

OPERATION MANUAL

OFFSET PRINTING MACHINE

AR-010



107-0186-01

INTRODUCTION

- Thank you very much for purchasing PLEXTOR AR-010.
- Before attempting to use, please read this manual thoroughly and get familiarize all the functions for proper and safety operation. After read this manual, keep it for future reference.
- This printing machine is a offset duplicator enabling to print a paper size from business card to double-fold card. For using UV ink, use optional UV roller and blanket separately sold.

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1. HANDLING

1.1 HAZARDOUS LABELING

1. The Hazardous Label is put on the place of machine requires special attention.
Please be understood the contents of Hazardous Label and be paid utmost care for safeness.



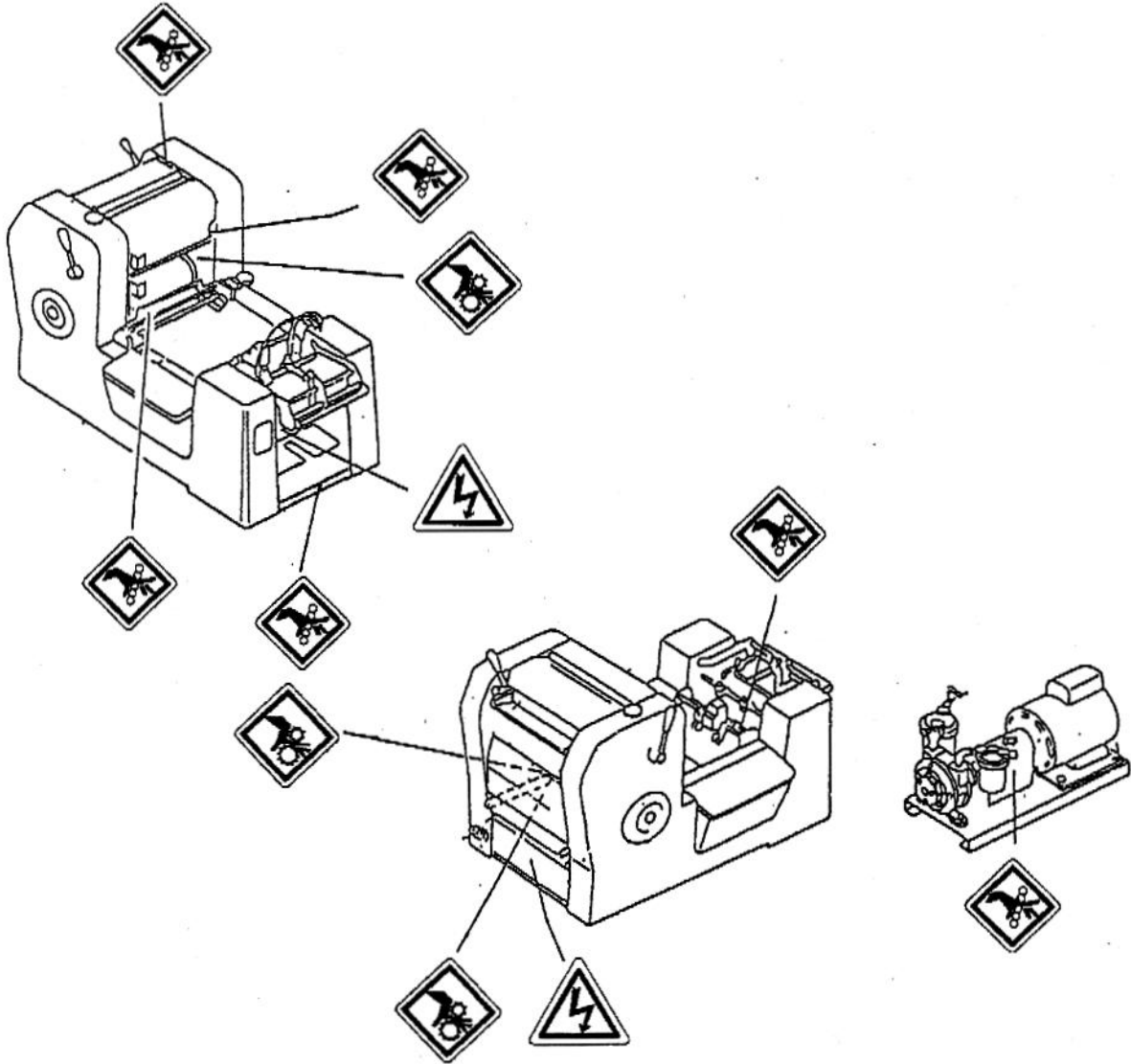
Entanglement Do not touch when the machine in motion.
Your hand or fingers might get caught in the machine.



Pinch Do not touch when the machine in motion.
Your hand or fingers might get caught in the machine.



Electrical Do not open the cover, as high voltage is running.



1.2 SPECIAL NOTES



DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in serious injury.

- Do not touch components protected by the safety cover, while printer is in motion. The printer is driven by a powerful motor. If you are caught by the printer on a hand or any other part of body, it may cause a serious injury, and dangerous.
- Do not take off the cover. Do not alter any part of the safety cover or protection equipment of the printer. An alteration of the safety cover or safety equipment may deteriorate safety features designed to prevent danger. It may lead to a serious accident, and do not make any alteration.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in serious injury.

- Never plugging and unplugging the power cord with a wet hand for preventing a shock from electricity. Also, be sure to hold the plug for plugging and unplugging the power cord.
- Be sure to ask your dealer for wiring of power line. Without having the special knowledge to make wiring causes leakage of electricity, electric shock and fire.
- In case moving the power cord plug to other location, be sure to provide proper grounding. Also, do not put many loads on one power outlet, this may result in electric shock and fire.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

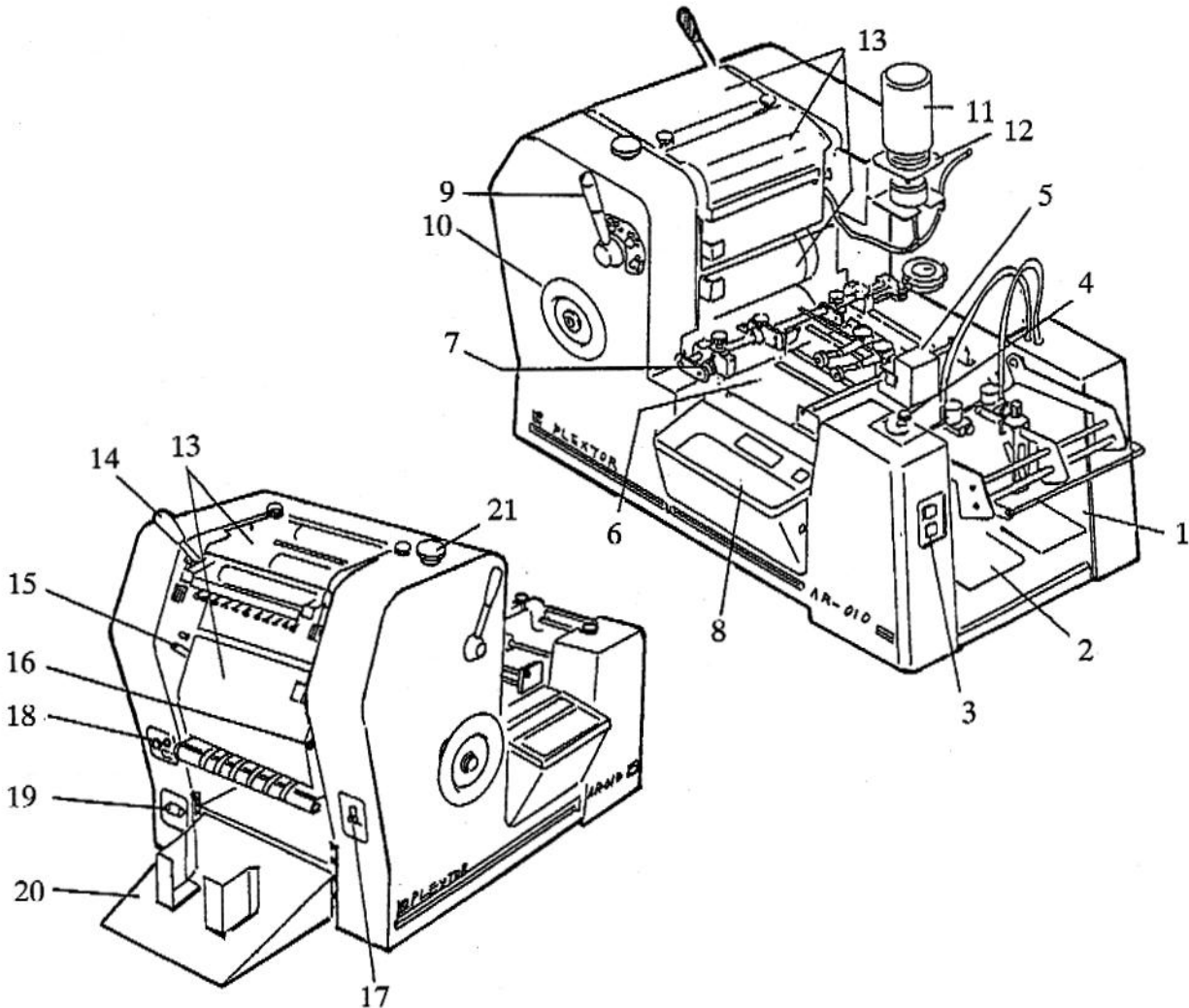
- For preventing electric shock and fire, do not put anything on the power cord.
- To move transport this machine, ask your dealer. In case moving, do not hold the cover. This will prevent your back from aching and to prevent falling of cover to invite injury.
- For preventing damages, do not connect any equipment other than the spray unit to the spray terminal.
- The cover may be damaged and may hurt you if you put heavy objects on the cover. When it is damaged, please consult with your dealer.
- Never remove Hazardous Label. If it is peeled off or uncleaned, promptly notify your dealer. It is very dangerous to operate the machine without paying attention.



Indicates an operational guidance

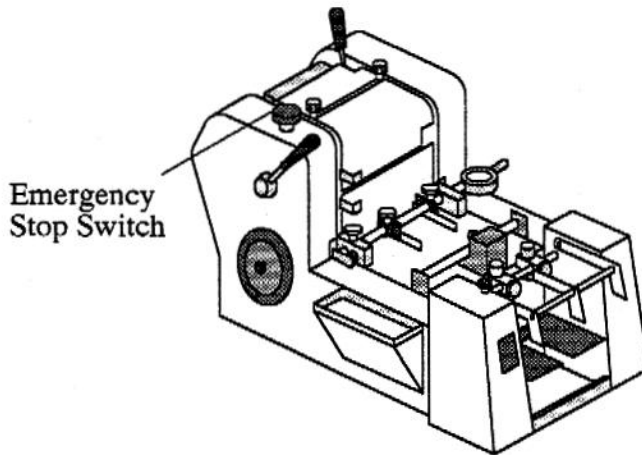
1.3 COMPONENTS AND FUNCTIONS

- | | |
|-------------------------------------|--|
| 1. Air feeder unit: | Feeds paper to feed table. |
| 2. Pile board: | Accommodates paper on. |
| 3. Elevator switch:
(「↑」, 「↓」) | Moves the pile board up and down. |
| 4. Elevator height adjuster: | Adjust the upper limit based on the height of paper. |
| 5. Double feed detection unit: | Detects double feed. |
| 6. Feed table: | Feeds paper from the air feeder to cylinder. |
| 7. Side positioning guide adjuster: | Adjusts the side guide. |
| 8. Keyboard: | Controls the printer. |
| 9. Form lever: | Feeds water and ink to the plate. |
| 10. Handle: | Counterclockwise rotation for feed forward. |
| 11. Water bottle: | Can contain up to 500 cc of dampening water. |
| 12. Water bottle holder: | Moves up/down to adjust the water level. |
| 13. Safety cover: | Stops the printer, when opened. |
| 14. Ink fountain lever: | Moves the ink fountain roller by hand. |
| 15. Ink doctor lever: | Used to clean rollers. |
| 16. Transfer roller lever: | Connects the ink rollers and water rollers. |
| 17. Power switch: | Turn on/off the power. |
| 18. Envelop feeder driving unit: | Connects the envelop feeder and the spray. |
| 19. Power connector: | To be connected with a supplied cord to AC 100V power outlet. |
| 20. Delivery plate: | Receives paper. |
| 21. Emergency stop switch: | To push the switch until locked, in steps the operation.. Turn the switch clockwise for release. |



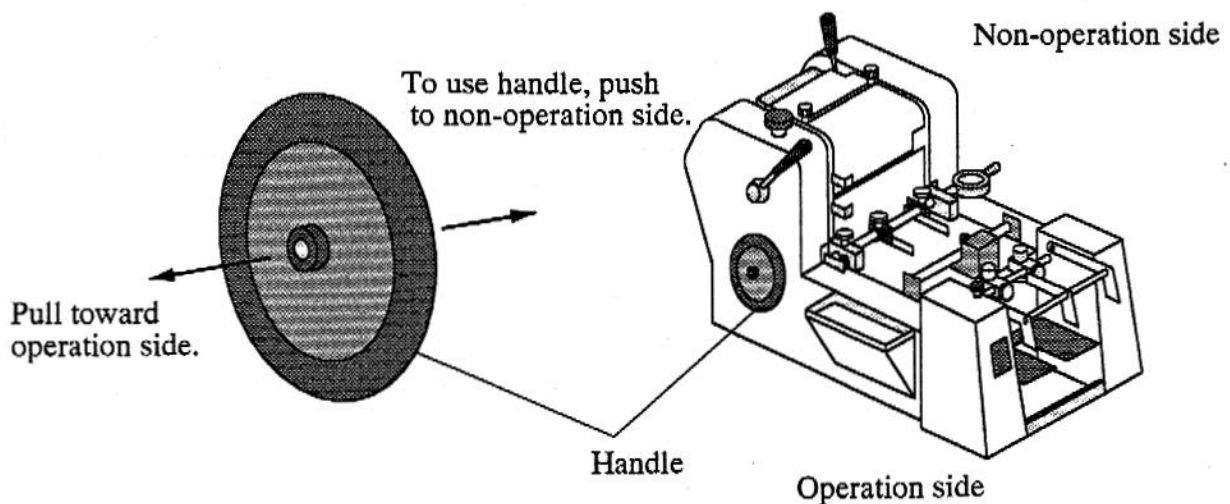
■ Emergency Stop Switch

- This machine is provided with a emergency stop switch.
- When emergency stop is required for any reason during operation, please push it.
- To release the function, turn it counterclockwise.

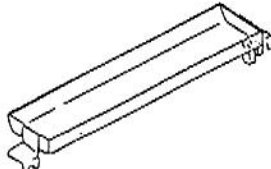

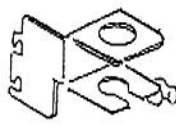
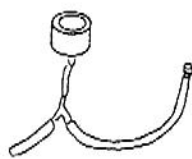
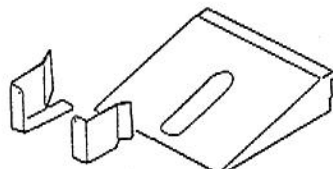

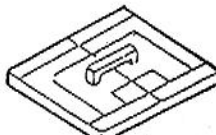




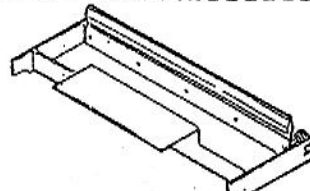



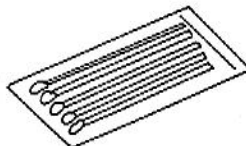
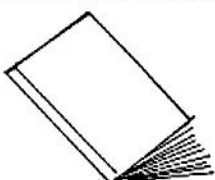
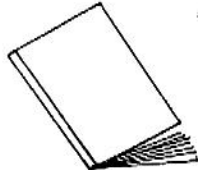
■ Handle


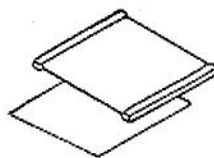

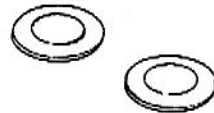
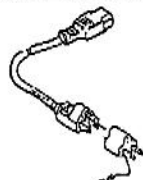

- Handle does not rotate while the machine is in motion, thus prevents danger of entangling your hand, fingers and clothes.
- To use the handle, push it non-operation side while the machine is not in motion. In this state, the safety device actuates and the machine will not run.
- To run the machine, pull the handle toward operation side.
- Even if the handle is pushed and the safety device functions, the following operations are feasible to perform.
 1. Plate pressure and check up (See page 31)
 2. Printing pressure and check up (See page 31)
 3. Manual and check up (See page 17)
 4. Blanket mode (See page 38)



1.4 ACCESSORIES

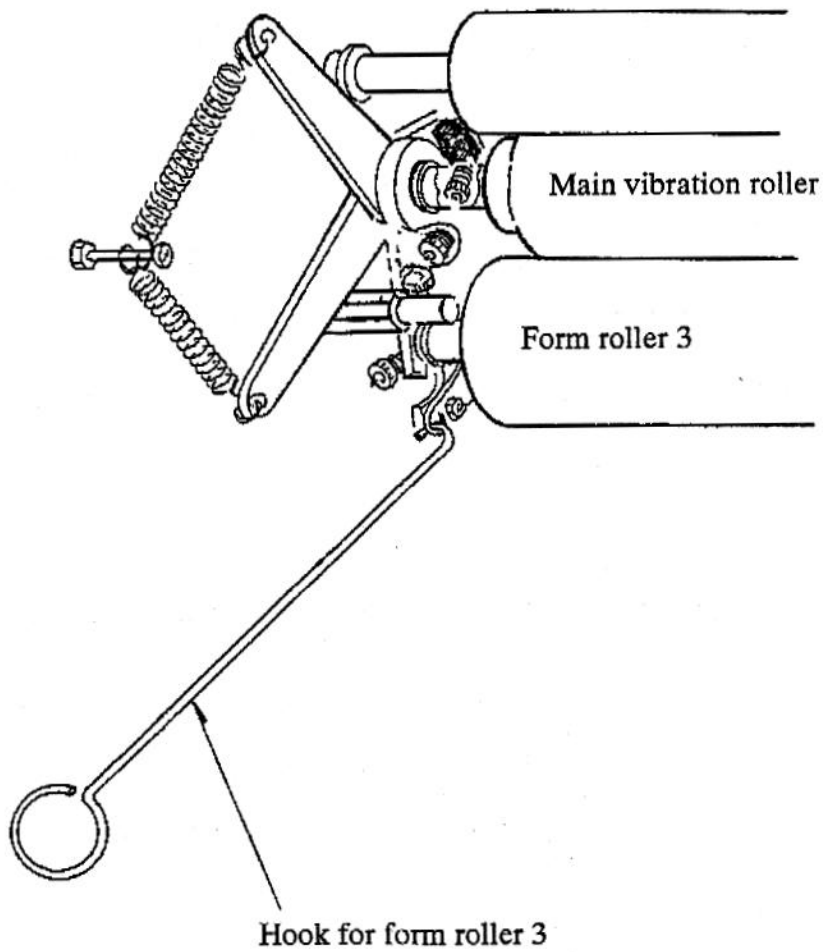
Name and Shape	Q'ty
Water fountain for dampening	1 ea.
	
Water bottle	1 ea.
	
Water bottle holder	1 ea.
	
Water holder	1 ea.
	
Delivery plate	1 set
	
Ink knife	1 ea.
	
Plate cut gauge	1 ea.
	
Plate release lever	1 ea.
	

Name and Shape	Q'ty
Water fountain for cleaning	1 ea.
	
Ink doctor	1 ea.
	
Bottle for cleaning	1 ea.
	
Tools	1 set
	
Hook for form roller	3
	
Cotton swab	1 set
	
Operation manual (This book)	1 ea.
	
Parts list	1 ea.
	

Name and Shape	Q'ty
Foot plate	4 ea.
	
Blanket	1 ea.
	
Dial gauge	1 ea.
	
Suction cup	2 ea.
	
Power cord	1 ea.
	
Operation video	1 ea.
	

