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SERVICE MANUAL

MBM Air Suction Folder Model 1800S



MBM Corporation

Ver. 03 160939 NW

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1. Safety Instructions

Definition of Symbols and Notes

The following names and signs stand for possible dangers.



Danger

This symbol stands for immediate danger. Disregarding these instructions may cause severe injury.



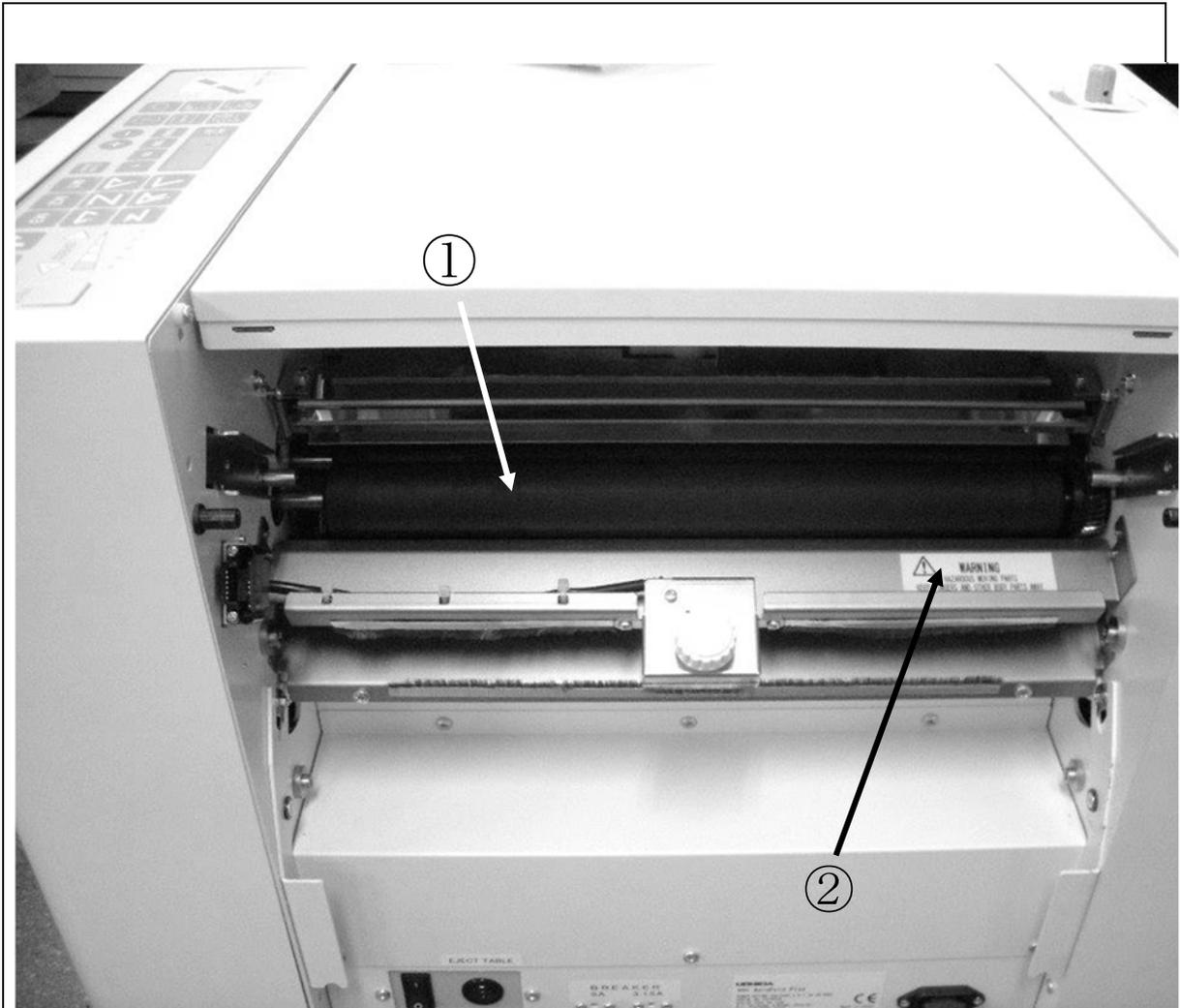
Caution

This symbol stands for a potentially dangerous situation. Disregarding these instructions may lead to injuries or damage to property.

Danger	
	Make sure that the machine is electrically grounded to prevent electrical shock.
	Operate the machinery within reasonable voltage range. There is a risk of electrical shock or fire if a higher or lower voltage is used, or if an electric current is utilized with a frequency not within the range stated above.
	Do not place any object on top of this machine. There is a risk of electrical shock or fire if water or any foreign object enters the machine.
	Handle the power cord with care. There is a risk of electrical shock or fire if the cord is damaged, broken, or placed under a heavy object.
	Do not insert or remove the power plug when water is present.
	Do not remove the cover of this machine. There is a risk of an electrical shock.
	Do not reconfigure the electronics of this machine. There is a risk of an electrical shock or fire.
	Do not operate the machine if it is emitting smoke or a strange odor. Turn off the machine, unplug it from the outlet and contact your dealer.
	Do not operate the machine if the power cord is generating heat or emits a strange smell. Turn off the machine, unplug it from the outlet and contact your dealer.
	If a foreign object enters into the machine, turn off the power switch and unplug the power plug, then consult your dealer.
In the event of a thunderstorm, unplug the machine.	

Caution	
	Keep hair, clothing, and jewelry away from the machine while operating. Serious injury may result.
	Do not put the machine on an unstable or slanted surface. Doing so may cause the machine to drop or fall over, causing damage and possible injury.
	Store and operate the machine in a clean, dust-free environment with low humidity. Avoid areas with high moisture, extreme temperatures and excessive dust, as these conditions may cause machine failure or electrical shock. Operate the machine at the temperature of 5 degrees to 35 degrees C.
	Be sure to grasp the power cord by the plug when unplugging it from the electrical outlet. Not doing so may cause damage to the cord and possible electrical shock or fire.
	Be sure to pull the power plug out of the electric outlet before moving the machine. Not doing so may cause damage to the cord and possible electrical shock or fire.
	Unplug the power plug from the electrical outlet when this machine is not in use.
	The socket-outlet shall be installed near the equipment and shall be easily accessible.

WARNING 1

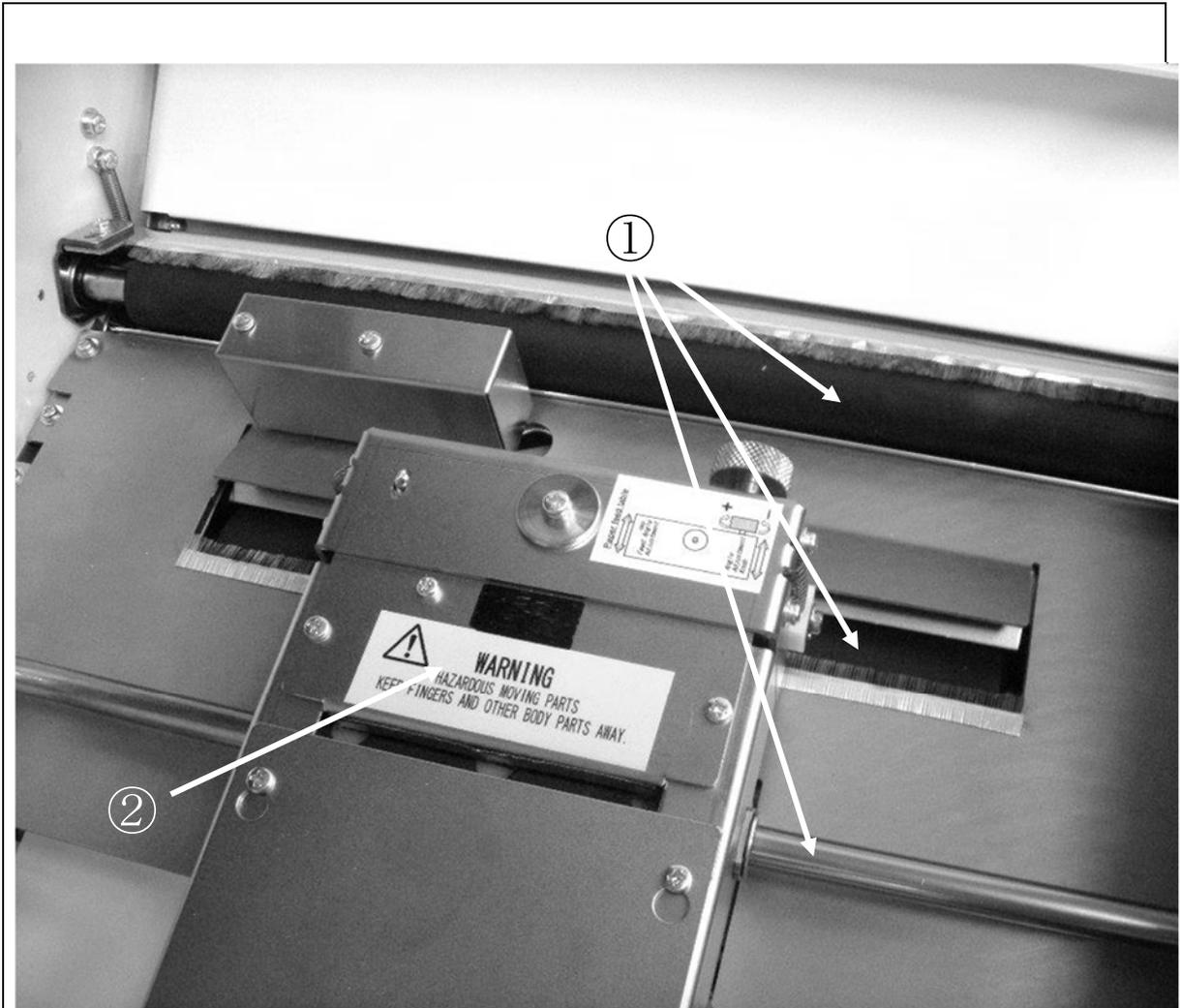


① : Moving Parts

② : Warning Label

WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY.

WARNING 2



① : Moving Parts

② : Warning Label

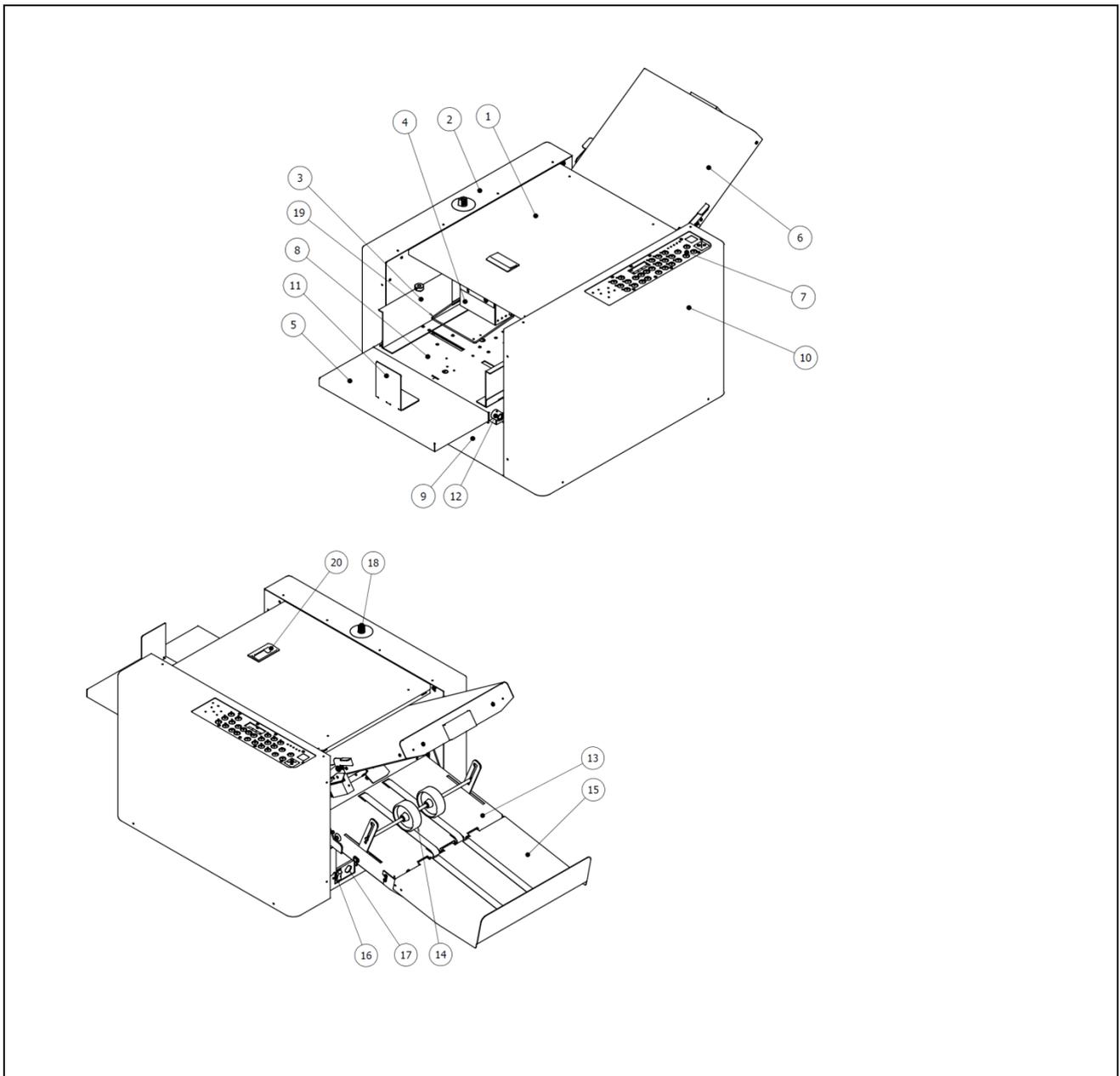
WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY.

2. Caution during Maintenance Service

Turn off the machine and unplug the power plug to avoid electrical shock.

