

Operation Manual

Desktop Card Cutter Precision Card Pro



www.mbmcorp.com

1908-8204-00

Introduction

Using this manual

Please read this Operation Manual carefully before using this machine. Store the Operation Manual in a safe place so that it can be easily retrieved and referred to whenever required.

Since the specifications of this product are subject to change for the purpose of further improvement, the descriptions in the Operation Manual may be different from unit to unit even for the same model. Be sure not to refer this manual for one of a different model.

Use this manual only for the originally delivered model.

Some components are omitted in the illustrations in this manual.

Unauthorized copying of the content of this manual is prohibited.

The content of this manual is subject to change without notice in the future.

How to unpack and install

[1]



Take out the bag with the Operation Manual and the cushioning material at the top.

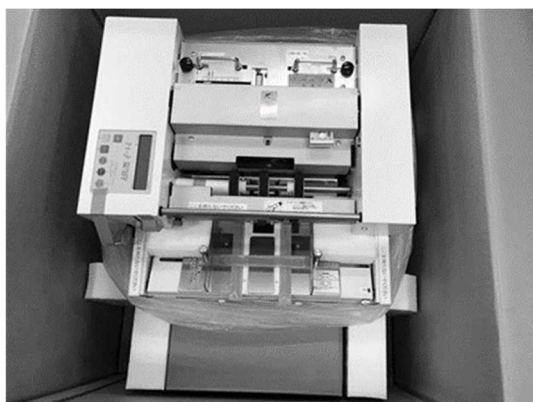
[2]



Pull out the cardboard box in front and check that the following parts are included.

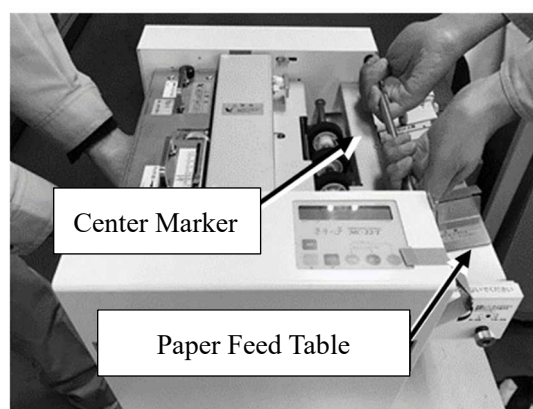
- Top cover x 1
- Paper feed support plate x 1
- Power cord x 1

[3]



Remove the fixing tape and open the plastic packaging bag that includes the product.

[4]



Have two or more people take out the product, holding the area shown in the picture (the Waste box part and the stay on the Paper feed table).



Note

- **Do not hold the Paper feed table or the Center marker part.**
- Place the product on a flat, robust table.

[5]



Peel off the tape securing each lever and the cushioning material, and remove the cushioning material.

* The normal position of the Paper Feed Pressure Lever and the Separator pressure lever is “0 (zero)”.

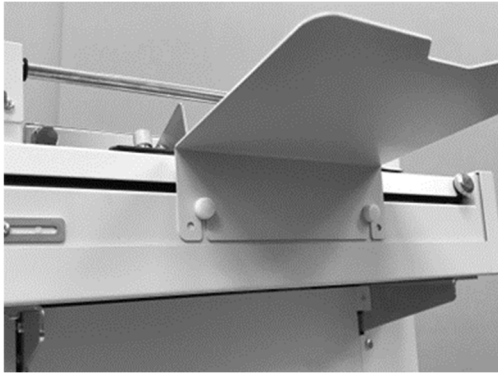
[6]



Pull out the accessory box and check that the following parts are included.

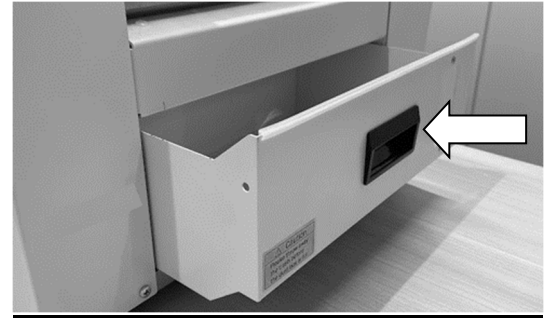
- Waste box x 1
- Ejection tray x 1
- Ejection separator plate x 1

[7]



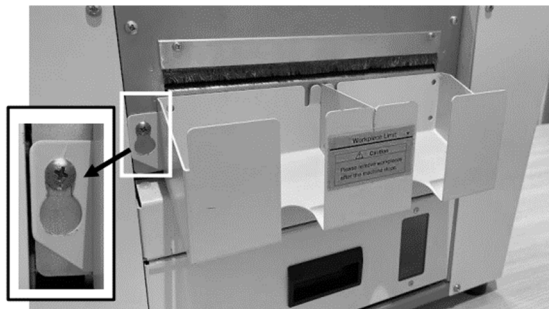
Hook the slit of the **Paper feed support plate** to the fixing screws (x 2) and tighten the fixing screws securely.

[8]



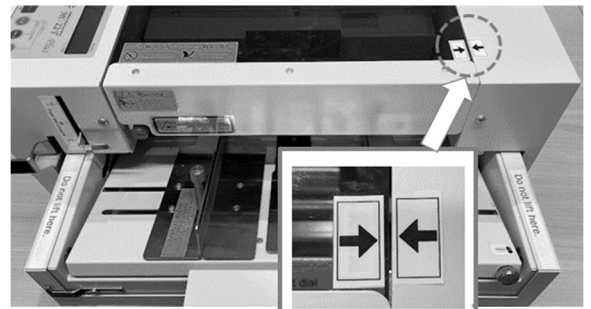
Push the **Waste box** all the way to the back from the position shown in the picture.

[9]



Apply and mount the keyhole fitting of the **Ejection tray** to the fixing screw of the main unit. Set the **Ejection separator plate** inside the Ejection tray.

[10]



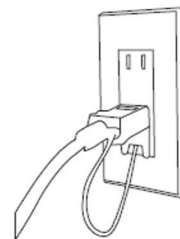
Set the **Top cover** as shown above.

[11]





Insert the supplied **power cord** into the outlet of the product.

[12]



Insert the Power Cord into a proper outlet. The shape of the Power Cord may differ from the illustration.

<p> Warning</p>	<ul style="list-style-type: none"> · At least two people are required to lift the main unit.
<p> Caution</p>	<ul style="list-style-type: none"> · Insert the power cord completely to the end.
	<ul style="list-style-type: none"> · Check that the outlet is 120V~, 60Hz.
	<ul style="list-style-type: none"> · Always be sure to ground before connecting the power plug to the power supply. Also, always be sure to disconnect the power plug from the power supply when you remove the ground connection.
	<ul style="list-style-type: none"> · The power should be turned “OFF” (switch set to “o” mark) when you insert the power plug to the outlet. · Do not share the outlet with other electrical products, especially the air conditioner, copying machine, and shredder. The electrical noise may cause this machine to malfunction.

* For operating procedures, refer to the “Operation Manual”.

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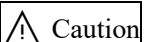
1 For Safe and Correct Use

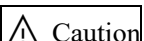
1-1 Basic safety precautions

Before use, make sure to read all basic safety precautions and risk prevention warnings, and fully understand them to perform setting/operation and maintenance/inspection of the Precision Card Pro.



You can prevent the accident by knowing where dangerous places are during installation/operation.

1-1-1 Risk prevention warnings

In this Operation Manual,  Warning  Caution are displayed according to the risk level for the areas that may be dangerous during operation and maintenance/inspection work.

Also,  Caution is displayed for the areas that may cause damage or failure to this machine by wrong operation or work.

The risk level standards are as follows.

 Warning	This symbol stands for immediate danger threatening the life and health of persons. Disregarding these instructions may cause severe damage to health and even serious injuries.
 Caution	This symbol stands for an endangering situation that may occur. Disregarding these instructions may lead to slight injuries or damage to property.

1-1-2 General safety precautions

To prevent the occurrence of accidents, strictly observe the following conditions.

