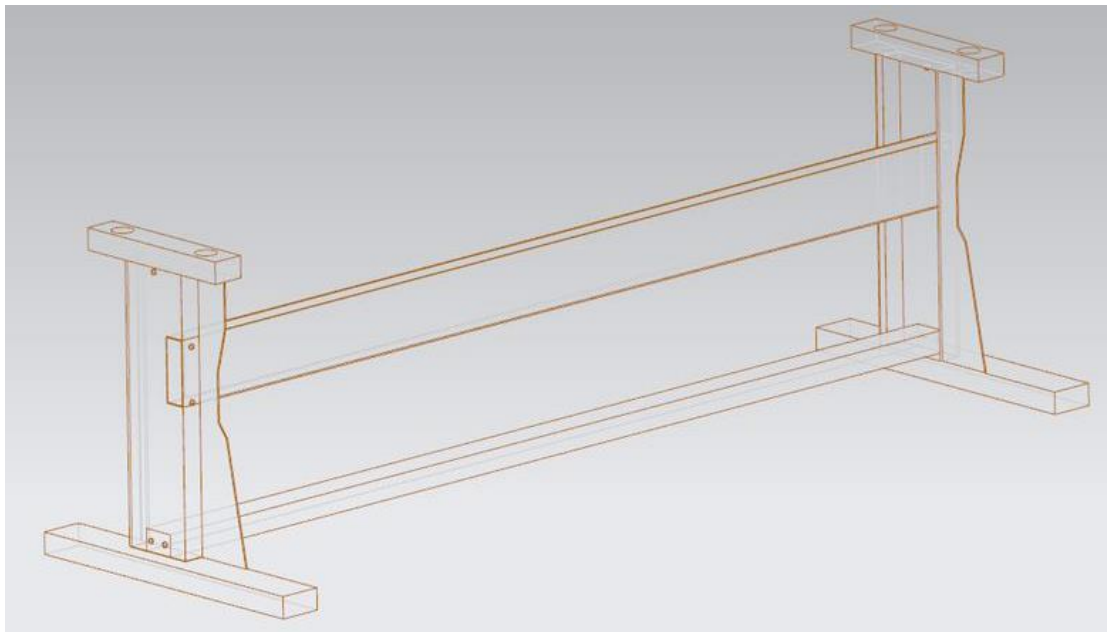


- 1. Main part
- 2. Front work table
- 3. Front beam
- 4. Back support
- 5. Back beam
- 6. Cork base

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

## ● Steel stand installation

- 1. Take all the parts from the package.
- 2. As shown below



## ● 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.

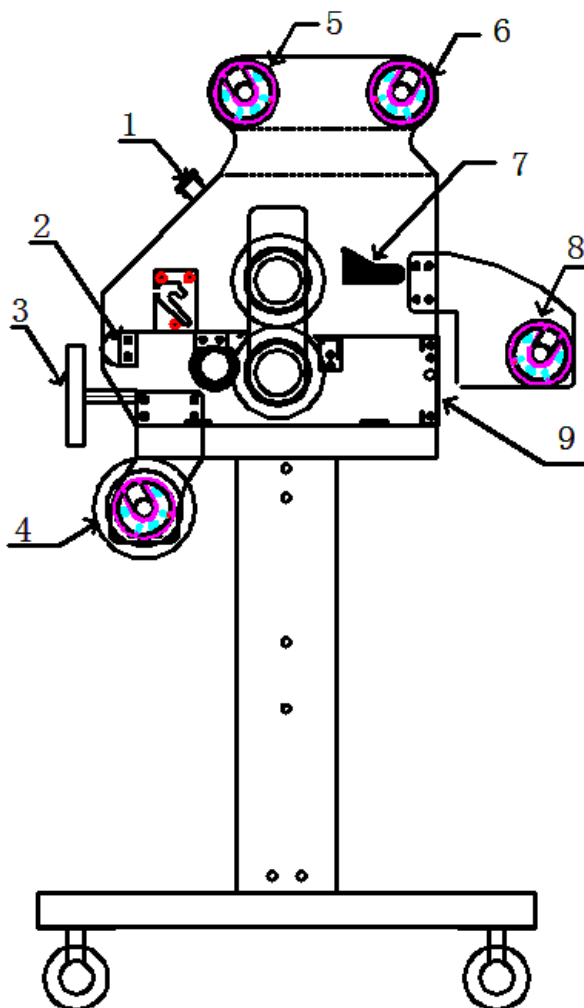
3. Fix left and right support onto reserved holes as followed.