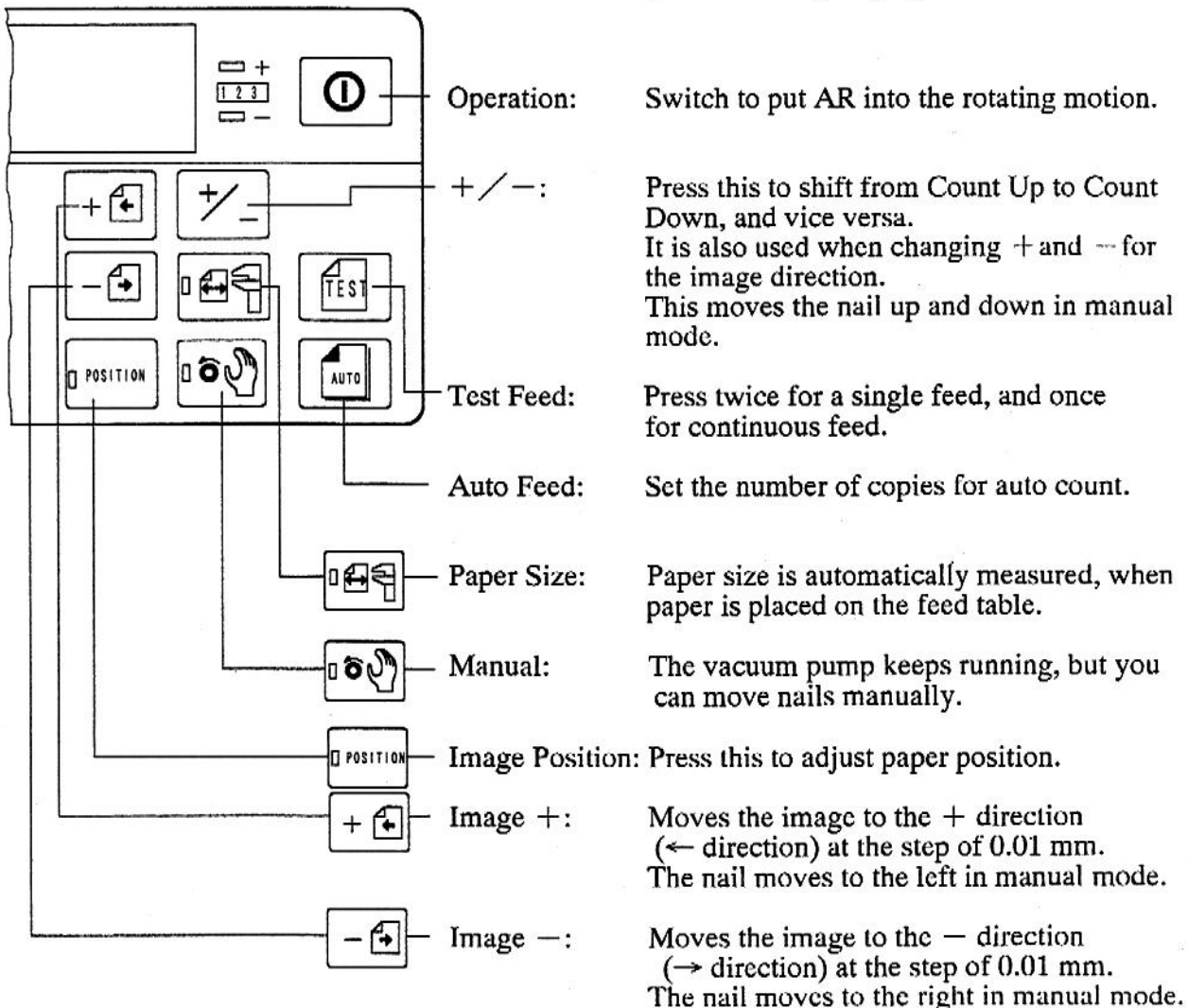
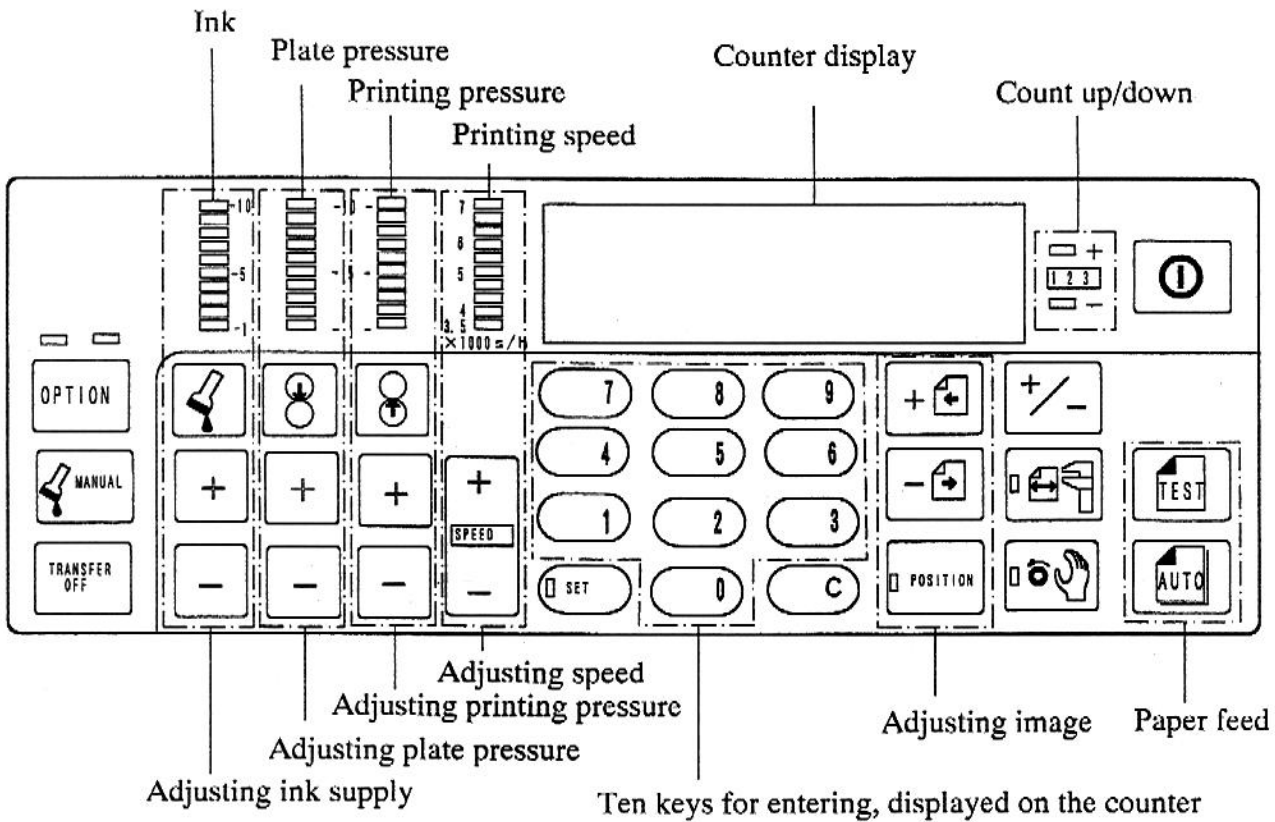
■ How to Use the Hook for Form Roller 3

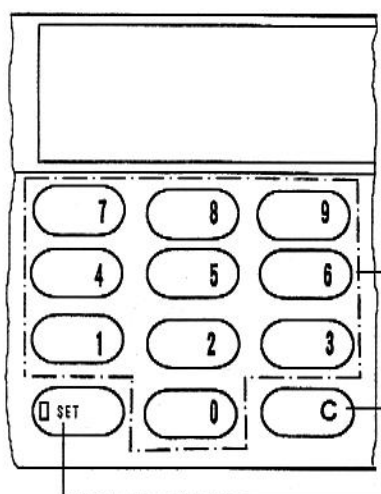
- When install the form roller 3, use the hook included.
- Pull the end of the mounting spring with the hook, and put the spring in place.



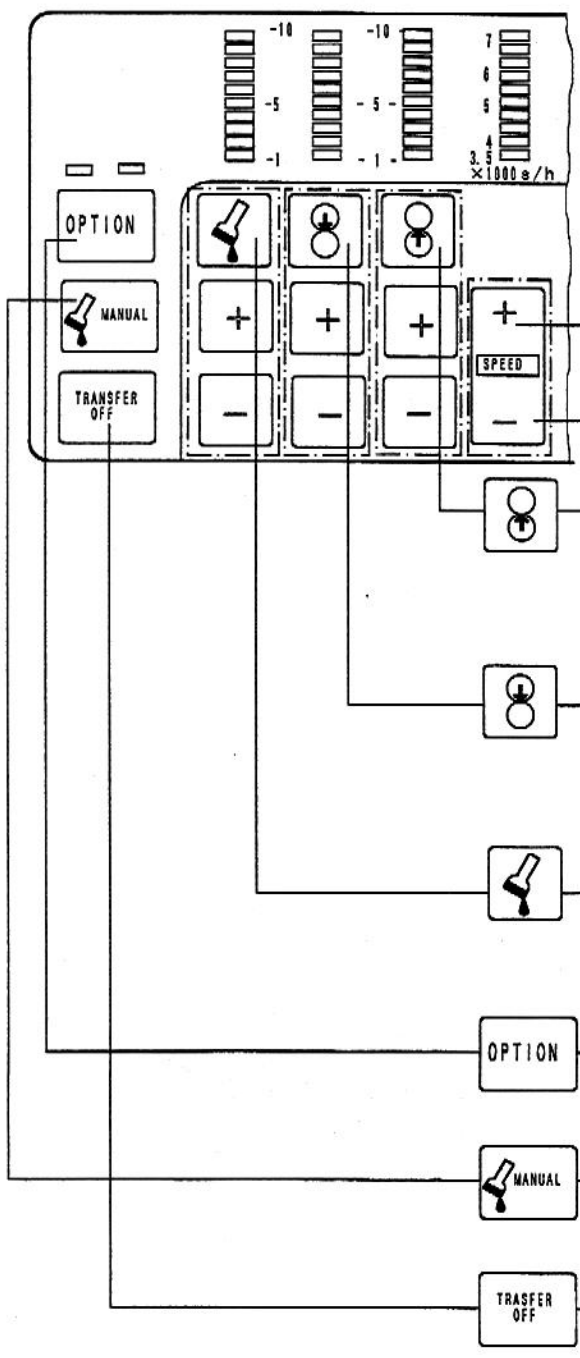
View from front delivery side

1.5 KEYBOARD





- Ten keys:**
Use these to enter the data about image and number of copies.
- Clear:**
Press this to clear the data about image and number of copies.
- Set:**
Use this to set the number of copies to print.



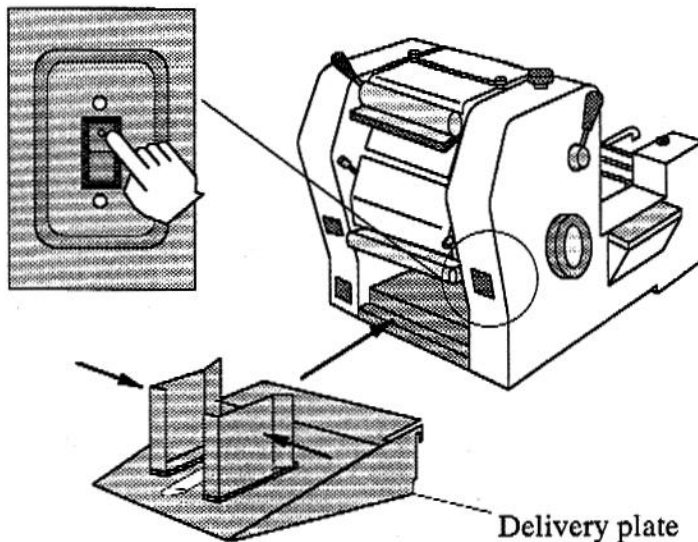
- Speed +:**
Press this to increase the printing speed.
- Speed -:**
Press this to reduce the printing speed.
- Printing Pressure:**
Press this to enable the set pressure.
- Printing Pressure +:**
Press this to increase the pressure.
- Printing Pressure -:**
Press this to reduce the pressure.
- Plate Pressure:**
Press this to enable the set pressure.
- Plate Pressure +:**
Press this to increase the pressure.
- Plate Pressure -:**
Press this to reduce the pressure.
- Ink:** This enables/disables ink (Off when flickering LED)
- Ink +:** Press this to increase ink.
- Ink -:** Press this to reduce ink.
- Option:**
While pressing this key, press the printing pressure key. Blanket mode is selected.
- Ink Manual:**
Maximum ink is supplied, while pressing this with the printing unit in operation.
- Transfer Off:**
Press this to stop transferring the image, and to operate blind print.

2. PREPARATION

2.1 PAPER FEED AND DELIVERY

2.1.1 Paper Delivery

1. Turn ON the power.

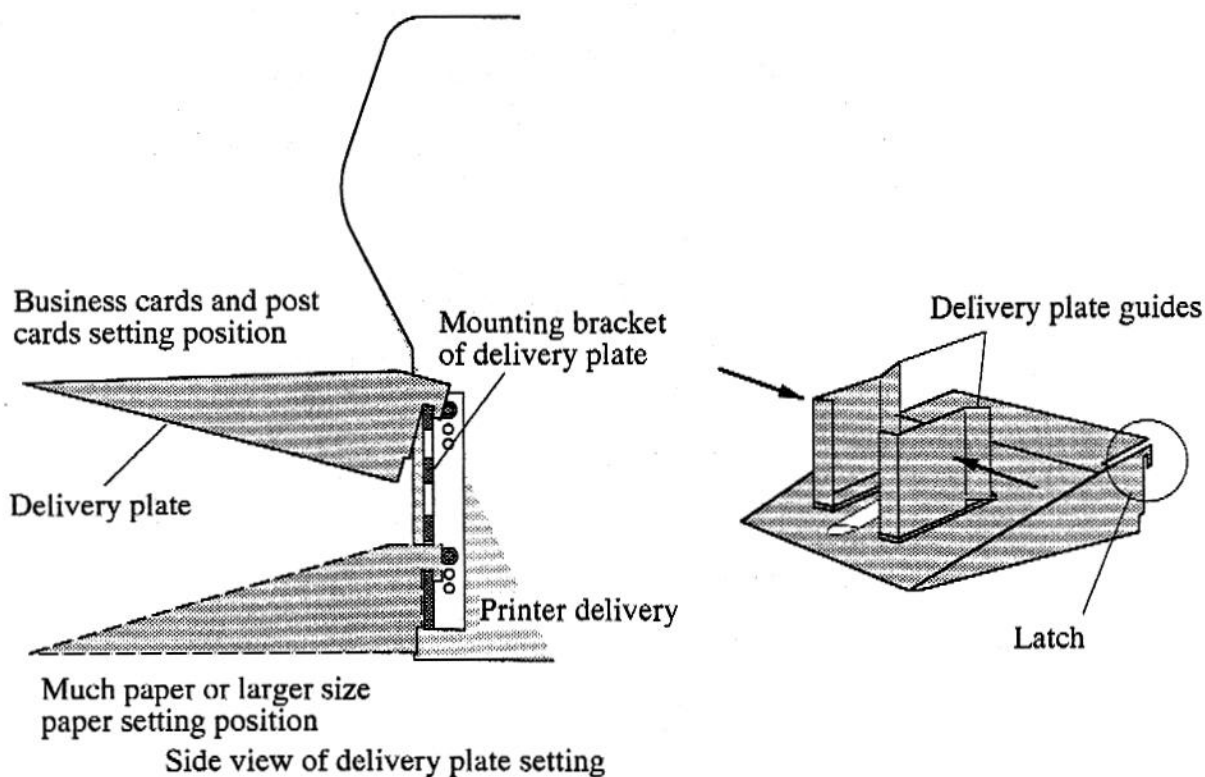


2. Set the delivery plate.
3. Set the delivery paper guides on the plate according to the size of paper.

■ Mounting the Delivery Plate

Mount the delivery plate at the delivery section of the printer.

1. Latch the delivery plate on the delivery plate mounting bracket.
 - One of four height positions can be selected.
2. Using the top position of bracket to mount the delivery plate sets to business cards, post card, and other small paper.
 - Using the bottom position of bracket sets to much paper or larger papers.
3. Set the delivery paper guide on the plate.
 - Easy to set the position as a magnet is adopted.



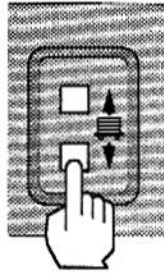
2.1.2 Paper Feed



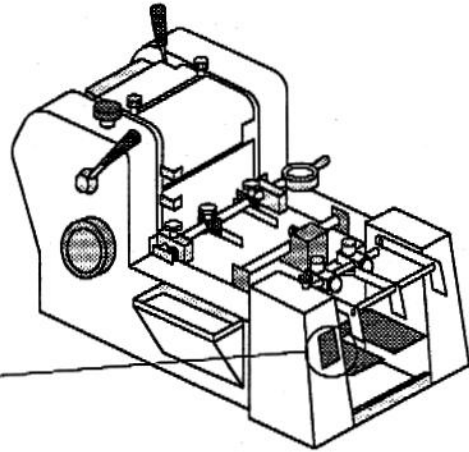
WARNING

- Do not insert a hand or an object during elevator operation as it may catch a hand and may cause a serious injury.

1. Lower the elevator.



Elevator button



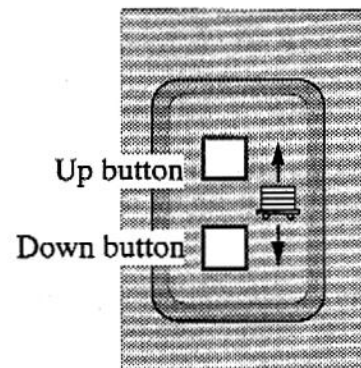
■ Elevator Button

UP Button

- If you continue to press this button, the elevator lifts and stops at the upper limit position. (The lamp lights up in the button.)
- Take your hand off the button on the way makes the elevator lifts slowly.
- Pressing again the button stops the elevator. (The lamp fails.)

Down Button

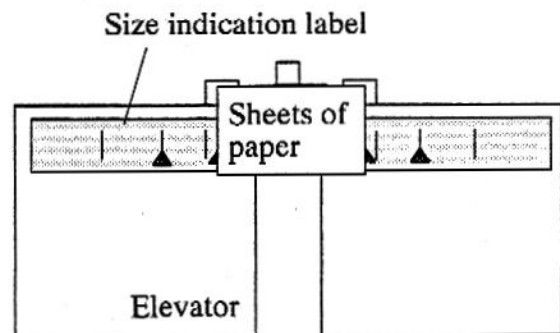
- If you continue to press this button, the elevator descends to the lower limit position. (No light provided in the button.)
- Take your hand off the button on the way makes the elevator stops descending.



2. Loading paper

Stack sheets of paper on the elevator.

- Place the sheets of paper according to the size indication label on the elevator.



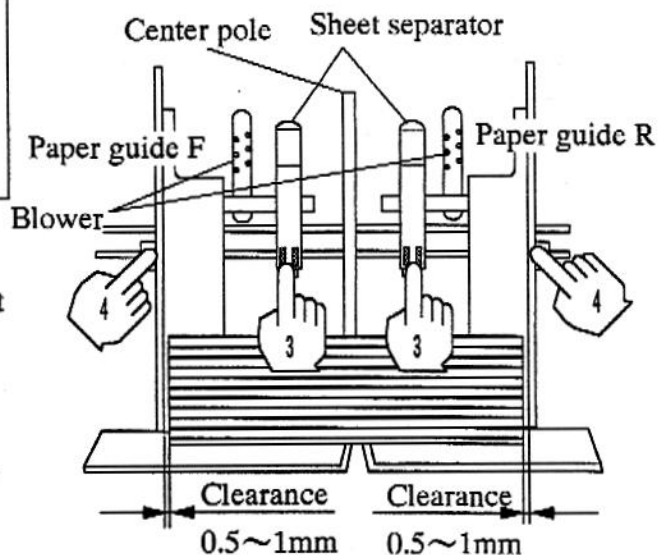


CAUTION

- Do not insert a finger during elevator operation.
- Sheet separator is a sharp edge.
- Take care of not to injure a finger.

3. Adjusting the blower and sheet separator position.

- Refer to next page for blower and sheet separator positioning.
- When setting business cards or post cards, 5mm from the center pole position is the standard.
- For postcards or double size postcards, 50mm from the center pole position is the standard.



4. Adjusting the paper guide position.

- Set the paper guides with paper in between, leaving 0.5 ~1.0mm on both sides is the standard. (See the figure right.)
- When moving the guide hold the place as indicated with hand mark 4 in the right figure.

5. Press the up button.

- At this time set the control bar at most frontward.
- Press the button until the elevator stops.

6. Adjusting the control bar position.

- Refer to next page for control bar position.

7. Adjusting the suction cup position.

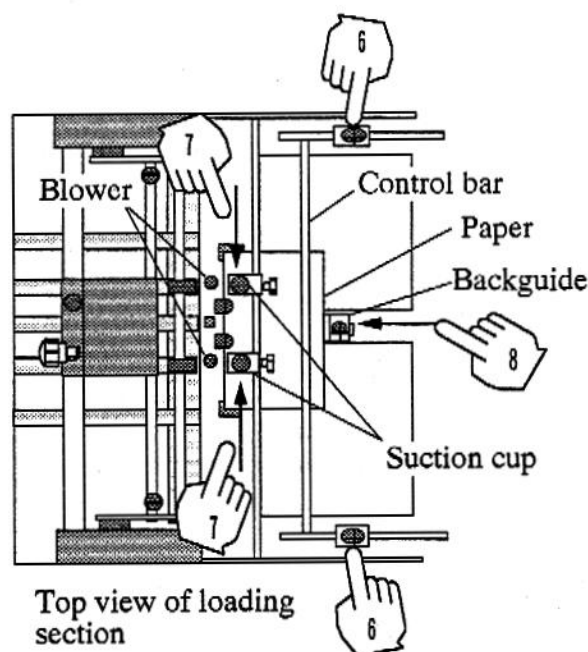
- Make the suction cup position same as the blower.