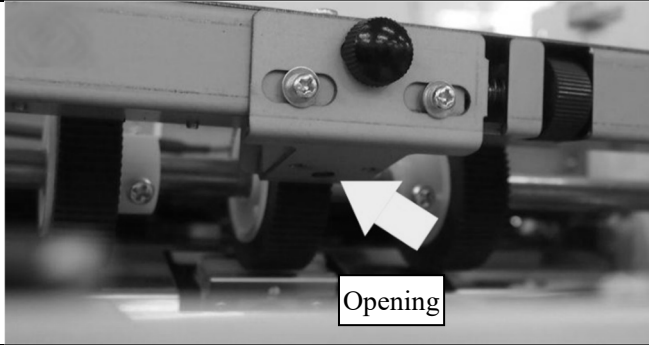
- Carefully wipe off any dust on the blade of the power plug and on the installation surface of the blade.
It may cause fire.
- Do not operate with the fixed cover removed.
- When you operate this machine, hold your hair away from the machine with a hairband or other confining device if you have long hair, and remove clothes and accessories such as neckties and necklaces, to prevent them from getting caught in the machine.
- Do not touch electric parts and electric circuits with wet hands.
- Turn off the Power switch when there is no need to operate this machine.
(Press the lower part of the switch, the side with the “○” mark)
- Turn off the Power switch immediately if any abnormality has occurred on the machine.
(Press the lower part of the switch, the side with the “○” mark)
- If you have any question about how to operate or work on this machine, contact your supplier directly.

- Do not use with any voltage other than the indicated power voltage. It may cause fire/electric shock.
- Do not connect more than one cable to a single outlet. It may cause fire/overheating.
- Insert the power plug securely into the outlet.
- It may cause fire/electric shock, if the blades of the power plug come into contact with metals.
- Do not place the machine in a humid or dusty environment. It may cause fire/electric shock.
- Do not place the machine in an unstable place, such as on “a wobbly table or tilted surface”.
It may drop or fall and cause injuries.
- Do not place the machine in an environment subject to excessive vibration/shock. It may drop or fall and cause injuries.
- Do not insert or drop metals into the machine from the opening.
It may cause fire/electric shock.
- Do not place the power cord close to the heater.
The cord sheath may melt, and cause fire/electric shock.
- Always hold the plug when you remove the power plug.
Pulling the power cord may damage the cord, and cause fire/electric shock.
- Do not remove or insert the power plug with wet hands. It may cause electric shock.
- Before you move the machine, check that the power plug is removed from the outlet. The power cord may be damaged, and cause fire/electric shock.
- Do not damage, break, or modify the power cord. If you break the power cord by placing a heavy object, heating it, or pulling it, it may cause fire/electric shock.
- Make sure that the water does not enter or make the machine wet. It may cause fire/electric shock.
- Do not disassemble/modify the machine. It may cause fire/electric shock.
- Remove the power plug from the outlet for safety, if you are not going to use the machine for a long time.
- Remove the power plug from the outlet if thunderclouds form nearby.
Lightning may cause fire/electric shock.
- Request internal inspection/repair from your supplier.
- Remove the power plug from the outlet for safety when you repair the machine.
- Wipe off water droplets with a dry cloth.
- Request replacement from your supplier when the power cord is damaged (such as when core wire is exposed or the wire is broken).
If you continue to use it, it may cause fire/electric shock.
- Do not use it if it is damaged. It may cause fire/electric shock.
In case of failure, turn off the Power switch, remove the power plug, and contact your supplier for repairs.
- If water enters the machine, first turn off the Power switch, remove the power plug, and then contact your supplier.
If you continue to use it, it may cause fire/electric shock.
- If a foreign object enters the machine, first turn off the Power switch, remove the power plug, and then contact your supplier. If you continue to use it, it may cause fire/electric shock.
- If you continue to use it in an abnormal state, if “smoke is coming out” or a “strange odor is generated”, it may cause fire/electric shock. Turn off the Power switch immediately, make sure to remove the power plug, check that smoke is no longer coming out, and then contact your supplier for repairs. Never try to repair by yourself as it is dangerous.

- The normal period of service is roughly five years.
- The normal period of service is the average period of time from the manufactured year that we have calculated under the autonomously set conditions, during which the machine can be used safely without any trouble. The normal period of service is a designed guideline. We recommend regular inspections, as there is a risk of causing accidents, such as ignition/injuries caused by aging deterioration in a shorter period of time, depending on the installed state/environment, and frequency of use.

1-1-3 About Center marker

This machine uses “Class 2 Laser” for the Center marker mechanism that adjusts the paper center position. Make sure not to look directly at the laser light emitted from the opening, as it can damage your eyes.

	<p>Laser wave length : 650 nm Beam spread angle : Approx. 5° Maximum power : 1 mW</p> <p>LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT Max.output:1mW wavelength:650nm</p>
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1-2 Display labels

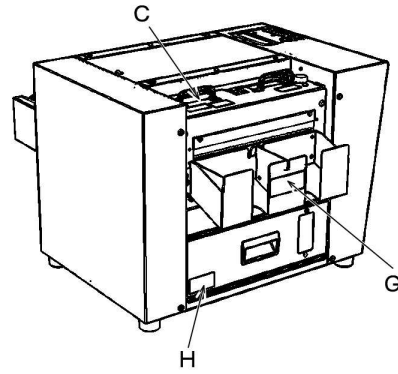
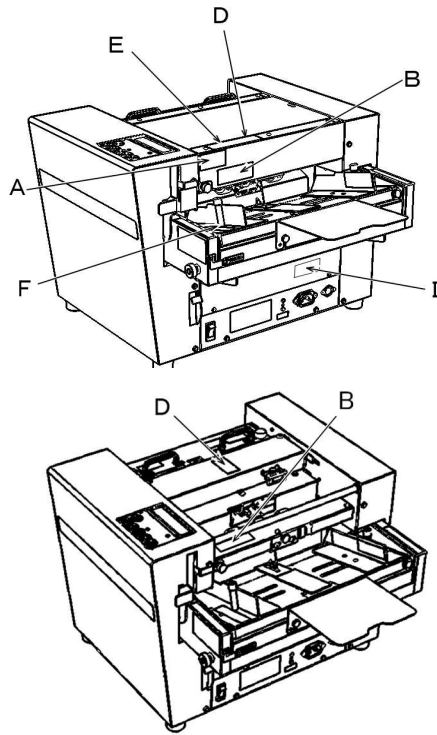
There are warning, caution, and other labels attached to this machine that require special attention for safety, to perform operation and maintenance/inspection.

Follow the warnings/cautions indicated on the label to prevent accidents.






1-2-1 Location where display labels are attached

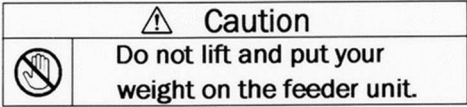
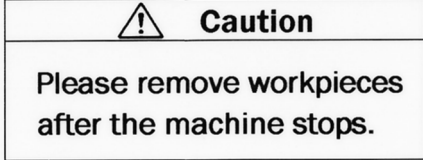
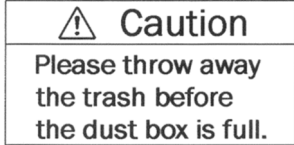
There are warning, caution, and other labels attached to this machine. Check that these labels are all legible. If any character or illustration is not visible, clean or replace the label.

If the label is damaged, lost, or illegible, replace the label. When replacing the label, always make sure that they are the same. Contact your supplier for new labels.