1. Left front support



2. Right front support



Right side of the laminator

- 1.Emergency stop
- 2.Front support beam
- 3.Pressure regulate wheel
- 4.Feeding roll
- 5.Backing sheet roll
- 6.Film roll
- 7.Infrared sensor beam
- 8.Finish product roll
- 9.Back support beam

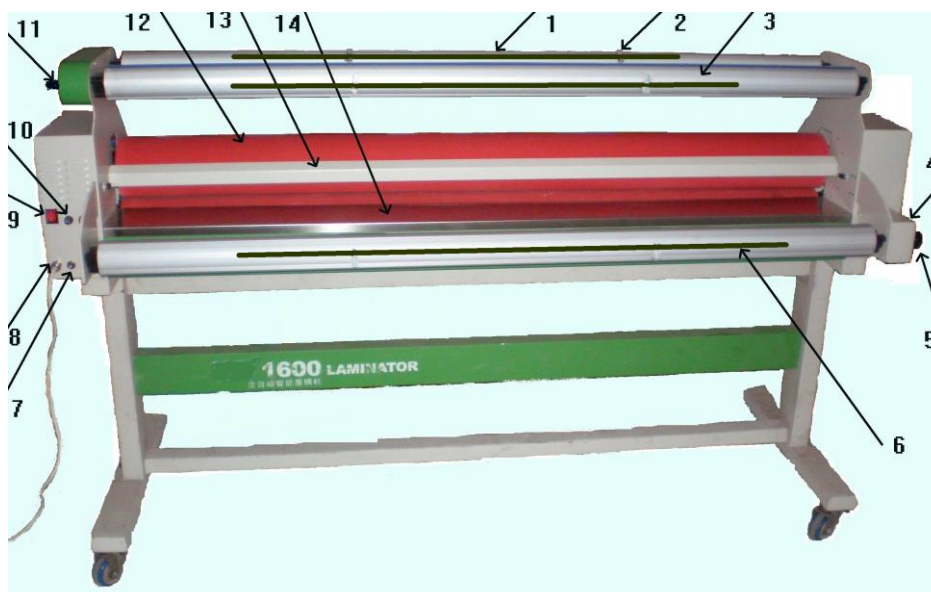
### 3. Parts of the machine

Front of the machine



1. Chain box   2. Damping grip   3. Control panel   4. Pressure regulate/Hand wheel  
 5. Front support   6. Feeding roll   7. Printings   8. Emergency stop button  
 9. Film roll   10. Finished product roll   11. Upper rubber roller   12. Front work table  
 13. Foot switch

Back of the machine



- |                       |                           |                          |                     |
|-----------------------|---------------------------|--------------------------|---------------------|
| 1. Backing sheet roll | 2. Damping                | 3. Film roll             | 4. Chain box        |
| 5. Damping grip       | 6. Finished products roll | 7. Foot switch interface | 8. Power wire       |
| 11. Damping grip      | 12. Upper rubber roller   | 13. Infrared sensor beam | 14. Back work table |

## 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 45°C; the max temperature for the laminator is 60°C. You can regulate a higher temperature for thick materials and lower temperature for thin materials.
- Machines can only run 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

### 1.Power supply

- **Power wire**

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

- **Main switch**

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

- **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.