8. Adjusting the back guide position.

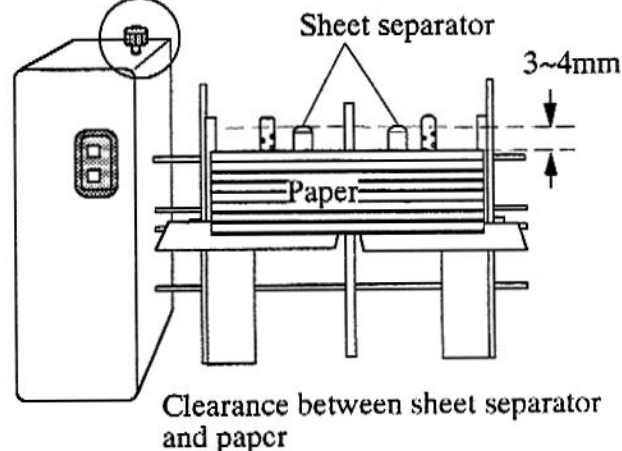
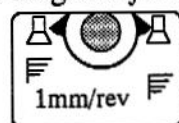
- Position the back guide so that the back guide slightly press the paper with its spring.

9. Adjusting the elevator stop position.

- Set the clearance between paper and the tip or sheet separator 3~4mm.
- If the clearance is greater, rotate the paper height adjustment knob clockwise.
- If the clearance is lesser, rotate it counter-clockwise to lift the elevator.

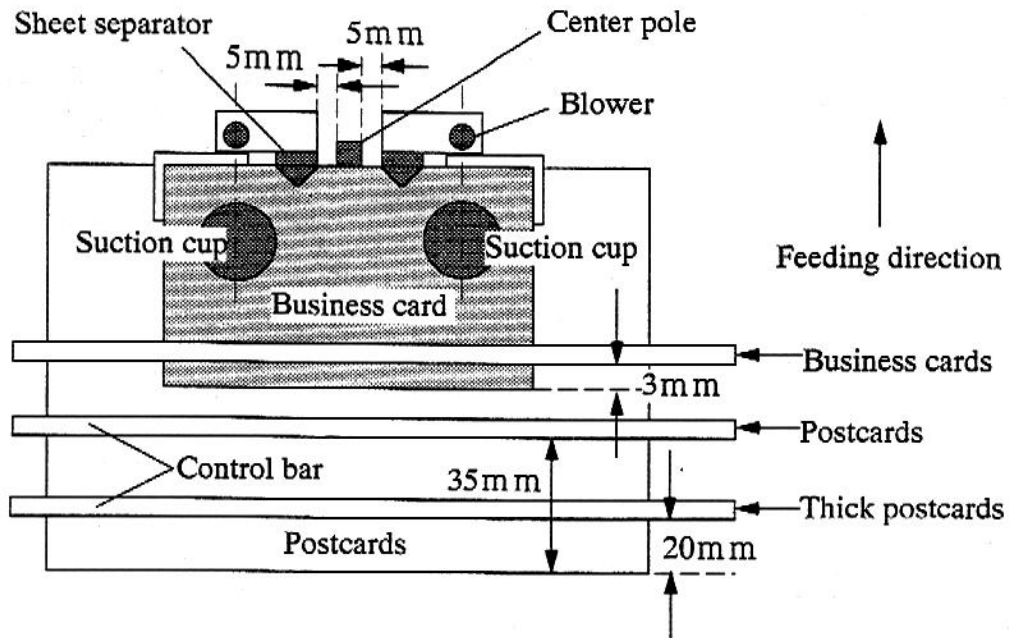


Paper height adjustment knob

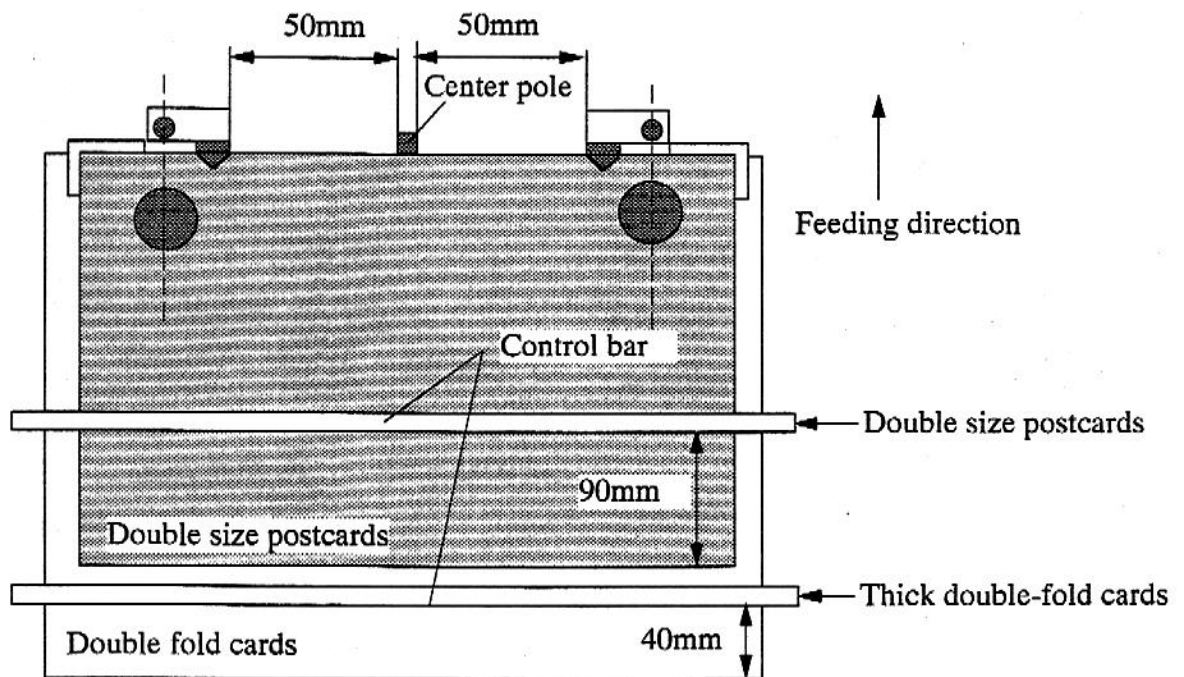


■ Adjustment of Blower, Sheet separator, Suction Cup, and Control Bar Position

- Make the blower and the suction cup in the same position.
- Set the control bar: thick paper toward the back, thin paper in the center.



Standard position of sheet separator, suction cup, and control bar for business cards and postcards.

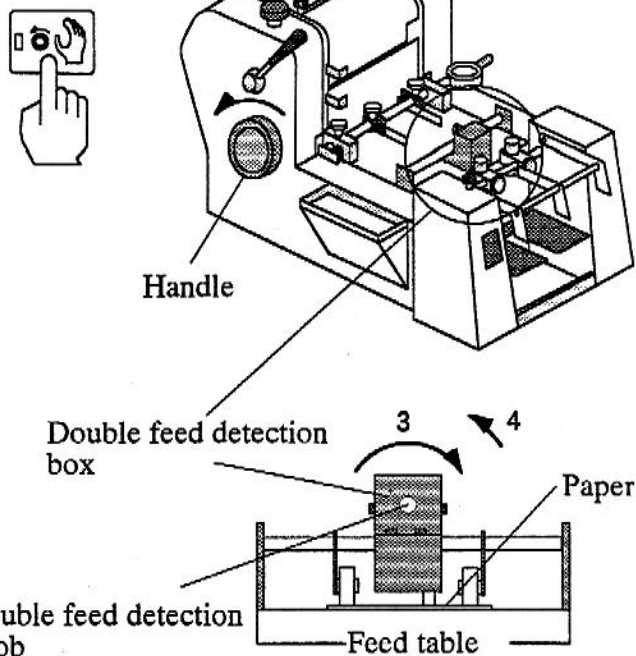


Standard position of sheet separator, suction cup, and control bar for double size postcards and double-fold cards.

2.2 ADJUSTING PAPER FEED

2.2.1 Setting Double Feed Detection

1. Press manual key.
2. Turn the handle counterclockwise.
 - One sheet of paper will be fed.
 - Feed the paper up to underneath the double feed detection box.
3. Turn the double feed detection knob clockwise until triggers the alarm.
4. Turn the double feed detection knob counterclockwise until stops the alarm, then further rotate it 1/4 turn.
 - For making sure, feed two sheets of paper and confirm the alarm.

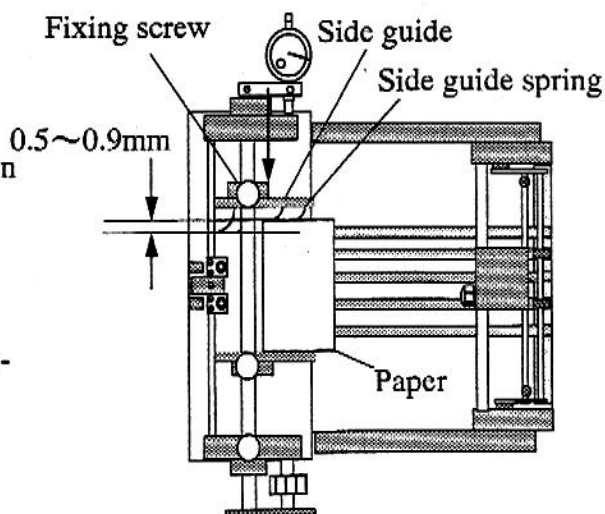
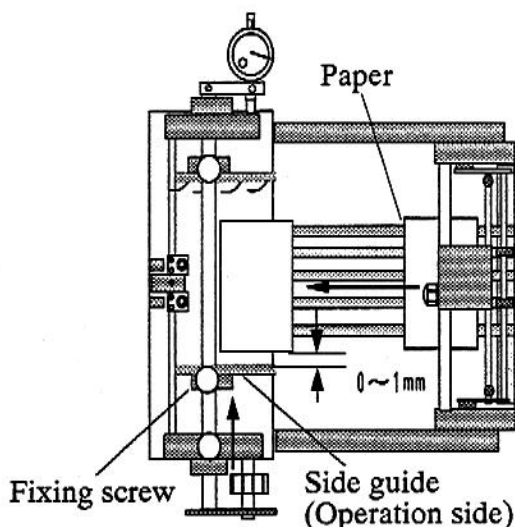


CAUTION

Do not insert a finger both the catch and the feed roller during operation. You may hurt your finger.

2.2.2 Adjusting the Side Guide Position

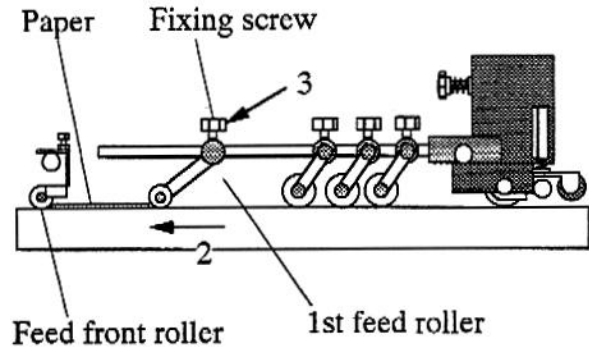
1. Turn the handle counterclockwise and feed the paper to the side guide position.
2. Set the side guide position of operation side.
 - Allow 0~1mm clearance from the edge of paper and set.
 - Position of the side guide of operation side is the standard side position for printing.
3. Tighten the side guide fixing screw of operation side.
4. Set the side guide position of non-operation side.
 - Set the side guide springs at the position the springs are pressing the paper about 0.5~0.9mm.
5. Tighten the side guide fixing screw of non-operation side.



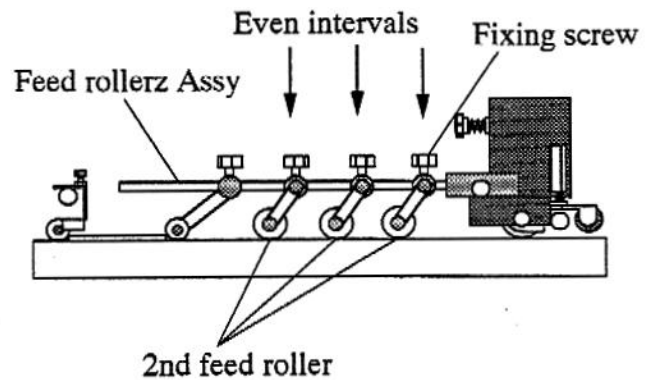
Viewed from the top of operation side

2.2.3 Positioning the Feed Sub-rollers

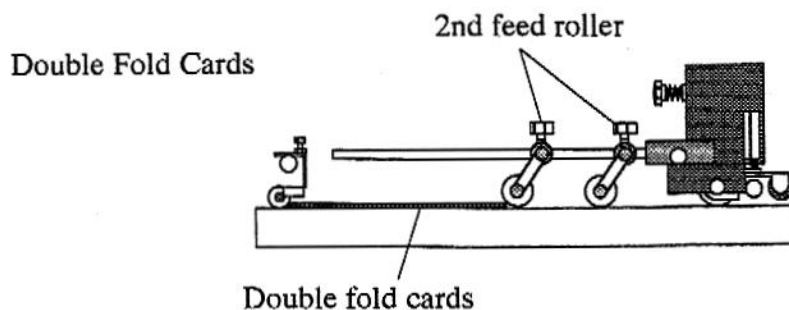
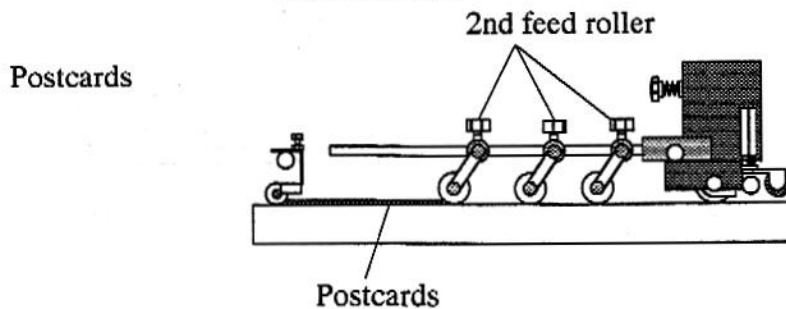
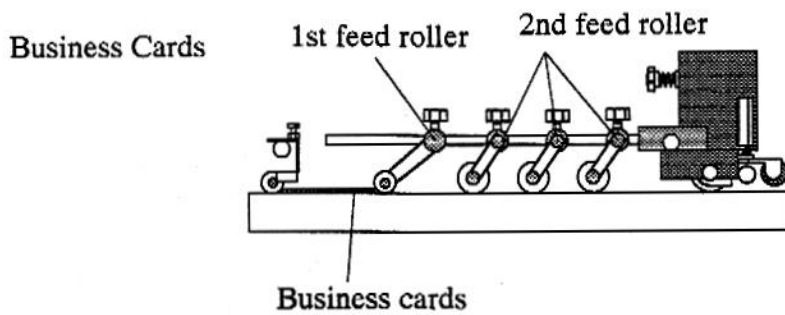
1. Rotate the handle counterclockwise and feed the paper up to the feed front roller.
2. Set the 1st feed rollers.
- Set them to the edge of paper.
3. Fix the 1st feed rollers with screws.



4. Fix the 2nd feed rollers with screws.
- Secure the 2nd feed rollers in even intervals.

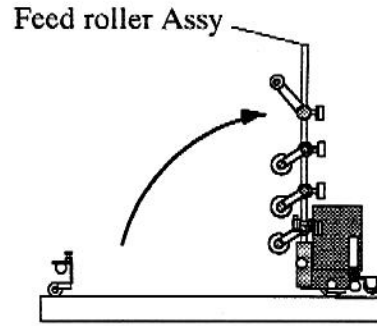


■ Position of Feed Rollers Classified by Size of Paper

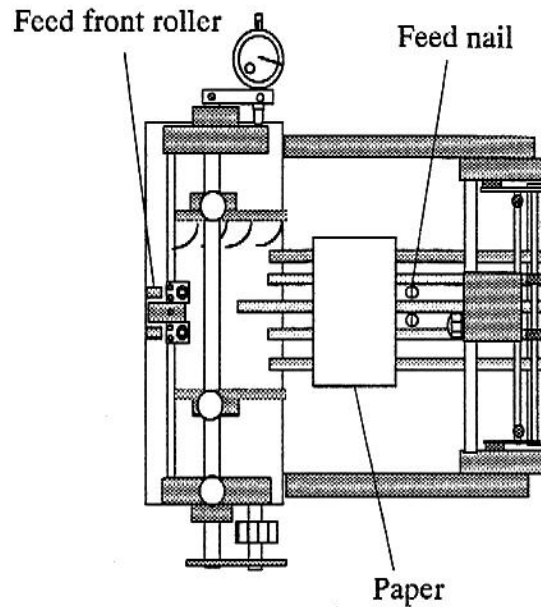


2.2.4 Measuring the Paper Size

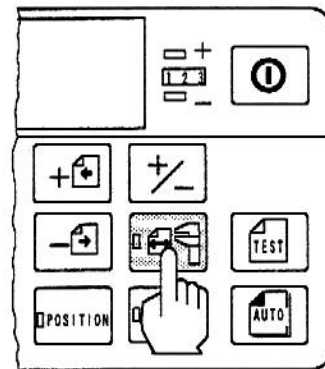
1. Lift the feed roller Assy as per right figure.



2. Place a paper at the front of nail.



3. Press the paper size key.
 - Automatically measures the size and thickness of paper.
 - Plate pressure is set to level 5.
 - To stop measuring, re-press the key.



Right side of keyboard

NOTES

The paper size measuring is unable to do in the following cases.

- The cover is opened.
- The handle is pressed.
- A paper is set at or near the feed front roller.

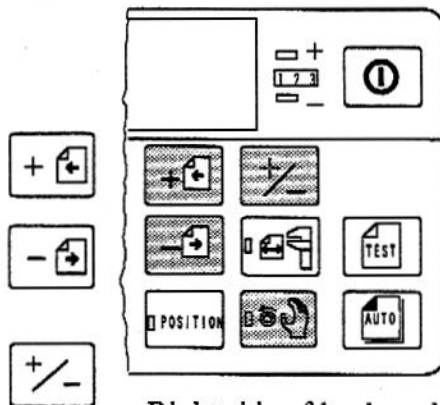
Manual Checking of Feed Nail

1. Press the manual key and run the vacuum pump.

- The counter displays " nA iL ".

2. Use the following keys and check the feed nail movement.

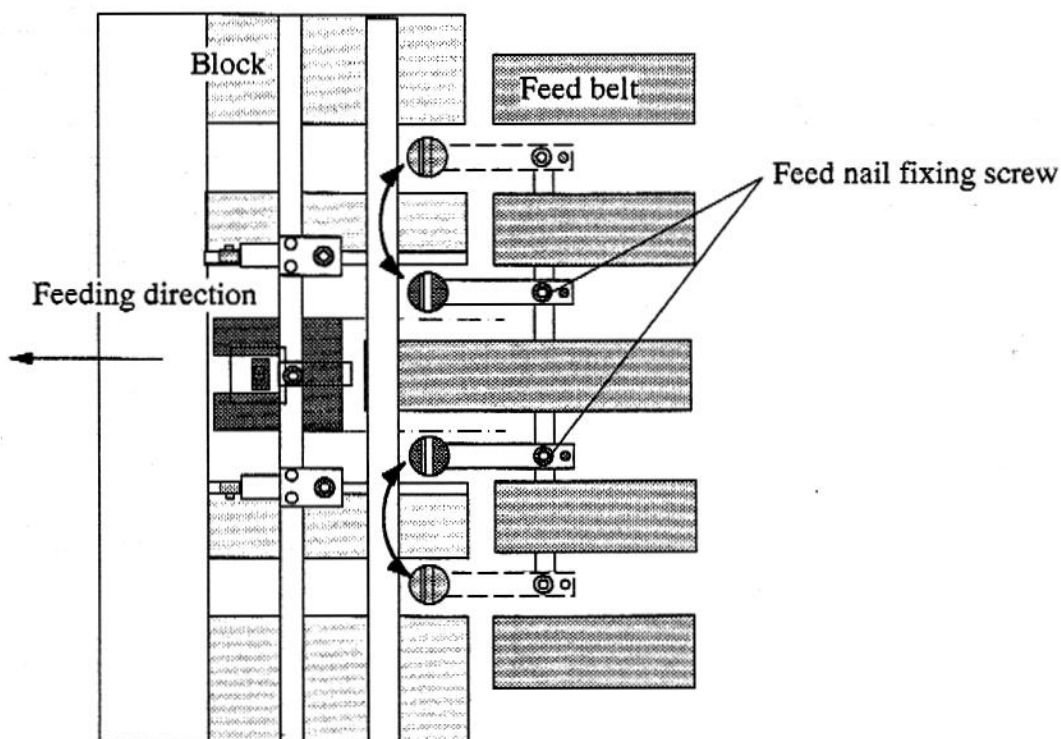
- Pressing the image "+" key slowly moves the feed nail leftwards.
- Pressing the image "-" key slowly moves the feed nail rightward.
- Pressing the "+/-" key moves the feed nail up and down.



Right side of keyboard

Mounting the Feed Nail

- Mount the feed nail outward when feeding the double fold or other larger size papers.
- At a time of mounting the feed nail, be sure that the feed nail and the both sides blocks are not touched.
- Mounting and removing of feed nail should be done with the feed nail fixing screw.