1-2-2 Description of display labels

A	 <p>Warning</p> <p>Do not touch any rotating part. There is a danger of receiving an injury.</p>	<p>Keep your hands away from the gears and rollers. There is a risk of your hands getting caught.</p>
B	 <p>LASER RADIATION DO NOT STARE INTO BEAM</p> <p>CLASS 2 LASER PRODUCT Max.output 1mW wavelength: 650nm</p>	<p>This machine uses “Class 2 Laser” for the Center marker mechanism that adjusts the paper center position. There is a risk of damaging your eyes if you look at the laser light directly or for a long time.</p>
C	 <p>Warning</p> <p>Do not touch any blades. There is a danger of receiving an injury.</p> <p>Make sure to turn off the machine before removing slitter unit.</p>	<p>Remove the Adjustable slitter unit after turning off the Power switch. Also, beware of the blade when handling the Adjustable slitter unit. There is a risk of cutting your hands.</p>
D	 <p>Warning</p> <p>Do not touch any blades during machine is working. There is a danger of receiving an injury.</p>	<p>Beware of the blade when handling the Adjustable slitter unit and the Cutter unit. Also, keep your hands away from the blade during operation. There is a risk of your hands getting injured.</p>
E	 <p>Warning</p> <p>Do not remove top cover. Make sure to stop the machine before any work.</p>	<p>Do not remove the Top cover while the machine is in operation. It may stop working and cause paper jams.</p>

F		Do not lift or push the feeder unit when moving this machine. It may cause the feeder unit to break. It takes at least two people, and “How to unpack and install” shall be observed when moving this machine.
G		Make sure the operation is in a stopped state when removing the workpiece from the Ejection tray. There is a risk of paper jam in ejection.
H		Discard the trash in the Waste box before use. Empty it before it is full. There is a risk of breaking the blades.

1-3 Safety device

The fixed covers and safety switches are installed to protect the operators and other people who might interact with the machine from accidents or dangers.

1-3-1 Function of safety device

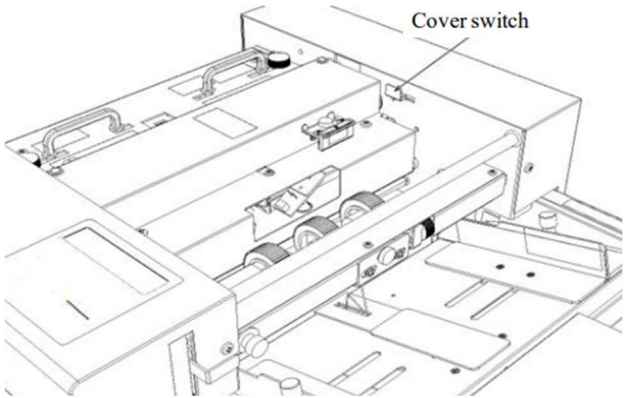
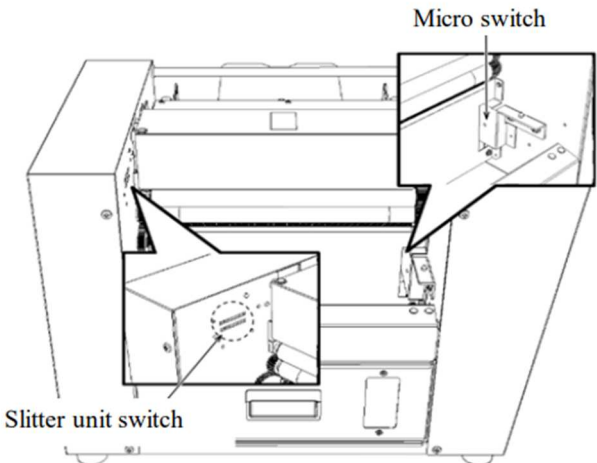
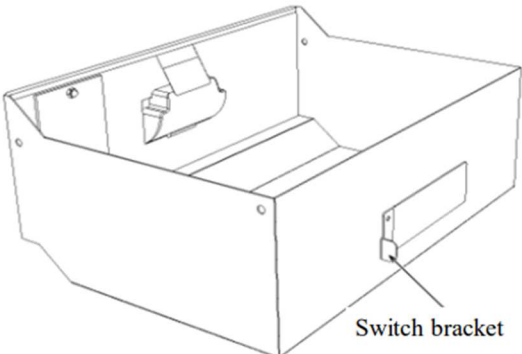
They protect the operators from accidents when performing operation and maintenance/inspection of this machine.

1-3-2 Function of safety switches

They are installed in three locations, namely the Top cover, Adjustable slitter unit, and Waste box, to prevent this machine from operating if these three parts are not equipped on the machine.

When a Top cover, Adjustable slitter unit, or Waste box is opened or removed, the safety switch will be turned OFF and the machine will be stopped.

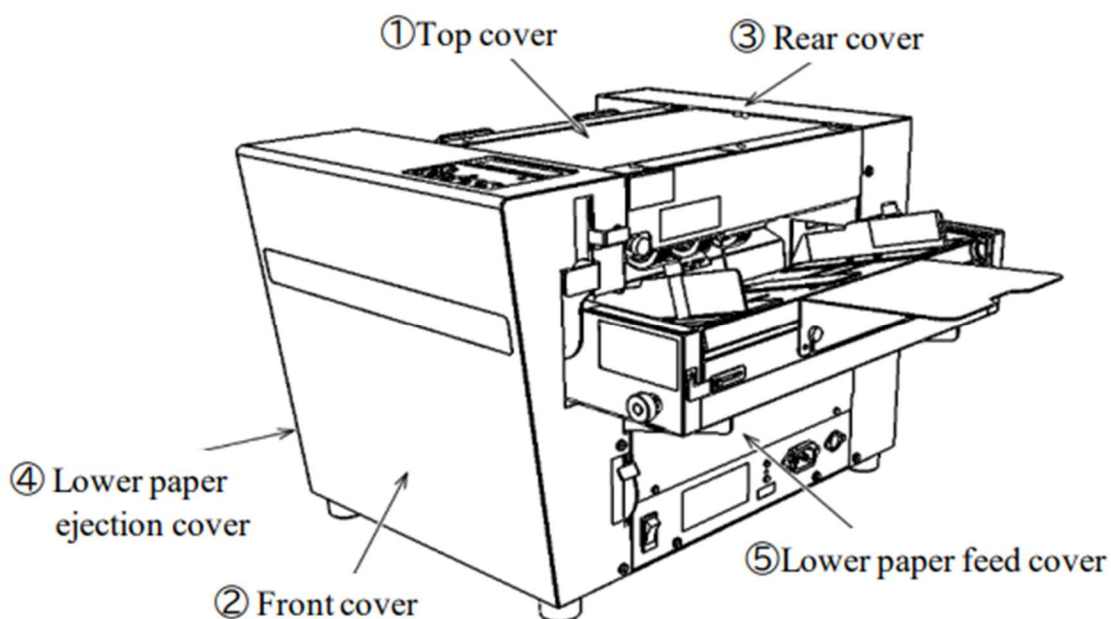
Never operate this machine with the Top cover, Adjustable slitter unit, or Waste box opened or removed with a modified safety switch.

<p>Top cover switch</p>	
<p>Slitter unit switch and micro switch</p>	
<p>Waste box switch</p> <p>(The Switch bracket in the back side of the Waste box operates the safety switch on the main unit side.)</p>	

1-3-3 Function of Top cover and each fixed cover

The Top cover and each fixed cover are installed to prevent electric shock and injuries to fingers and hands, clothing from getting caught in the operating devices, machine failure, and so on, when the operator inadvertently puts a part of his/her body or a tool inside the machine.

Do not operate this machine with the Top cover and each fixed cover removed, and never make modifications.



2 Machine Overview

2-1 Purpose of use

This machine is a card cutter that cuts business cards and postcards pre-printed on paper to any size automatically.