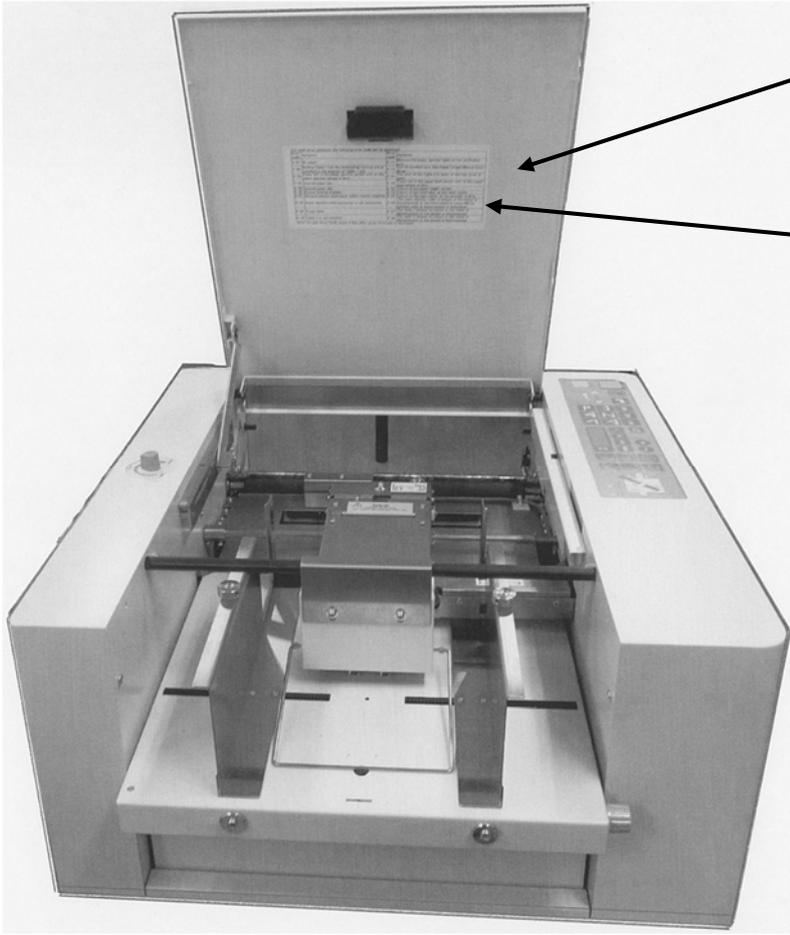
- (1) Hold the connector to avoid damaging cables when plugging or unplugging the connector.
- (2) When wiring, pay attention on over-tension or over-slack of wire harness to avoid touching to movable or rotary part.
- (3) Clean the photo sensor to avoid the machine error.
- (4) Clean the belts, rollers and other related area to avoid paper feed error.
- (5) When cleaning, use a towel after wringing out water.
- (6) Do not use an organic solvent to avoid machine trouble.
- (7) After cleaning, operate the machine only in the status that machine is not dry.

3. Part Names



	Name	Number	Name
①	Top cover	⑫	Skew Adjustment Knob
②	Left side cover	⑬	Paper Ejection Table
③	Paper Guide(Left & Right)	⑭	Paper Ejection Roller
④	Paper Height Detection Sensor	⑮	Auxiliary Paper Ejection Table
⑤	Auxiliary Feed Table	⑯	Power Switch
⑥	Table 1	⑰	Paper Ejection Table Socket
⑦	Operation Panel	⑱	Air Adjustment Knob
⑧	Paper Feed Table	⑲	Weight Arm
⑨	Door for Table 2	⑳	Top cover Knob
⑩	Right side cover	*	Table 2
⑪	L Stopper guide		

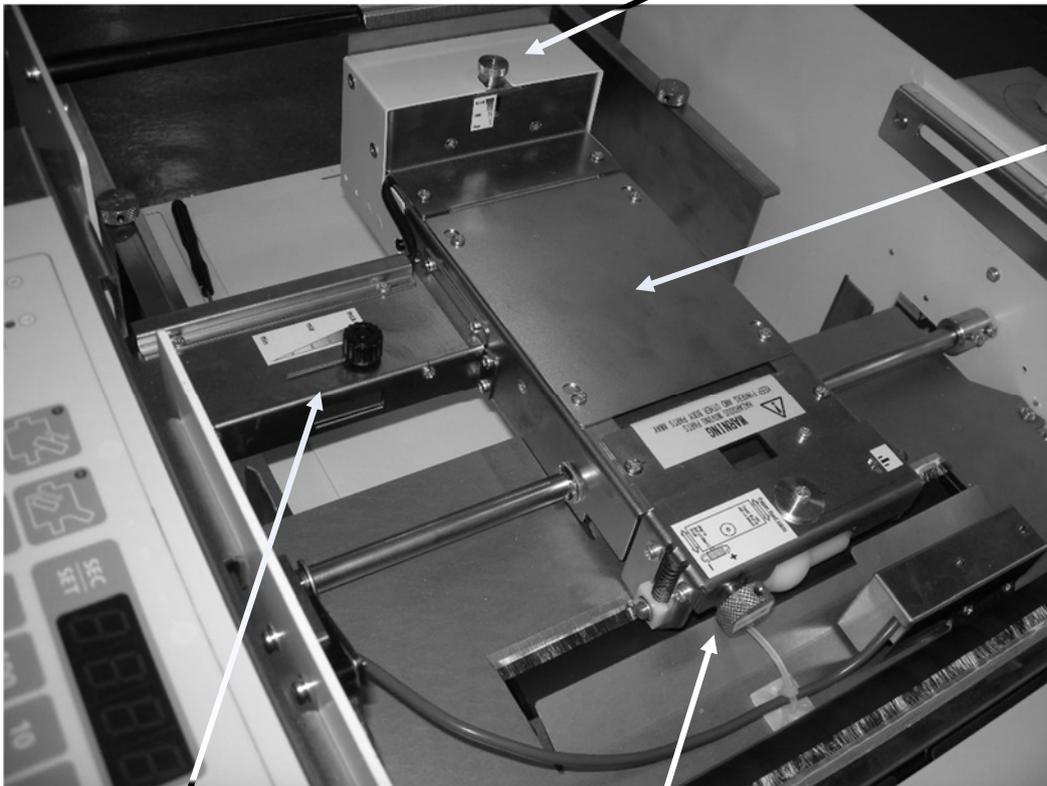
Table 2 is set under the Paper Feed Table in the machine, which you find when opening the door ⑨ for the table 2.



Upper Cover is open to adjust belt feeder assembly.

Error Code Chart

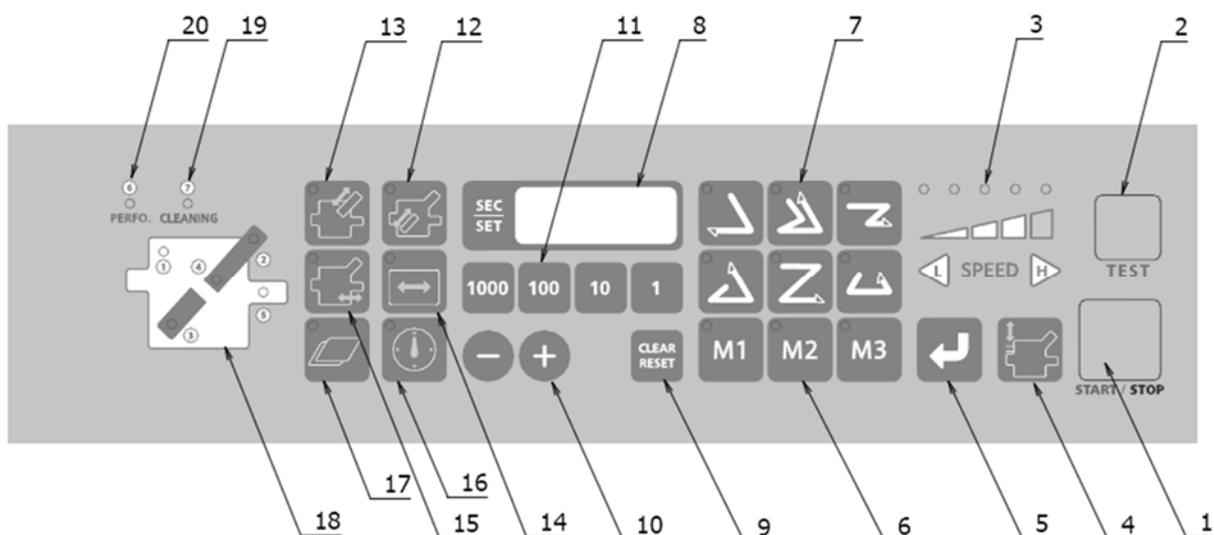
Paper Floating Height Adjuster



Belt Feeder Assy

Suction Air Adjuster

Feed Angle Adjustment Dial



4. Designation and Functions of Operations Panel

No.	Designation/Indication	Function
①	START/STOP key	Starts and stops machine.
②	TEST key	1) <u>Test folds</u> two sheets without counting. 2) Also used for <u>test blow</u> without folding (pressed more than 2 seconds until buzzer sounds.)
③	Speed adjustment key	Select 5 speed.
④	Paper feed table up/down key	Moves up and down the Paper Feed Table
⑤	Store key	Memorize fold position after adjustment is done.
⑥	Memory 1/2/3 key	Memorize three special fold types.
⑦	Fold type key	Select 6 fold types and store job routine.
⑧	Counter	Shows the number of sheets, position of the stopper of Table 1 and 2, and paper size.
⑨	Clear/Reset key	Clears the counter / resets after an error.
⑩	+/- key	Use for adjusting position of the stopper of Table 1 and 2, the position of paper ejection roller, and inputting paper length
⑪	Numerical key	Use for inputting the number of sheets to be folded, length of non-standard size paper, factors of interval function and others.
⑫	Table 2 stopper move mode key	Use to adjust Table 2 Stopper position.
⑬	Table 1 stopper move mode key	Use to adjust Table 1 Stopper position.
⑭	Paper length input mode key	Use to input paper length for non standard norm paper.
⑮	Paper ejection roller move key	Use to adjust position of Paper Ejection Roller.
⑯	Interval key	Sets time and number of interval function during folding work.
⑰	Double Feed Error Detection key	Sets double feed error detection ON/OFF.
⑱	Trouble Locating Map	
	①②③④⑤	Indicates location of trouble.
	In case of Double Feed	①④⑤ lamps flash at the same time. Display indicates E-13.
⑲	Cleaning lamp	Indicates when cleaning of the FEED section (belt, roller) is necessary. It lights every 10,000 sheets of folding. Can disable this function. Refer detailed section.
⑳	Perforation mode lamp	Indicates when the optional perforating unit is installed.

5. Operations

- 1) Turn power switch on.
- 2) Set papers
- 3) Folding Test
 - 3-1) Press one of the fold type keys to test.*
 - 3-2) Set speed.
 - 3-3) Press the TEST key.
 - 3-4) Stoppers of Table 1 and Table 2 moves to home position once.
Then, stoppers of the Tables move to appropriate folding positions.
 - 3-5) After folding two pieces of papers, machine stops. Examine 2nd folded paper.

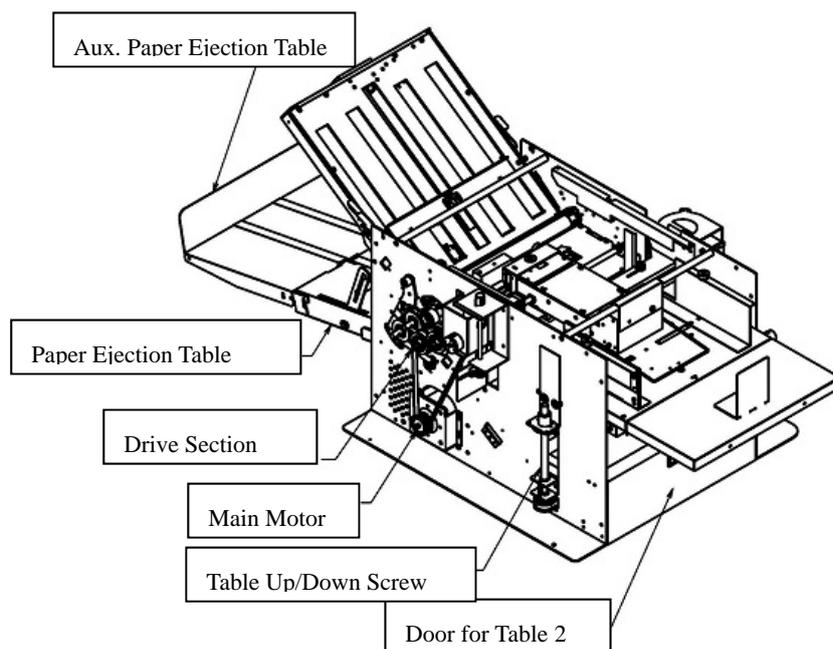
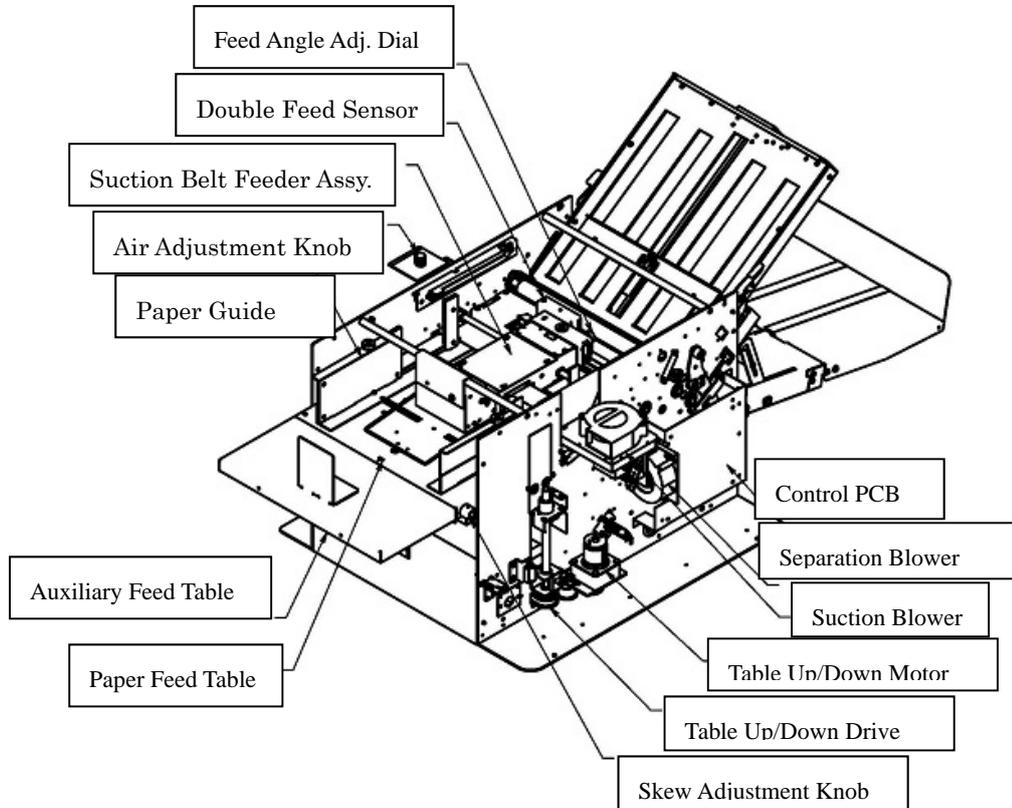
*: If fold type key is not pushed, machine operates based on previously set folding pattern and speed.

- 4) Fold by Adding Counter
 - 4-1) Clear the numbers of counter and set it to zero.
 - 4-2) Press START key.
 - 4-3) Folding continues until out of paper in the Feed Table.
- 5) Fold by Subtracting Counter
 - 5-1) Set desired number of fold.
 - 5-2) Press START key.
 - 5-3) The folding stops at the time when reached to the setting numbers.
- 6) The machine can be stopped anytime by pressing STOP key or when error occurred.