Registering portion of feed table viewed from above the operation side

2.3 BLIND PRINTING



DANGER

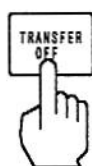
- Do not touch any part protected by safety cover and attentioned by hazardous labels, it may cause a serious injury and dangerous.

1. Press the operation key.



2. Press the transfer off key.

- The counter displays "OFF".



3. Press the test feed key twice continuously.

- One sheet of paper will be fed.
- Check for paper delivery without any trouble.



Peep note twice.

Press twice with the interval less than 0.5 sec.

4. Press the test feed key once.

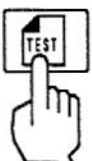
- Feeds the paper continuously.
- Check for paper feed through delivery.



Peep note once.

5. Stop paper feeding.

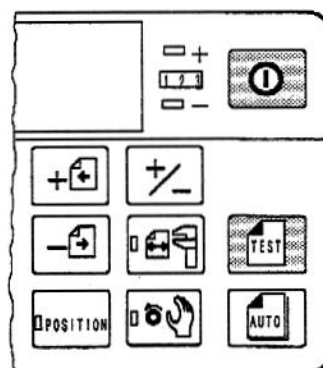
- Press the test feed key.



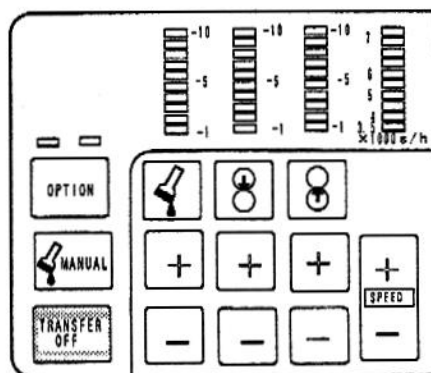
- Press the transfer off key.



6. Press the operation key and stop running the machine.



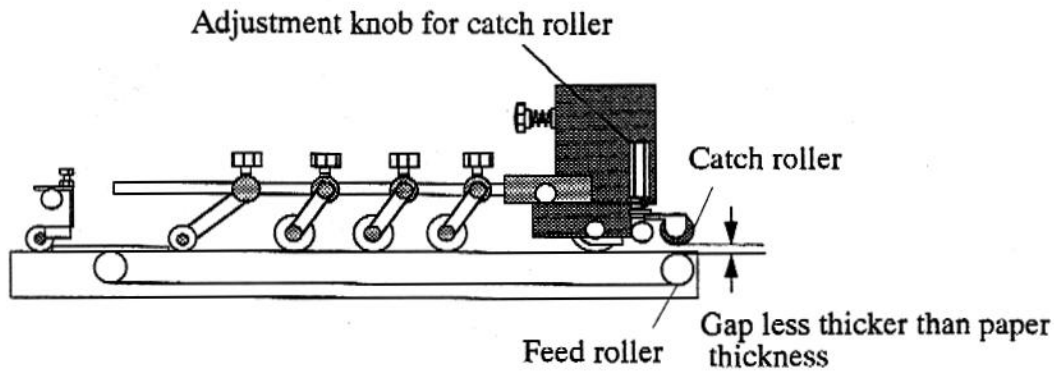
Right side of keyboard



Left side of keyboard

■ Adjusting the Pressure of Catch Rollers

- When feeding a paper thicker than a thick postcard or thick double fold card, rotate the adjustment knobs for catch rollers counterclockwise and obtain a gap between catch roller and feed roller a little less than the thickness of feeding paper.



- When paper is fed slanted, adjust the pressure of catch rollers with the adjustment knobs for catch rollers.

When a paper is fed as per figure 1.

- Rotate the catch roller adjustment knob of operation side counterclockwise.
- Or, rotate the catch roller adjustment knob of non-operation side clockwise.

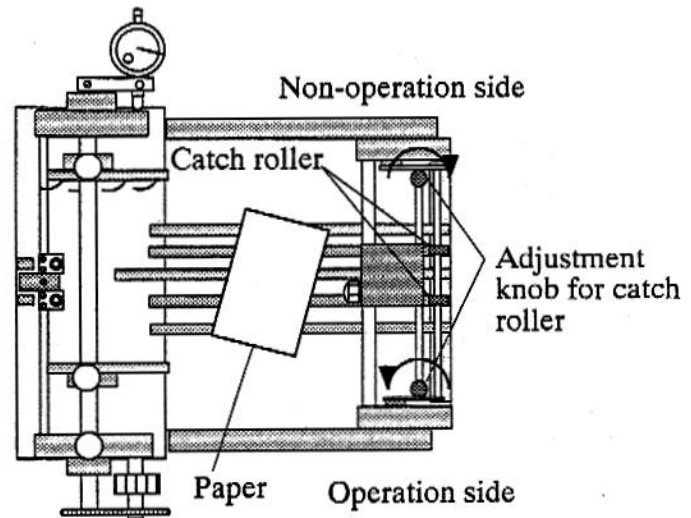


Fig. 1

When a paper is fed as per figure 2.

- Rotate the catch roller adjustment knob of operation side clockwise.
- Or, rotate the catch roller adjustment knob of non-operation side counterclockwise.

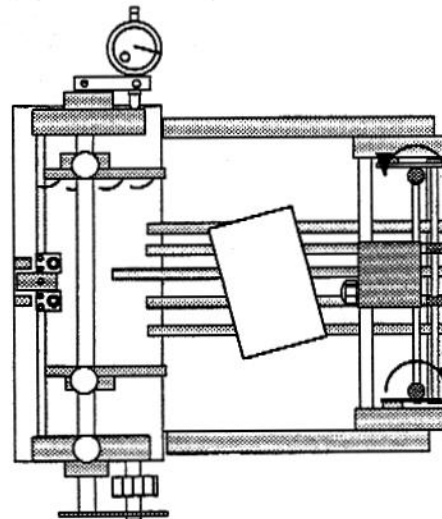


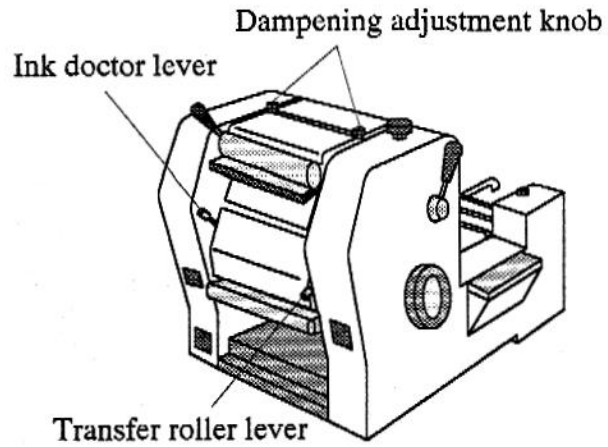
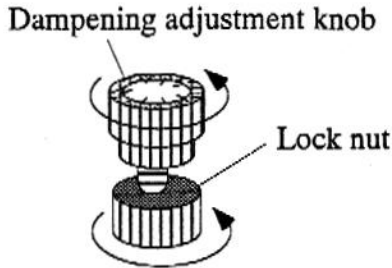
Fig. 2

2.4 PREPARING INK AND WATER

2.4.1 Putting Ink

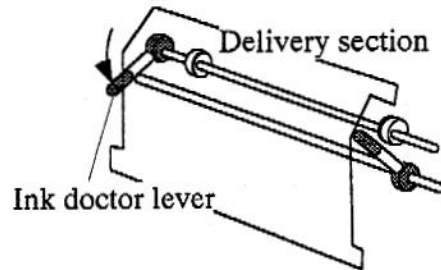
1. Rotate the dampening adjustment knob fully counterclockwise.

- At first, loosen the lock nut.



2. Lower the ink doctor lever.

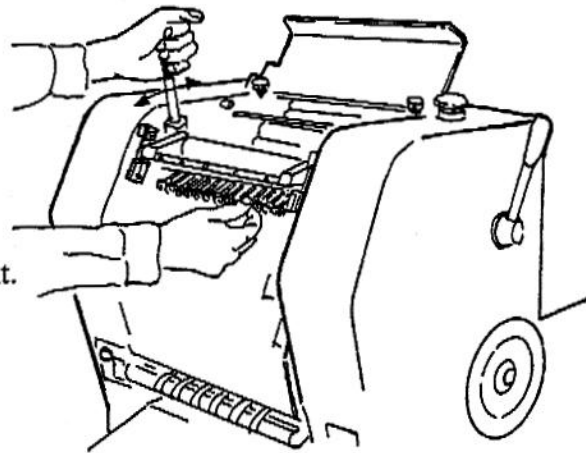
- Make sure that the ink doctor is disengaged.
- If the lever is unable to lower, rotate the handle counterclockwise to perform lowering the lever.



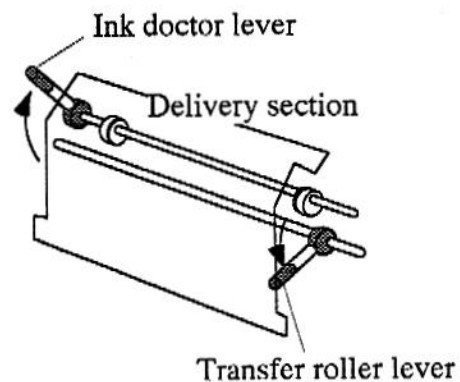
3. Put some amount of well-kneaded ink into the ink fountain.

4. Rotate the adjustment knob on the ink fountain to supply ink uniformly.

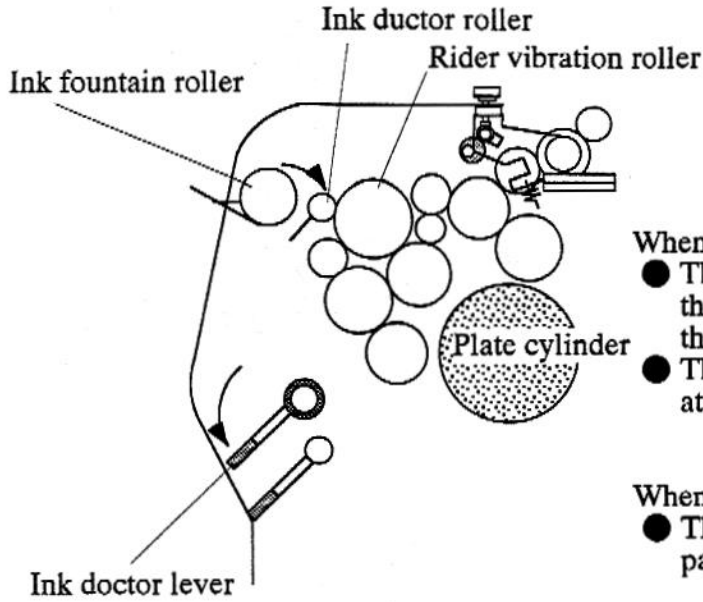
- Move the ink fountain lever back and forth to perform this adjustment.



5. Lift the ink doctor lever and lower the transfer roller lever.



■ About the Ink Doctor Lever



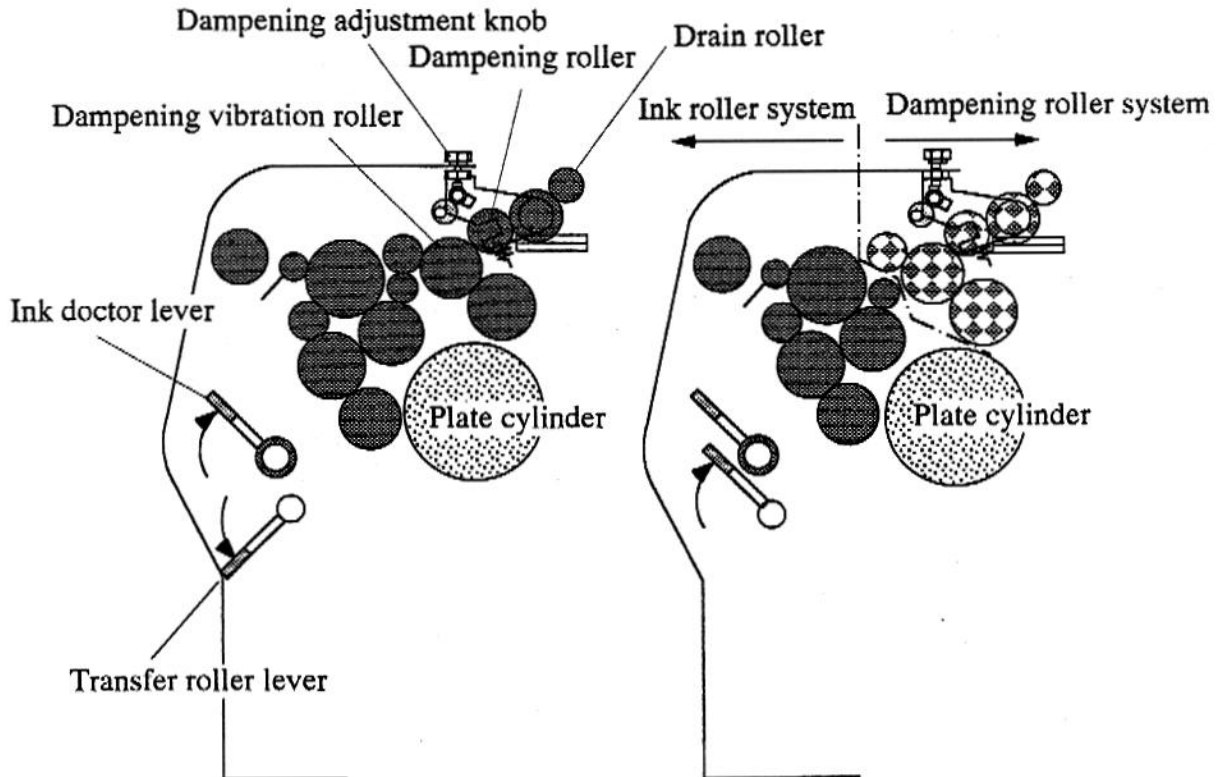
When the Ink Doctor Lever is Lowered.

- The ink ductor roller separates from the ink fountain roller and moves to the rider vibration roller side.
- This is required when putting ink and at a time cleaning.

When the ink doctor lever is lifted.

- The ink ductor roller calls while feeding paper.

■ About the Set Position of Transfer Roller Lever



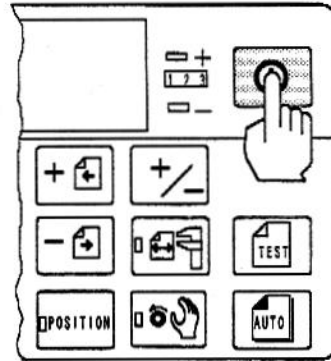
Lever Position for Cleaning Roller and Calling Ink

- When rotating the dampening adjustment knob counterclockwise, the dampening roller and the dampening vibration roller are connected.
- When the transfer roller lever is lowered, the ink roller system and dampening roller system are connected.

Lever Position for Printing

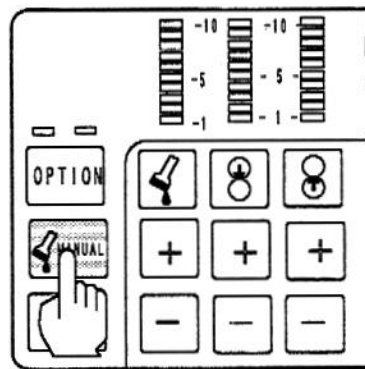
- When the transfer roller lever is lifted, the ink roller system and the dampening roller system are separated.

6. Press the operation key.

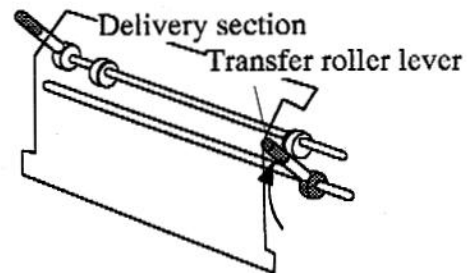


7. Press the ink manual key.

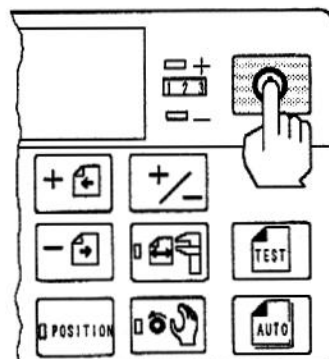
- While pressing, maximum amount of ink is supplied.
- Keep pressing the key until ink is supplied to the drain roller.



8. When ink is formed on the roller, make the transfer roller lever upward.



9. Press the operation key and stop running.





WARNING

- Do not spill any liquid like a dampening solution into the machine, as this will result in an electric leakage, electric shock, and fire.
- When unavoidably an object or a liquid got into the machine, promptly unplug the power cord and contact to your dealer.
This will result in an electric leakage, electric shock, fire, and damages.

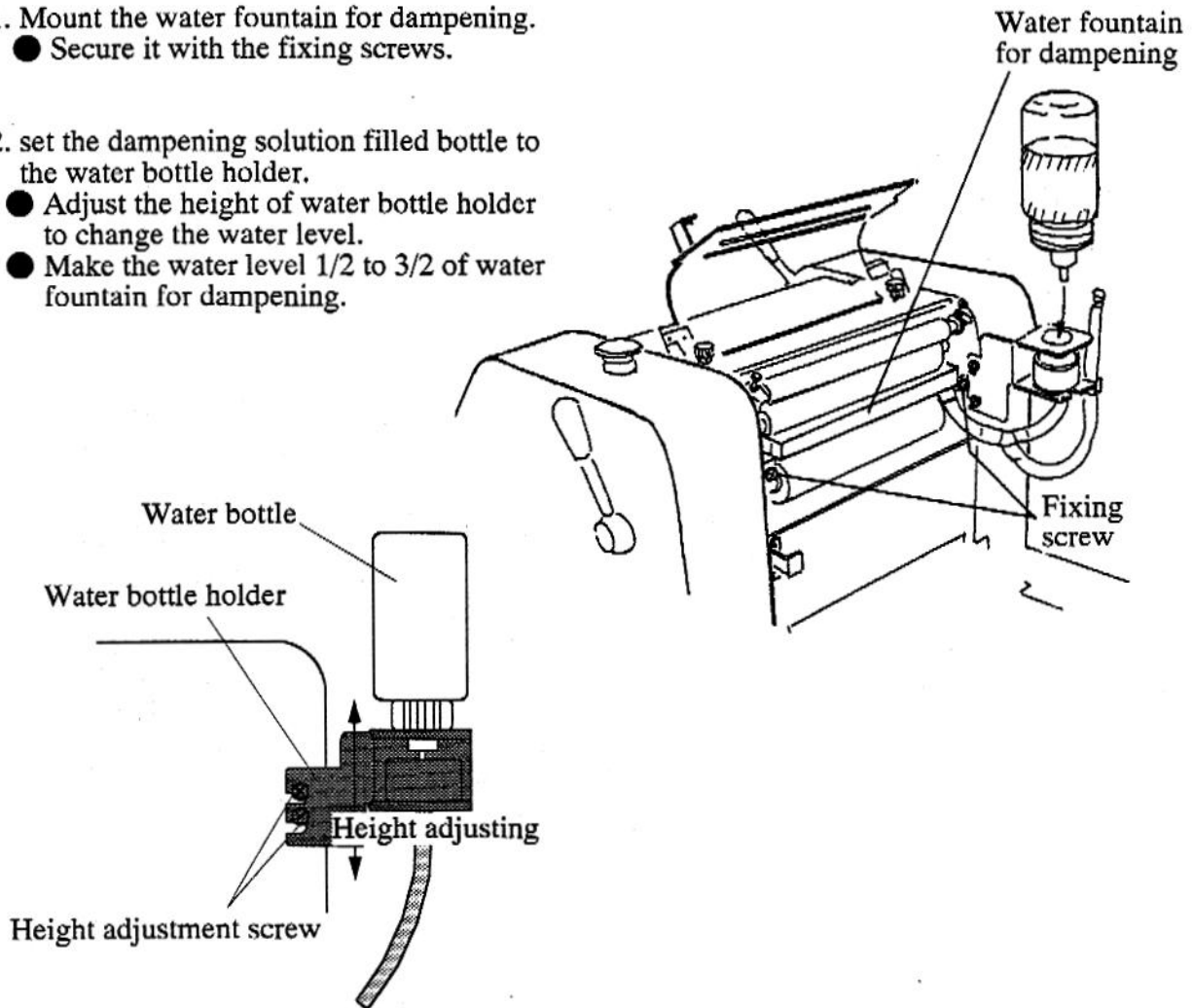
2.4.2 Preparing Water

1. Mount the water fountain for dampening.

- Secure it with the fixing screws.

2. set the dampening solution filled bottle to the water bottle holder.

- Adjust the height of water bottle holder to change the water level.
- Make the water level $1/2$ to $3/2$ of water fountain for dampening.



2.5 INSTALLING THE PLATE

1. Etching the plate.

- Using an absorbent cotton, sponge, etc. to evenly etch the plate.

2. Move the plate release lever to open the gripper hook and insert the plate.

- Push the plate to contact it to the stopper.
- For PS plate, hook it to the pins on the gripper hook.

