

# Matrix 530 Laminator

## Operation Manual

Please read this manual carefully before operations!

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### Special attentions !

**Prior to the use of these electric laminators, make sure to check if the PE line for the power sockets is reliable and effective so as to secure the safety of the operator and no damage to the electric parts, and at the same time keep the socket reachable to the operator !**

★ Please keep this manual for future reference!

★ Please pay special attention to the paragraphs with warning marks in the manual because they are important for correct operation and maintenance of the machine and also for the sake of the operator's safety.

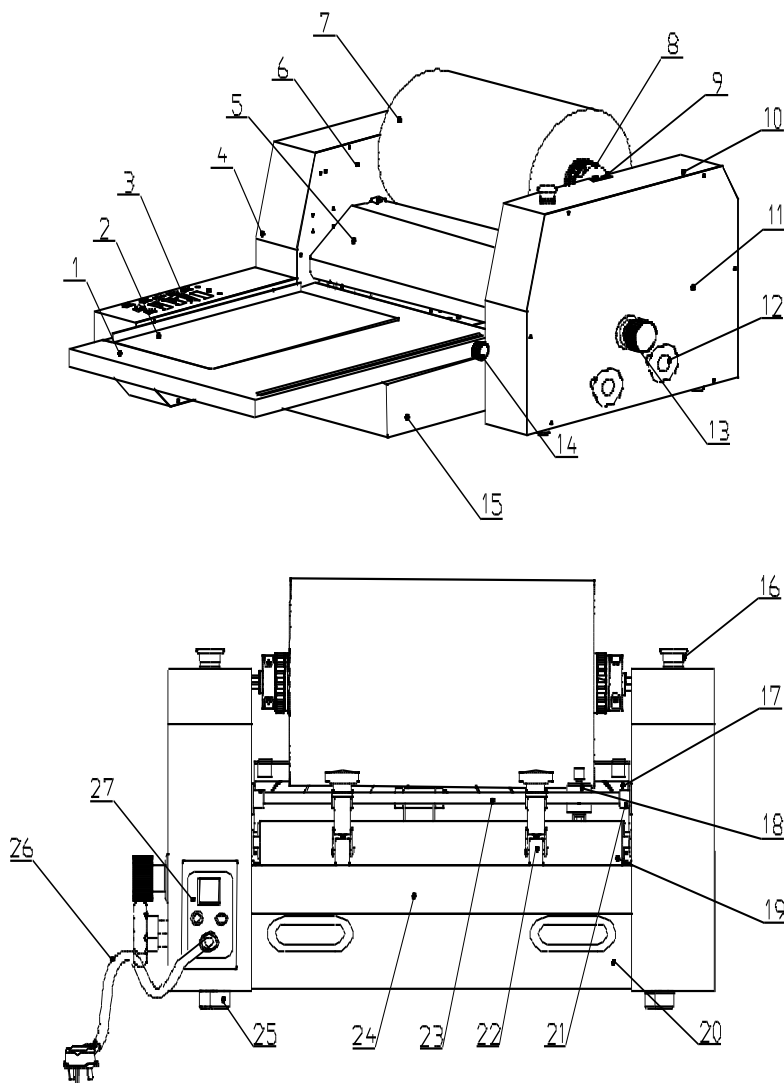
## **I. Application and characteristics of Matrix530**

**Matrix530** fast laminator laminates printed matter, spray-drawing products, packing boxes, books and the like, allowing them to resist water, stain and damage, and providing durability. Featuring compact size, fast and continuous lamination, automatic parting cut, easy operation, economics and utility, this unit is ideal for the post production of various types of printed and packing products.

Main characteristics of **Matrix530** fast laminator:

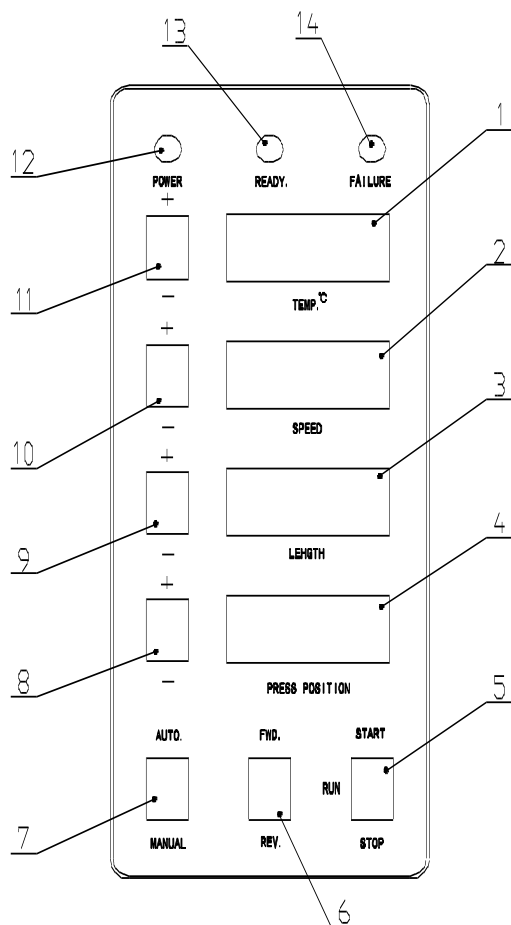
- Suitable for lamination of BOPP pre-film-coating of rolls;
- Infrared heating in the steel roll enables faster heating and more uniform thermal conduction;
- Accurate control device with overlapped paper feeding;
- Curling-preventing device, preventing laminated paper from curling;
- Automatic parting cut device, allowing automatic parting cut of laminated paper;
- LED display, displaying temperature, velocity and other parameters;
- Safe and reliable over-temperature protective device;
- Continuously adjustable temperature and speed;
- Simple and practical feed roll construction, allowing fast loading and removal of film;
- Easy operation, positioning and self-locking of the rubber roll lifting and lowering mechanism;
- Safety protective device, preventing accidents;
- Steady operation and good performance of continuous operation with the complete machine.