2-2 Specifications

Cutting method	Vertical: Cutter unit Horizontal: Adjustable slitter unit
Number of imposition	2 to 12 sheets (Number of columns per imposition: 1 to 6)
Paper size	Max. 9.251" × 14" Min. 5.039" × 5.039"
Paper thickness	0.003" to 0.016" 0.08 mm [basis weight 64 g/m ²] to 0.40 mm [basis weight 350 g/m ²]
Paper quality	Plain-paper, fine quality paper, coated paper, inkjet paper * The thickness of coated paper ranges from 0.007" to 0.015". Loosen the papers thoroughly before setting them. * Depending on the conditions such as the state of printing or paper and the environment of use, a double feed, a paper feed slip, or other issues may occur, even if the paper quality is within the specified range.
Paper color and cut mark	Supports white, black, and colored papers. * For the black/blue papers, use a white mark. * For the white/red/orange/yellow papers, use a black mark. * For paper colors that are hard to distinguish, basically use a black mark for the bluish green, yellowish green, and reddish purple papers, but a white mark could be effective depending on the shade. For the light blue, green, and bluish purple papers, basically use a white mark, but a black mark could be effective depending on the shade. If the mark detection does not work, then cut by referencing the lead edge.
Cutting speed	100 business cards/Approx. 40 sec. (Letter 10-up without gutter)
Maximum loading capacity	Lamination thickness: 0.787" (100 sheets for thickness of 0.007")
Cut size	Adjustable by setting (standard equipment) (Center gutter 0.393", vertical size 1.850" to 5.905", horizontal size 1.771" to 3.937")
Paper feed system	Automatic paper feeding (with double feed detection, paper feed pressure adjustment mechanism, paper detection sensor)
Paper ejection system	Cut strip separation and forced paper ejection
Machine size	W 23.43"×D18.27"×H13.55" (Including Paper feed support plate and Ejection tray)
Machine mass	Approx. 31 kg
Power supply	100—120V~, 60Hz, 0.7A
Display language	English
Display unit	inch
Environment of use	Temperature +68°F to +86°F Humidity 50% to 70% Without condensation

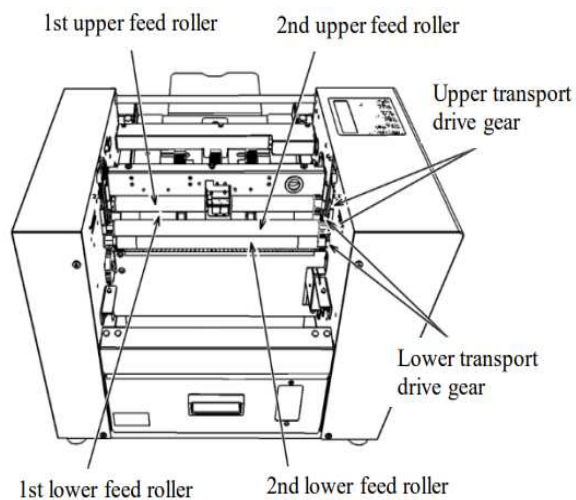
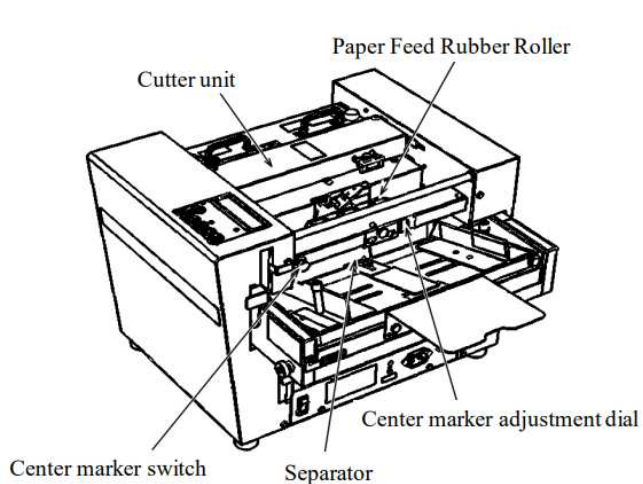
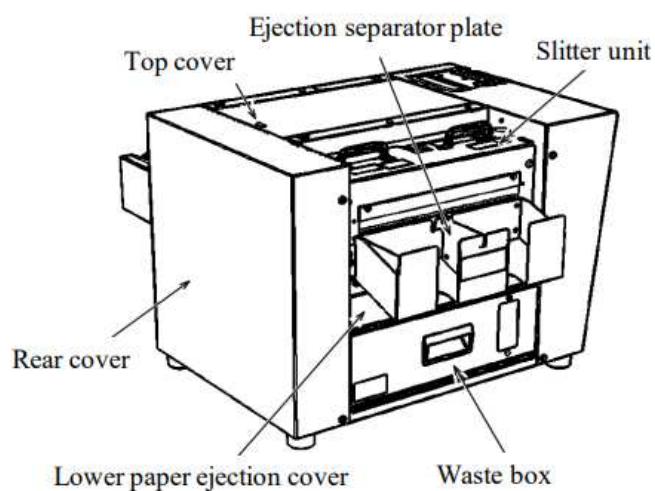
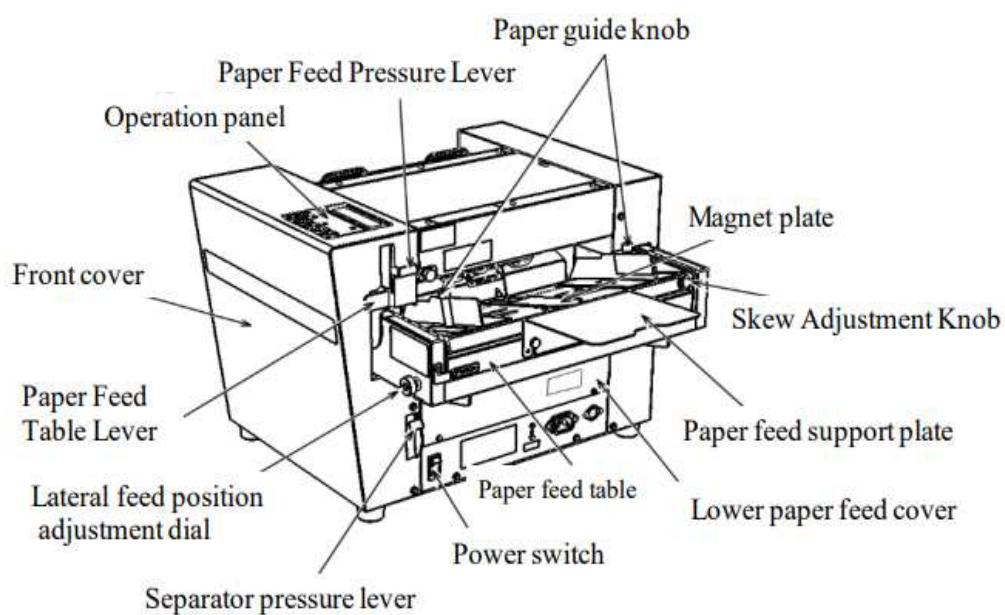
The specifications and appearance of this machine are subject to change without notice for further improvement.

2-3 Accessories

This machine comes with the following accessories. Please check when you unpack.

	Name	Quantity	Remark
1	Operation Manual	1	This manual
2	How to unpack and install	1	Inserted in pages 2 to 3 of the Operation Manual
3	Holding position guide	1	Included in the upper part of the product in the package
4	Waste box	1	Stored inside the accessory box
5	Ejection tray	1	Same as above
6	Ejection separator plate	1	Same as above
7	Top cover	1	Stored on the separator plate at the upper part of the accessory box
8	Paper feed support plate	1	Same as above
9	Power cord	1	Same as above
10	Magnet plate	1	Attached to the Paper feed table

2-4 Names of each part

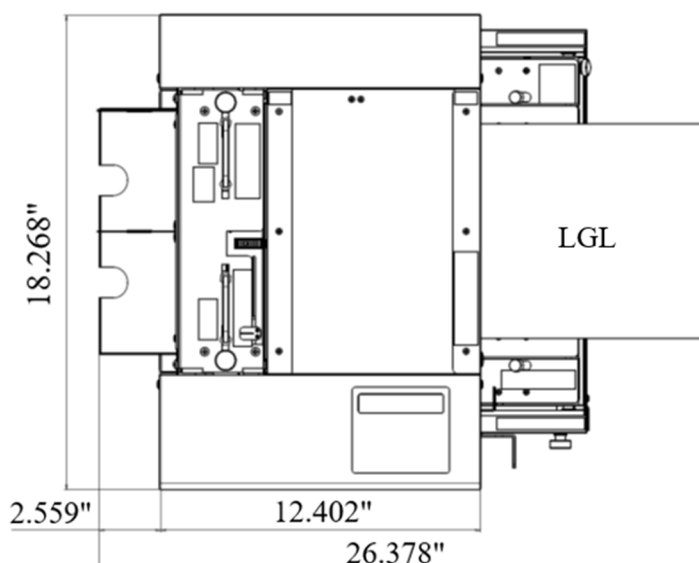


2-5 Location and installation of equipment


This machine shall be installed in the following locations.