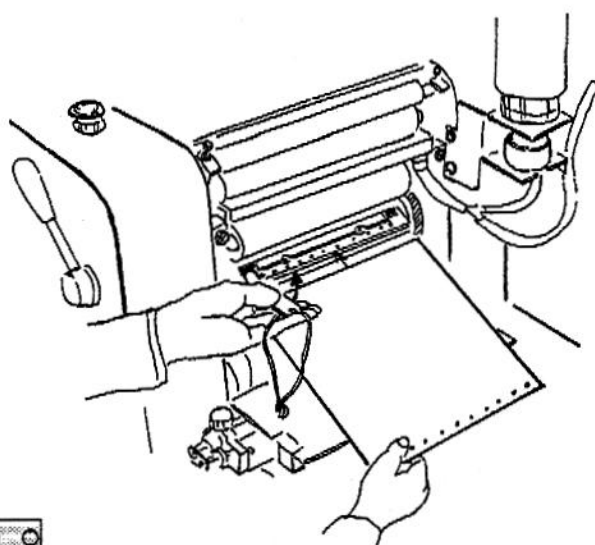
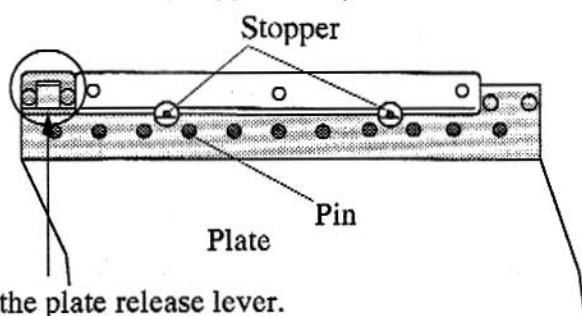


Plate holder (Gripper hook)

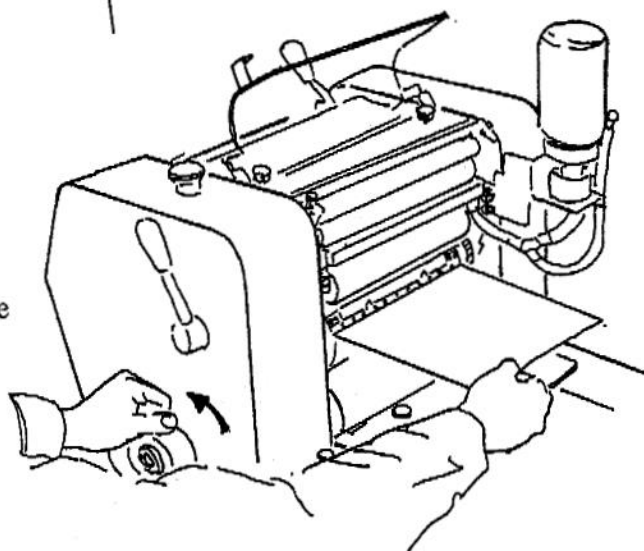


Insert the plate release lever.

3. Close the plate release lever and secure the plate firmly.

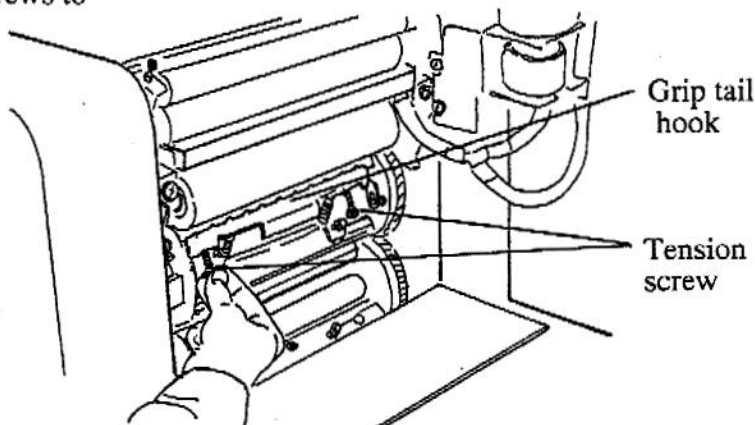
4. Wind the plate around the cylinder.

- While pulling the plate, turn the handle counterclockwise.



5. Hook the plate back on the grip tail hook.

- For PS plate, use the tension screws to secure.



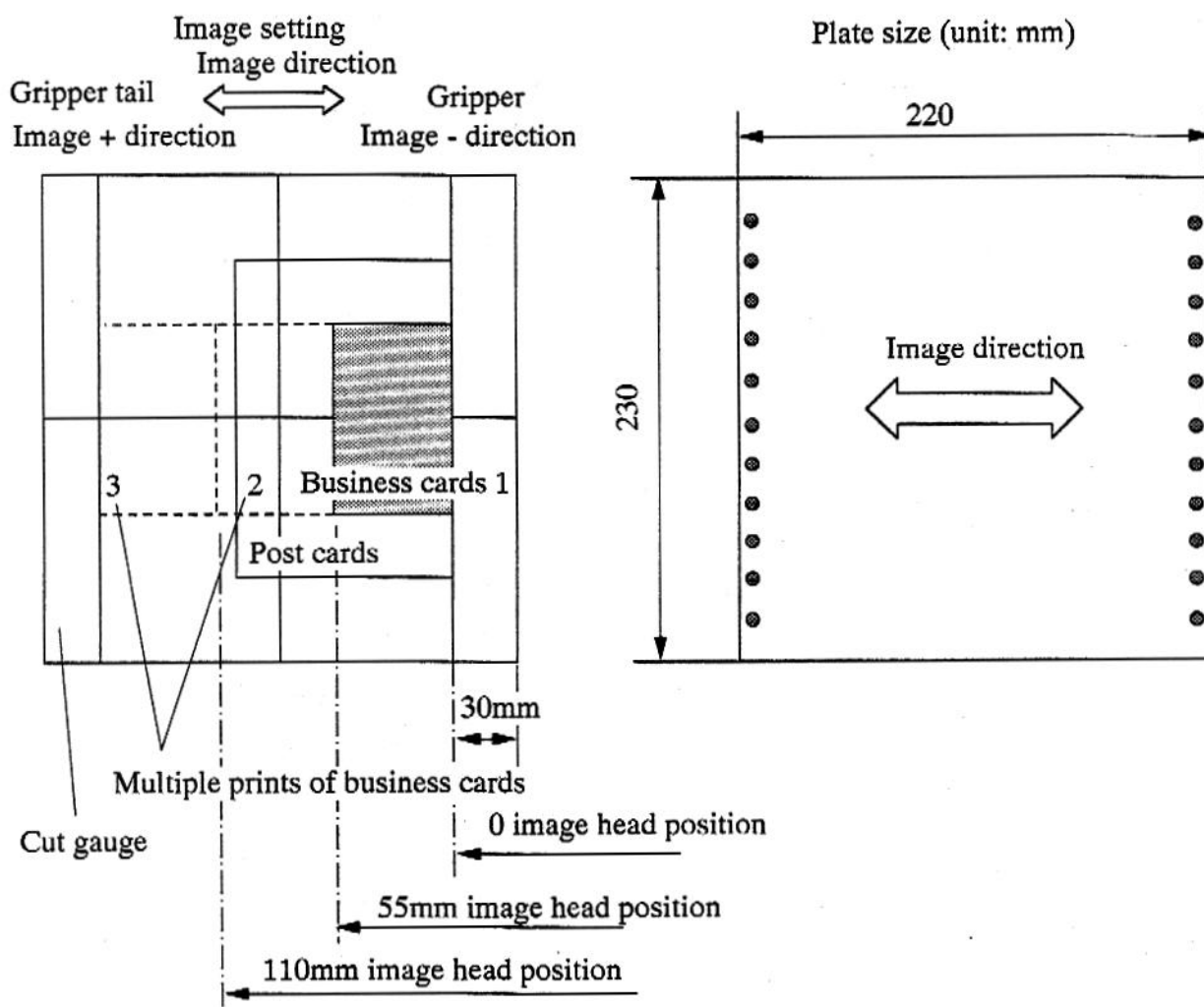
■ Prepare the Plate

* Pink master, Silver master, and aluminum PS plates can be used with AR-010.

Prepare plates, by either cutting plate material in 230 x 220mm beforehand, or cutting the prepared plates in the appropriate size with the cut gauge provided in the package.

* See the following procedure to set the image position.

1. Set the image leaving 30mm of margin from the paper edge to the gripper.
This is an approximate printing position to make zero image head.
2. Set the side position to align the paper at the center of the plate.
3. Put the cut gauge on the plate, and cut the plate along the gauge.
4. If punch holes are required for aluminum PS plates, use the optional punch designated for the use.
When holes are necessary, provide them evenly to the right and left.
5. For multiple prints with business cards and others, line up cards from the gripper head (0 image head) to the gripper tail.



■ Plate thickness Setting

1. Put it into Test Mode.(Refer to page33)
2. When you press [Plate Pressure] key, any one of Plate thickness P0.10, P0.15 or P0.20 is displayed at the counter, and you can alter the Plate thickness setting.

* By pressing Plate Pressure [+] or [-] key, you can toggle the cycle of P0.10 → P0.15 → P0.20 → P0.10 (and so on).

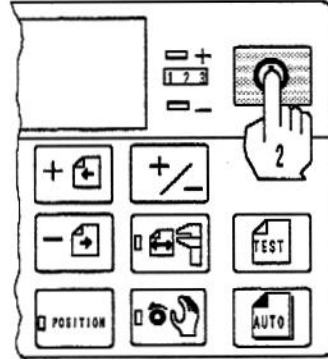
When you find the thickness you want, press Plate Pressure key. Then the Plate thickness value is saved and it returns you to LED test condition.

3. Turn off the power.

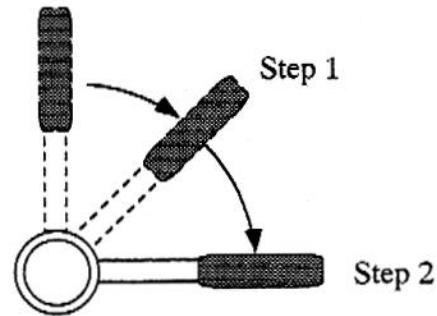
3. TEST PRINT

3.1 ADJUSTING WATER

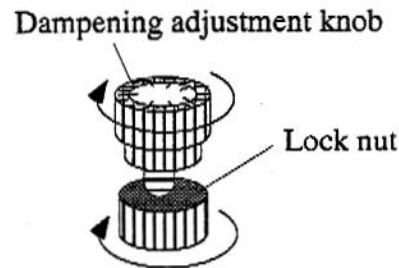
1. Wipe out the plate with water.
 - Wipe out thoroughly with a absorbent cotton or a sponge moistened with water.
 - After cleaned, close the safety cover.
2. Press the operation key.
 - The machine starts to run.



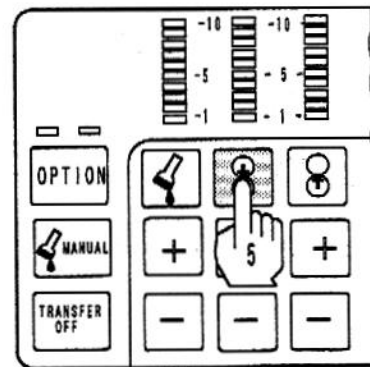
3. Lower the form lever.
 - Lower the lever one step makes one form roller to touch the plate.
 - Lower the lever two steps makes all form rollers to touch the plate.



4. Rotate the dampening adjustment knob (both sides) clockwise.
 - Reduce water supply and make the condition just before the plate becoming dirty. Fix the lock nut.
 - Refer to the next page for adjusting water.

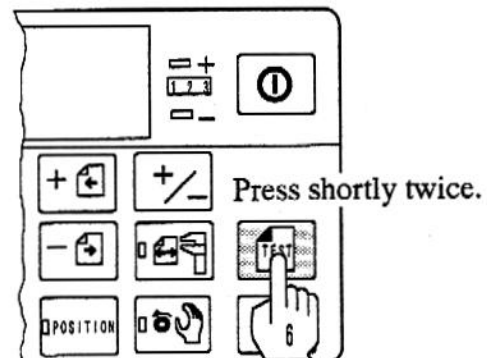


5. Press the plate pressure key.
 - Plate image transferred to the blanket.



6. Press shortly the test feed key twice consecutively.
 - Prints one sheet.

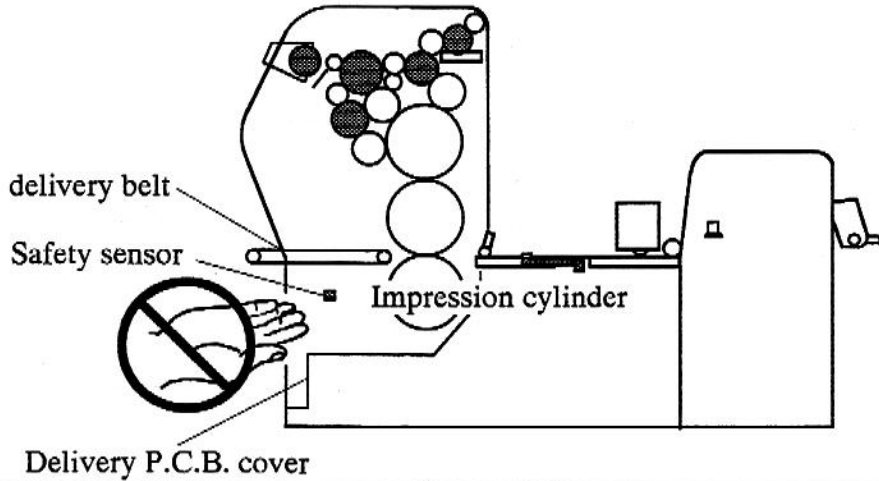
7. Check that the print is done.



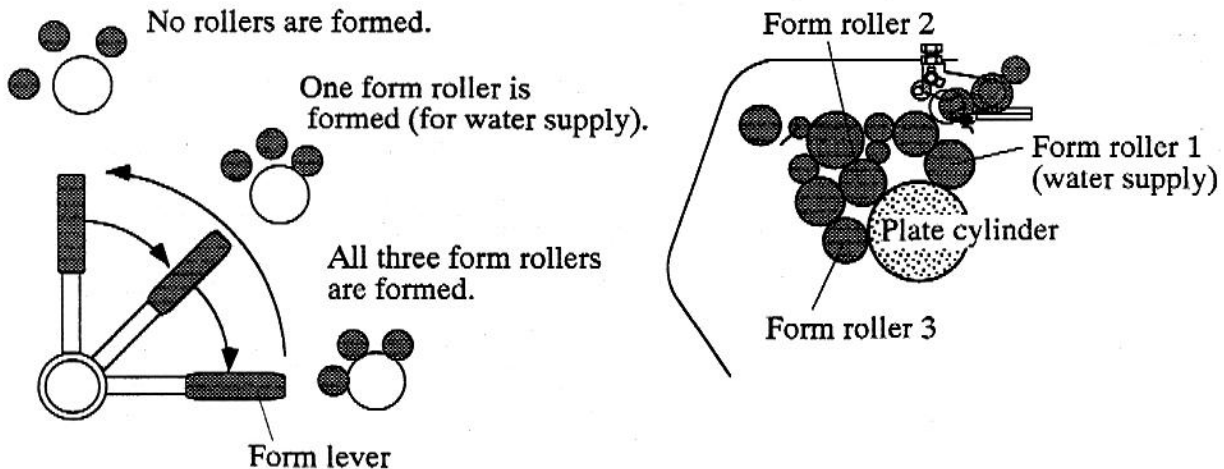


DANGER

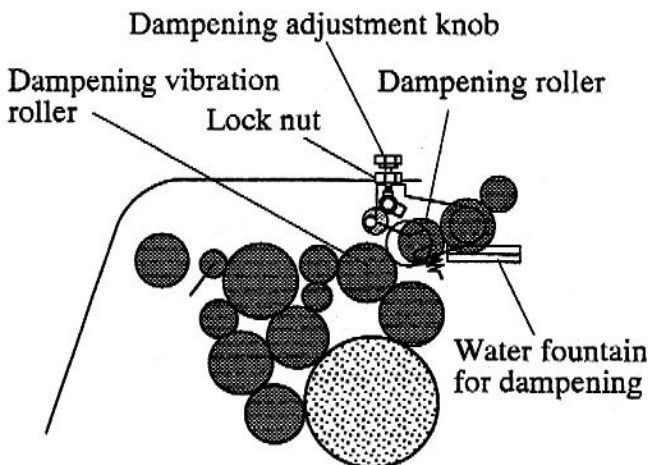
1. Never put your hand under the delivery belt or wipe out the impression cylinder. Your hand and wiping cloth entangled with the components of machine causing a serious injury.
2. A safety sensor is adopted under the delivery belt. (See the below figure.) This is to stop the machine at a time detects an foreign object in the delivery section during the machine is in motion. Also, never attempt to put a hand right above the delivery P.C.B. cover so as the sensor does not detect the hand.



■ The Relation Between Form Lever and Form Rollers



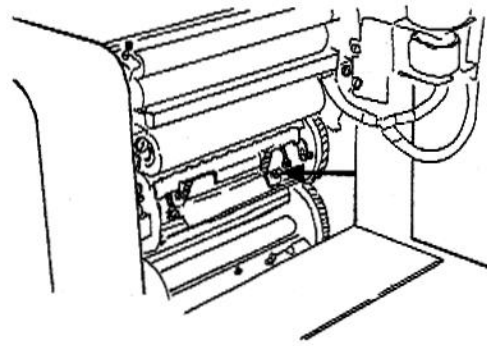
■ About Water Adjustment



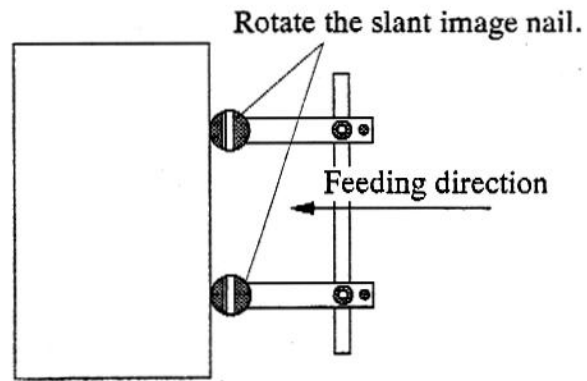
- Turning the dampening adjustment knob clockwise moves the dampening roller to separate the dampening vibration roller thus reduces water supply amount.
- Turning the dampening adjustment knob counterclockwise moves the dampening roller to touch the dampening vibration roller thus increases the water supply amount.
- Reduce water supply and make the condition just before the plate becoming dirty. Fix the lock nut.
- Water supply is affected by printing speed. Increasing speed to increase water supply, reducing it to reduce water supply.
- Detailed water adjustment, see page 40.

3.2 SLANT IMAGE ADJUSTMENT

- When the image is slanting, adjust the slant screw on the plate cylinder.
 - For PS plate, adjust by loosening the tension screw at the grip tail hook.



- Adjusting the slant image for business cards and cards of telephone card size finely, adjust the slant image nail. (Refer to the next page for the nail adjustment.)



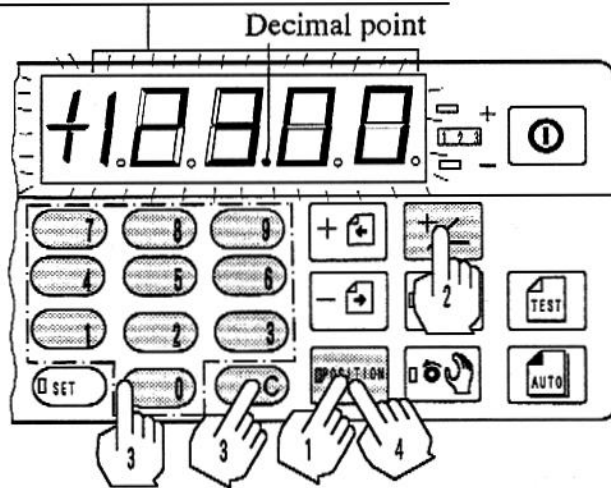
3.3 IMAGE POSITION ADJUSTMENT

3.3.1 Adjusting Image Position (in 0.01mm Unit)

- Press and hold the image position key for about 3 seconds.
 - The counter display blinks.

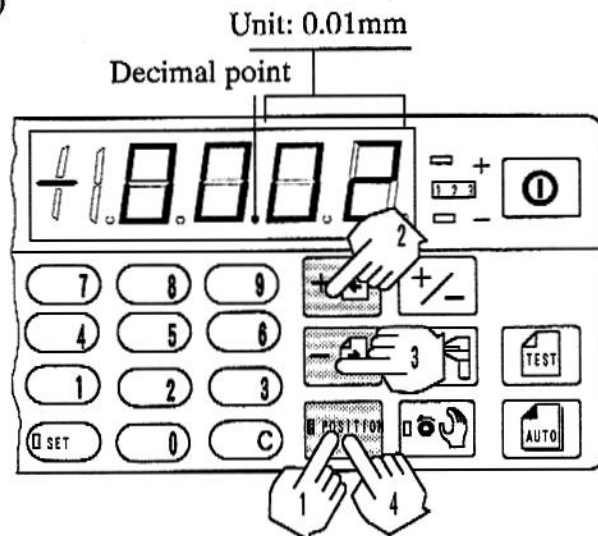
Enter with the 10 keys (Unit: 0.01mm)

- Press the + / - shift key.
 - + is for shifting the image to head direction.
 - is for shifting it to bottom direction.
- Use ten keys to enter the length in 0.01mm unit.
 - For correction, press C key.
- Press the image position key.
 - when you hear a buzz, the set value is memorized.