**II. Schematic of complete Matrix530 machine**



1. Front operating panel    2. Paper backup board    3. Operation panel    4. Left box  
 5. Front protective cover    6. Left supporting board    7. Roll film  
 8. Feed roll supporting sleeve (assembly)    9. Support base of feed roll    10. Right box  
 11. Cover of right case body    12. Pressure-regulating hand wheel    13. Leveling hand wheel  
 14. Fixing knob for front panel    15. Electrical apparatus box    16. Emergency stop switch  
 17. Guide roll    18. Notched cutter device    19. Top cutting roll    20. Rear support  
 21. Supporting sleeve    22. Inclined guide wheel device    23. Supporting bar    24.  
 Rear paper-receiving board    25. Caster    26. Power lead    27. Switchboard

### III. Schematic of operating panel:



1. Temperature display screen
2. Speed display screen
3. Paper length display screen
4. Cut length display screen
5. Start/run/stop key
6. Forward/backward keys
7. Auto/manual key
8. Cut length setting key
9. Paper length setting key
10. Speed setting key
11. Temperature setting key
12. Power indicator
13. Operating indicator
14. Fault indicator

- Temperature display screen:

Temperature display screen displays the temperature setting. While the Temperature Display Key is regulated, the value on the display screen changes (with increment or decrement at 1°C) accordingly. The display range of temperature is 80°C~130°C.

※ When the temperature setting is less than 80°C, the display screen displays the word “Cold”, and now, the machine does not heat.

- Speed display screen:

Speed display screen displays the speed setting. While the Speed Display Key is regulated, the value on the display screen changes accordingly. The display range of speed is 1m/min~7 m/min.

- Paper length display screen:

Paper length display screen displays the actual length of the laminated paper. When the Paper Length Setting Key is regulated, the value on the display screen changes accordingly. The display range of paper length is 200mm~1200 mm.

- Cut length display screen:

Cut length display screen displays the value of the cut length (position where the cutting roll is lowered). When the Cut Length Setting Key is regulated, the value on the display screen changes accordingly. The display range of cut length is 300 mm~999 mm.

- Auto/manual key:

Auto: When the key is set at Auto, the main unit runs and the front paper feed roll and rear cutting roll can lift and lower. For normal film running, the key is to be set at Auto.

Manual: When the key is set at Manual, the main unit runs and the front paper feed roll and rear cutting roll do not operate. When the unit starts and warms up or the film is placed in, the key is to be set at Manual.

- Forward/backward key:

Forward/backward Key controls the operating direction of the main unit. When the key is set at Forward, the machine runs in a forward rotation. When the key is set at Backward, the machine runs in a backward rotation.

※The forward/backward key only controls the operation of the drive part of the main unit. The drive part of cutting motor can not run in a reverse manner.

- Start/run/stop key:

Start/Run/Stop Key is used to assist the Auto/Manual Key with the control of the operation of the main unit.

In Auto state:

①When the key is at Start, the paper feed roll lowers, allowing the paper to be fed in. At this position, self-locking is not available, and the unit automatically resets to the Run state after starting. Generally, Start is used to feed the first sheet of paper or feed the paper when restarting after the operation was interrupted.

②When the key is at Run, the main unit continues to run and the front paper feed roll and rear cutting roll are in continuous operating state.

③When the key is at Stop, the main unit does not run.

In Manual state:

When the key is at Run, the machine continues to run. When the key is at Stop, the machine stops, and the Stop does not function in Manual state.

- Temperature setting key:

Temperature Setting Key enables regulation and setting of the temperature value of the machine. When the key is set at “+”, the temperature setting increases and when the key is set

at “-”, the temperature setting decreases.

- Speed setting key:

Speed Setting Key enables to regulate and set the running speed of the machine. When the key is set at “+”, the speed setting increases and when the key is set at “-”, the speed setting decreases.

- Paper length setting key:

Paper Length Setting Key enables to regulate and set the length of the paper to be laminated, thus achieving the regulation of the lapped width between the previous paper and subsequent paper. When the key is set at “+”, the paper length setting increases and the lapped width reduces, and when the key is set at “-”, the paper length setting decreases and the lapped width grows.

- Cut length setting key:

Cut Length Setting Key enables to regulate and set the cutting distance (position where the cutting roll lowers). When the key is set at “+”, the cutting distance is greater and the lapped joint between the previous paper and subsequent paper is closer to the cutting roll. When the key is set at “-”, the cutting distance is smaller and the lapped joint between the previous paper and subsequent paper is farther from the cutting roll.

- Power indicator:

Connect the power and switch on, and the Power Indicator is in normal lighting.

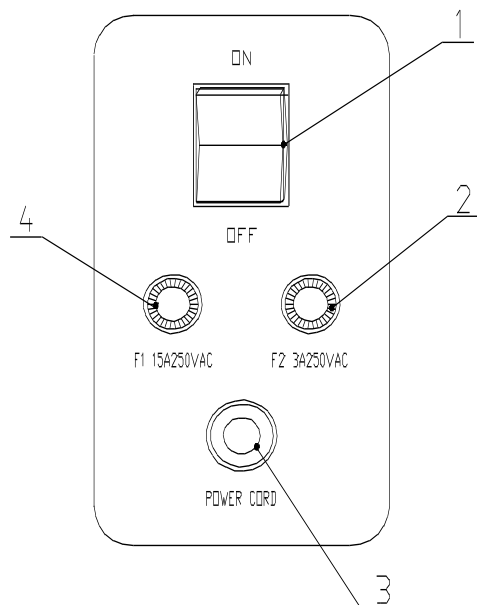
- Operating indicator:

When the actual temperature on the steel roll reaches the set temperature, the Operating Indicator is in normal lighting. When the actual temperature is lower or higher than the set temperature, the Operating Indicator flickers.