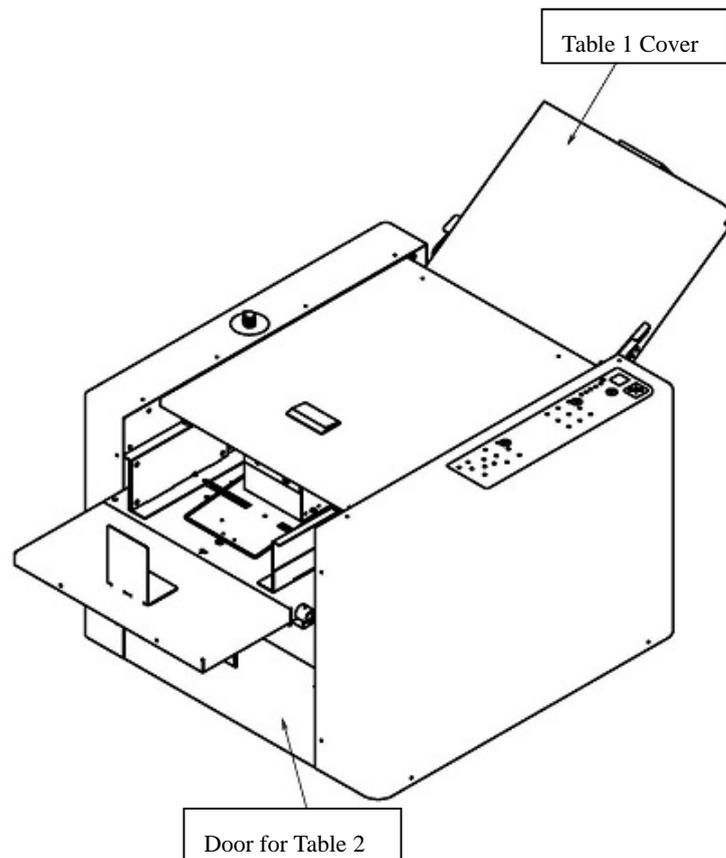
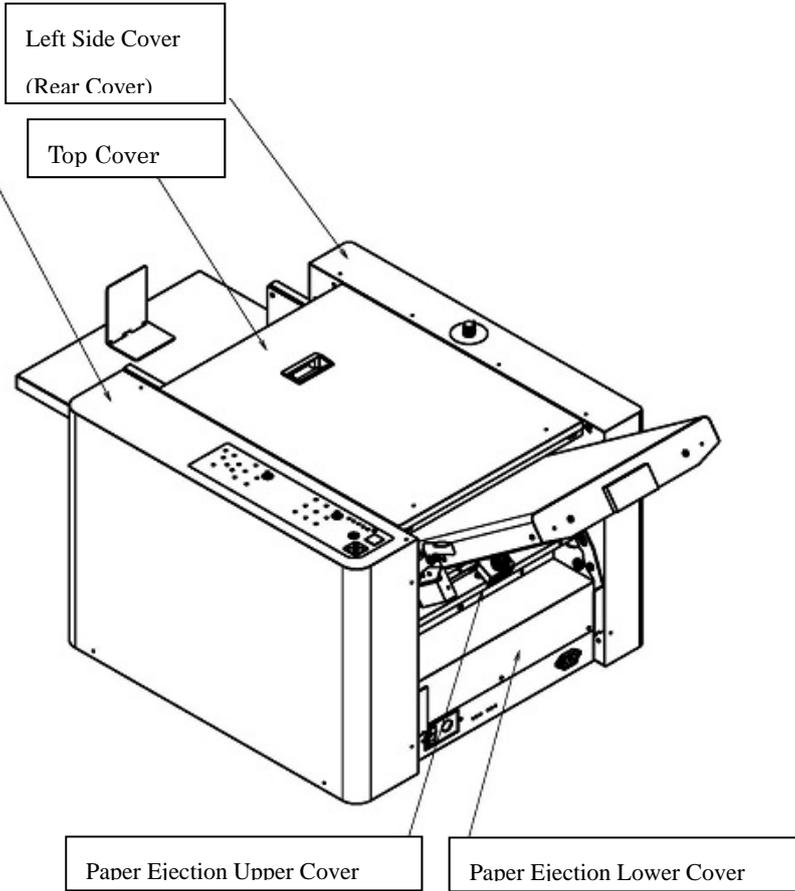
Refer operation manual for details.

6. Structure of the sections

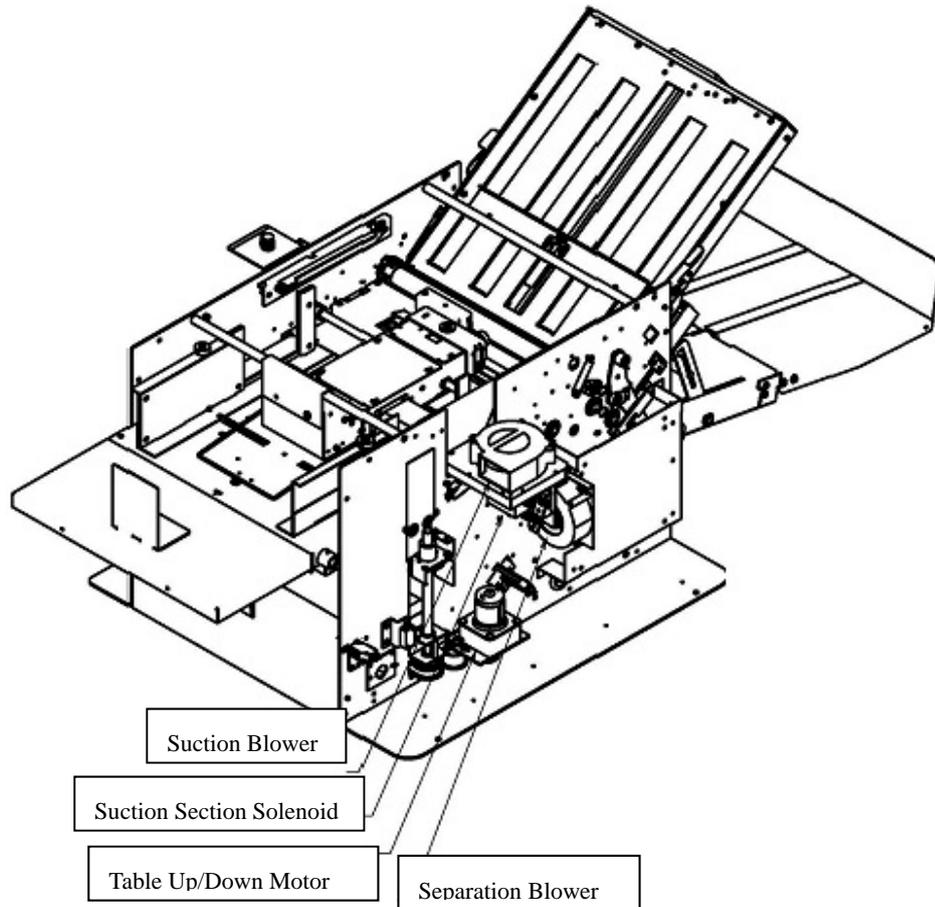
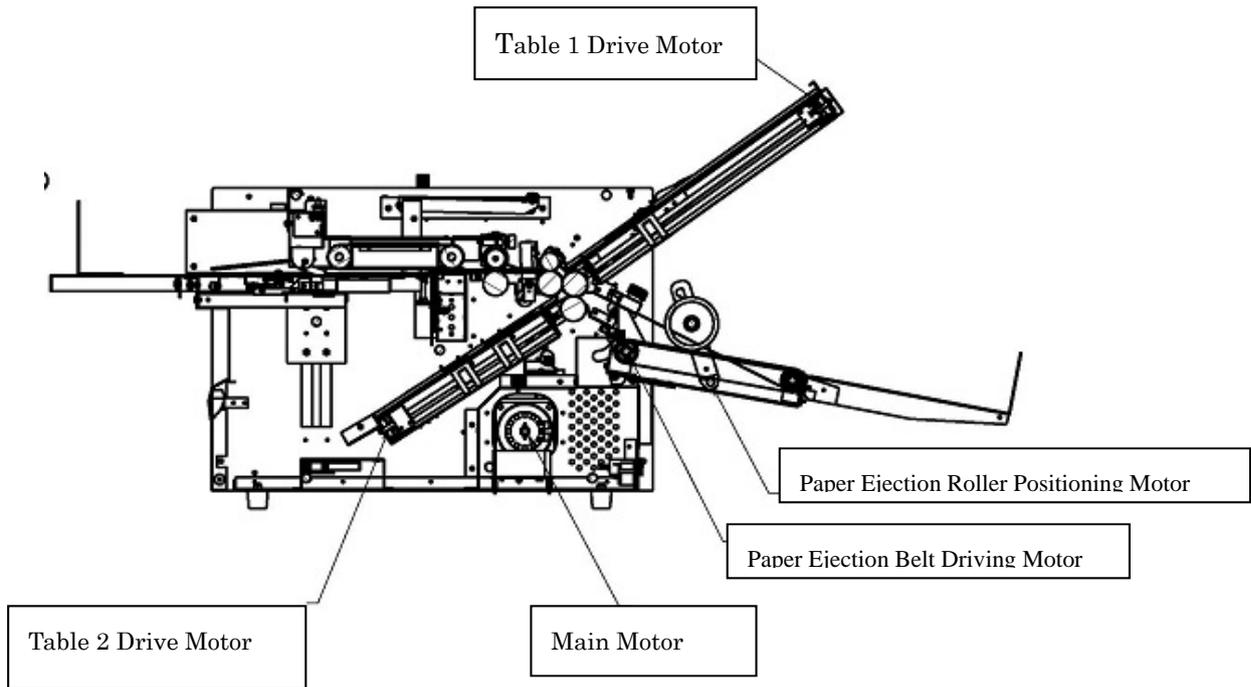
1) Layout Drawing of Overall Machine



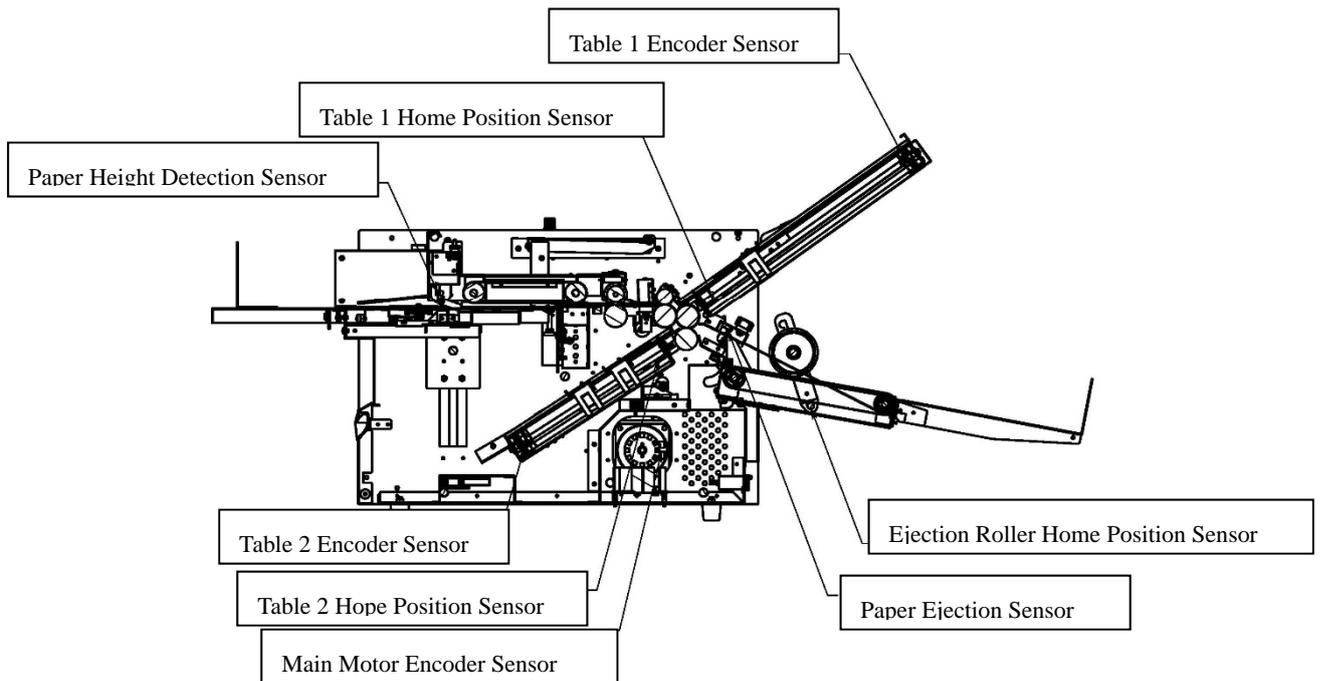
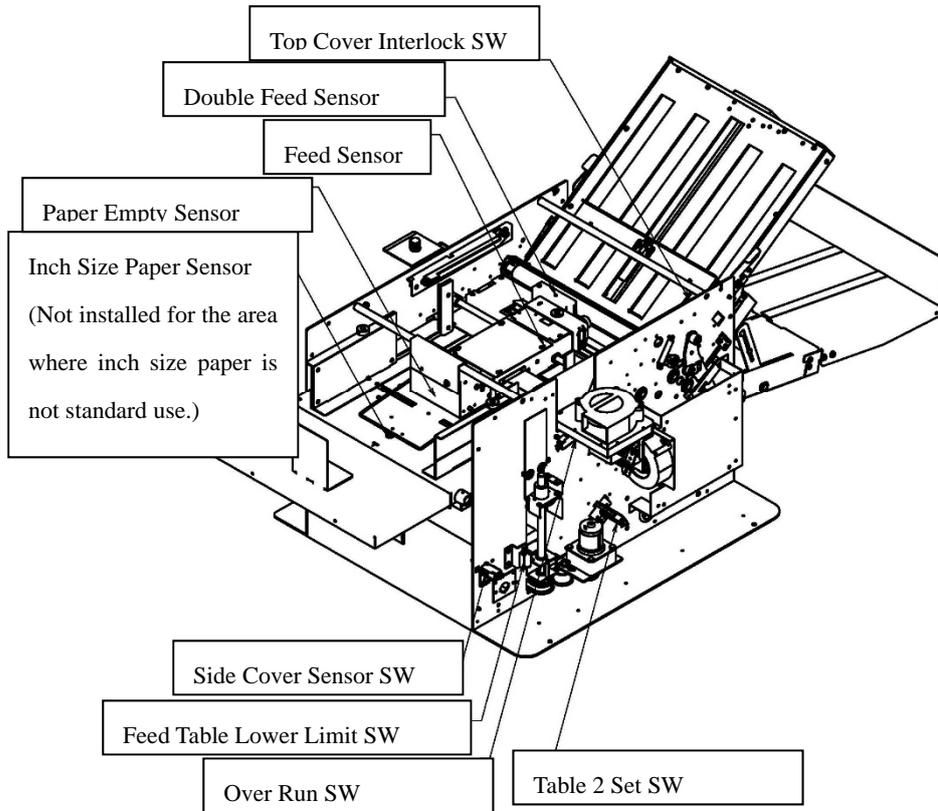
2) Covers