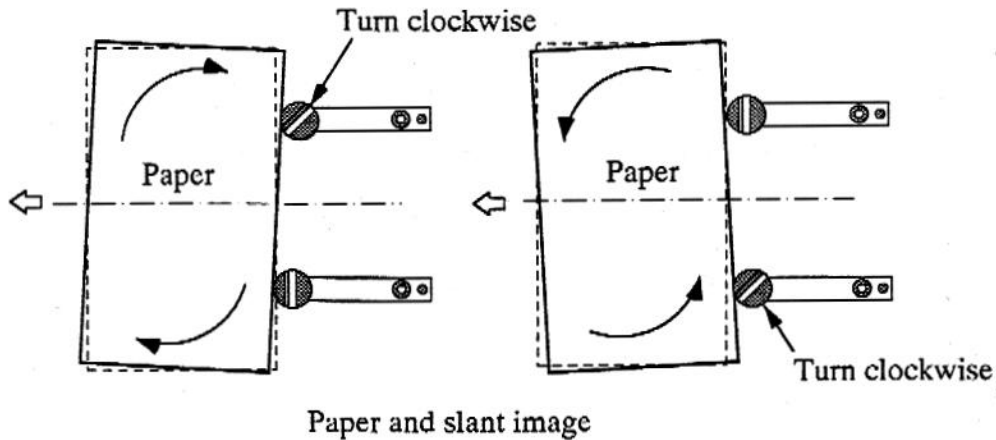
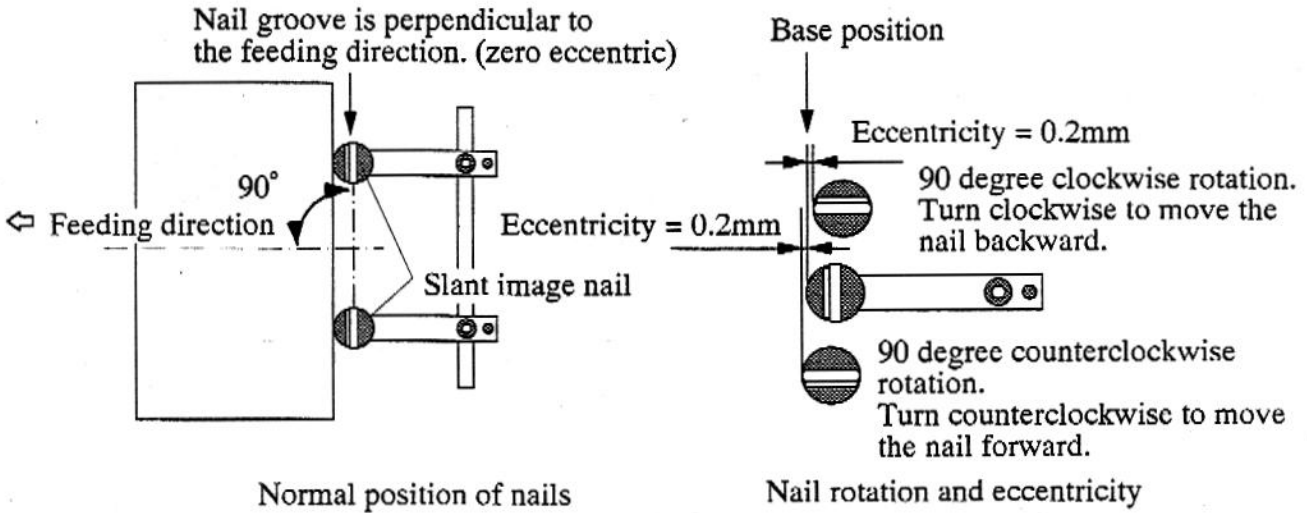
3.3.2 Adjusting Image Position (in 0.01mm Unit)

- Press the image position key.
 - The set value is indicated.
- Press the + key.
 - + is for shifting the image to head direction.
 - The image position changes.
- Press the - key.
 - is for shifting it to bottom direction.
 - The image position changes.
- Press the image position key.
 - when you hear a buzz, the set value is memorized.



■ About the slant Image Nail

- When the image is greatly slanting, adjust the slant screw on the plate cylinder, and shift the mounting position of plate.
- For a minor slant image, adjust the slant image nails. Paper is fed with skew, when the nail is rotated, as the nail is set eccentric.
- Set the groove perpendicular to the feeding direction for normal conditions.
When the image is slightly slanting, put the screw driver in the groove, and turn the nail.
- You can adjust the slant image up to 0.2mm with the nail (see the figure below).
Do not turn the nail excessively, or it will lose the precision of positioning.
return to the original position when finishing print.

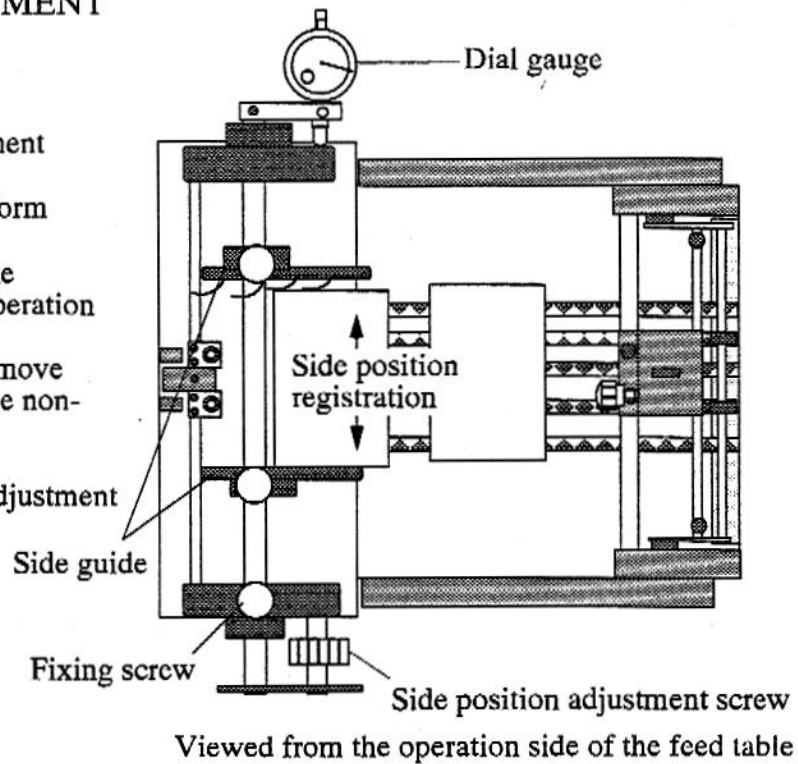


■ About the Image Position Adjustment

1. Regarding setting value memory.
 - The value displayed on the counter, as it is blinking, automatically saved with a buzz after 60 seconds from the change of set value without pressing the image position key.
2. Regarding set value reset.
 - Pressing the clear key while the counter blinking resets to zero.
3. Regarding the Adjustable Image Position Range.
 - Set the image leaving 30mm from the gripper, prepared with the cut gauge.
This is an approximate printing position to make zero image head.
For printing business cards, you can shift the image to the gripper tail to adjust the image head in the range between -10 and 110mm.
For double size postcards, the image head can be adjusted in the range of +/- 10mm.

3.4 SIDE POSITION ADJUSTMENT

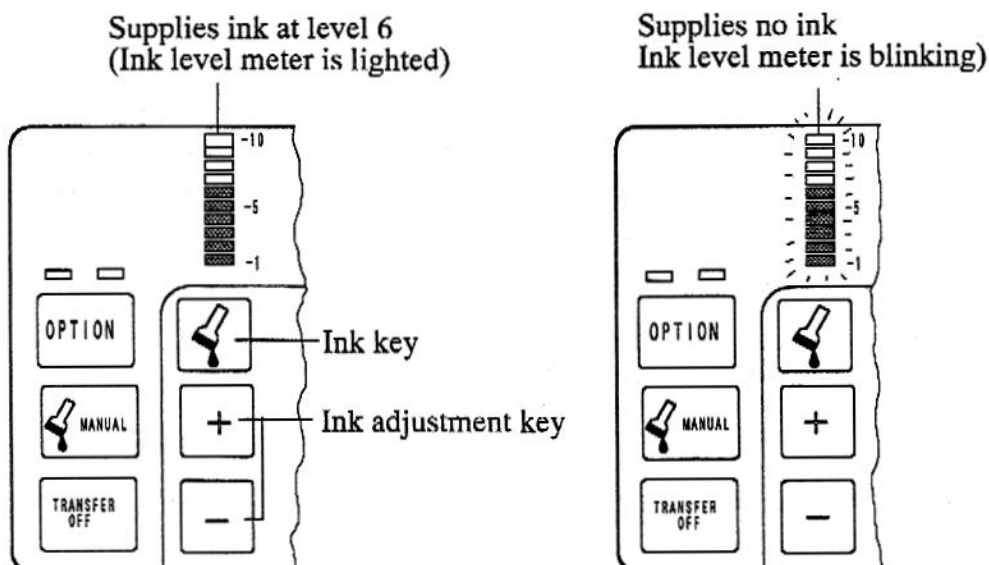
1. Loosen the fixing screw.
2. Adjust the side position adjustment screw.
 - Observe the dial gauge to perform adjustment.
 - Rotate it clockwise to move the printing position toward the operation side.
 - Rotate it counterclockwise to move the printing position toward the non-operation side.
3. Fasten the fixing screw when adjustment is finished.



3.5 DARKNESS OF PRINT

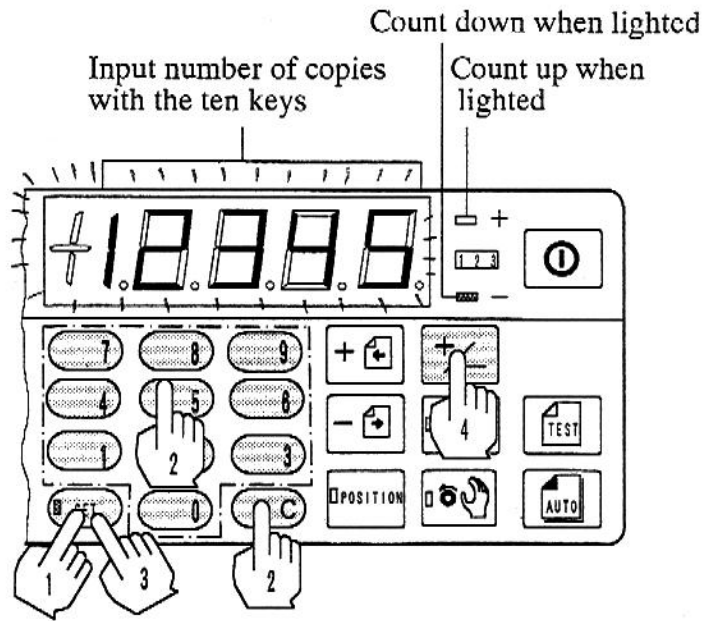
Before entering to print work, check for darkness of print.

1. Adjust the screw on the ink fountain to fit to the image.
2. If it is too dark, print it on the spoiled paper to adjust.
3. If it is thin, operate the ink fountain lever to supply adequately.
4. For adjusting the amount of ink while paper feed is running, press + or - of ink supply key.
 - When + or - key is pressed and the ink level meter is blinking, no ink supplied.
 - Pressing the key again lights the level meter.
 - Ink is only supplied during print work.



3.6 SETTING THE NUMBER OF COPIES TO PRINT

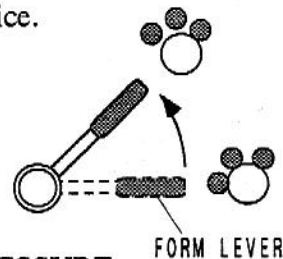
1. Press the page set key.
 - The counter display blinks.
 - When the counter shows the number of copies on the way printed, press the key for about 3 second.
2. Input the number of copies to print with the ten keys.
 - To correct the setting number, press the clear key.
3. Press the page set key.
 - The setting number is saved with a buzz.
 - The setting number is saved after about one minute from the setting value change without pressing the page set key.
4. Press +/- key.
 - The counter display shifts count up or count down with each pressing of the key.



NOTES

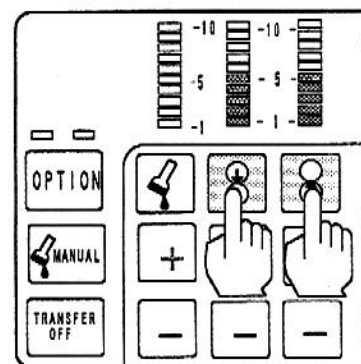
AT THE TIME TO PRINT

- When a failure occurs indelivery, the machine stops feeding automatically. Examine the cause and put the machine in order, then press the paper feed key.
- When ink is too hard, paper may entangled. In this case, add a compound less than 5% to ink. Adding an excessive amount of compound causes dirty print.
- For a coated paper print, use an optional spray powder device.
- When under rotating without printing, return the form lever at the form roller 1 position. This will prevent the excessive emulsification and poor printing result.



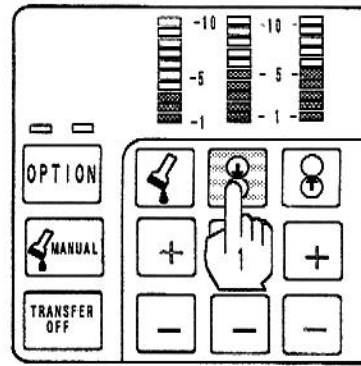
CHECKING THE PLATE PRESSURE AND PRINTING PRESSURE

- Pressing the plate pressure key or printing pressure key enables to check respective pressure.
- The plate pressure can be checked the width of nip transferred on the blanket. (Normally, approximately 3mm at plate pressure level 5.)
- The printing pressure can be checked the width of nip remained on the paper by putting the to be printed between the impression cylinder and the blanket. (Normally, approximately 4mm at printing pressure level 5 for aside of postcard.)
- These checking are feasible even if the safety cover is opened.

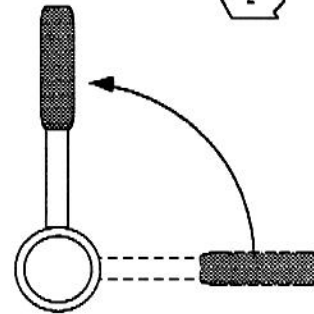
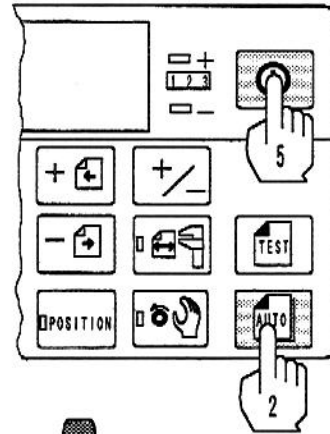


4. REGULAR PRINT

1. Press the plate pressure key.
 - The image transferred on to the blanket from the plate.

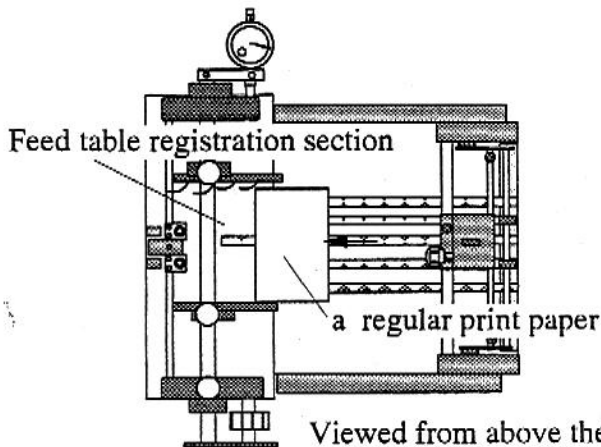
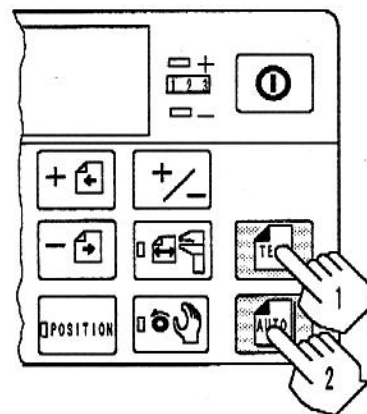


2. Press the auto feed key.
 - When the set number of copies finish printed, paper feed stops.
3. To stop feeding paper on the way, press the auto feed key again.
 - The counter stops.
 - Re-pressing the auto feed key starts feeding paper.
4. Return the form lever when print is finished.
5. Press the operation key.
 - The machine stops running.



■ To Shift the Mode from Test Print to Regular Print

1. Press the test feed key.
 - Set the spoiled papers in advance.
 - Print starts without shifting the numbers on the counter.
2. When a regular print paper reaches the feed table registration section, press the auto feed key.
 - The counter starts to work.





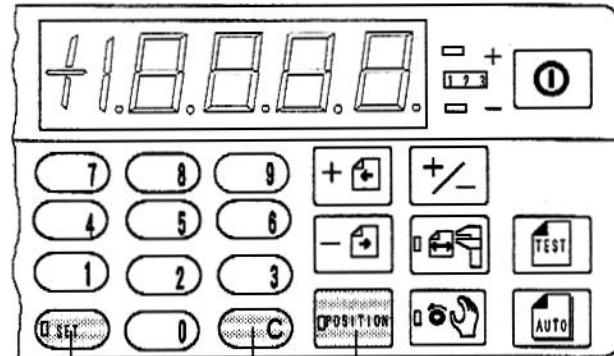
CAUTION

- Besides the accumulative counter indication and plate thickness setting, do not set to test mode, as the initial setting of print may shift and unable to perform printing.

■ Indication Procedure of Accumulative Counter

The counter shows the total printed number of sheets when the test feed key or auto feed key is used.

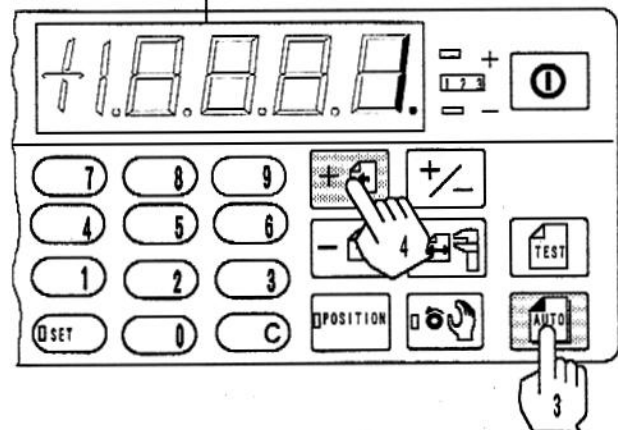
1. Turn the power off.
2. While pressing either one of set, clear, or image position key to turn on the power.
 - The machine turns into test mode as the LED indicator blinks in sequence.



Press and hold one of the keys and turn on the power.

3. Press the auto feed key.
 - The counter indicates the total number of sheets printed.

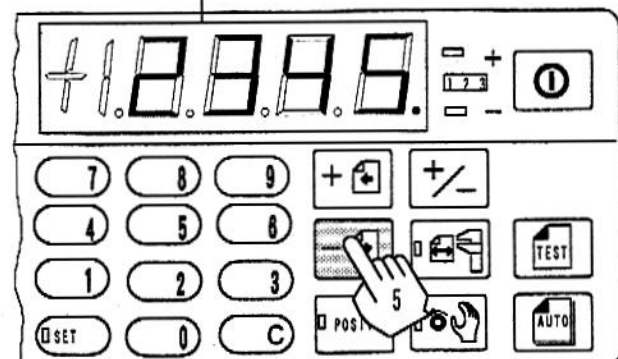
Shows ten thousand unit of total printed number of sheets.



4. Pressing the image + key shows ten thousand unit of total printed number of sheets on the counter.

Shows the last four figures of total printed number of sheets.

5. Further, to press the image - key indicates last 4-digit of thousand unit on the counter.



6. After checked the total number of printed sheets, be sure to turn off the power.

5. CLEANING



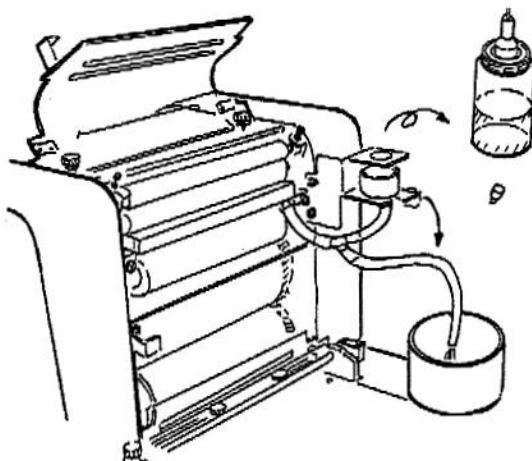
WARNING

- Do not spill any liquid like a dampening solution into the machine, as this may result in an electric leakage, electric shock, and fire.
- When unavoidably an object or a liquid got into the machine, promptly unplug the power cord and contact to your dealer. This may result in an electric leakage, electric shock, fire, and damages.