- Fault indicator:

In case of an interruption in paper feed during the operation or an excessive space between the previous paper and subsequent paper, the machine automatically stops and the Fault indicator flickers. In normal operation, the Fault indicator is out.

**IV. Schematic of switchboard:**



- 1. Power switch
- 2. Fuse for motor
- 3. Power lead
- 4. Heating fuse

**V. Main technical parameters:**

Model	Matrix530
<b>Technical parameters</b>	
Types of rubber film	BOPP
Max. size of roll film	0.44 m × 1000 m
Film thickness range	25Mic ~ 32Mic
Applicable dimension of reel for roll film	φ75mm
Max. O.D. dimension of roll film	φ220mm
Applicable thickness of paper core	150 ~ 350g/m <sup>2</sup>
Max. applicable size of printed matter	450×640 mm
Min. applicable size of printed matter	200×300 mm
Speed regulation range	1 ~ 7m/min
Temperature regulation range	80 ~ 130°C
Preheating time	15~20 min
Max. lifting height of rubber roll	6mm
Rated input voltage	230V / 50Hz
Rated input power	2200W
Rated input current	9.6A
Weight of main unit (net)	130Kg
Weight of frame (net)	64Kg

Physical dimensions of machine (L×W×H)
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1868×850×1285 mm
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## VI. Operating cautions:



- Please ensure that the voltages of power supply you are using match the rated working voltages before operations. Please use the power supply matching the rated voltage. Do not misuse other incorrect power supply.
- To avoid fires and electric shock, never use the power sockets for overload, and provide the power with reliable earthing protection.
- Please don't use damaged wires or sockets.



- This machine has a heating system. Please don't touch the surface of the roller during operation, in case your hand can be burnt.
- Please do not spray water or other liquids on the machines, in case electric shocks or machine failures may occur.



- During the operation, please take care that no clothes, neckties, hairs, necklaces and cuffs will be rolled into the machine, in case body injuries, surface damages of rubber rollers or other damages may occur.
- During the laminating operation, please don't put anything but laminating materials on the working panels and the cabinets on the two sides so as to avoid accidental involvements, which will cause damages to the surface of rubber rollers or to the machine.
  - When faults occur, non-professional persons should not dismantle the machine for repairs. Ask for help from professionals or the local distributors. Any dismantling or repairing by persons without our authorization, will affect normal use and maintenance of the machine.
  - The environment for the service of the machine shall be maintained at 10°C—40°C with the ideal humidity at 55%. Stay away from high temperature (e.g. place near air-conditioner), damp and dusty places
  - Operating spaces: applicable and enough spaces are needed so as to ensure the safe and effective applications.
  - The surface of the hot steel roll of the machine should be kept clean and frequently wiped

in alcohol of high purity, thus eliminating the effect on the lamination.

- Please don't use corrosive liquids to wipe the machine when cleaning it, otherwise the machine frame will be damaged. You can use soft dry cloth to clean the enclosures and wipe the surfaces

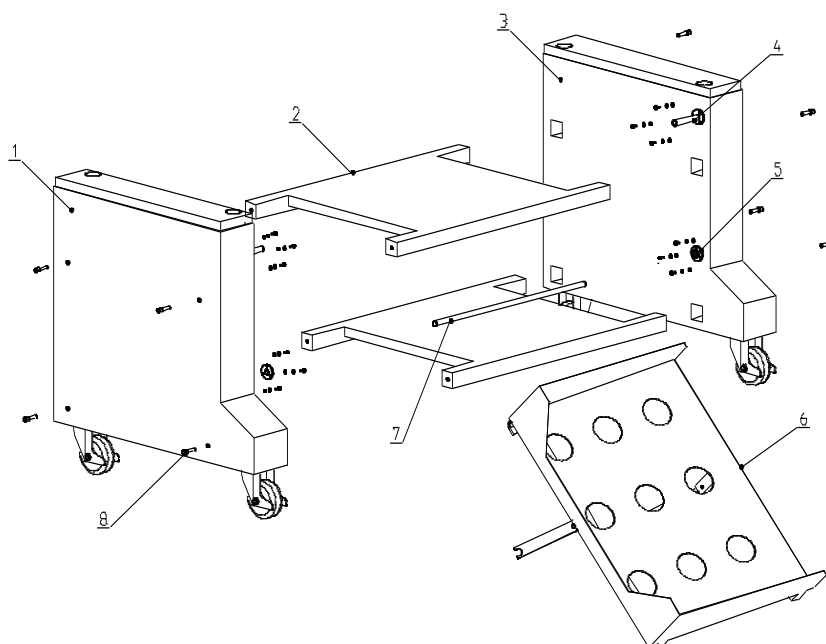


- After the lamination, cool the surface of the steel roll before stopping the machine, and lift the front steel roll and the rear rubber roll to avoid the deformation of the rubber roll surface.
- Please don't use the machines for other purposes than lamination, otherwise damages to the machine or accidents may occur.

## VII. Assembly of frame and installation of main unit

(I) Assembly of frame:

Get the frame out of the packing case and conduct the assembly as per the figure below.