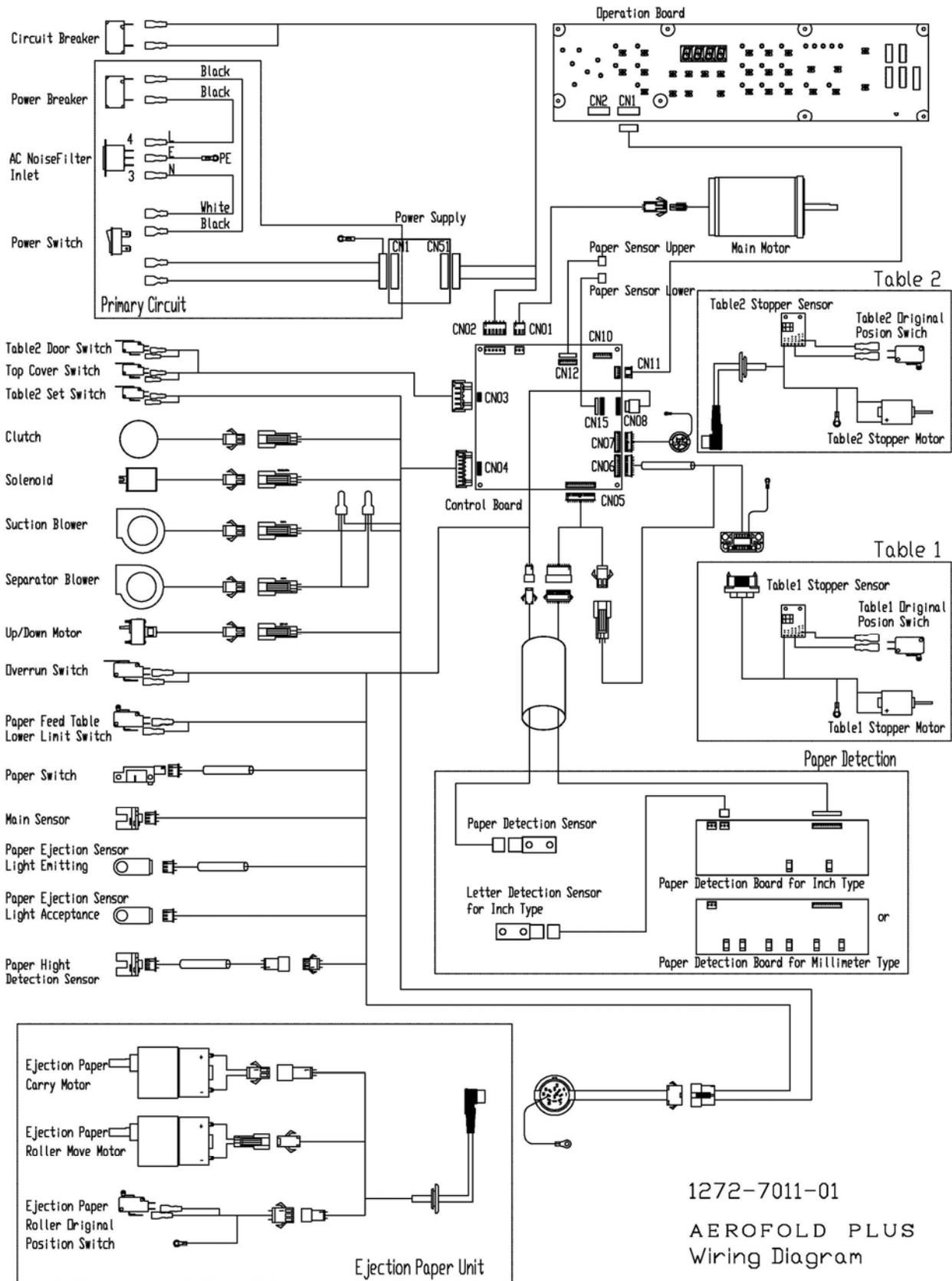
3) Layout of Motor and Solenoid



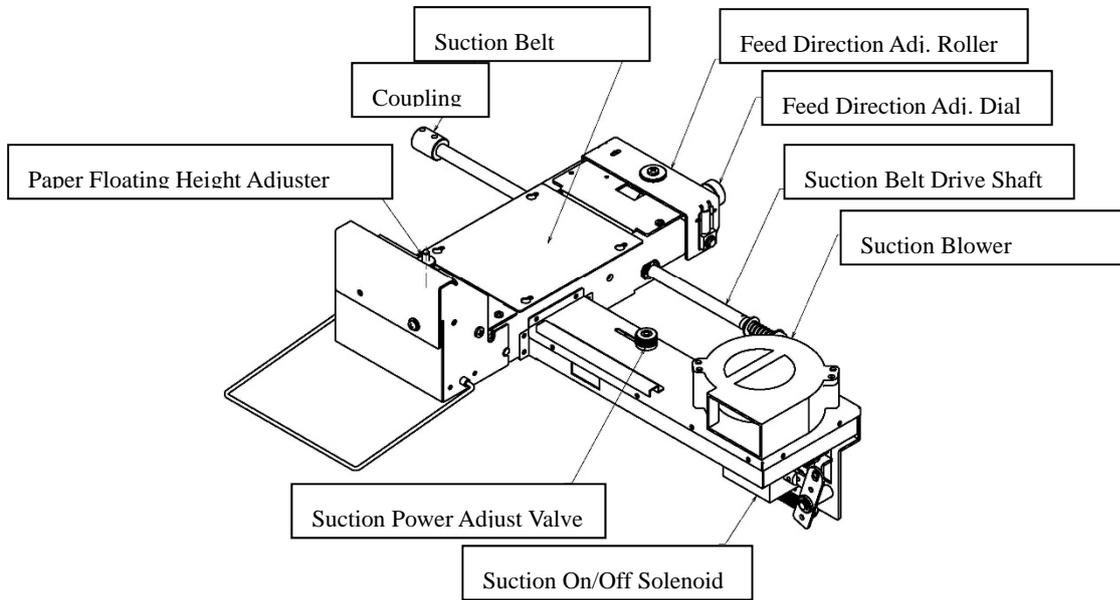
4) Layout of Sensors, Switch (SW) and Solenoids