* For the installation procedure, refer to “How to unpack and install” at the beginning of this manual.

- A level and stable location.
- A well ventilated location.
- The plane space of the entire equipment loaded with the Legal size(LGL) papers is as shown in the figure to the right. Secure and use the work space around the machine.




This machine consists of a precision machine and electronic parts. Always avoid the following locations when you install the machine, as there is a risk of fire/electric shock/failure.

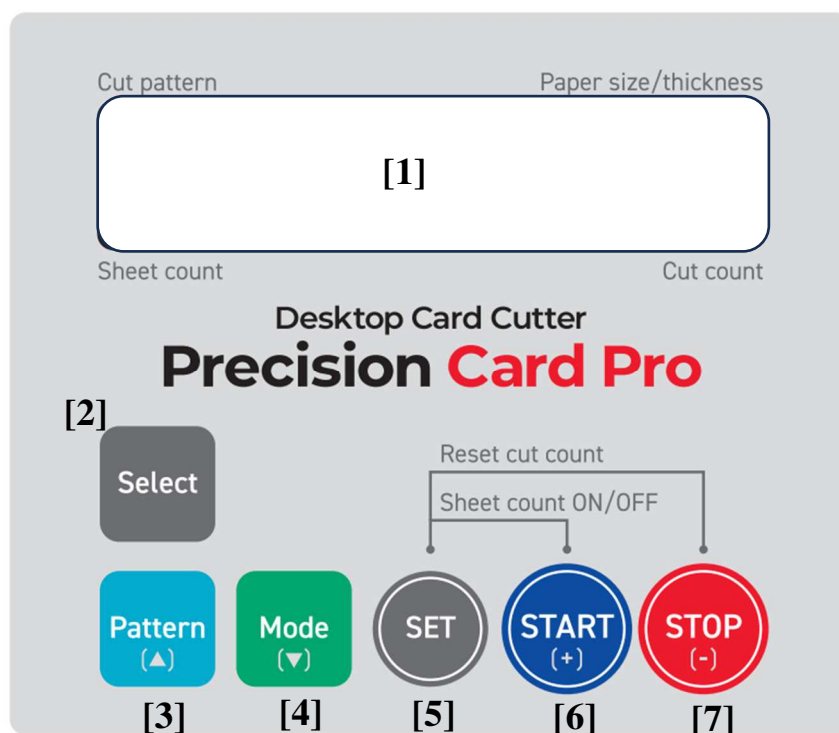
 Warning	Locations exposed to direct sunlight	Dusty or dirty location
	Locations exposed to extreme temperatures and humidity	Locations exposed to open flame
	Wet locations	Locations with a volatile material
	Locations close to the air conditioning unit	Locations exposed to vibrations

Use a power supply that meets the following conditions.

120V ~, 60Hz

 Caution	Do not share the outlet with other electrical products, especially the air conditioner, copying machine, and shredder. The electrical noise may cause this machine to malfunction.
	Always be sure to ground before connecting the power plug to the power supply. Also, always be sure to disconnect the power plug from the power supply when you remove the ground connection.

2-6 Description of Operation panel



[1]	LCD	Displays the cut pattern, cut count, paper size/thickness values and so on.
[2]	Select	Used to select the basic cutting pattern.
[3]	Pattern	Used to select the cutting pattern details after selecting the basic cutting pattern. (E.g.) In the mark detection cutting mode, it changes from <■BUS.10 LTR> → <■BUS.G10 LTR> → <■BUS.G12 LGL> .
[4]	Mode	Used to change the items (such as the Lead edge and Length) in each cutting pattern detail.
[5]	SET	Used to set the items of cutting pattern details after changing them.
[6]	START	Used to start cutting. Also used to set the cutting size.
[7]	STOP	Used to stop cutting. Also used to set the cutting size.

2-7 Description of LCD display

- [1] When you turn on the power, the “throw away trash warning” message appears on the LCD after the initialization operation is finished. Make sure to throw away the trash in the Waste box before use.
If you keep using the machine with the trash remaining inside, the cut strip will not drop and it may damage the Cutter unit.

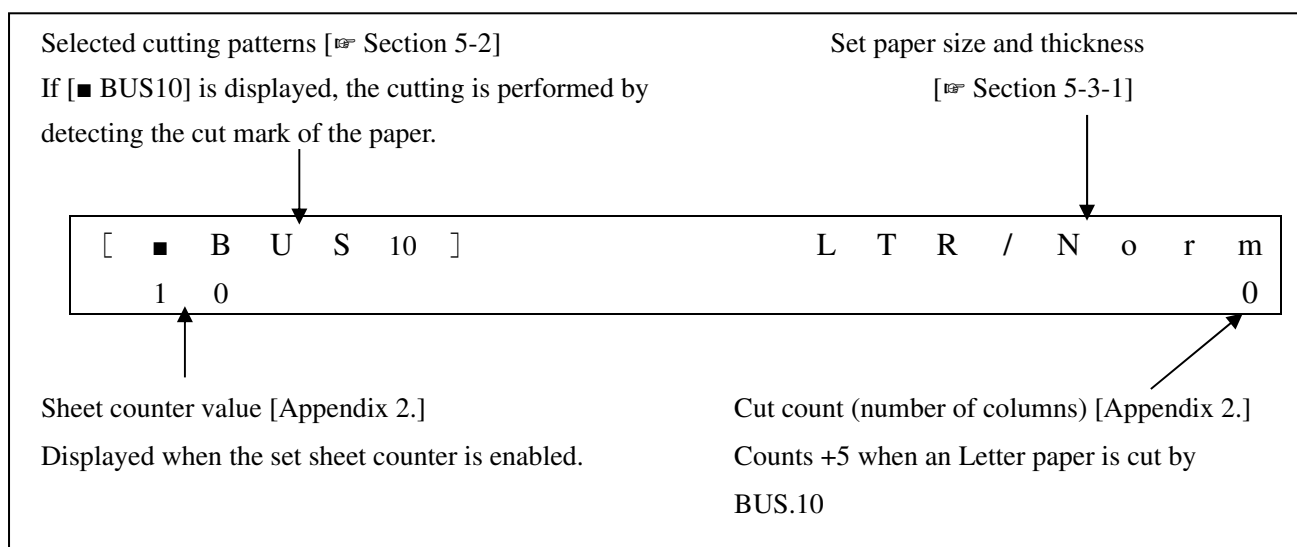
This will be displayed for approximately 10 seconds. **Press one of the six panel keys if you are using it right away.**

Please throw away trash, before Use.

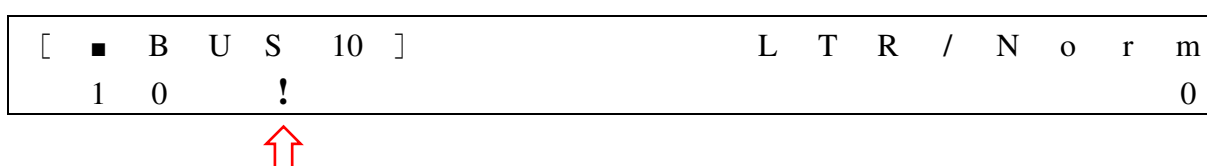
* An error message appears on the LCD when you take out the Waste box. To reset, turn OFF the power and then turn it back ON.

- [2] The following display appears on the LCD, and the machine enters the standby state.

* Displays the mode and cutting pattern used while the power is turned OFF.