1. Left support board of frame    2. Support of frame    3. Right support board of frame  
4. Stub axle    5. Supporting sleeve    6. Rear paper-receiving board  
7. Support roll for frame    8. Socket head cap screw ( M8 )

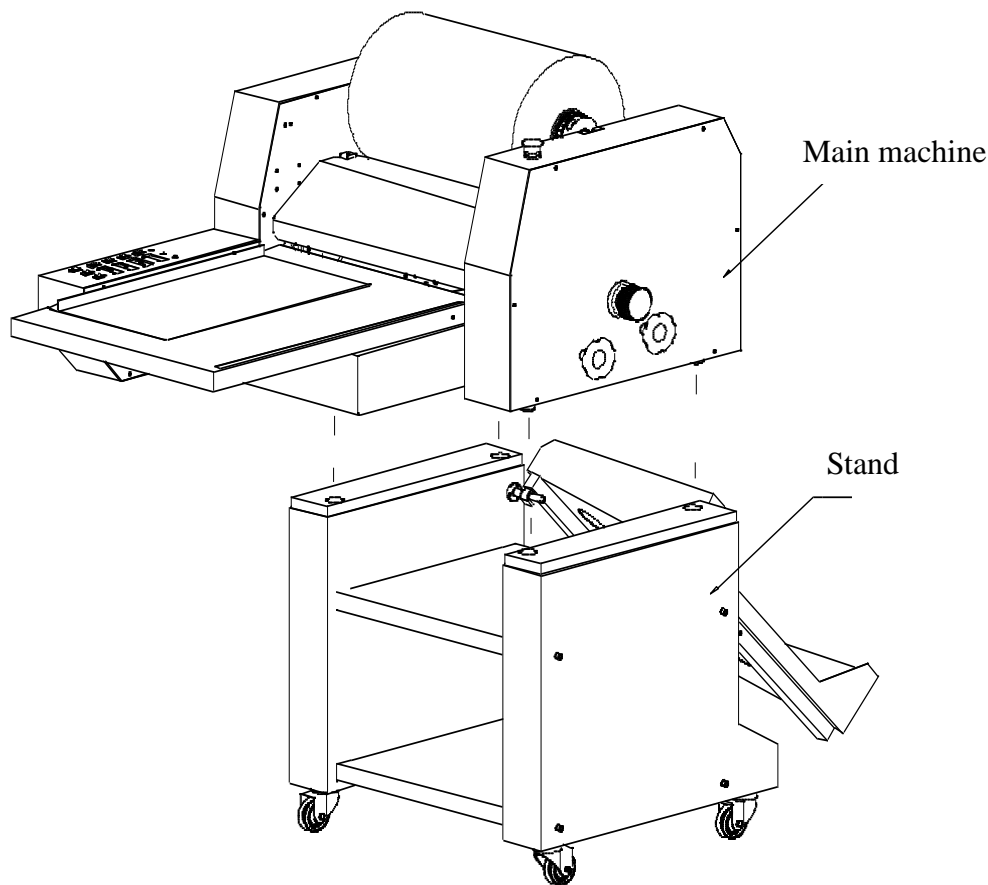
- Connect the left and right support boards of the frame with the two supports of frame via

hexagon socket cap screws and make sure that the connection is firm and reliable.

- Place the two hooks of the rear paper-receiving board onto the stub axle, and mount the support board for film holder on the support roll for frame.
- Properly set the connected frame at a specified location (horizontal floor) at standby.

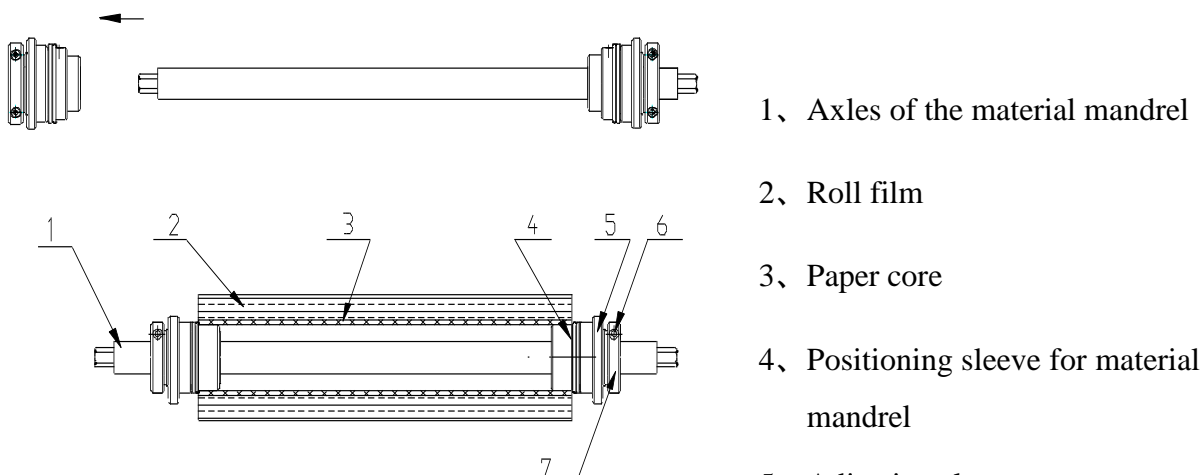
(II) Installation of main unit:

Mount the main unit steadily on the frame as shown in the figure (as below).



**VIII. Mounting film roll and operating instructions:**

(I) Mount the film roll on the feed roll (as shown in the figure below):