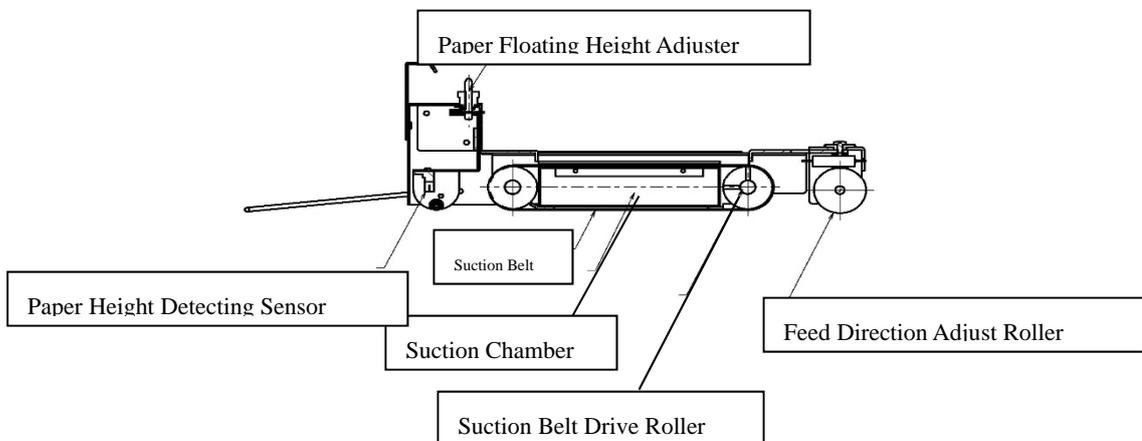
5) Wiring Diagram



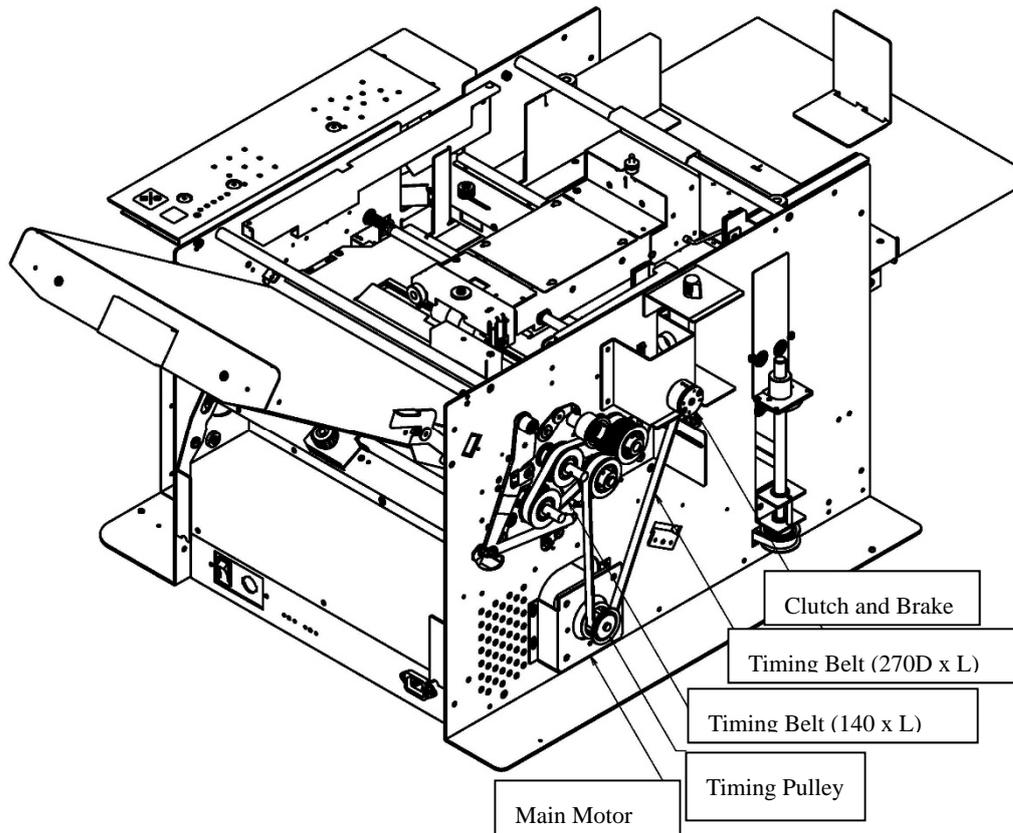
6) Suction Section



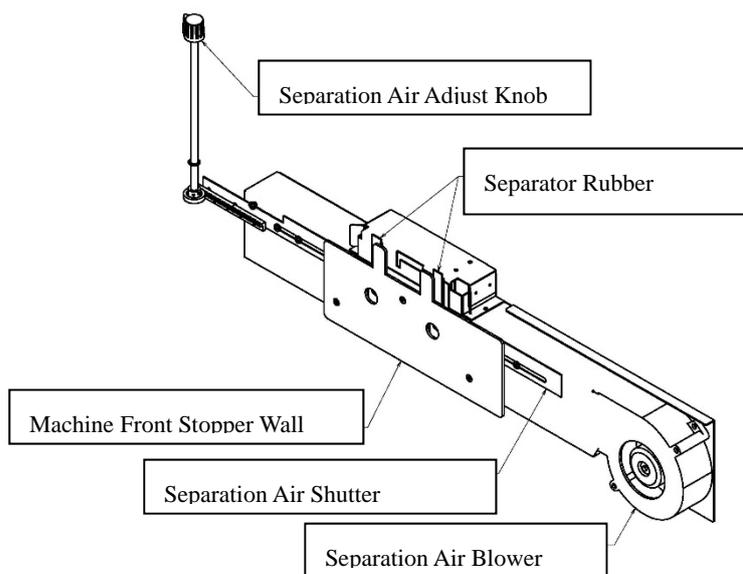
7) Paper Height Detection Section



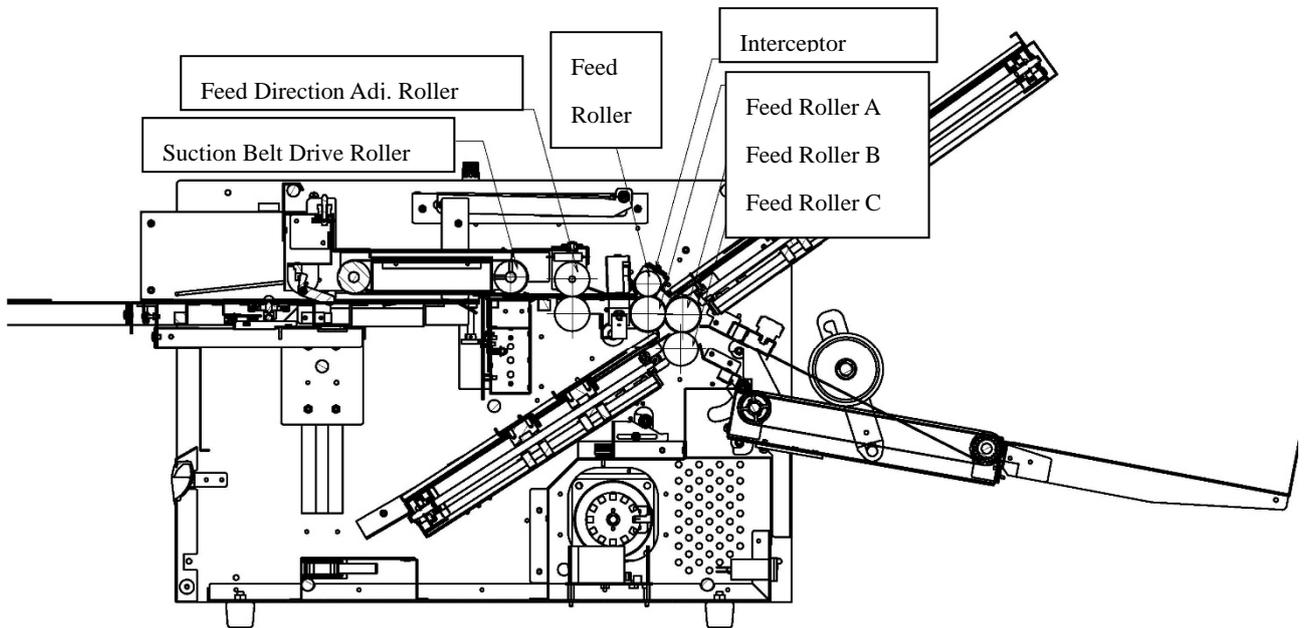
8) Drive Section



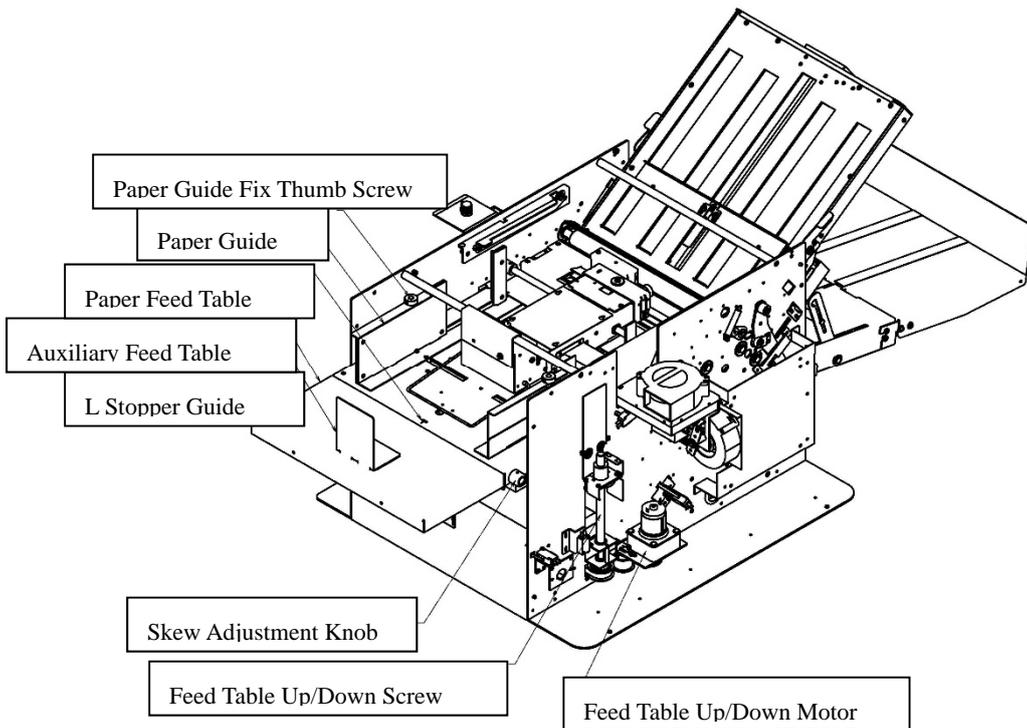
9) Separation Air Section



10) Paper Transportation Section



11) Paper Feed Table



12) Control Section



Main PCB

Power Switch

Switching
Power Supply

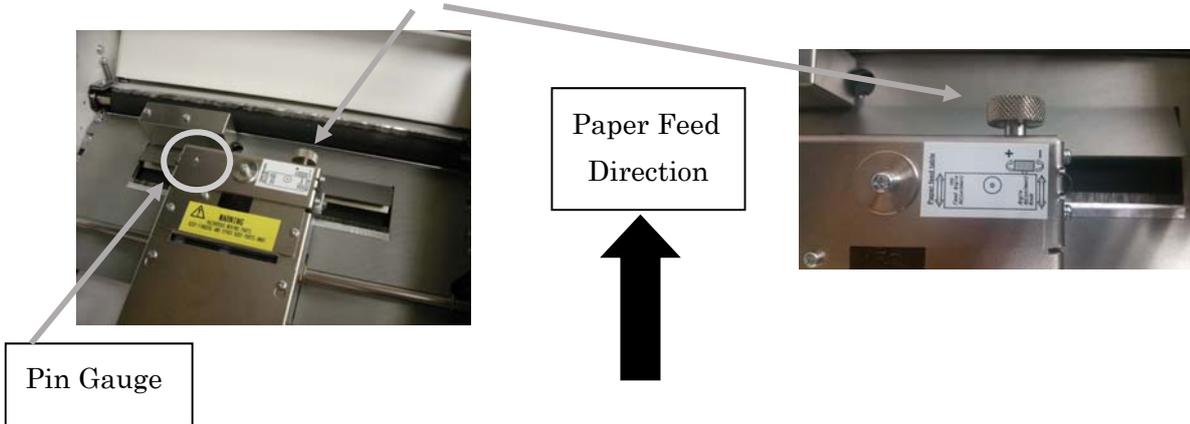
Main Motor

13) Option

- (1) Perforator: SRA3 (W320xD450mm) size is applicable for perforation.
- (2) Scoring: SRA3 (W320xD450mm) size is applicable for scoring.
- (3) Large Capacity Stacker: Can install Extension Conveyor for Ejection Table.
- (4) Table 2 Interceptor: Capable of Folding Longer A4 (W210xD580mm) or 680mm length paper can be folded into two (2).

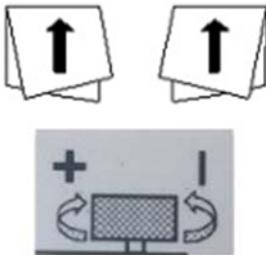
7. Skew Adjustment

1) By Feed Angle Adjustment Dial for minor adjustment (Approx. up to 129g/m2 paper)



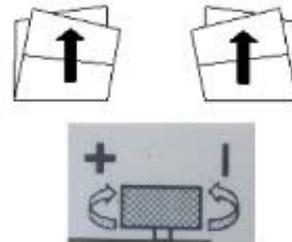
(1) Turn Feed Angle Adjustment Dial + or - depending on the status of skew.
Refer figures below and Pin Gauge.

(Ex.: Single Fold)



Turn + Direction Turn - Direction

(Ex.: Double Parallel and All Others)



Turn + Direction Turn - Direction

Skew Adjustment by Fold Pattern						
Fold Pattern	Single Fold		Double Parallel		Fold Out	
Skew Direction						
Paper Feed Direction						
Feed Angle Adj. Dial (Belt Feeder)	Turn -	Turn +	Turn -	Turn +	Turn -	Turn +
Skew Adj. Knob (Table)	Direction	Direction	Direction	Direction	Direction	Direction
Fold Pattern	Letter Fold		ZigZag		Gate	
Skew Direction						
Paper Feed Direction						
Feed Angle Adj. Dial (Belt Feeder)	Turn -	Turn +	Turn -	Turn +	Turn -	Turn +
Skew Adj. Knob (Table)	Direction	Direction	Direction	Direction	Direction	Direction

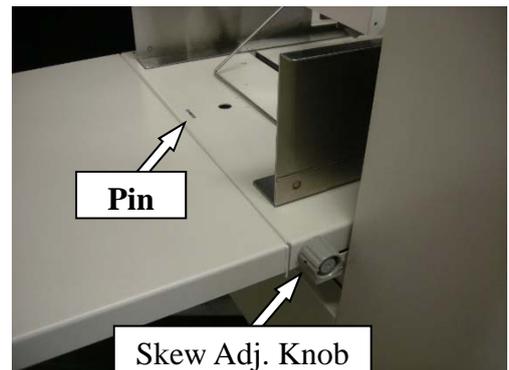
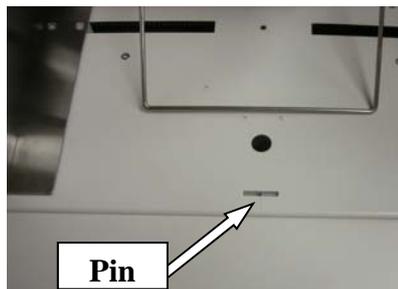
2) Adjustment by Paper Feed Table for relatively major adjustment

(Approx. over 129g/m² paper)

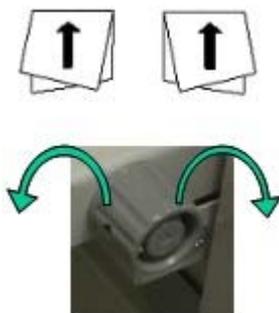
Firstly table angle adjustment is used when loading paper on the Feed Table so that there should be no gap between leading edge of paper and machine front stopper wall. Refer Notes and Drawing of the following page.

Thereafter, in case skew is not correctable by the Angle Adjustment Dial, as above 7-1), adjustment by Skew Adjustment Knob is used, i.e., whole Paper Feed Table is rotated.

Count degree of turn such as 1/4 turn of the Skew Adjustment Knob or Pin position, to measure how much the Table is rotated.

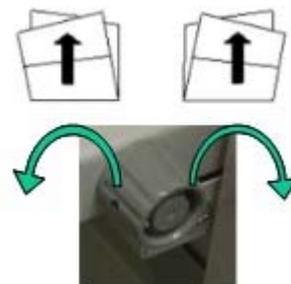


(Ex.: Single Fold)



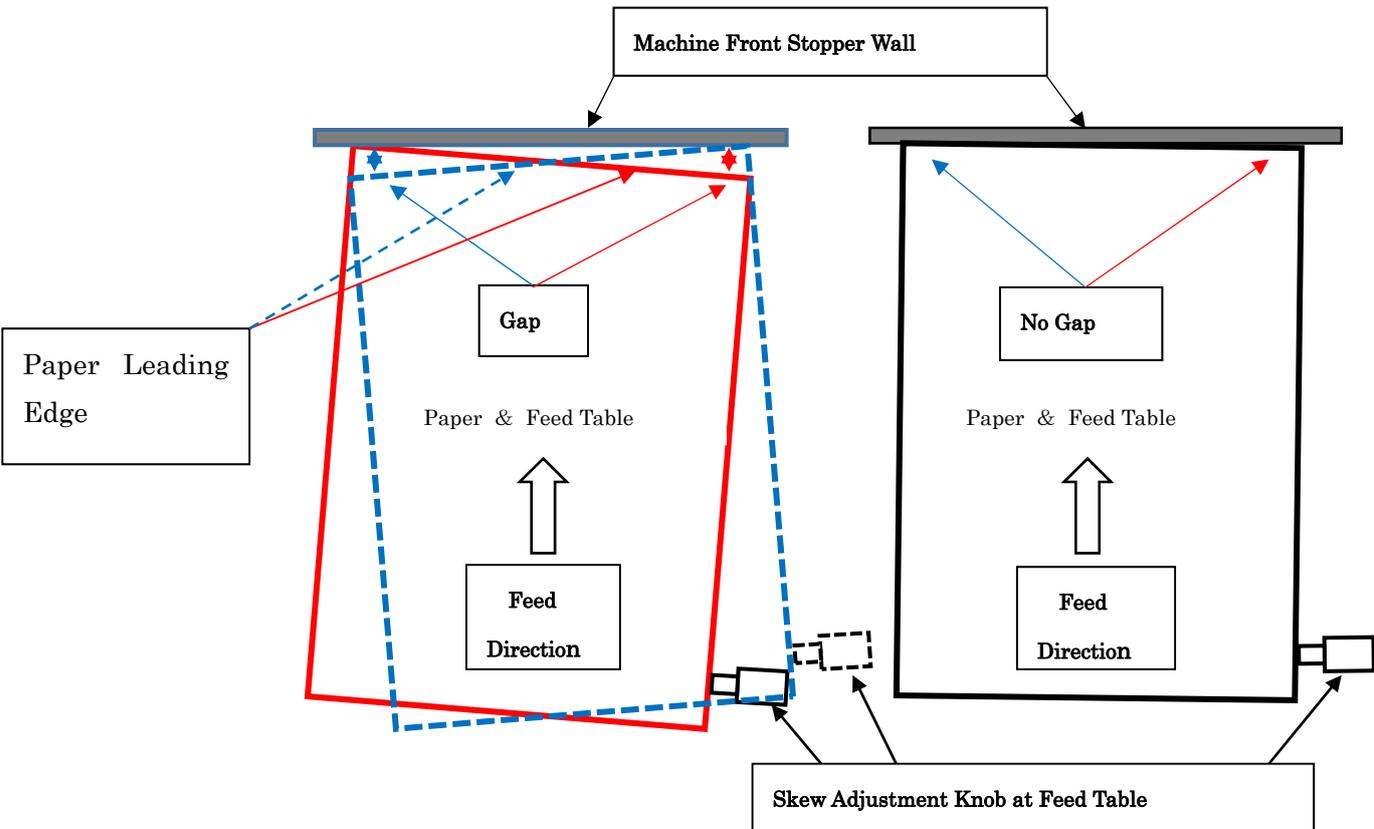
Turn Counterclockwise or Clockwise

(Ex.: Double Parallel Fold or All Others)



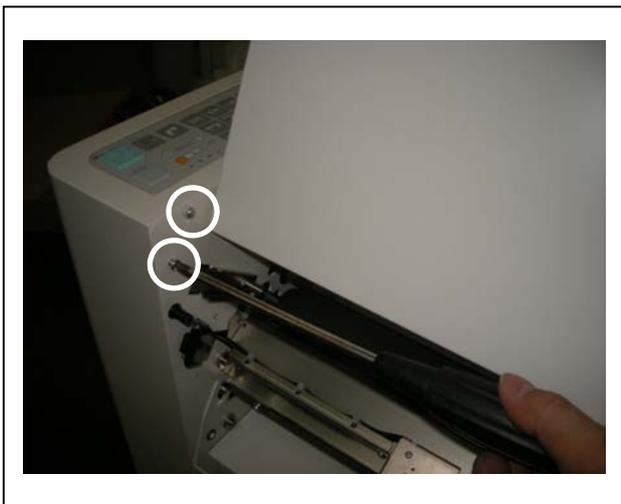
Turn Counterclockwise or Clockwise

IMPORTANT: Leave no gap between Leading Edge of the Paper and Machine Front Stopper Wall. Such gap may cause paper skew. Use Feed Table Skew Adjustment knob at Feed Table to remove unnecessary gap between Paper Leading Edge and Machine Front Paper Stopper Wall.

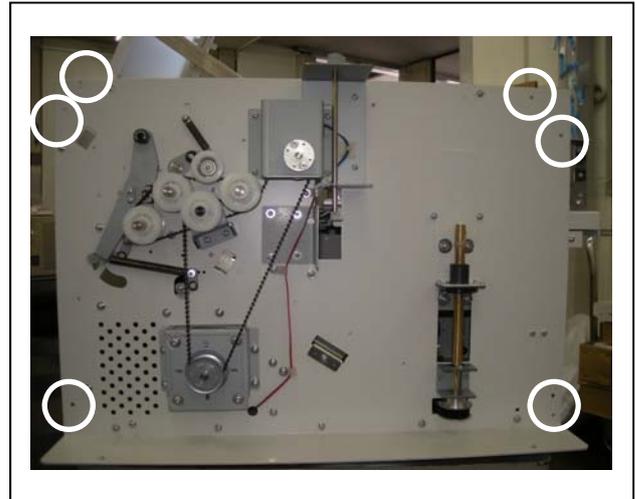


8. Disassembling Suction Belt Assembly (Exchanging Suction Belt)

1) Remove firstly Table 1 and Paper Ejection Table. Then, remove Left (rear) and Right(front) Cover.



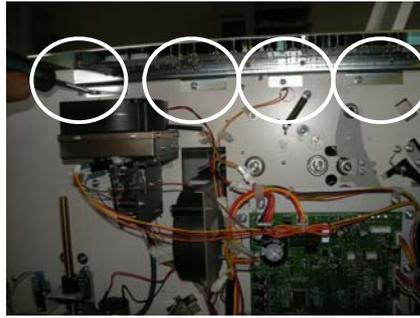
Screws are located inner side of machine.



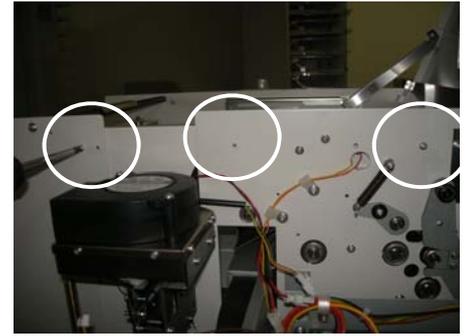
6 Fixing Screws.



Remove Connector of Operation Panel



4 Fixing Screws.



Remove Screw
Bracket for Cover.
3 Fixing Screws.



Bracket of Cover is removed.



Remove Feed Angle Adj. Unit.
2 Screws.



Feed Angle Adj. Unit is removed.



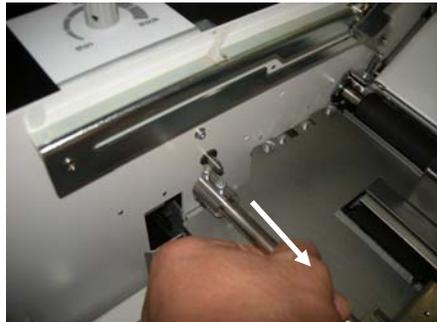
Remove Paper Floating Height Adjuster.
2 Screws.



Paper Floating Height Adjuster is removed.



Remove Coupling.
2 Fixing Screws.



By pulling the direction of
arrow, remove the shaft.



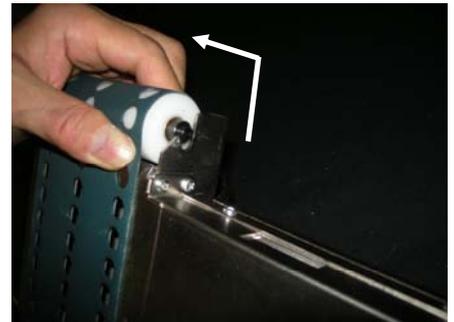
Remove Coupling from
shaft by pulling it out.