1. Remove the water bottle.

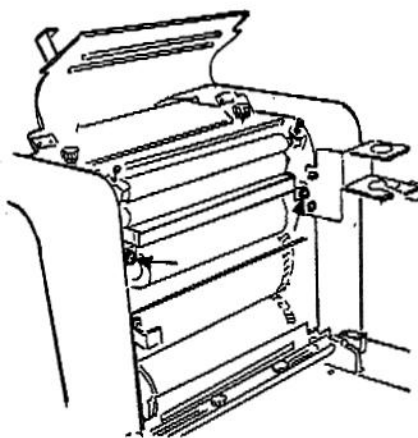
2. Drain water from the water fountain for dampening.

- Take out the cap from the tube attached to water holder and drain water.



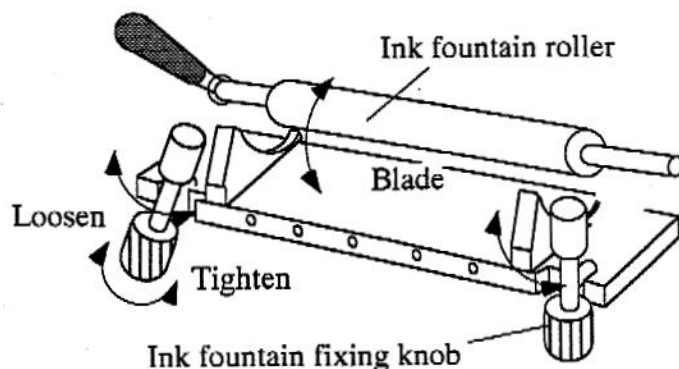
3. Detach the water fountain for dampening and replace it with the water fountain for cleaning in the same place.

- Firmly secure with the fixing screws.



4. Remove ink from the ink fountain.

- Use the ink knife to remove ink in the fountain.
- The ink fountain is detachable. Loosening the ink fountain fixing knobs enables to tilt the fountain this side.
- Clean ink thoroughly with a waste cloth.



CAUTION

- Be careful of not caught your hand when tilt the ink fountain.
- The blade is a sharp edge, take care and not to injure your hand.

5. Check for the dampening adjustment knobs are set extremely counterclockwise.

- At first, loosen the lock nut.

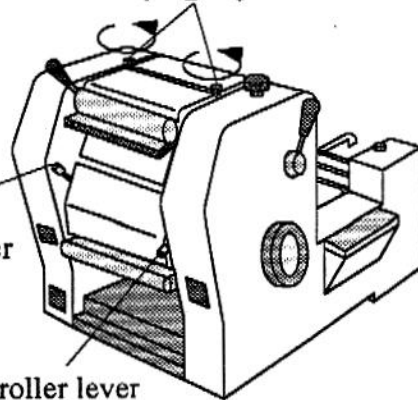
Dampening adjustment knob



Lock nut

Ink doctor lever

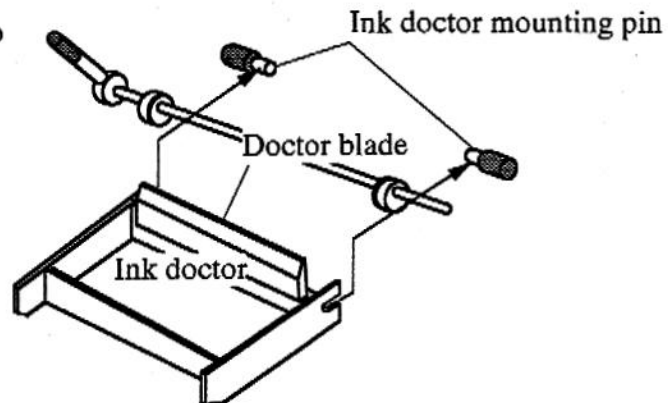
Dampening adjustment knob



Transfer roller lever

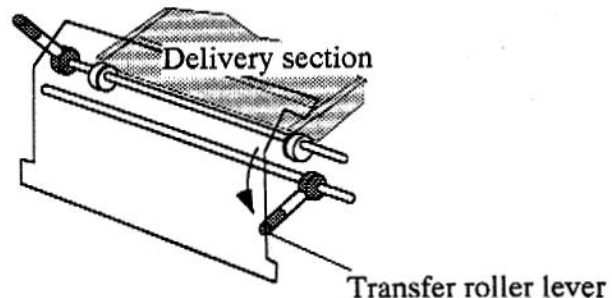
6. Mount the ink doctor.

- Hang the hook portion of ink doctor to the ink doctor mounting pins.
(Also, refer to the following caution "Notes on Ink Doctor Mounting".)



7. Lower the transfer roller lever.

- Connects the water roller system.



CAUTION

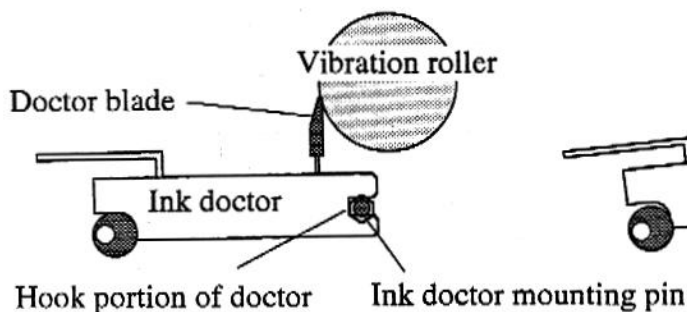
Notes On Ink Doctor Mounting

- Be sure to insert the hooks into the mounting pins provided on both sides of the panels.
- If it is erroneously mounted above the pin shafts, the doctor blade does not touch firmly that the cleaning is unable to do and damages the roller.

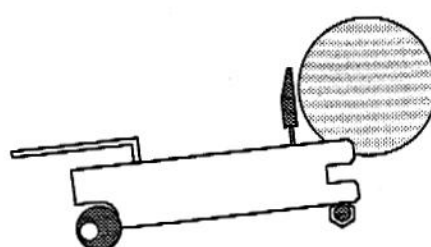
OK

NO

Unable to clean, damages the roller



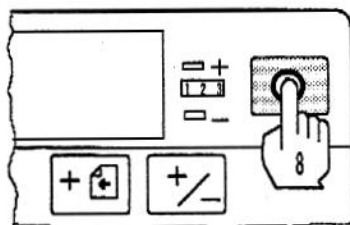
Proper doctor setting



Wrong doctor setting

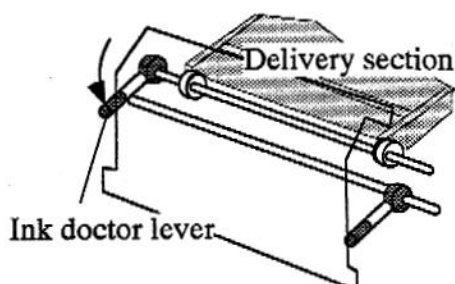
8. Close the safety cover and press the operation key.

- The machine starts to run.



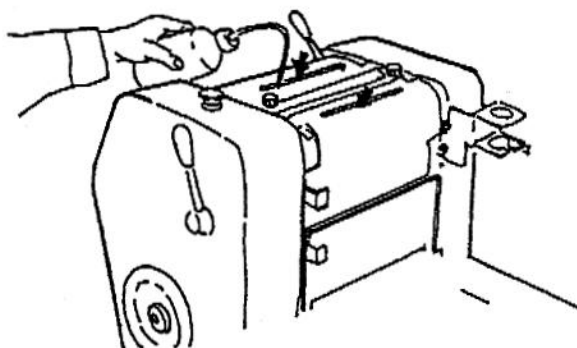
9. Lower the ink doctor lever.

- The roller touches to the blade.



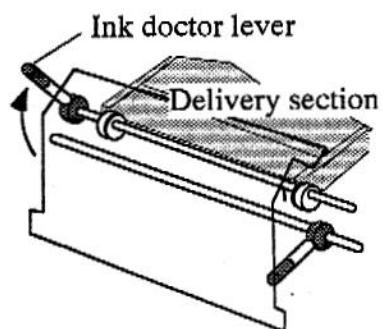
10. Pour a cleaning solution to clean roller.

- Pour a solution little by little from a slit on the safety cover and apply through the length.
- Running the roller fast giving a quick cleaning.



11. Raise the ink doctor lever after completed cleaning.

- The doctor blade separates from the roller.

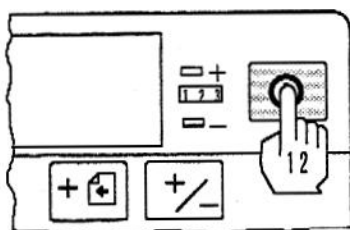


12. When the roller is dried up, press the operation key.

- The machine stops running.

13. Detach the ink doctor.

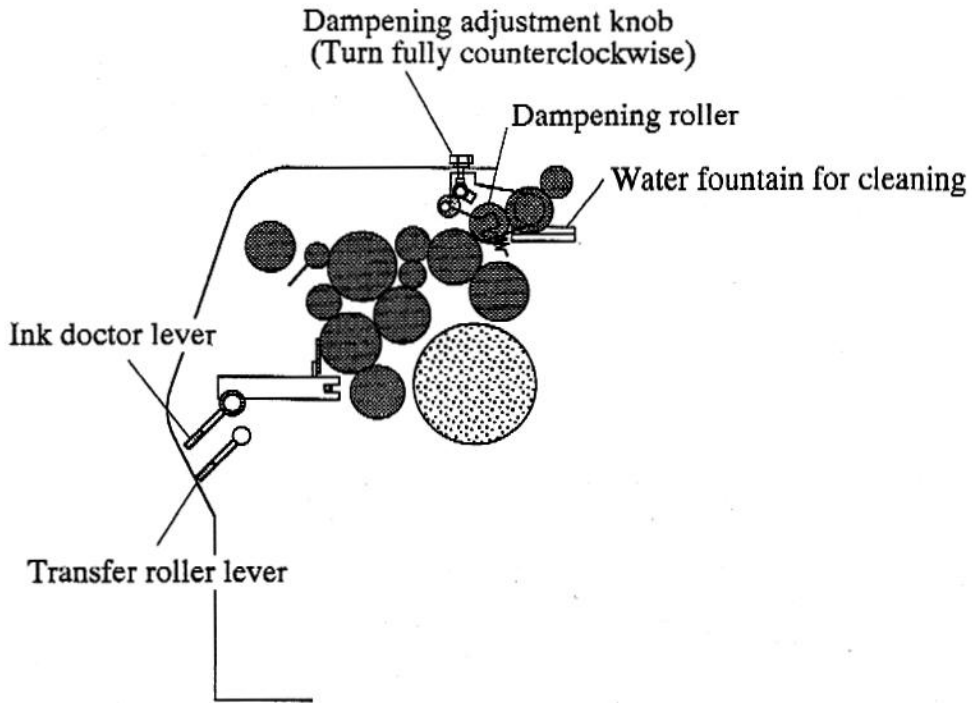
- Wipe out the ink on the doctor blade.



14. Detach the water fountain for cleaning.

- Wipe out ink in the water fountain for cleaning.

■ Position of Ink Doctor Lever and Transfer Roller Lever at Cleaning



■ Cleaning the Cylinders

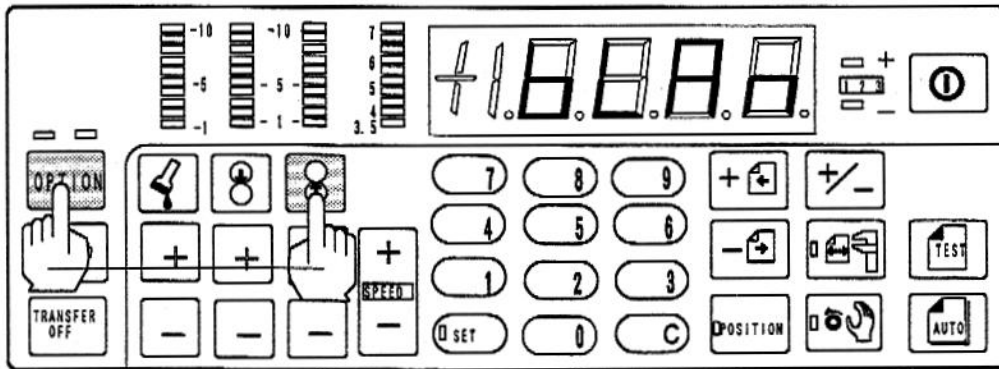
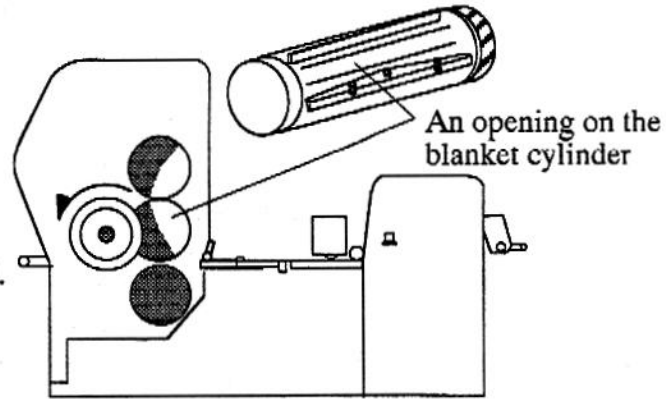
- Do not leave any etching solution on the plate and impression cylinders. In case it remains, clean by water or warm water.
- To clean the impression cylinder, stop running the machine and wipe out from the delivery section side.
- The paper plate is prone to adhere. Take it off as soon as the printing is over.
- For blanket cleaning, use a suitable cleaning solution for blanket.

6. MAINTENANCE AND CHECK

6.1 REPLACING BLANKET

Mounting the Blanket

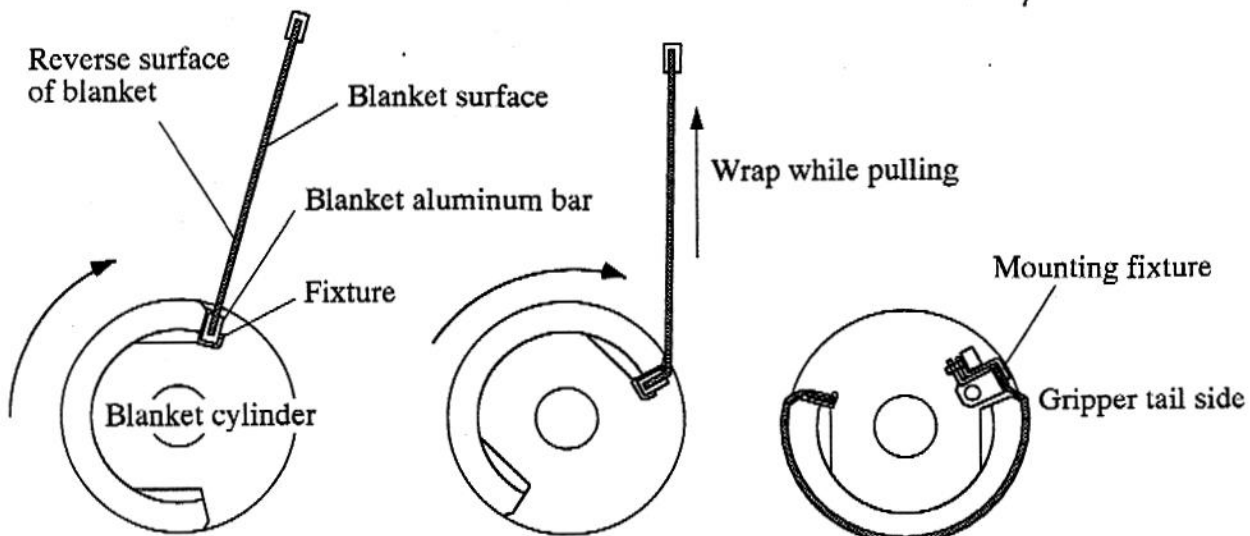
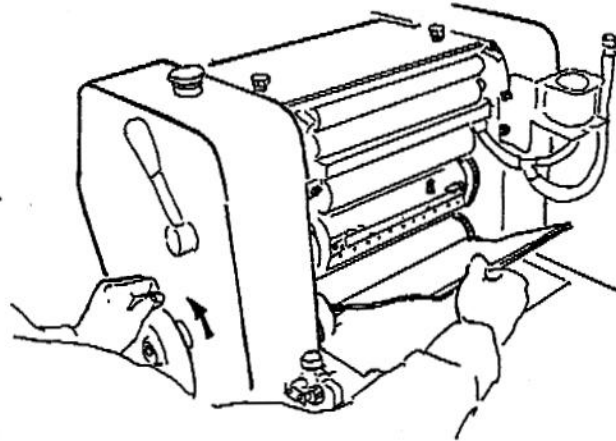
1. Rotate the handle so that an opening on the blanket cylinder can be seen.
2. While pressing the option key, press the printing pressure key.
 - When this mode is selected, an appropriate printing pressure is maintained until the mode is released.
 - " bLAN " shows on the counter.



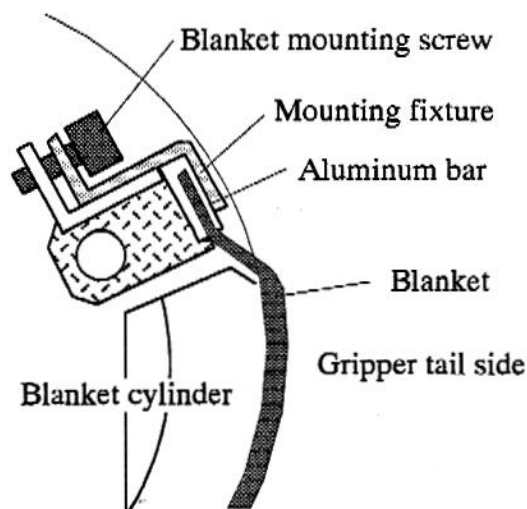
3. Hook the aluminum bar to the fixture.

4. Wrap the blanket.

- While pulling the blanket strongly, rotate the handle counterclockwise.



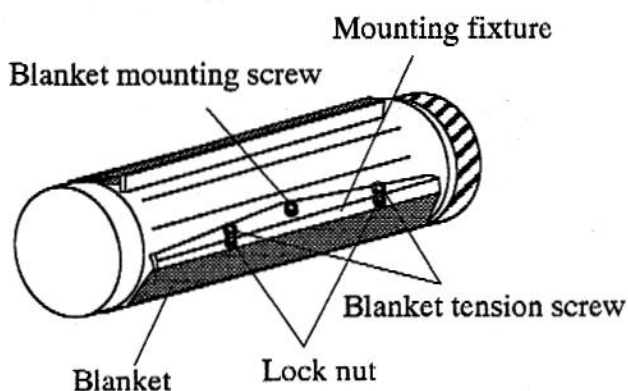
5. Put the aluminum bar of gripper tail into the mounting fixture.



6. Tighten the blanket mounting screw.

7. Tighten the two blanket tension screws evenly.

- As the standard value, apply approximately 6 kgfcm torque.



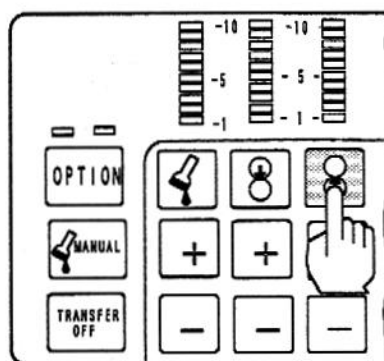
8. Further to rotate the blanket cylinder one turn, and tighten the blanket tension screws to take out the slackness of blanket.

- Repeat this step for two to three times.

9. Lightly secure the lock nuts.

10. Press the printing pressure key.

- The counter indication disappears and the blanket mode is released.



■ Dismounting the Blanket

Do the reverse manner as to mounting, dismount the blanket.

The same as to blanket mounting, set the machine to "blanket mode" and start with the gripper tail side to dismount.

After dismount the blanket, release the "blanket mode".

Note that the machine should not be run when the blanket is dismounted state.

NOTES

- The tension of blanket influences the printing quality. Too strong tension may cause running dots, too weak tension may cause overlap.
- The use of optional torque driver is recommended to put the blanket in even tension.

6.2 ADJUSTING THE ROLLER PRESSURE

6.2.1 Detail Adjusting the Water Supply Section

When overall water supply is exceeded.

- Rotate both operation and non-operation sides Dampening adjustment knob clockwise evenly.

When overall water supply is lesser.

- Rotate both operation and non-operation sides Dampening adjustment knob counterclockwise evenly.

When left and right water supply is unbalanced.