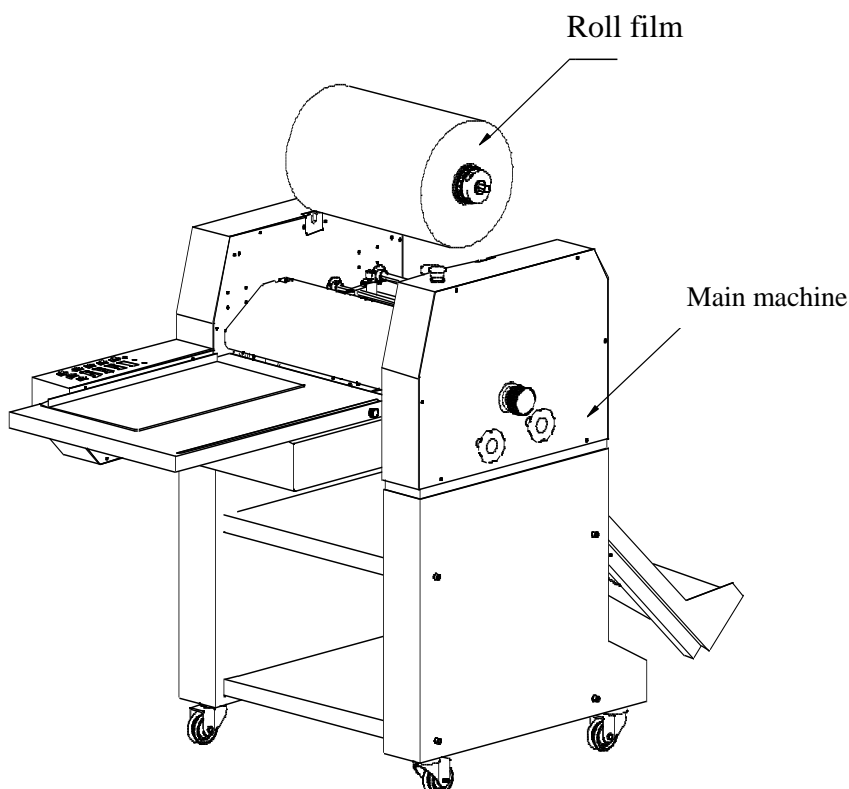


- 1、Axles of the material mandrel
- 2、Roll film
- 3、Paper core
- 4、Positioning sleeve for material mandrel

1. Loosen the fastening screws on the positioning sleeve of material rolls, and take down the supporting sleeve (part) of the material mandrel on the one side
2. Put the film rolls on through the material mandrel
3. Put the removed positioning sleeve on through one end of film roll's paper core
4. Adjust the distances between the supports of the two material mandrels according to the practical width of used consuming materials so as to make the film in the middle of the material roll
5. Fasten the screws for positioning sleeve of material mandrels
6. Adjust the friction forces by turning the adjusting sleeve of the mandrels

※the friction forces should not be too big

(II) Mount the feed roll loaded with film roll on the main unit (as shown in the figure below):



**IX. Operating procedure and method of machine:**

1. Connect the power and switch the power on.

2. Clockwise turn the two pressure-regulating hand wheels and lower the front and rear top rolls respectively. (Note: Continue to turn the wheels even after the front and rear top rolls are lowered so that the two rolls are completely pressurized.) (The operation is as shown in Fig. 1):

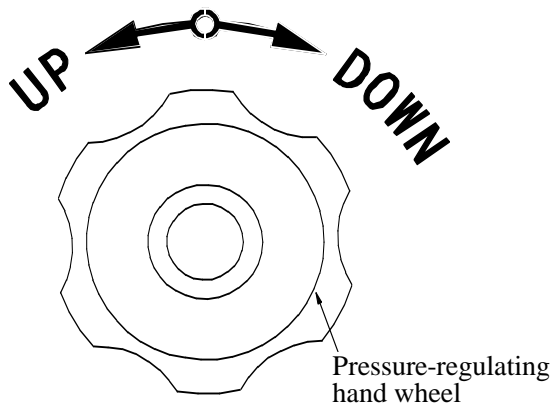


Figure 1

3. Set the Auto/Manual Key at Manual and the Start/Run/Stop Key at Run, and the machine continues to run.

※Now, the machine is preferably running at a low speed of 1 ~ 2m/min.

4. Set the temperature setting on the display screen to the temperature value required for lamination by regulating the Temperature Setting Key. Now, the machine begins to preheat.

※The temperature value should be set in line with the different thickness of the paper core. At the very beginning, the setting should not be set overhigh to prevent impact of the lamination.

5. Measure the length of the printed matter to be laminated and set the value of paper length based on the actual length measured.

※Example for regulation: Assume an actual length of 300mm by measurement. Set the value on the display screen at 300 and now, the lapped width between the previous paper core and subsequent paper core should be 0. If a gap of 5mm is desired between the previous paper core and subsequent paper core, regulate the displayed value to 295. If a space of 5mm between the previous paper core and subsequent paper core, regulate the displayed value to 305.

6. Check the operating indicator. If it is in normal lighting, this indicates that the temperature of the steel roll has come to the setting. Now, pass the film through. (See Fig. 2 for the operation of passing through the film.)

- Remove the front protective cover.

- Feed the guide paper of over 450mm in length from the front of the steel roll.

※ Now, the main unit should run at a speed below 1 m/min for easy alignment of the guide paper.

When the guide paper comes out of the front hot laminating roll, make sure that it passes through the curling-preventing device. When the front end of the guide paper comes out of the cutting roll, set the Start/Run/Stop Key at Stop so that the main unit stops.

- Mount the roll film over the guide roll onto the front hot laminating roll as shown in the figure and stick it to the end of the guide paper.

※ During this operation, never let the adhesive side of the film stick to the steel roll. In case of any adhesive on the steel roll, immediately clear it to prevent impact of the lamination.