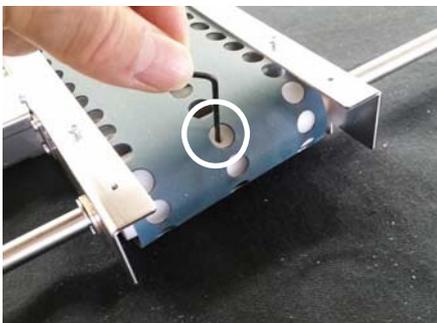
Remove Wiring Connector
and remove Suction Assy.



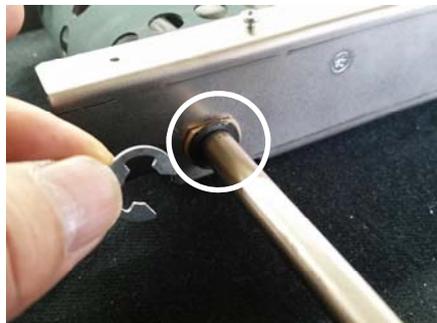
Loosen Screws and remove Safety
Cover.



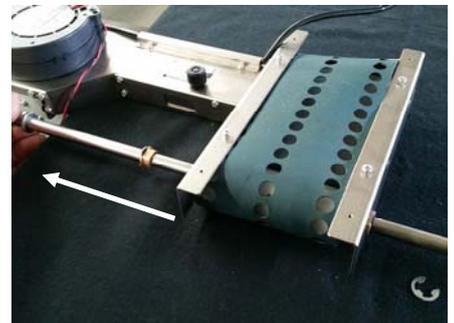
Remove Pulley by pulling
angled direction.



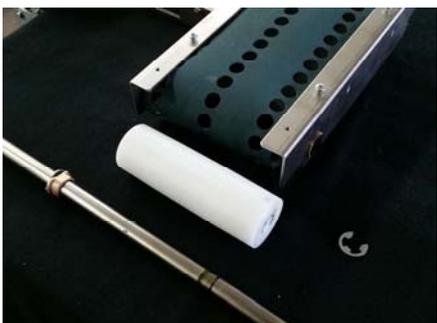
Remove 2mm Hex Screw which
are fixing Plastic Roller to the
Shaft. (2 screws)



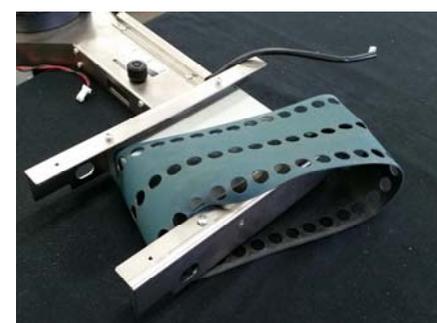
Remove E-Ring.



Pull out the Shaft per
arrow direction.



Drive Roller and Drive Shaft
are removed.



Replace Suction Belt.

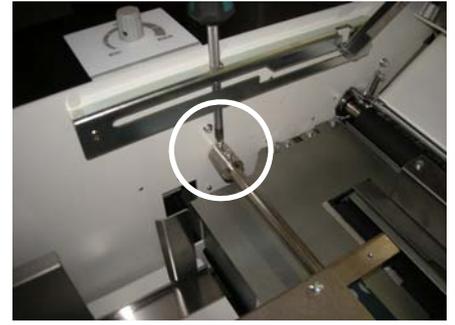


Take note for direction of Belt
Rotation by Arrow Mark.

2) For assembly, take reverse procedures of removal.

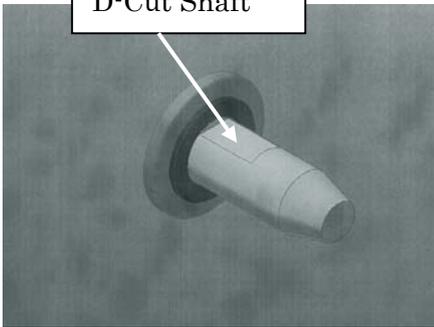


Take note for assembly sequence.



IMPORTANT: While pushing Clutch Shaft by Minus Screw Driver, fix screw for Coupling

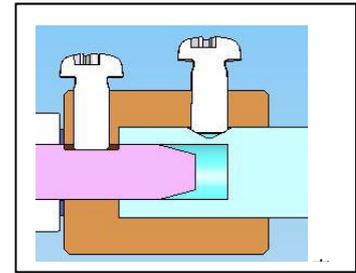
D-Cut Shaft



Drilled Shaft



IMPORTANT: Make sure positions of Fixing Screws are right positions as per the drawing below. Match the recess.



3) By Test Mode, check that the Suction Belt and linked Shaft and Other Related Parts runs smoothly as per the procedures described below.

(1) Setting Test Mode

- (i) Turn Power Switch on.
- (ii) While keep pressing Clear Key, press Test Key for more than 2 seconds.
- (iii) At the Operation Panel, Jam Map lamps flickers indicating Test Mode is on.
- (iv) Release fingers from Clear and Test Keys.

(2) Set speed at lowest (1).

(3) Press Memory Key M1 and Main Motor starts to rotate.

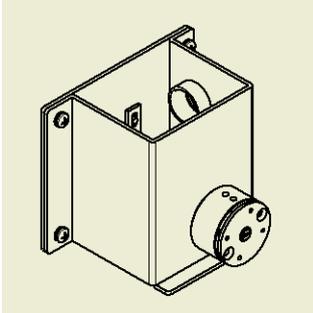
(4) Press Memory Key M2 and Clutch is activated and Suction Belts starts to rotate.

(5) For some time period, watch how these parts work. No slippage of Suction Belt. No meandering of the Suction Belt, etc.

(6) To end Test Mode, while pressing Clear Key, press Test Key.

9. Exchanging Clutch Unit

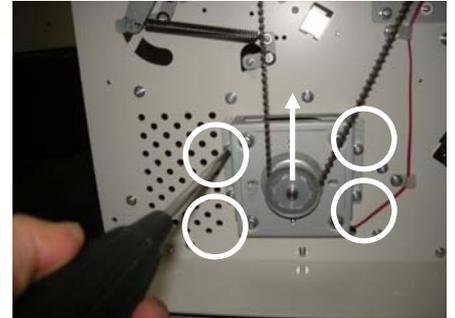
1) Clutch and Brake Unit must be exchanged by a complete assembly. Do not exchange one or several individual components.



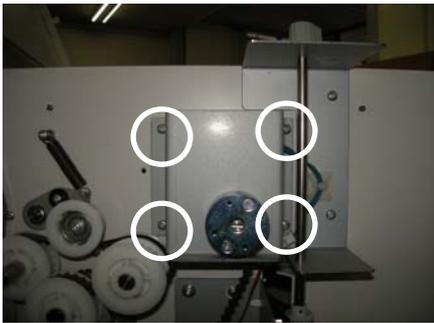
Clutch Unit Assembly as supplied.



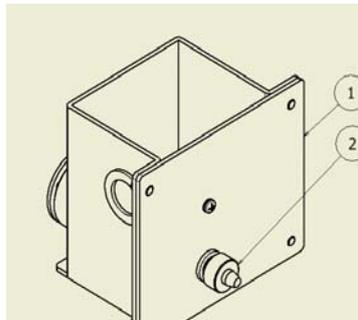
Remove screws of Coupling.



Loosen tension of Timing Belt by loosening 4 fixing screws.



Remove Clutch Unit Assembly.



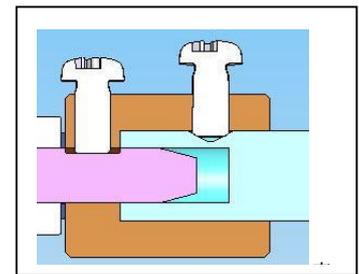
From Clutch Unit Assy, remove #1 Plate and #2 Collar. They are not used for the machine.



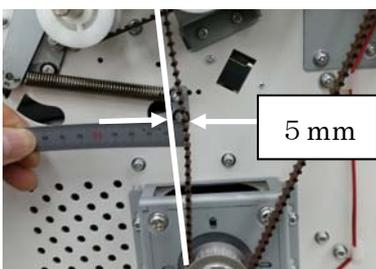
Mount the new Clutch Unit Assy. to the machine.



IMPORTANT: While pressing shaft by Minus Driver, fix Coupling by two (2) screws.



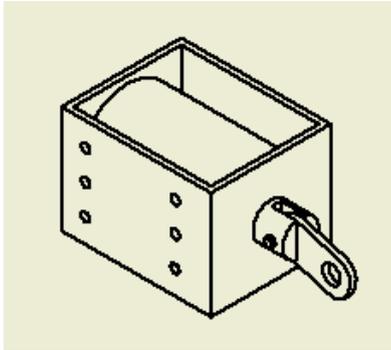
IMPORTANT: Make sure positions of Fixing Screws are right positions as per the drawing above. Match the recess.



Mount Timing Belt. Belt tension must be controlled by giving 5mm distance when the belt is pushed.

10. Exchanging Solenoid Unit

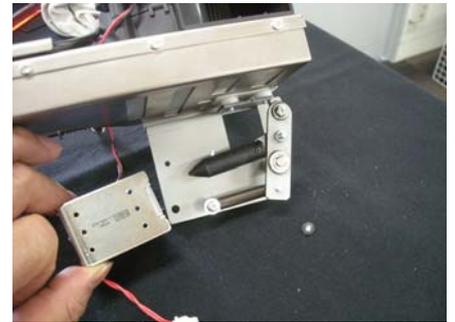
1) Exchanging Solenoid Assy. of Suction Section.



Solenoid Unit as supplied.



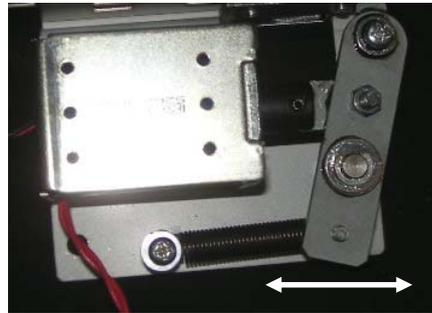
Remove 2 Solenoid Fixing Screws.



Solenoid unit is removed.



Loosen M4 Nut and remove Plunger Assy.

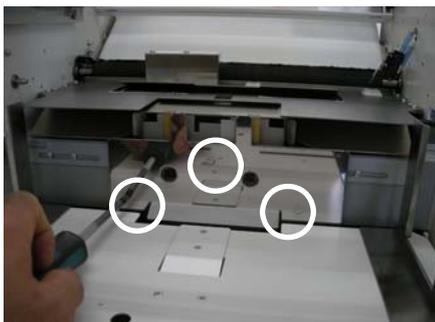


After Solenoid Unit is exchanged to new, manually move linkage per arrow mark and confirm that it moves smoothly.

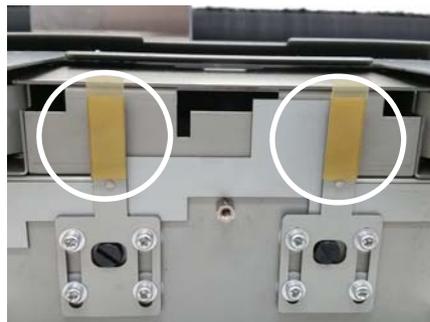
11. Replacing Separator Rubber

1) Replacing Separator Rubber at Paper Separation Section

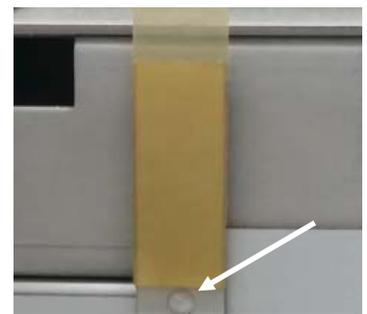
It should be done, after Suction Assembly is removed per Section 10 above.



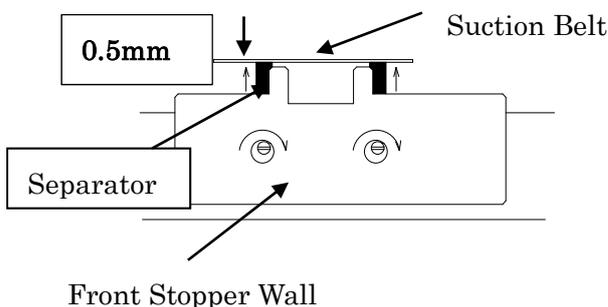
Remove Front Stopper Wall by removing 3 screws.



IMPORTANT: Both Two Separators must be replaced at one time.



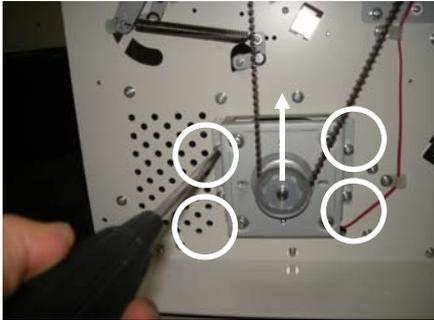
Bottom edge of Separator Rubber is leveled to the Nipple.



After Separator Rubbers are exchanged to new, adjust that gap between Separator Rubber and Suction Belt leaves approximately 0.5mm paper path gap.

12. Replacing Timing Belt

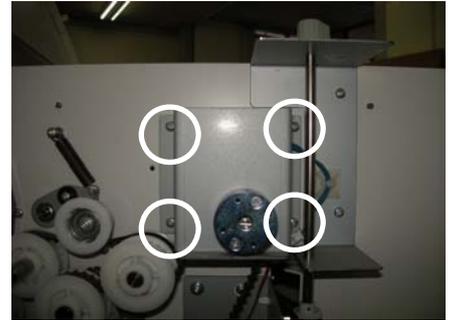
1) Replacing Drive Timing Belt (270DXL037)



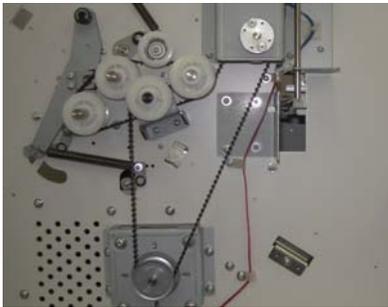
Loosen Timing Belt Tension by loosening 4 screws.



Remove Screws of Coupling.



Remove Clutch Unit Assembly.



Replace Timing Belt. Belt tension must be controlled by giving 5mm distance when the belt is pushed. Refer page 27.



IMPORTANT: While pressing shaft by Minus Driver, fix Coupling by two (2) screws.



2) Replacing Timing Belt (140XL037) for Transport Section



Remove Tension Roller Bracket. (2 Screws)



Remove Screw of Idler Roller.

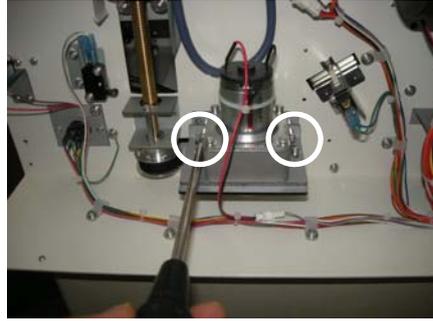


Replace with new Timing Belt and mount in reverse procedure.