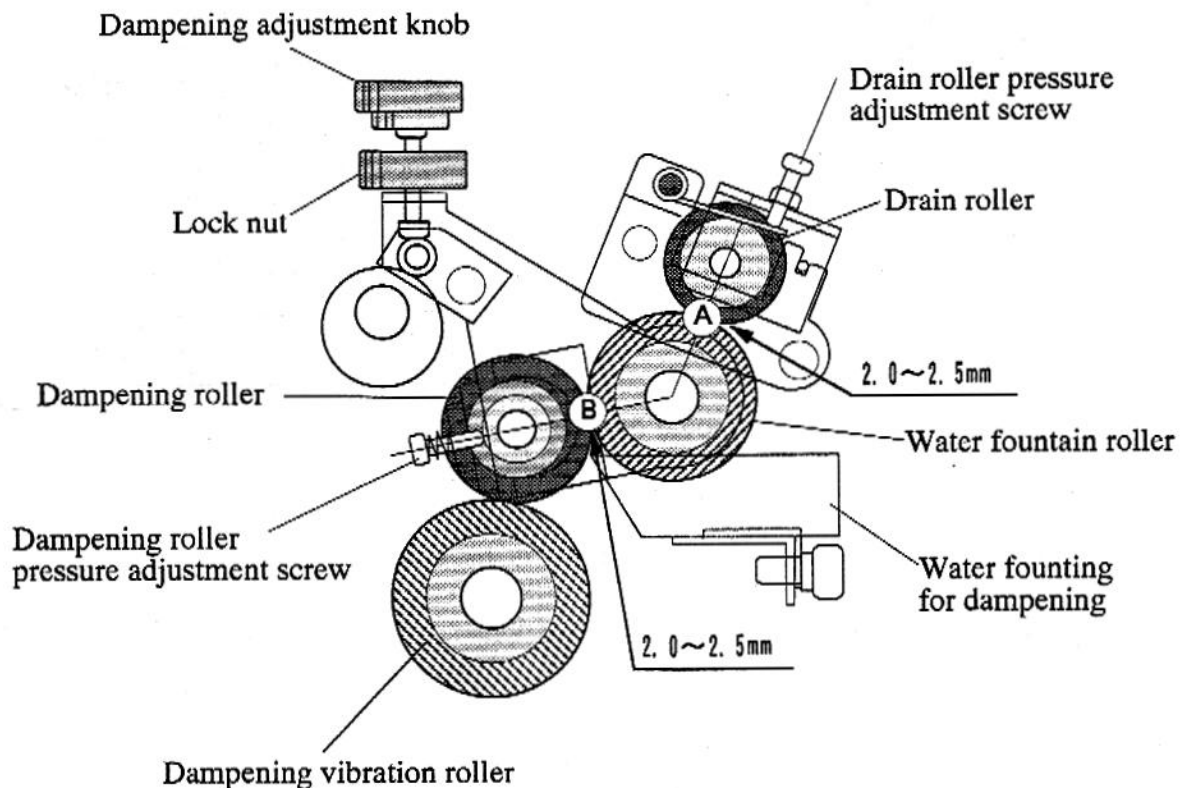
- Rotate Dampening adjustment knob clockwise for excessive water supply side.
- Rotate Dampening adjustment knob counterclockwise for less water supply side.

Checking the roller pressure

- Execute the following procedure to check the roller pressure.
 1. Run the machine, then stop the machine for about one minute.
 2. Rotate the handle and check the nip width remained on the roller.

Standard roller pressure:

- Drain roller pressure at portion A : 2.0~2.5mm
(by Drain roller pressure adjustment screw)
- Dampening roller pressure at portion B : 2.0~2.5mm
(by Dampening roller pressure adjustment screw)



Roller arrangement in water supply section

6.2.2 Adjusting the Form Roller Section

Adjusting the forming pressure (at portions A, B, C)

- Rotate the forming pressure adjustment screw to adjust the pressure. Rotate clockwise to reduce, rotate counterclockwise to increase the pressure.
- Wrap the plate to be used to confirm the forming pressure.
- At a time to confirm the pressure, position the form roller 1 set near at the gripper of plate cylinder.
- Follow the below procedure to confirm the forming pressure.

1. While pressing the transfer key, lower the form lever 90 degrees to touch the form roller to the plate.
2. Return the form lever and put your hand off from the transfer key.
3. Rotate the handle counterclockwise to check each nip width on the roller.

Adjusting the kneading pressure (at portions D, E, F)

- Rotate the kneading pressure adjustment screw to adjust the pressure. Rotate clockwise to reduce, rotate counterclockwise to increase the pressure.
- Follow the below procedure to confirm the kneading pressure.

1. Run the machine, then stop the machine for about one minute.
2. Rotate the handle and check the nip width on each form roller.

Rotate the handle counterclockwise to check the kneading pressures for form rollers 1 and 2.
Rotate the handle clockwise to check the kneading pressure for form roller 3.
Remove the rider vibration roller for checking the kneading pressure of form roller 2.

Standard roller pressure:

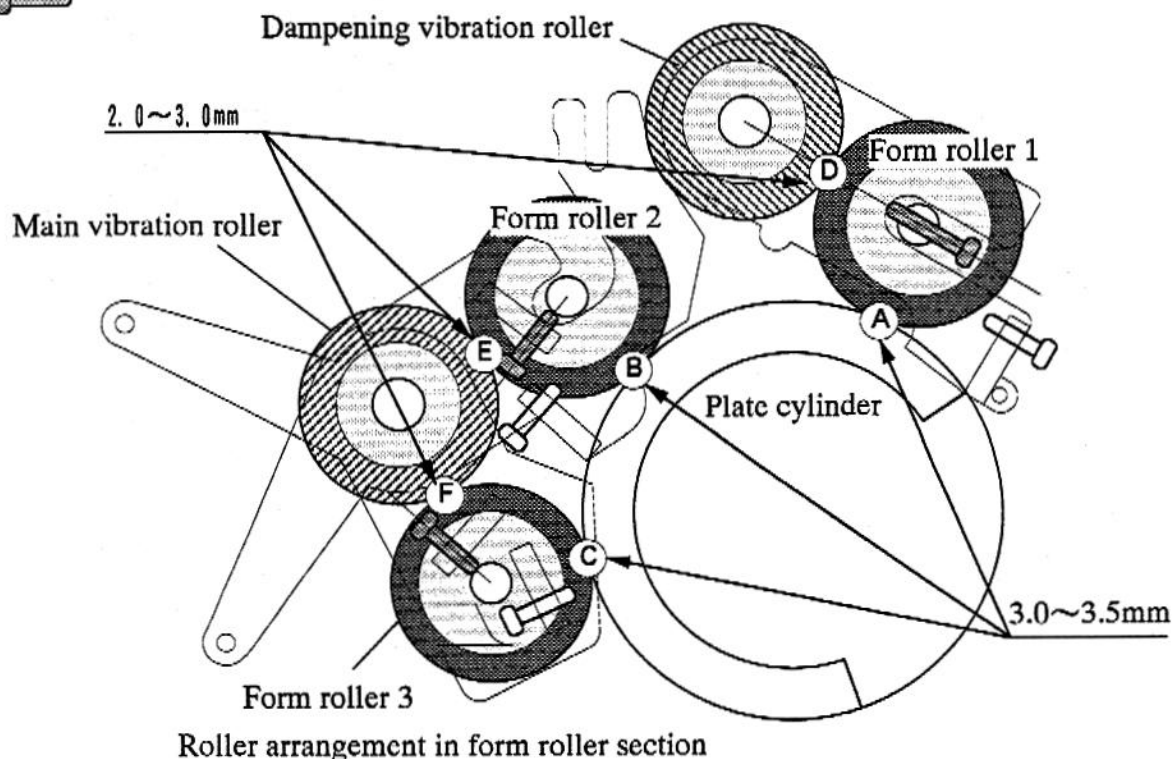
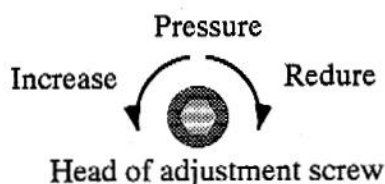
Forming pressure (at portions A, B, C) 3.0~3.5mm

Kneading pressure (at portions D, E, F) 2.0~3.0mm

Forming pressure adjustment screw
(Painted white)



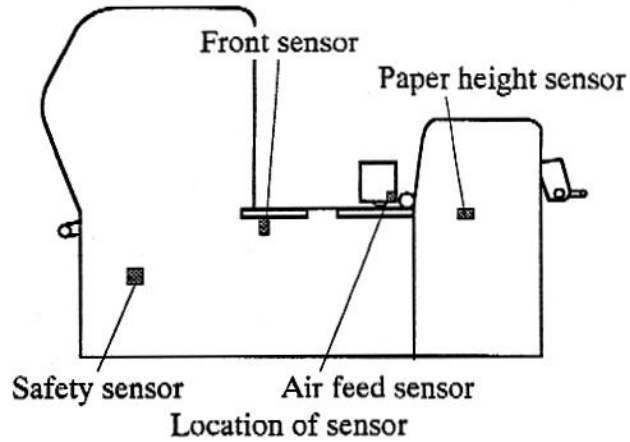
Kneading pressure adjustment screw
(Painted blue)



6.3 CLEANING THE SENSOR

6.3.1 Location of Sensor

- This machine is equipped with three reflection photo sensors (i.e. paper height sensor, air feed sensor, front sensor) to detect paper.
- To prevent danger, a translucent photo sensor is adopted as a safety sensor in the delivery section under the belt.



6.3.2 How to Clean the Sensor

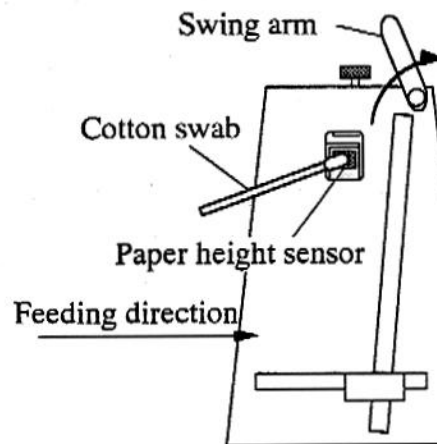
- An air spray sold in the market is effective for cleaning the sensor.

Clean the safety sensor.

- To clean the safety sensor, wipe out the transparent safety sensor cover inside the delivery section with a soft cloth.

Clean the paper height sensor.

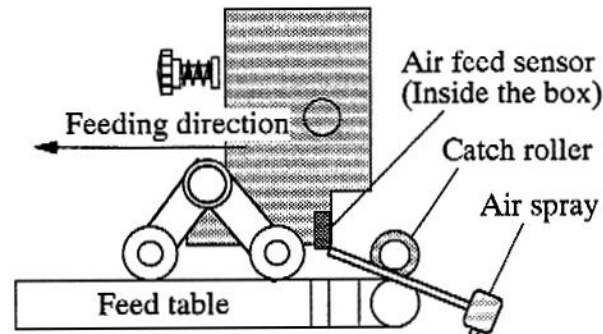
- Perform cleaning the sensor by put up the pull up arm.
- Clean the sensor with a cotton swab provided with this machine.



Inside view of operation side air feed section

Clean the air feed sensor.

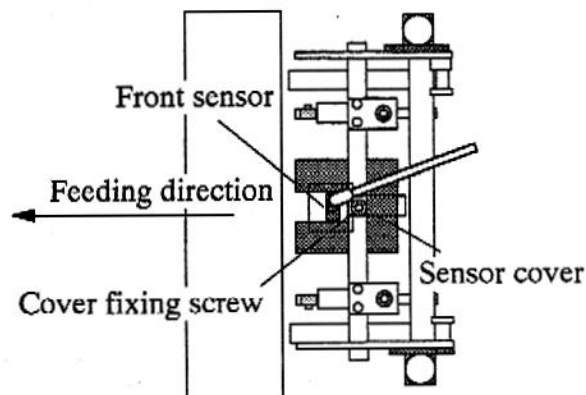
- As the sensor is installed with the bottom up, spray from the bottom side when using an air spray sold in the market.



Double feed detection section from operation side

Clean the front sensor.

- Remove the sensor cover first and clean the sensor.
- Clean the sensor with a cotton swab provided with this machine.



Feed table registration section viewed above the operation side

NOTES

- Dirt and dust on the sensor may cause a detection failure. Clean the sensor periodically with a cotton swab or an air spray.

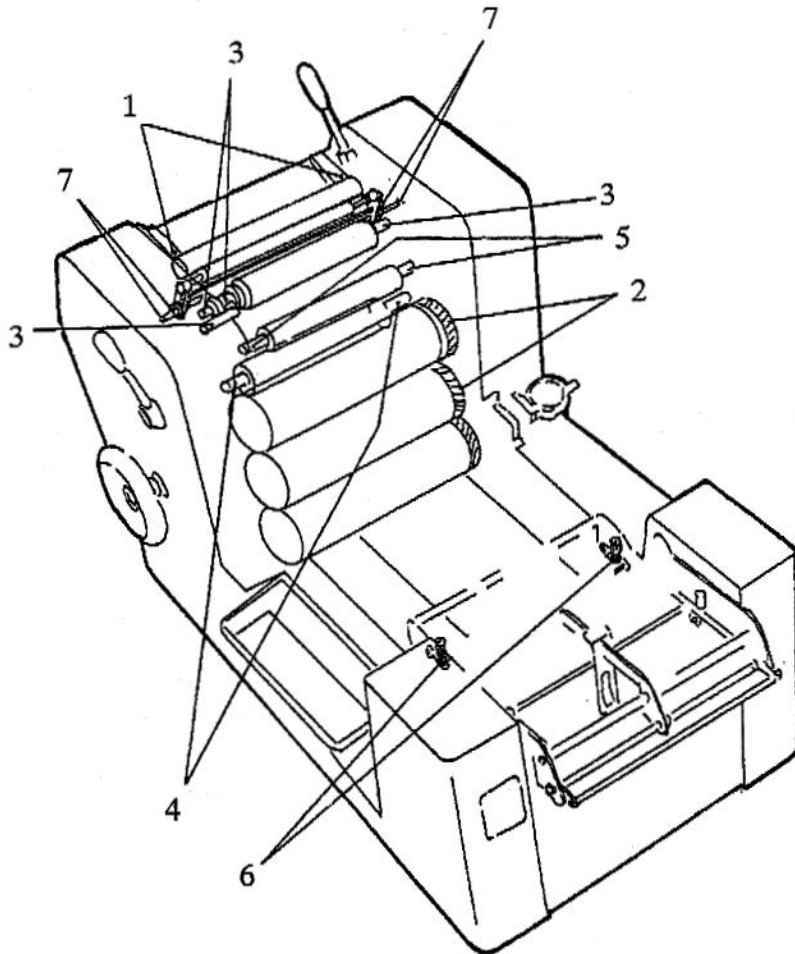
6.4 GREASING

- This machine is greased on necessary points before it is shipped. However, provide grease once a month for long-term use. (For fountain side block, once a week.)
- Recommended grease:
Spray grease Nichi Moly LAP. R3 (Nihon Molybdenum) or equivalent
- Application:
 1. Ink fountain side blocks
 2. Cylinder gears
 3. Rider vibration roller shaft, cam bearings, vibration drive shaft
 4. Dampening vibration roller shaft bearings
 5. Main vibration roller shaft bearings
 6. Spring portion of catch roller adjustment knob
 7. Ink doctor roller shaft bearings

NOTES

- Any quality of grease can be used, as long as it is equivalent to the mentioned, but never mix different grease quality.
- Never apply grease to belt.

And other roller shaft bearings and supporting points.






6.5 DISPOSAL

For disposing of this machine, please consult with your dealer.

7. ERROR MESSAGES

- An error message is displayed on the counter when some problem occurs on this machine.
Error messages and their problem contents are as follows.

Typical Error Message	Problem	Solution	Cure
"E r 11"~"E r 12" Er 11	Rotating components.	Press the clear key.	<ul style="list-style-type: none"> Remove an object interrupts rotation. Release the emergency stop switch. Ask your dealer if not cured.
"E r 21"~"E r 25" Er 21	Printing pressure.	Turn off the power.	<ul style="list-style-type: none"> Release the emergency stop switch. Ask your dealer if not cured.
"E r 31"~"E r 33" Er 31	Plate pressure.	Turn off the power.	<ul style="list-style-type: none"> Release the emergency stop switch. Ask your dealer if not cured.
"E r 41"~"E r 44" Er 41	Paper feed.	Turn off the power.	<ul style="list-style-type: none"> Release the emergency stop switch. Ask your dealer if not cured.
"E r 51"~"E r 53" Er 51	Inking mechanism.	Turn off the power.	<ul style="list-style-type: none"> Release the emergency stop switch. Ask your dealer if not cured.
"E r 61"~"E r 66" Er 61	Paper feed suction.	Turn off the power.	<ul style="list-style-type: none"> Contact your dealer.
"-2-" -2-	Double feed detection.	Press the clear key, or remove double fed paper.	<ul style="list-style-type: none"> Adjust double feed detection. Re-adjust feed mechanism.
"FEEd" FEEd	Paper feed, or paper entangled.	Error releases automatically.	<ul style="list-style-type: none"> Intercept the direct light strikes. Re-adjust feed mechanism. Contact your dealer if not cured.

Typical Error Message	Problem	Solution	Cure
"Covr" 	Safety cover is opened.	Close the cover. Press the clear key.	<ul style="list-style-type: none"> • Close the cover whenever the machine is running or at measuring paper size.
"hndL" 	The handle is pushed.	Pull the handle operation side. Press the clear key.	<ul style="list-style-type: none"> • And pull the handle toward operation side and set to release position whenever the machine is running or at measuring paper size.
"SAFE" 	Delivery safety sensor.	Press the clear key.	<ul style="list-style-type: none"> • Remove an object intercepts the safety sensor. • Clean the safety sensor.

■ Troubles Other Than Error Messages

Please ask your dealer for the trouble not listed here.

Problem	Cure	Referring Page
Power does not turn on.	<ul style="list-style-type: none"> • Confirm the power cable is connected. 	
No running.	<ul style="list-style-type: none"> • Close the safely cover. • Pull the handle to set at this side. • Remove an object intercepting the safely sensor. • Press the printing pressure key and release "blanket mode". • Release the emergency stop switch. 	5 39 5
Elevator does not go up.	<ul style="list-style-type: none"> • Adjust the control bar to suit the paper. • Keep pressing the up button. • Release the emergency stop switch. 	12 11 5
Elevator does not go down.	<ul style="list-style-type: none"> • Keep pressing the down button. • Release the emergency stop switch. 	11 5
Elevator goes up too high.	<ul style="list-style-type: none"> • Put the light away from the paper height sensor. 	42
Suction does not work.	<ul style="list-style-type: none"> • Position the control bar backward. • Adjust the paper height adjustment knob set the paper height higher. • Suction hose is detached or damaged. 	13 12
Feeds double.	<ul style="list-style-type: none"> • Lower the paper height with the paper height adjustment knob. • Re-adjust the double feed detection. 	12 14
No feeding.	<ul style="list-style-type: none"> • Measure the paper size. • Adjust the feed roller Assy. • Increase the printing pressure. 	16 15
No ink supply.	<ul style="list-style-type: none"> • Press the ink key. (Turn on the ink level meter light.) • Put the ink doctor lever upward. (The lever in lower calls no ink.) 	30 21
Unable to feed test one sheet. Counter does not work.	<ul style="list-style-type: none"> • Clean the front sensor. • Connector of double feed sensor is disconnected. 	42
No printing.	<ul style="list-style-type: none"> • Press the transfer off key and release the mode. • Turn the form lever 90 degrees rightward. 	18 26
plate becomes dirty.	<ul style="list-style-type: none"> • Adjust the dampening adjustment knob or drain roller pressure adjustment knob. 	27,40
Unable to clean.	<ul style="list-style-type: none"> • Ink doctor is not set properly. • Lower the transfer roller lever and ink doctor lever. • Turn the dampening adjustment knob fully counter-clockwise. 	35 35 35

8. SPECIFICATIONS

Model :	AR-010
Maximum printing area :	165 x 225mm
Paper size: Maximum :	165 x 265mm
Minimum :	45 x 80mm
Thickness :	0.15~1.5mm (110~700kg)
Paper loading height :	200mm
Feeding system :	Suction and nail
Delivery system :	Belt
Number of rollers :	14 (3 form rollers, 3 oscillation rollers)
Dampening system :	Continuous dampening (AR magic)
Printing speed :	3500~7000 copies/hour
Printer dimensions :	950 (width) x 600 (depth) x 680 (height) mm
Weight :	120 kg
Power source :	AC 100V, 50/60Hz
Power consumption :	700W

* Specifications and design subject to change without notice for further improvement.

■ Installing Environment

- Do not install the machine close to windows to avoid sun light.
It may cause the malfunctions and printing failure.
- Avoid such a place where it is dusty and vibration emits from floor.
It may cause the abnormal movements and printing failure.
- Avoid such a place where it is exposed to the wind-swept of air conditioner.
It may cause a feeding failure due to change of paper quality, delivery and printing failure.
- Avoid such a location where high-humid and high temperature exist.
It way cause the feeding, delivery, and printing failure.
Using environment temperature : 18°C~25°C
Using environment humidity : 50%~60%

■ Option

Spray device T-26-0

Envelop feeder BF -265

Exclusive table KT-900

Exclusive puncher YSP-11

UV dryer UV-015N, UV-030N

Delivery table ED-185N

Torque driver

UV roller

UV blanket

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