* When the cut count of the Cutter unit increases, “Maintenance Time” appears on the LCD when you turn on the power. If the machine is used in this state, “!” appears on the right side of the set “Sheet count” on the LCD.
Change the cutter when this message is displayed.

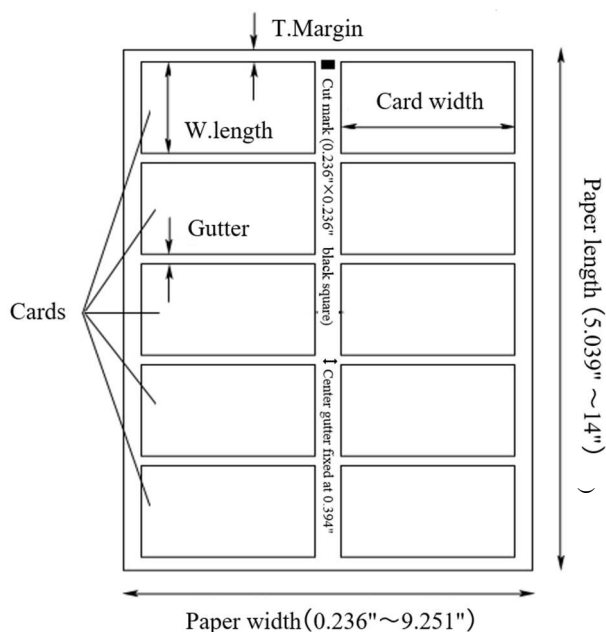


2-8 About normal cutting patterns

There are 3 patterns in the “lead edge detection cutting mode” and 3 patterns in the “mark detection cutting mode” available as the normal cutting patterns on this machine. For details of the normal cutting patterns, refer to [Appendix 1.].

* For the cutting patterns, you can register 10 patterns of customizable “user pattern” in addition to the “normal cutting patterns” (6 patterns). For how to set user patterns, refer to [6 Setting User Patterns].

Descriptions of terms used in cutting patterns



Lead edge...Length from the lead edge of the paper to where the first cut is made

Length...Length of the workpiece (business cards and postcards)

Card width (slitting width)...Width of the workpiece

Gutter...Gap between the workpieces in the feed direction

Center gutter...Gap between the workpieces in the lateral direction


Cut mark...Top edge of the mark is used as a reference when the detection method is Mark.

3 About Papers

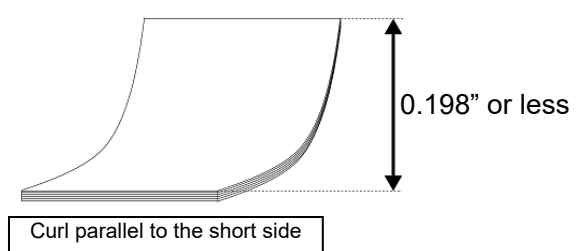
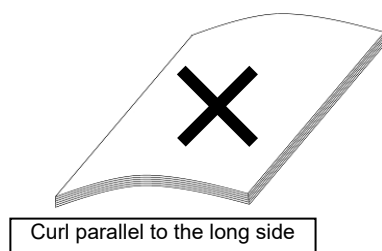
3-1 “Size”, “thickness”, “quality”, and “color” of papers


Select from the papers that are described in [2-2 Specifications].

3-2 Papers that cannot be used

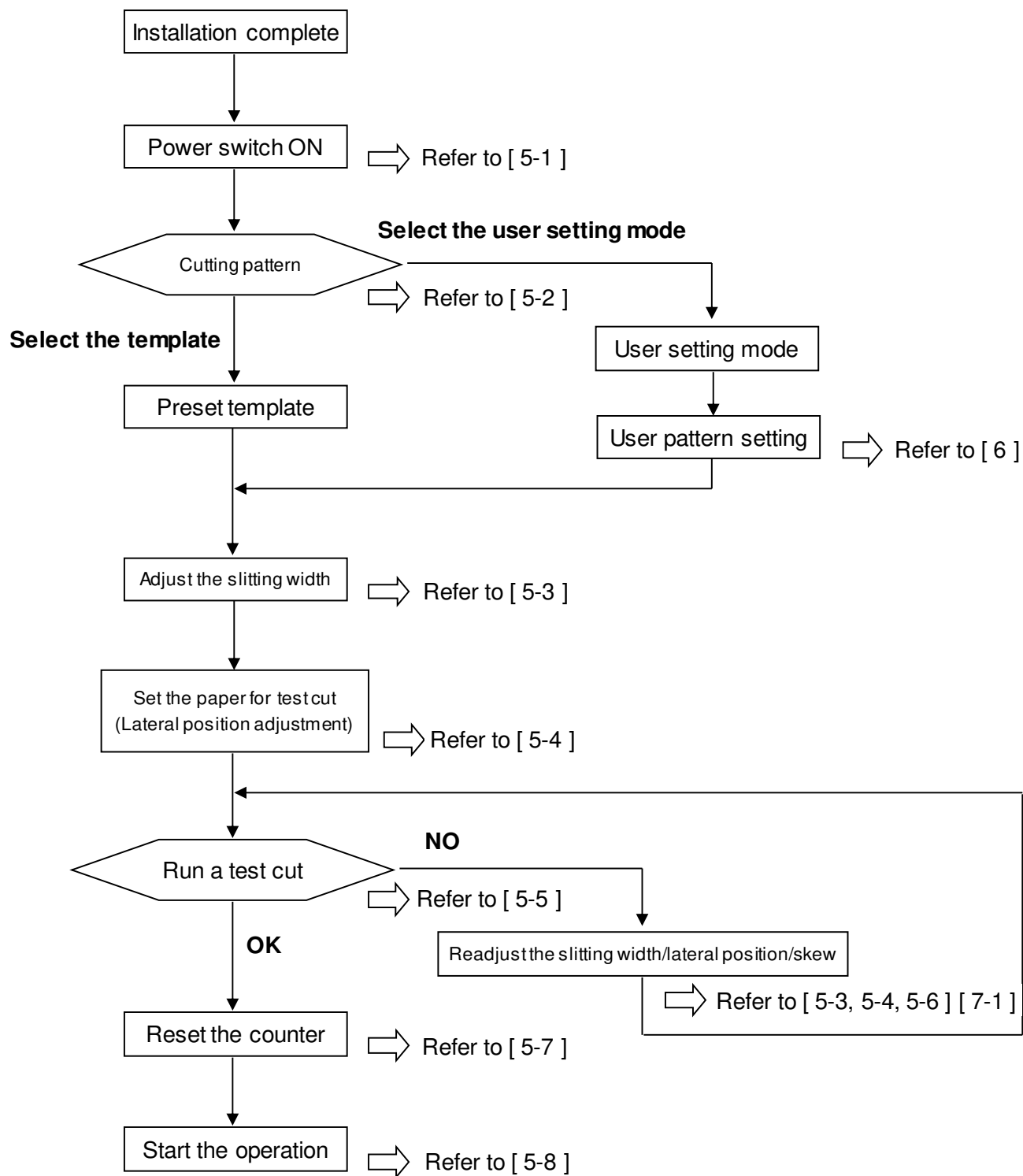
 Caution	<p>Using the following papers may very easily cause trouble.</p> <p>For any trouble that occurs by using the following papers, you may have to pay even if it is within the free guarantee period, or it may not be covered by the warranty.</p>
---	---

- Paper that is or tends to be charged with static electricity
- Curled (warped) paper
 - * The lateral curl is never allowed. * The vertical curl should be corrected to within 0.196". [Refer to the figure below]
- “Deformed” or “wavy” paper
- Unspecified paper (such as papers that are too thick or thin, or plastic films)
- Ripped or folded paper
- Paper with large cutting burrs * May easily cause paper feed slips and double feeds.
- Paper that is too slick, or too glossy
 - * The surface may be easily scratched, and it may likely cause a paper feed error, or a detection error of the paper feed sensor.
- Paper with specially coated or laminated surface
- Paper with glue from label sheet adhered to it
- Paper on which the print or color does not last
- Paper with transparent or semi-transparent base color
- Paper with solid printing
- Paper that was just printed
- Paper with rugged surface (such as by embossing)



 Caution	<p>The paper that is charged with static electricity might cause the cut strip to stick to places such as the blade, which may cause trouble. Specifically, the printed material that was just output from the laser printer may be fully and entirely charged with static electricity. Perform the discharge process or leave it for at least 15 minutes before cutting.</p> <p>It is effective to keep the humidity inside the work room at 50% or more.</p> <p>However, if the humidity is too high, it may crease the paper and have negative impact on the paper feed.</p>
---	--

4 Cutting Workflow



5 Basic Operation

5-1 Turning ON Power switch

When you turn on the power, the “throw away trash warning” message appears on the LCD after the initialization operation is finished.