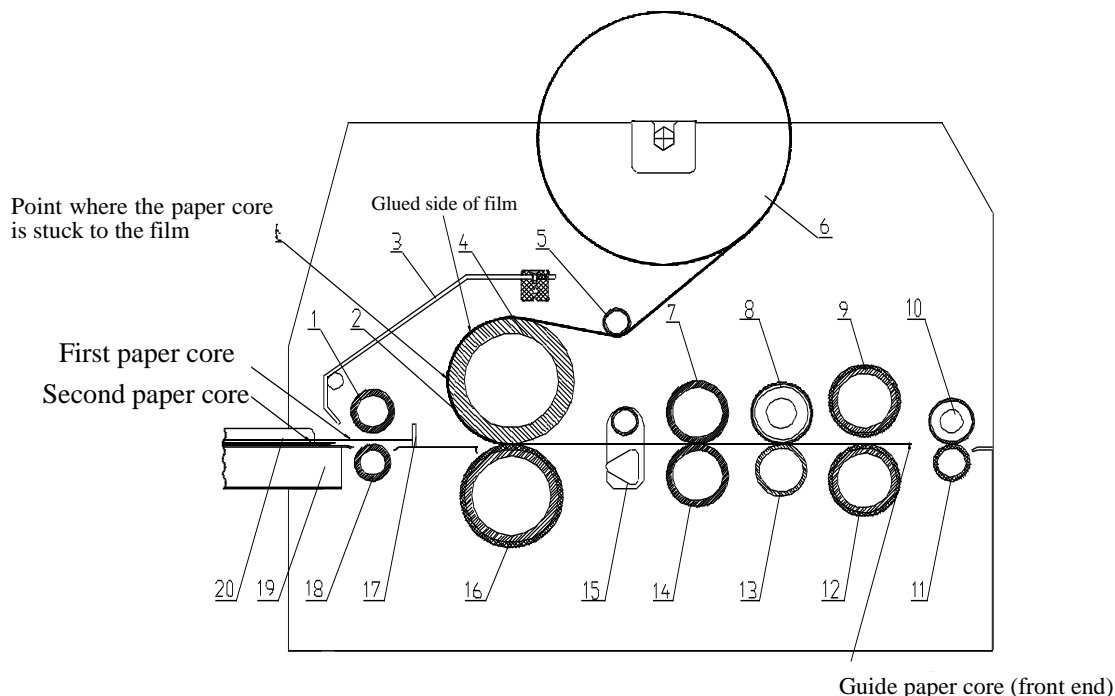


Figure 2

- |                                 |                                 |                               |
|---------------------------------|---------------------------------|-------------------------------|
| 1. Top paper feed roll          | 2. Guide paper(end)             | 3. Front protective cover     |
| 4. Front hot laminating roll    | 5. Guide roll                   | 6. Roll film                  |
| 7. Top rear tractive roll       | 8. Notched cutter               | 9. Top cutting roll           |
| 10. Guide wheel                 | 11. Bottom roll for guide wheel | 12. Bottom cutting roll       |
| 13. Notched cutter support roll | 14. Bottom rear tractive roll   | 15. Curling-preventing device |
| 16. Front bottom rubber roll    | 17. Paper stop                  | 18. Bottom paper feed roll    |
| 19. Front operating panel       | 20. Paper backup board          |                               |

7. As shown in Fig. 1, raise the top rear tractive roll, turn the leveling hand wheel counterclockwise, and regulate the curling-preventing device to a position relatively

suitable for the paper core to be laminated.

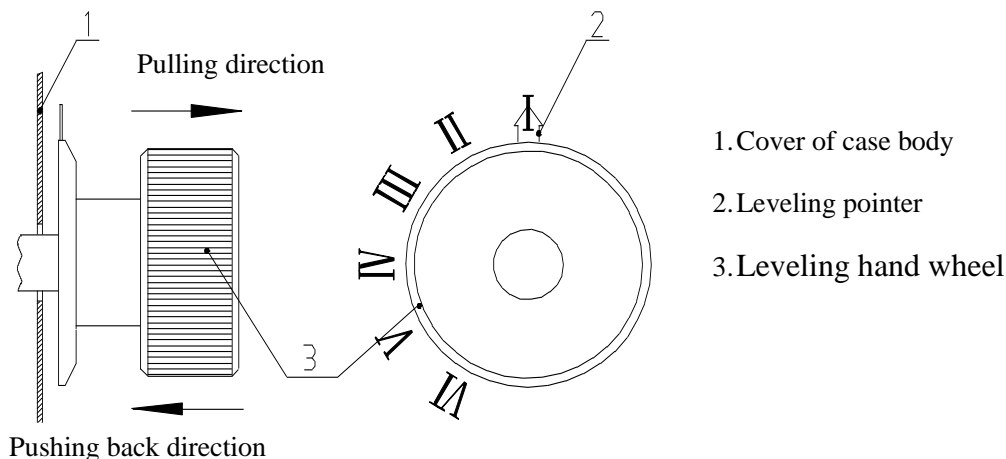


Figure 3

As shown in Fig. 3:

- Pull out the leveling hand wheel in the direction shown in the figure.
- Turn the leveling hand wheel counterclockwise so that the leveling pointer is aligned to the graduation on the case body.

※ The graduations on the case body correspond to the positions of the curling-preventing device.

- Push back the leveling hand wheel in the direction shown in the figure and fix it.

8. Regulate the position of the notched cutter and depress it.

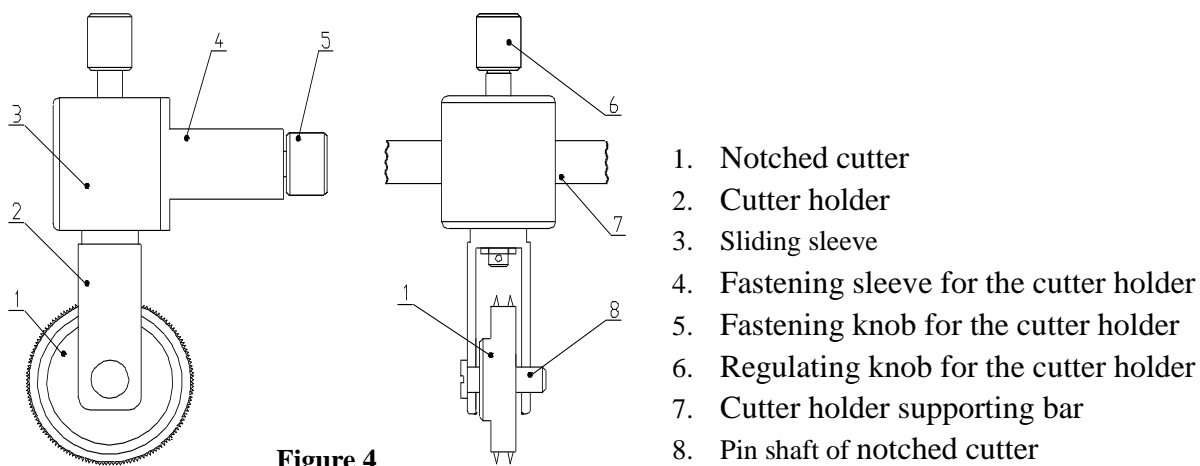


Figure 4

As shown in Fig. 4:

- Loosen the cutter holder by turning the fastening knob for the cutter holder counterclockwise, move the cutter holder leftwards or rightwards along the cutter holder supporting bar, regulate the position of the notched cutter and lock the cutter holder after

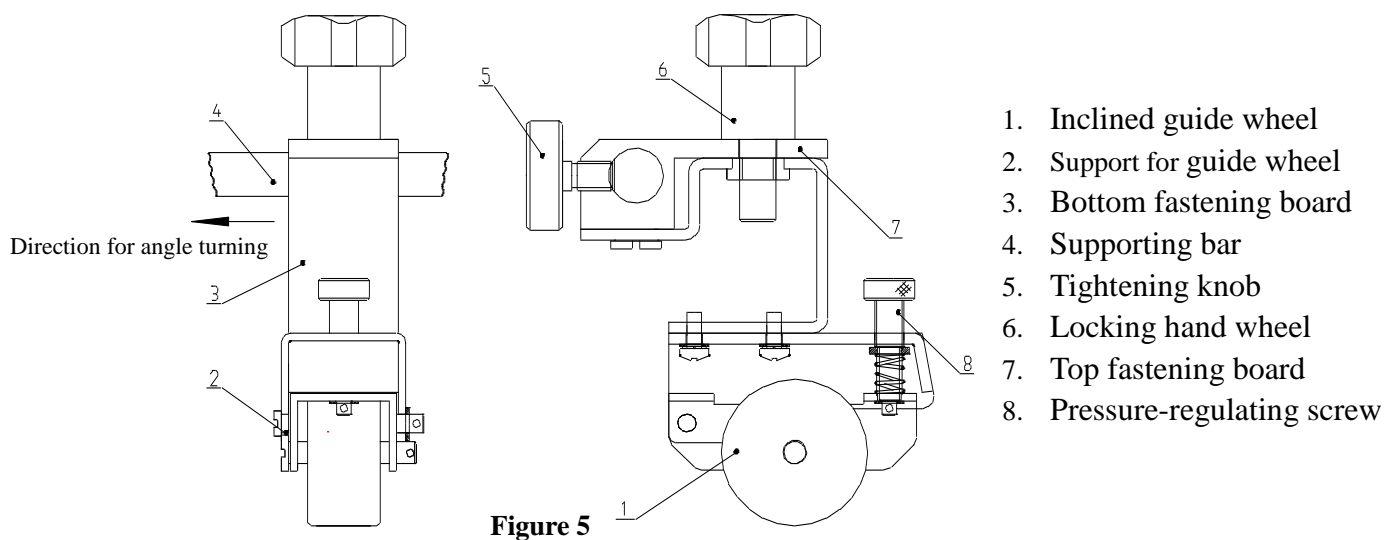
setting the position.

※ The position of the cutter is to be adjusted depending on the breadth of the consumable. The cutter should be pressed at 10mm away from the film edge.

- Depress the notched cutter by turning the regulating knob for the cutter holder clockwise.

※ Never depress it over-tight so that the service life of the notched cutter is not affected.

9. Adjust the position of the inclined guide wheel and its inclination angle.



As shown in Fig. 5:

- Loosen the top fastening board by turning the tightening knob counterclockwise, move the guide wheel leftwards or rightwards along the supporting bar, and lock it after setting the position.

※ The position of the guide wheel is to be adjusted depending on the breadth of the consumable. In case of a wide breadth of the consumable ( $\geq 310\text{mm}$ ) which requires 2 sets of guide wheel, one set should be located on the side of the notched cutter at about 100mm from the edge of the consumable and the other at 150mm from the other side of the consumable. In case of a narrow breadth of the consumable, 1 set of guide wheel may be required and should be located on the side of the notched cutter at about 100mm from the edge of the consumable.

- Loosen the bottom fastening board by turning the locking hand wheel counterclockwise, turn the bottom fastening board in the direction as shown in the figure, and lock it by turning the locking hand wheel clockwise after setting the inclination angle of the guide wheel.

※ The inclination angle of the guide wheel is to be adjusted depending on the thickness of the object to be laminated. The thinner the object to be laminated, the smaller angle is required, vice versa.

- To regulate the pressure on the guide wheel, the pressure increases by turning the pressure-regulating screw clockwise and the pressure decreases by turning the pressure-regulating screw counterclockwise.

※The pressure on the guide wheel is to be adjusted depending on the thickness of the object to be laminated. Thinner printed matter requires lower pressure while thicker printed matter requires higher pressure.

10. Set the value on the cutting display screen in line with the positions of the curling-preventing device. The higher the position, the higher cutting value is required. The correspondence of the positions to the cutting values is as shown in the table below.

Positions	Range of cutting values
Position 1	330~380
Position 2	330~380
Position 3	330~380
Position 4	350~400
Position 5	375~430
Position 6	410~480

※The data in the table are theoretical calculated values for reference only. The actual cutting values are to be set by the operator and adjusted slightly depending on the conditions of the object to be laminated. To set a cutting value, it is recommended that a medium value in the given range be used if possible.

11. Check if the paper backup board on the front operating panel is vertical to the rubber roll and vertically in line with the roll film. In case of out-of-verticality and deviation, make adjustment by loosening the two tightening screws.

12. Feed the first paper core along the paper backup board and make sure that its front end is against the paper stop. Set the Start/Run/Stop Key to Start and now, the front paper feed roll lowers and feeds the first paper core, and the machine starts for lamination. When the paper feed roll rises, place the second paper core under the first one, and feed it along the paper backup board till it is against the paper stop. Repeating the above procedures enables continuous paper feeding. (As shown in Fig. 2)

13. Stop the machine after continuous lamination of a few paper cores, and check the lamination effect of the coated product, the lapped size between paper cores and the cutting. (Note: As the number of devices subject to adjustment is large, to avoid the initial waste of paper, perform this operation at low speed.)