### 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.

### 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.

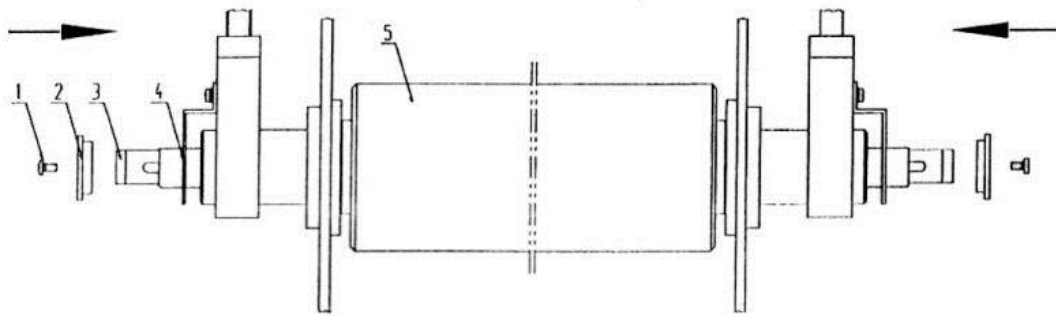
### 4.Rise up and down of the upper roller

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. Heating pipe installation



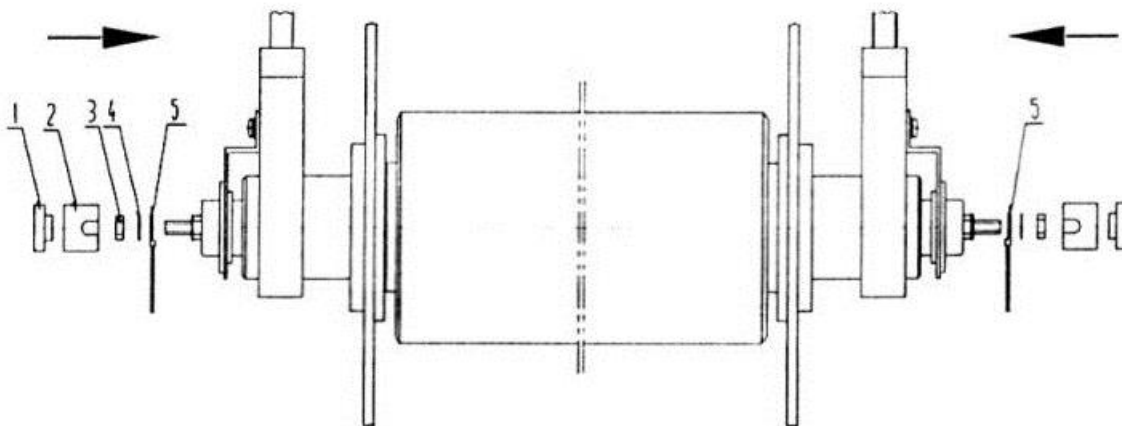
*Caution: Please shut down the power before heating pipe installation.*



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, and 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.