Please throw away
trash , before Use.

This will be displayed for approximately 10 seconds.

Press any key on the panel if you are using it right away.

[■ B U S 10] L T R / N o r m
1 0 0

* Displays the mode and cutting pattern that you were working on right before the power is turned OFF.



Caution

Make sure to throw away the trash in the Waste box before use. If you keep using the machine with the trash remaining inside, the cut strip will not drop and it may damage the blade of the Cutter unit.

5-2 Selecting cutting pattern

* This is not required if you are performing the same work as when the power was turned OFF.

(The work that was executed right before turning OFF is retained in the memory.)

5-2-1 Selecting function

Each time you press the “Select” key, the mode changes from [BUS10]⇒[■BUS10]⇒[User 01].

[BUS 10] indicates the “lead edge detection cutting mode”, [■BUS10] indicates the “mark detection cutting mode”, [User 01] indicates a mode where users can freely create a cutting pattern.

For user pattern settings, refer to [6 Setting User Patterns].

[B U S 10] L T R / N o r m
1 0 0

[■ B U S 10] L T R / N o r m
1 0 0

[U s e r 0 1] L T R / N o r m
1 0 0

5-2-2 Selecting cutting pattern

The initial values of the cutting pattern in each mode are as follows.

If you do not need to change the initial values, proceed to [5-3].

a. Types and initial values of [BUS] (lead edge detection cutting) mode

Cut Pattern	Detection method	Cards (1/2 of total number of imposition)	T.Margin	W.Length	Gutter	Size	Paper thickness	Ex(*3)	T.ADJ	Sheet
BUS. 10	Edge (*1)	5(*1)	0.500"	2.000"	0.000"(*1)	LTR	Norm	11.000"	0.000"	10
BUS. G10	Edge (*1)	5(*1)	0.251"	2.000"	0.125"	LTR	Norm	11.000"	0.000"	10
BUS. G12	Edge (*1)	6(*1)	0.374"	2.000"	0.251"	LGL	Norm	14.000"	0.000"	10

b. Types and initial values of Mark-B [■ BUS]/Mark-W [□ BUS] (mark detection cutting) mode

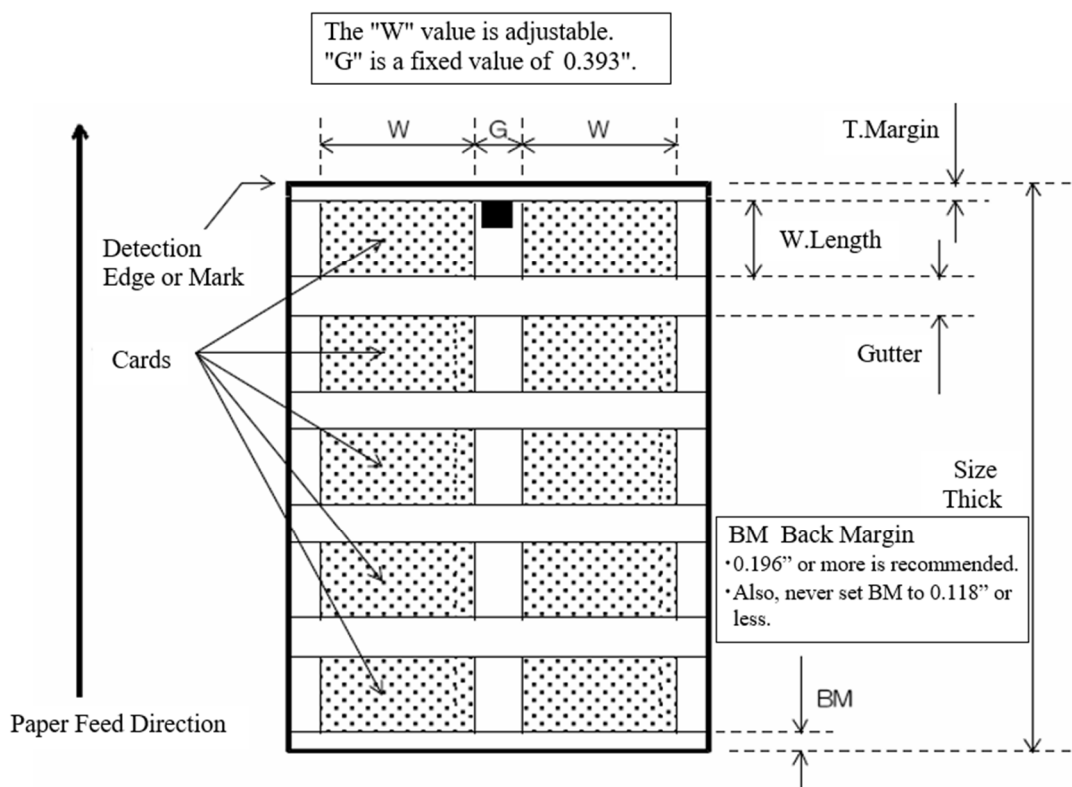
Cut Pattern	Detection method	Cards (1/2 of total number of imposition)	T.Margin	W.Length	Gutter	Size	Thick	Ex(*3)	T.ADJ	Sheet
■ BUS. 10	Mark-B■ Mark-W□	5(*1)	(*2)	2.000"	0.000"(*1)	LTR	Norm	11.000"	0.000"	10
■ BUS. G10	Mark-B■ Mark-W□	5(*1)	(*2)	2.000"	0.125"	LTR	Norm	11.000"	0.000"	10
■ BUS. G12	Mark-B■ Mark-W□	6(*1)	(*2)	2.000"	0.251"	LGL	Norm	14.000"	0.000"	10

*1: Fixed value. This cannot be changed.

*2: Not displayed. This depends on the position of the cut mark.

The position of the pre-printed mark should be the same as each of the T-Margin in "Edge detection mode".

*3: Special paper size (valid if Ex is selected for Size)



(Fig. 4)

5-2-3 Changing initial values

If you need to change the initial values, follow the procedure given below to make adjustments.

- [1] Select the cutting pattern that you want to change.
- [2] Press the “Mode” key. The screen for changing the settings appears on the LCD.

There are 10 pattern change screens. For details, refer to [Appendix 8.].

(E.g.) [Screen 1] Setting detection method and imposition count

⇒Detect	Edge
Cards	5

- [3] Press the “Pattern” key or “Mode” key to select the menu to be changed.
 - * The selected item is indicated with ⇒ at the left edge of the screen.
- [4] Press the “START” or “STOP” key and change the set value.
 - * For the range that can be set, refer to [Appendix 1. Setting range for each cutting pattern].
- [5] Set with the “SET” key when you are finished with the setting.
 - “Memorized” appears on the screen and the machine enters the standby state.

* To go back to the original screen without changing any setting,
while pressing and holding the “Mode” key, press the “SET” key.

Note:

The settings set in this section will be reflected automatically to “Cutting pattern”.

Record the set value of that cutting pattern to [Appendix 10.].

If you changed the standard pattern, record it to “a: Lead edge detection cutting pattern” and “b: Cut mark detection cutting pattern” in [Appendix 10.]. If you created (changed) the user pattern, record it to “c: User cutting pattern”.