14. In line with the actual condition of the laminated product, re-set the operating parameters

and perform fine adjustment of the parts of the machine to be adjusted so as to achieve the optimal operating effect.

15. When all parameters are stabilized by regulation, mount the front protective cover and continuous operation is possible. (Note: Now, you can raise the speed, but the speed is proportional to certain extent to the temperature, and they should be adjusted at the same time.)

16. After operation for some time, sort out the laminated and shaped product.

**X. Work to be done after operation:**

1. At the completion of the operation, stop the machine, and set the display screen at “Cold” by regulating the Temperature Setting Key. Now, the machine stops heating and starts cooling down.
2. Remove the front protective cover, cut the rubber film and lift the notched cutter.
3. Set the machine at Manual and it starts to run with no load, discharging the remaining paper core.
4. Return the curling-preventing device to Position 1.
5. Wait till the temperature drops, and raise the front hot laminating roll and the top tractive roll.
6. Mount the front protective cover, switch the power off and disconnect the power, thus ending the operation.

**XI. Common problems in operation and solutions:**

Common problems	Causes	Solutions
Complete machine does not run	<ul style="list-style-type: none"> <li>● Power is disconnected</li> <li>● Fuse is blown</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the power</li> <li>● Replace the fuse</li> </ul>
Low cutting efficiency or no cutting-off possible	<ul style="list-style-type: none"> <li>● Notched cutter is improperly located</li> <li>● Notched cutter is not depressed</li> <li>● Inclination angle of the inclined guide wheel is small</li> <li>● The pressure of the inclined guide wheel is low</li> <li>● The inclined guide wheel is improperly located</li> <li>● The cutting position is improper</li> <li>● Lapped width between paper cores is excessively large</li> </ul>	<ul style="list-style-type: none"> <li>● Adjust the position of the notched cutter as required</li> <li>● Depress the notched cutter</li> <li>● Increase the inclination angle of the inclined guide wheel</li> <li>● Increase the pressure of the guide wheel</li> <li>● Adjust the position of the guide wheel</li> <li>● Increase properly the cutting value</li> <li>● Reduce the lapped width between paper cores</li> <li>● Depress the roll by turning the pressure-regulating hand wheel</li> </ul>

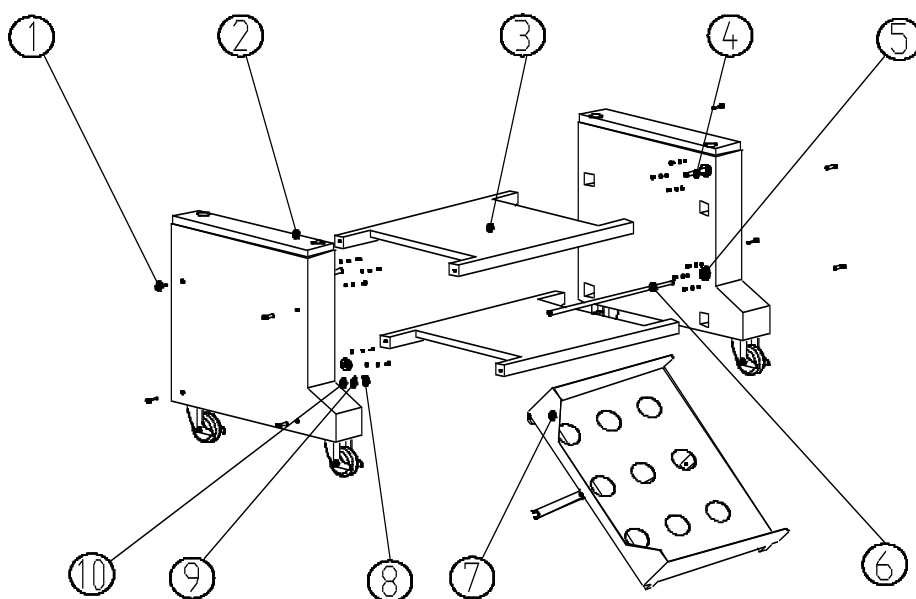
### A Packing List of Matrix530 series

No.	Name	Quantity	Remarks
1	Main machine	1pc	
2	Front operating panel	1pc	
3	Fixing knob for front panel	2pc	
4	Mandrel	1pc	Installed on the machine
5	Mandrel sleeve	2sets	Installed on the machine
7	Operation Manual	1pc	Card is included.
8	Slitter	1pc	
9	Allen key	1pc	S=5

## A packing list of Matrix 530 stand

Name	Unit	Quantity	Remarks
Left support of frame	set	1	Include: caster Wheel, upper case body of frame, upper cover of frame stub, and combined pin
Right support of frame	set	1	Include: caster Wheel, upper case body of frame, upper cover of frame stub, and combined pin
Stub axle	set	2	
Support roll of frame	pc	1	
Frame support	set	2	
Paper-receiving box	set	1	Include: support board for film holder, support axis for film holder, screw, cushion and splint pin
Supporting sleeve for paper-receiving	pc	2	
M8×20 Socket head cap screw	pc	8	
φ8 Plain cushion	pc	8	
φ8 Spring cushion	pc	8	
M4×10 Cross recessed screw	pc	12	
Φ4 Plain cushion	pc	12	
Φ4 Spring cushion	pc	12	

Remark : please refer to machine install upright sketch map in machine install.



1. M8 Screw    2. Left and right support board of frame    3. Frame support    4. Stub axle  
 5. Supporting sleeve for paper-receiving board    6. Supporting roll of frame  
 7. Paper-receiving box    8. M4 Screw    9. φ4 Spring cushion    10. φ4 Plain cushion

## **Illustrations**