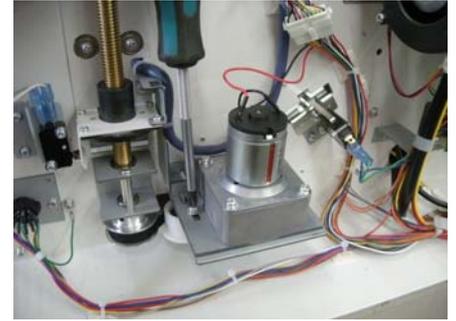
3) Replacing Timing Belt (424XL037) for Up/Down Lifter for Paper Feed Table



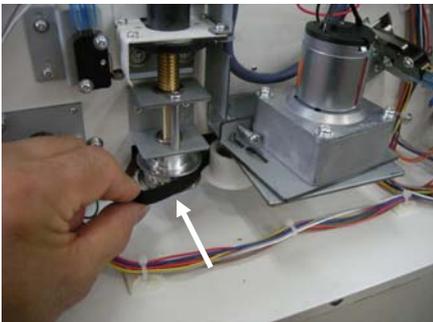
Loosen M4 Nut for Tension Adjustment Screw. (2 Nuts)



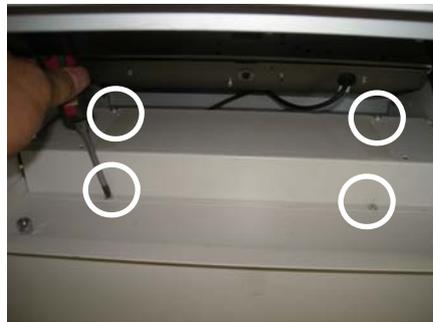
Loosen Tension Adjustment Screw for approx.. 12mm. DO NOT REMOVE SCREW COMPLETELY.



Remove Motor Mounting Screw. (2 screws)



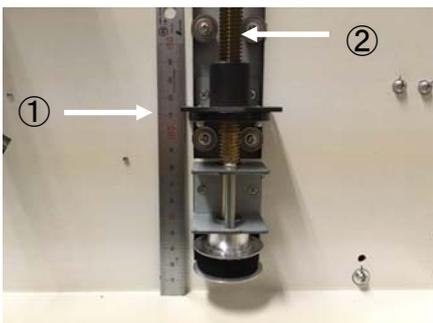
Timing Belt is removed.



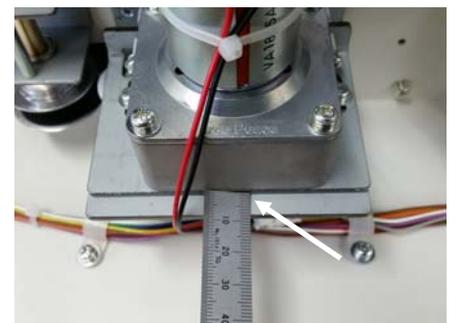
Open Door for Table 2 and open Belt Cover.



Replace with new Timing Belt and assemble in reverse procedure.

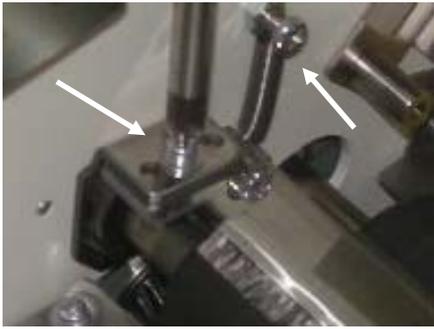


IMPORTANT: Before giving tension to New Timing Belt:
(i) Make trapezoidal nuts right and left are in the same level.
(ii) Adjust in the same level for left and right height of nuts by rotating trapezoidal nuts.



The distance of arrow mark should be approx.. 8mm when belt tension is properly adjusted.

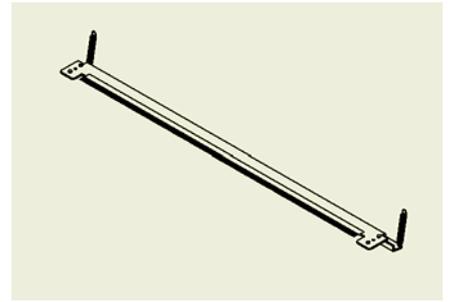
13. Replacing Interceptor



Remove Mounting Screw and Spring.



Mounting Screw and Springs are located in both sides.



Replace with a new Interceptor and mount in reverse procedure.

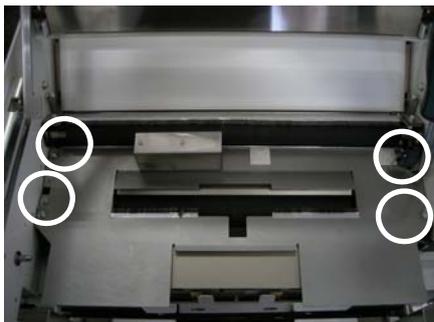
14. Removing Paper Guide at Transport Section (Replacing Feed

Sensor and/or Ultrasonic Double Feed Sensor)

Remove Paper Guide first and replace Sensors. Also, refer paragraph 8, removing suction belt unit.



Remove Screws for Paper Guide.



4 Screws in total. 2 each on both sides.



Remove Connector for sensor.



Paper Guide is removed.



Turn Paper Guide upside down and replace Feed Sensor.



By removing Paper Guide, Lower portion of Ultrasonic Sensor is visible. Replace the Sensor.

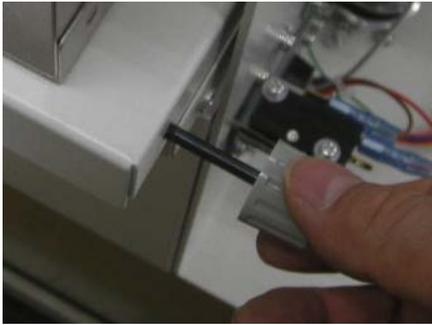


By removing Sensor Cover on the Paper Guide, upper Ultrasonic Sensor is visible. Replace Upper Ultrasonic Sensor.

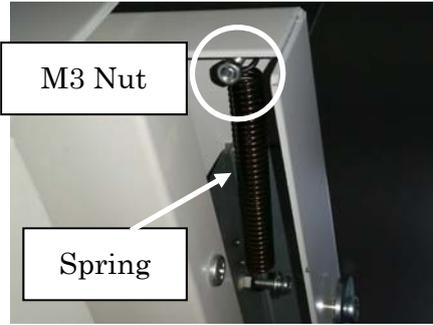
15. Removing Paper Feed Table (Replacing Paper Empty Sensor and/or Paper Sensor for Inch Size Paper)

Firstly, remove Paper Suction Unit. Refer paragraph 8, removing suction belt assembly.

NOTE: Sensor for inch size paper is only mounted to the area where inch size paper is used in standard.



Remove Skew Adjustment Knob at Feed Table turning it counterclockwise.



Remove M3 Nut used for spring hook.



Remove spring by using fine plier.



Remove screws for Paper Feed Table. (M3 Countersunk screw 4 pcs)



Remove Paper Guides on both sides from Paper Feed Table (M3 Countersunk screw 4 pcs)



Remove Paper Guide Lock Screw.



Remove Cover of Up/Down Lift unit. (M4 Screw 4 pcs)



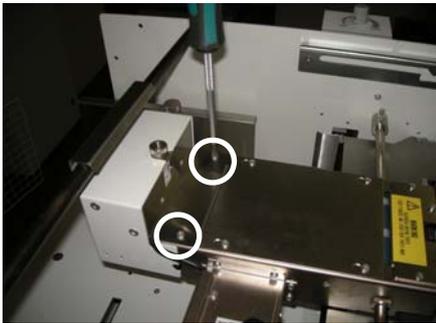
Cut Cable Tie and remove Wiring Connector.



Replace Paper Empty Sensor.

16. Replacing Other Sensors

1) Replacing Paper Floating Height Sensor



Remove adjustment unit of Paper Floating Height Sensor.
(2 Screws)



Remove Cover. (4 Screws)



Replace Paper Floating Height Sensor.

2) Replacing Top Cover Switch



Remove Mounting Bracket of Top Cover. (2 Screws)



Remove Top Cover Switch.
(2 Screws)



Replace Top Cover Switch.

3) Replacing Paper Ejection Sensor



Remove Paper Ejection Upper Cover and Lower Cover.

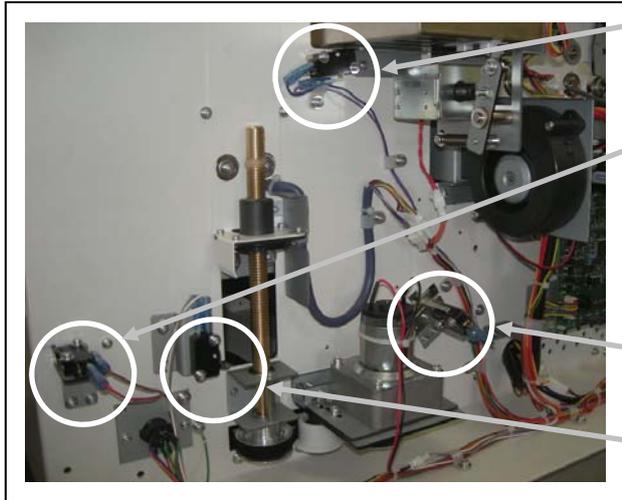


Remove Sensor Cover.
(2 Screws)



Replace Paper Ejection Sensor.

4) Replacing Other Sensors



Over Run Switch

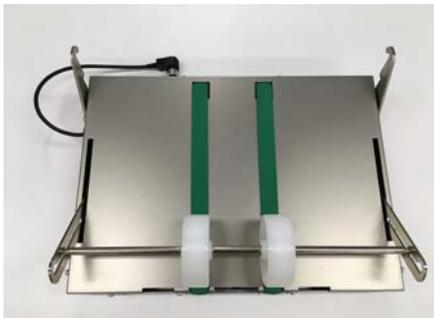
Side Cover Switch

Table 2 Set Switch

Feed Table Lower Limit
Switch

17. Replacing Paper Ejection Belt and Replacing Ejection Roller Home

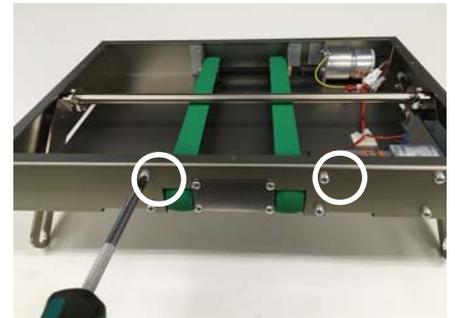
Position Switch



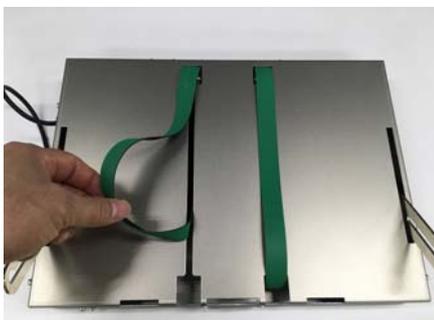
Remove Paper Ejection
Table from Machine.



Remove Cover from back
side of the Table.



Remove Drive Pulley and Idle
Pulley for Paper Ejection.



Remove Belt as shown.



After replacing with new
Belt, assemble in revers
procedure.

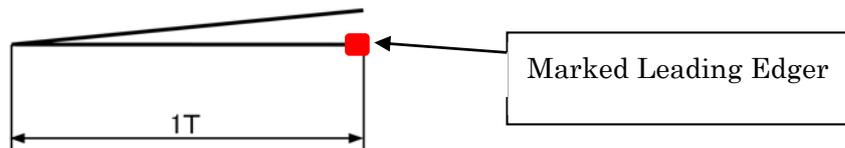


Replace Paper Ejection
Home Position Switch.

18. Zero Setting of Folding Table

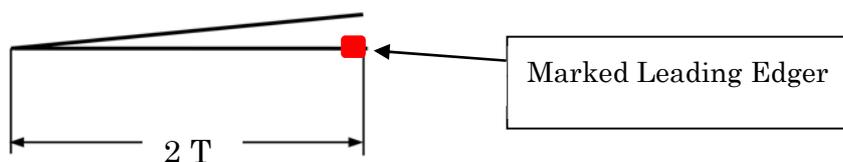
1) Adjustment of Table 1 (Upper Folding Table)

- (1) Use Offset paper A3 (297 x 420mm), 80g/m²
- (2) Mark paper feed leading edge by marker. ■
- (3) Set speed at 3 (Middle Speed).
- (4) Load paper on Paper Feed Table setting marked leading edge facing Machine Front Stopper Wall.
- (5) Press Fold Pattern “Double Parallel Fold”.
- (6) Test fold and open the paper as if it is single fold.
- (7) Measure 1T length. 1T should be 1/2 of 420mm (=210mm).
- (8) If there is any difference between actually folded 1T measurement and 210mm, compensation value should be put into the machine, i.e., difference off (= 210 – 1T).
- (9) To input compensation value of Table 1, press “C Key and 1000 Key” simultaneously for over 2 seconds.
- (10) To lengthen 1T, press “+ Key”.
To shorten 1T, press “- Key”.
- (11) After compensation value is input, press “Store Key”.



2) Adjustment of Table 2 (Lower Folding Table)

- (1) Do the same preparation procedure of 1)-(1) thru 1)-4) for Table 1 above.
- (2) Press Fold Pattern “Single Fold”.
- (3) Measure 2T length. 2T length should be 1/2 of 420mm (210mm).
- (4) If there is any difference between actually folded 2T measurement and 210mm, compensation value should be put into the machine, i.e., difference of (= 210 – 2T).
- (5) To input compensation value of Table 2, press “C Key and 100 Key” simultaneously for over 2 seconds.
- (6) To lengthen 2T, press “+Key”.
To shorten 2T, press “-Key”.
- (7) After compensation value is input, press “Store Key”.



19. Test Mode

1) Getting into Test Mode

- (1) Turn Power Switch on.
- (2) While keep pressing “Clear Key”, press “TEST Key” for more than 2 seconds.
- (3) As JAM Map Lamps start to blink, release fingers from “Clear Key” and “TEST Key” and machine is in Test Mode.
- (4) Keys relative to Device is listed in the chart below.

2) Getting out of Test Mode

- (1) Turn off Power Switch.

Key v.s. Activated Device during TEST Mode:

Key	Activated Device
M1 Key	Main Motor
M2 Key	Blower
M3 Key	Clutch
Store Key	Solenoid (Suction Valve)
Interval Key	Aging
Table 1 Stopper Position Adjust Key	Move Table 1 Stopper Position
Table 2 Stopper Position Adjust Key	Move Table 2 Stopper Position
Ejection Roller Position Adj. Key	Change Ejection Roller Position 1 thru 8
Paper Feed Table UP/Down Key	Paper Feed Table up or down
Speed Selection Key	Setting Speed 1 thru 5

Double Feed Sensor during Test Mode

During Test Mode, status of Ultrasonic Double Feed Sensor is indicated by "Double Feed Key Lamp".

By putting two sheets between the Sensors, "Double Feed Key Lamp" lights.

IMPORTANT FACTS TO KNOW:

Ultrasonic Double Feed Sensor detects double feed of any white, printed, transparent, black or mixture of them quite accurately. Principle of the sensor is that it detects absolute physical air gap between the two sheets. However, pasted or fused sheets are not detected as there is no physical gap, i.e., regarded as single sheet.