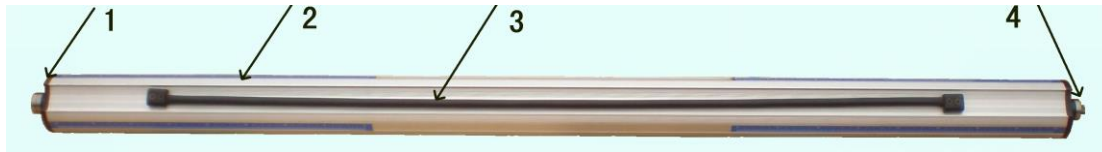
*Caution: Hex nuts must be tightened!*

## 6.A-alum rolls

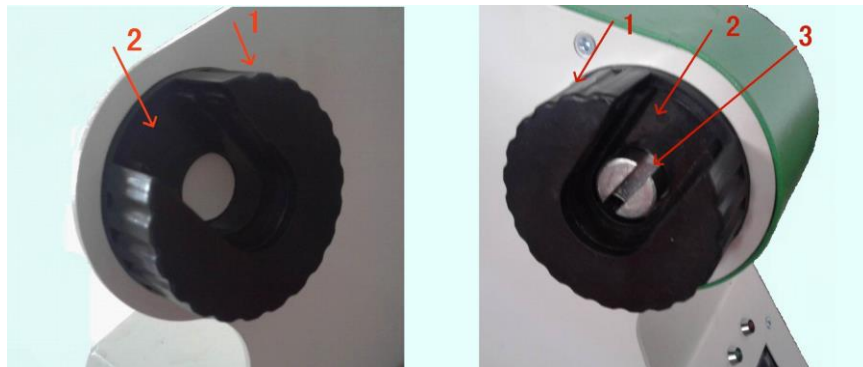
Feeding roll, film roll, finished products roll, backing sheet roll can assemble quickly. Put the liner shaft head to liner slot and fix another shaft head of the other side. There are three rubber strips on each a-alum roll that produce friction and prevent slippery. 3-inch inner



diameter paper tube can yoke 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 shaft head

## 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.

## 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 and vice verse.

## 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.

## 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

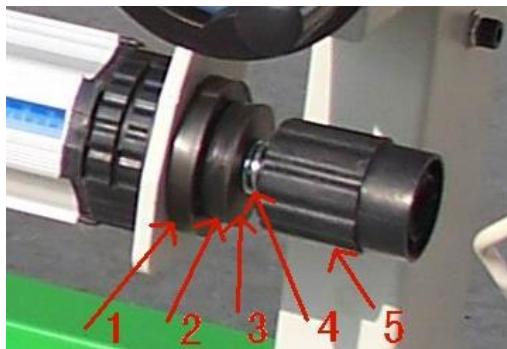
finished products roll. Clockwise rotate the grip can increase the friction and vice versa.

## 7. Damping maintenance

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

### 1. Damping system of feeding roll

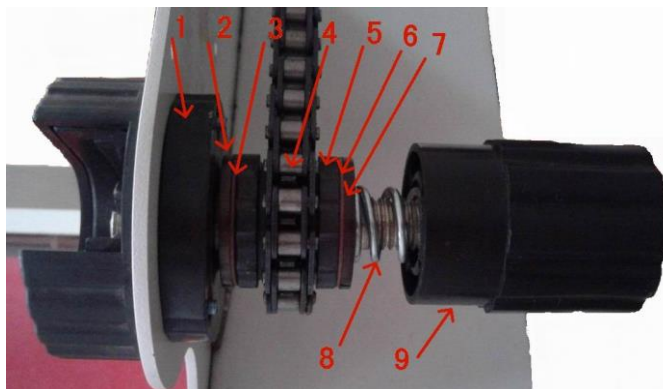
The rubber mat will wear after a period use that can not produce friction for rolls, this way; you should replace it as followed. Take the grip, spring, iron plate down and replace a new rubber mat.



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

### 2. Damping system of backing sheet roll and finished products roll

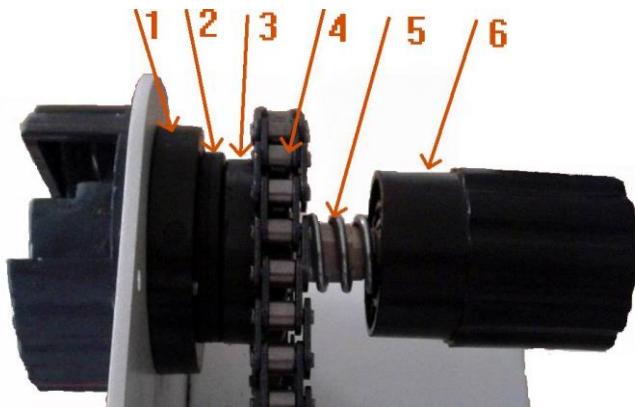
You can find them in the chain box or the case, which should clean and lubricate at a regulate time.