20. Check Lamps, Error Codes and Troubles

1) If Check lamp (1) is flashing it may indicate:

- (1) Empty paper
- (2) Paper Feed Table is stack.
- (3) Failure of the Paper Height Sensor
- (4) Empty feed
- (5) Excessive loading of paper



2) If Check lamp (2) is flashing it may indicate:

- (1) Improper setting of Table 1
- (2) Stopper lock at Table 1



3) If Check lamp (3) is flashing it may indicate:

- (1) Electric plug of Table 2 is not inserted
- (2) Stopper lock of Table 2

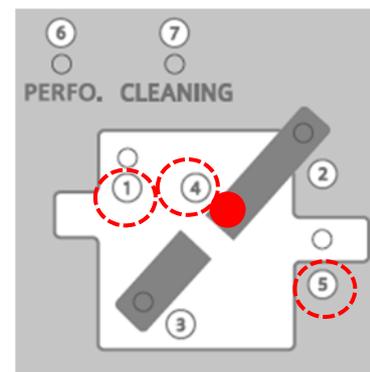


4) If Check lamp (1), (4) and (5) are flashing, it may indicate:

- (1) Double Feed Paper. ○ ○ ○

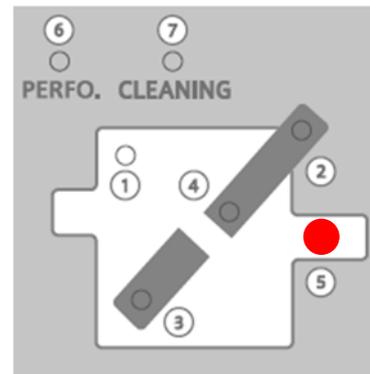
5) If Check lamp (4) only is flashing, it may indicate:

- (1) Paper Jam ●



6) If Check lamp (5) is flashing it may indicate:

- (1) Electric plug of the Paper Ejection Unit is not inserted
- (2) Ejected paper is full
- (3) Ejected paper jamming.
- (4) Paper ejection sensor is dirty by dust or ink



6) If Check lamp (6) is lit, it may indicate:

Perforator Unit (Optional) is installed

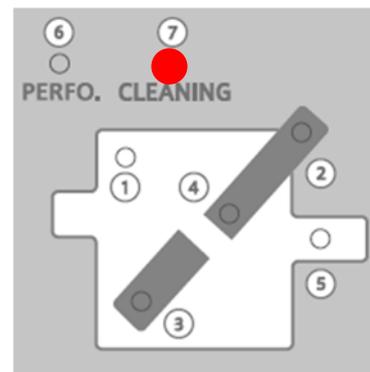


7) If Check lamp (7) is lit, it may indicate:

It lights after every 10,000 sheets of paper folded.

- For reset, turn on the machine while pressing – Key.
- You can disable this function when you turn on the machine while keep pushing [Single (Fold type)] key.
- You can activate this function again when you turn on the machine with [Gate (Fold type)] key pushed.

Clean the Paper Transport Belt as frequently as needed depend on the printing condition and paper quality even before the cleaning lamp is lit.



21. Troubleshooting

Symptom (1/3)	Possible Cause of Trouble	Suggested Countermeasure
Machine power does not turn on, even Power Switch is turned on.	Power cable is not connected to power supply.	Plug in Power Cable Connector to electric supply firmly.
	Circuit breaker of Machine is activated.	Reset Circuit Breaker.
	Contact Failure of Power Switch	Replace Power Switch.
	Contact Failure of Noise Filter	Plug in Noise Filter Plug firmly.
	Connector is unplugged for Control PCB or DC Power Supply	Plug in connector firmly.
	Failure of DC Power Supply Unit.	Replace Power Supply Unit.
	Failure of Control PCB	Replace Control PCB.
Stopper Plate does not move.	Connector Plug of Table 2 is pulled out	Firmly plug in the connector.
	Paper jam at inside Table 1 or 2	Remove paper jam by taking out Table 1 or 2 from machine.
	Photo Sensor is dirty	Clean photo sensor.
	Motor is out of order for Table 1 or 2	Replace motor of Table 1 or 2.
	Control PCB is out of order	Replace Control PCB.
Frequently Paper Ejection jams.	Position of Ejection Roller is not set suitable for paper size used.	Relocate Ejection Roller at suitable location.
	Full of Paper at Ejection Table.	Take out folded paper.
Ejects paper but no paper is fed in.	Dirt sticking or Dirty photo sensor.	Clean ejection photo sensor.
	Control PCB is out of order	Replace Control PCB.
No detection of paper size	Not standard norm paper is used.	Input paper length of non standard norm paper.
	Contact failure of Connector	Plug in connector firmly.

Symptom (2/3)	Possible Cause of Trouble	Suggested Countermeasure
Folded paper wrinkles	Paper torn chip is sticking on surface of Folding Roller.	Remove paper jam by taking out Table 1 or 2 from machine.
	Dirty Folding Roller	Clean Folding Roller.
	Paper grain is set in landscape direction or softer grain paper is used.	Try with slower speed.
	Out of standard specification paper is used	Use paper within machine specification.
Frequently slippage of sheet occur	Paper Feed Belt or Paper Feed Roller is covered with paper dust or dirty ink.	Clean Paper Feed Belt or Paper Feed Roller.
	Worn out Paper Feed Belt.	Replace Paper Feed Belt.
	Out of specification paper is used.	Use paper within machine specification.
	Dirt or Dirty Separator	Clean Separator.
	Separator position is too high.	Set Gap between Separator and Paper Feed Belt at 0.5mm. Use feeler gauge.
Frequently double feed of sheet occur	Separator is worn out.	Replace Two(2) Separator at the same time.
	Dirty Separator	Clean Separator.
	Sheet is sticking together.	Fan out paper for good separation and set paper on Paper Feed Table again.
	Out of specification paper used.	Use paper which is in specification.
	Top paper separated by blow air is floating too close to Paper Feed Belt.	Lower Paper Height Sensor.
	Too much blow air for paper separation	Reduce blow air of paper separation.

Symptom (3/3)	Possible Cause of Trouble	Suggested Countermeasure
Folding position not adequate	Fine adjustment is not properly done.	Adjust Table 1 Stopper and/or Table 2 Stopper position.
	Changed folding speed during one folding process.	Keep the same folding speed during one folding process,
	Folding Roller is dirty.	Clean Folding Roller.
Frequently paper jam occur.	Paper Feed Table is not square against Machine Front Stopper Wall.	Make Paper Feed Table square by Skew Adjustment Knob at Paper Feed Table.
	Sheet is not cut square.	Make Paper Side Edge square against Machine Front Stopper Wall by Skew Adjustment Knob at Paper Feed Table. Or, use squarely cut paper.
	Torn paper chip stays in paper path.	Clear out paper chip from paper path.
	Dirty Paper Folding Roller	Clean Paper Folding Roller.
	Dirty Paper Feeding Roller	Clean Paper Feeding Roller.
	Excessive static electricity	Spray static electricity remover.
Paper bends at unexpected place. Or, Paper does not feed even START Key is pressed.	Excessive warp of paper.	Correct paper flat manually.
	Folding position is not adjusted properly.	Adjust Table 1 Stopper or Table 2 Stopper position.
	Table 1 and/or Table 2 is not set properly.	Reset Table 1 and/or Table 2 in proper position.
	No paper on Paper Feed Table or Paper Feed Table is at lower position.	Place paper on the Paper Feed Table and lift the Table up.

IMPORTANT:

If printed paper is immediately loaded to the machine for folding, it increases possibility of paper jam, double feed, slippage, paper wrinkle, etc. Make sure that the printing ink is completely dry, statics are gone and paper is well fanned out before loading.

In case the machine is set near fluorescent lamp, paper size sensor may not work properly. In such case, place the machine adequately away from the fluorescent lamp.

22. Error Codes

For each error symptom, the following error code will be displayed.

Error code	Symptom
E-01	No paper
E-02	Neither Table 1 nor Perforating/Scoring unit is installed to the position of Table 1 unit.
E-03	Paper left in Paper Ejection Sensor area, or Paper Ejection Sensor is dirty.
E-04	Internal paper jam
E-05	Ejected paper jam
E-06	Excessive loading of paper
E-07	Sensors need cleaning or Rollers need cleaning.
E-08	Paper Ejection Table Plug is not connected.
E-09	Empty feed
E-10	Table 2 is not installed
E-11	Remove the Paper Ejection Table to use Perforator Unit.
E-12	Out of standard paper size, use Paper Length Manual Input Mode.
E-13	Double Feed Error. Remove Double Fed Paper from Ejection Table.
E-51	The door of the Table 2 is open, or Top Cover is open
E-52	Paper left in Paper Feed Sensor area, or Paper Feed Sensor is dirty.
E-53	Failure of Paper Height Sensor.
E-54	Failure of Feed Table Up and Down Motor
E-55	Failure of Main Motor, or the Encoder is dirty
E-56	Paper Ejection Roller is locked, or Motor Wire is disconnected, or Home Position Micro Switch for Ejection Roller is disconnected or dislocated.
E-57	At Table 1: Stopper is locked, or Stopper Motor is disconnected, or Sensor is disconnected.
E-58	At Table 2: Stopper is locked, or Stopper Motor is disconnected, or Sensor is disconnected.

Note: To clear Error Code from display, press CLEAR/RESET Key after cause of trouble is eliminated.

23. Other Troubleshooting and Cleaning

Refer Operation manual page 47 and on for Cleaning Paper Jam, Cleaning Sensors, Cleaning Fold Roller, Paper Feed Belt and Cleaning Suction Belt.

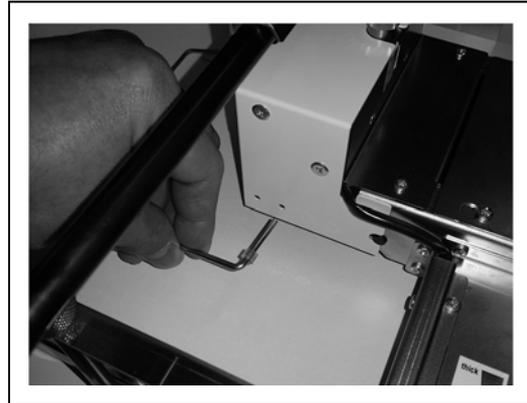
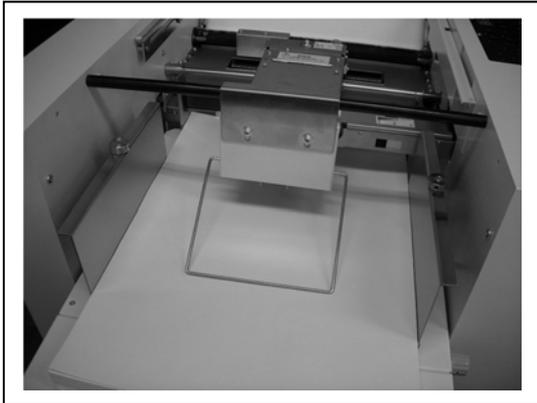
24. Other Adjustable Functions

CAUTION: Turn off the machine and remove Power Supply Cable from the electric outlet.

1) Weight Arm

Weight Arm is supplemental tool for separating paper by air blow on the Paper Feed Table.

It is especially effective for thinner paper. In case the Weight Arm is not necessary, remove and keep it in safety place. The Weight Arm is spring loaded and removable by hand.



2) Adjustment of Base Plate of Table 2.

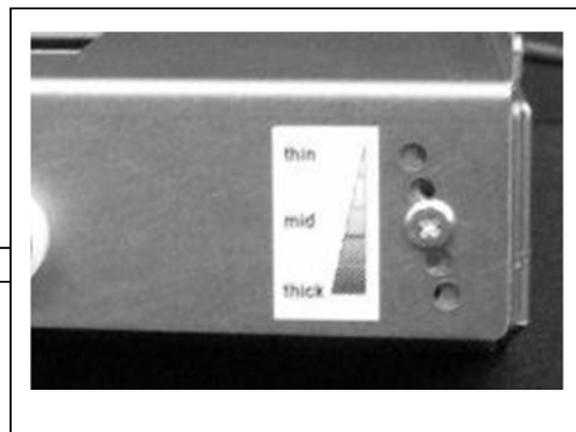
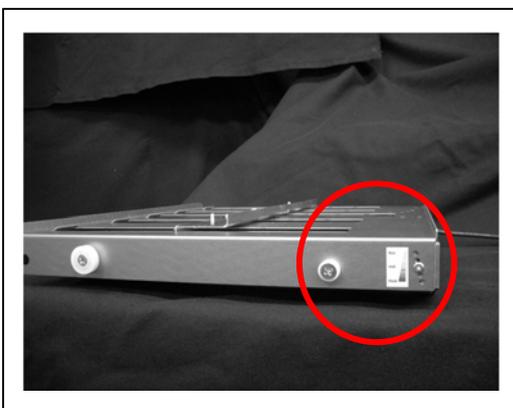
Position of Base Plate of Table 2 is adjustable back and forth.

As factory default setting, it is placed at 3rd hole (medium position).

General Guidance:

Thicker Paper: In case frequent slippage of paper is observed, remove Base Plate Fixing Screws located both sides of Table 2. Place the Base Plate for Thicker side of location and fix the Screws.

Thinner Paper: In case two-stage folding is observed, remove Base Plate Fixing Screws located both sides of Table 2. Place the Base Plate for Thinner side of location and fix the Screws.



3) Folding Roller Pressure (Press Power) Adjustment

Folding Pressure can be set for 3 steps.

As factory default setting, it is place at mid. position.

Note: Adjustment should be done after Paper Feed Table is lifted at the highest position first.
Open Cover for Table 2 under Paper Feed Table.

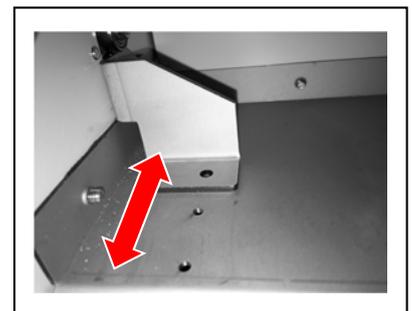
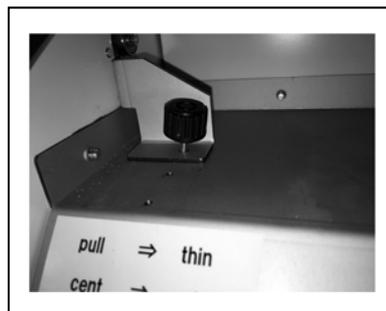
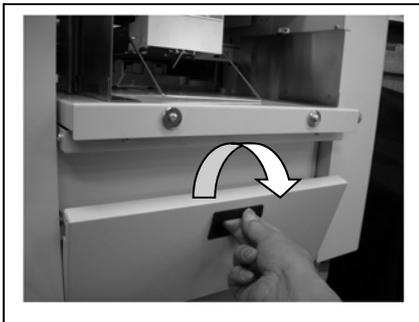
Thicker Paper: In case higher folding pressure is desired, remove Thumb Screw and pull the Bracket so that Folding Roller Spring gives higher pressure to the Roller.

Left and Right Setting should be the same strength.

Thicker Paper => Higher Pressure.

Thinner Paper: In case paper is wrinkled, remove Thumb Screw and push the Bracket so that Folding Roller Spring gives lower pressure to the Roller. Left and Right Setting should be the same strength.

Thinner Paper => Lower Pressure



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