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

### 2. 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 friction, but it will occur wear after a period use that can not produce friction for the roll, this way, you should replace it as the following steps.

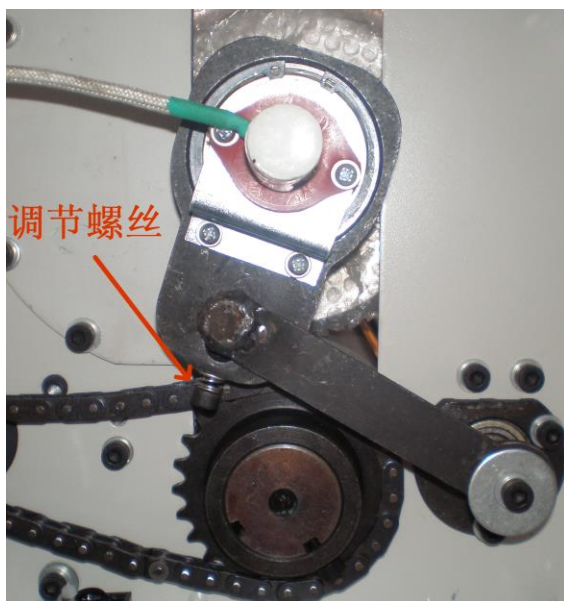


1. Bearing bush
2. Rubber mat
3. Chain sheave
4. Chain
5. Spring
6. Grip

## 7.Parallelism and gap 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 sate, the un-parallelism of the rollers may be occurred by the thread clearance of stroke adjustment.*



Left case



Right case

*Notice: Adjusting screw in the left case is used for pressure regulation.*

*Adjusting screw in the right case is used for Parallelism regulation.*

### 1. Parallelism regulation

1. Shut down the power and open the right and left cases.
2. Put the upper roller down and left a tiny gap, then check the left and right.
3. Clockwise turn the screw in the left case can increase the right gap and vice versa.

### 2. Pressure regulation

1. Shut down the power and open the right and left cases.

2. Parallelism regulation.
3. Put two paper notes between the rollers after parallelism regulation. Anticlockwise regulate the hand wheel, and then pull the two notes to check the tension.
4. Regulate the screw in the right case until you feel the tension is the same.

## 6. Lamination process

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

### 1. Preheating

1. Put 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.
5. Fix the cold film and drag some out, in the meanwhile, use the damping grip to regulate the proper tension.
6. Fix the printings and the damping grip.

### 2. After preheating

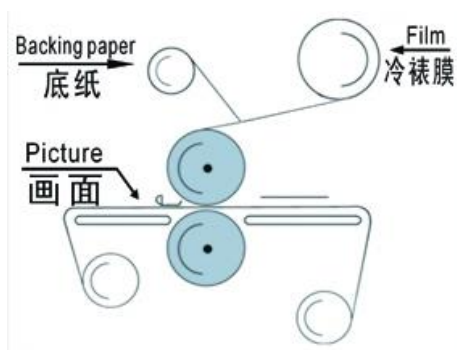
1. Choose "Inching" function to make the rollers stop running.
2. Rises up the upper roller and remove the black rubber beam.
3. There are absolutely no air bubbles and snow points through low heat. So, cold lamination will have the best quality between 40°C-50°C. Tear the film off the backing sheet 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. Fix the printings and drag 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.*

5. Put the upper roller down and anticlockwise turn the hand wheel to impending state.



6. Press "continue" button to start laminating.

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

7. Clockwise turn the speed button to a proper speed.

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

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

### 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, and 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 procedures, 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 combustibile 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
Can not 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 tight of the film	Regulate the tension
	Too tight of the reception roll	Regulate the tension

## Appendix 1

**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	1	
Middle steel beam	1	
Left leg	1	Foot wheels contained
Right leg	1	Foot wheels contained
Hex screw M8 x 80	12	
Flat matφ8	12	
Bounce matφ8	12	