Caution

If the “BM (back margin)” shown in [5-2-2 (Fig. 4)] is set to less than 0.197”→5mm”, the warning “Your BM setting is less than 5mm.” will be displayed on the LCD.

If BM becomes less than 0.197”, the cut off parts of the paper back margin (back margin cut strip) becomes difficult to remove. This may cause trouble such as the ejection of back margin cut strips with the workpieces, the paper jam caused by papers being caught by the back margin cut strips, and the damage due to the cutter cutting the stack of back margin cut strips.

A setting where the BM (back margin) is 0.197” or more is recommended.

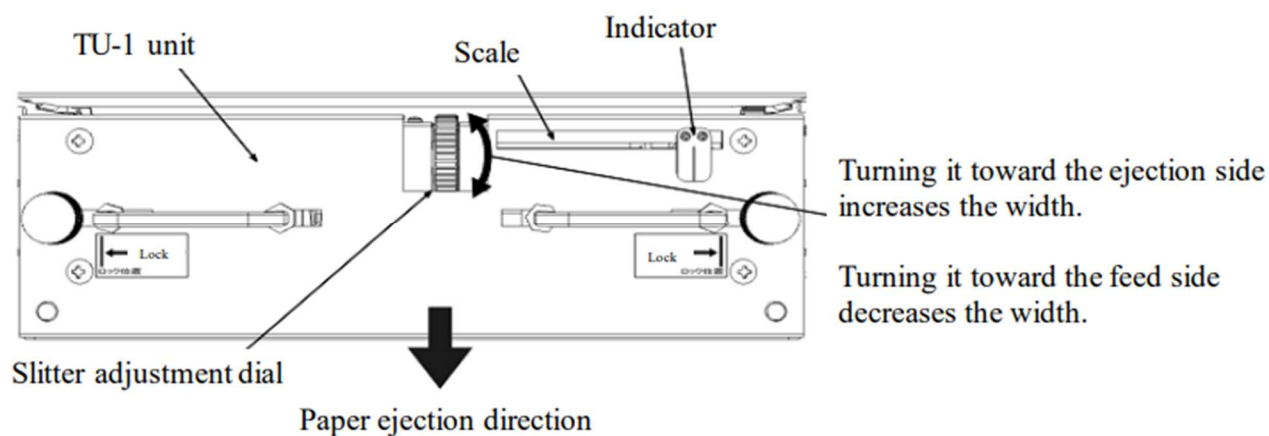
Also, never set BM to 0.118” or less.


5-3 Adjusting slitting width (slit location)

* This is not required if you are performing the same work as when the power was turned OFF.

On the TU-1 unit, the size of “W” shown in [5-2-2 Selecting cutting pattern (Fig. 4)] can be changed by turning the slitter adjustment dial.

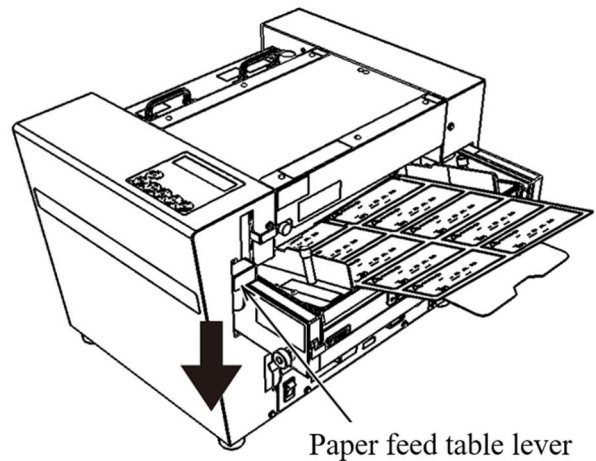
Adjust the slitting width while turning the slitter adjustment dial and checking the scale. The slitting width becomes wider when you turn the dial in the direction of ejection, and narrower when you turn it in the feed direction.



 Caution	<p><u>The slitting width should not be moved exceeding the scale range.</u></p> <p>It may cause slitter failure.</p>
--	--

5-4 Setting paper for test cut

- [1] Lower the Paper Feed Table Lever to the direction of the arrow to lower the lead edge of the Paper feed table, and then set a sheet of paper with the printing side facing up.

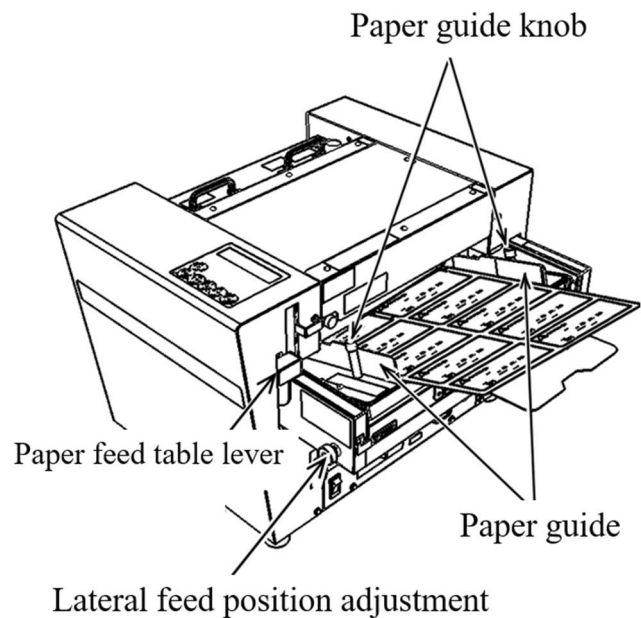


- [2] Adjust the paper guide to the position where it slightly touches the paper edge surface, and secure it with the paper guide knob.

- [3] Adjust the lateral positioning of the paper. For details on how to make adjustments, refer to [7-1 (1) Lateral position adjustment dial].

* When you use the **Center marker** as a reference for adjustment, you can easily align the center of the paper (center of the cut mark) to the center of the slit.

For details, refer to the next page, "About Center marker".

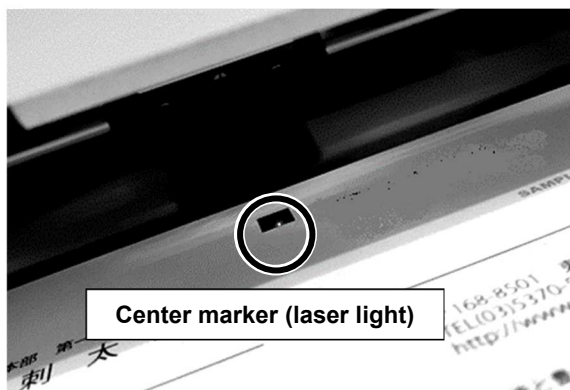


- [4] After setting the paper, pull back the Paper Feed Table Lever.

* About Center marker

This machine has a “Center marker mechanism” that irradiates laser light to align the center position of the paper (center of the cut mark) to the center position of the slit.

The irradiation position of the Center marker is aligned to the center of the center gutter of the slitter, by factory default.



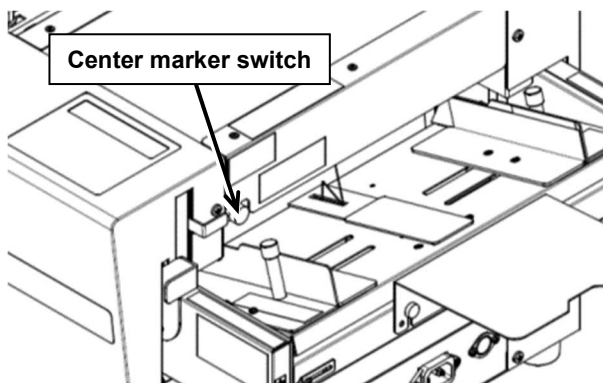
Caution

Never control or adjust using procedures other than those specified in this section, as it may lead to dangerous exposure of laser radiation.

[How to adjust lateral paper position]

- [1] Press the “Center marker switch” on the Operation panel at the upper part of the Paper feed table.

Irradiates the laser light for approximately 10 seconds to show the center position of the paper (slit).



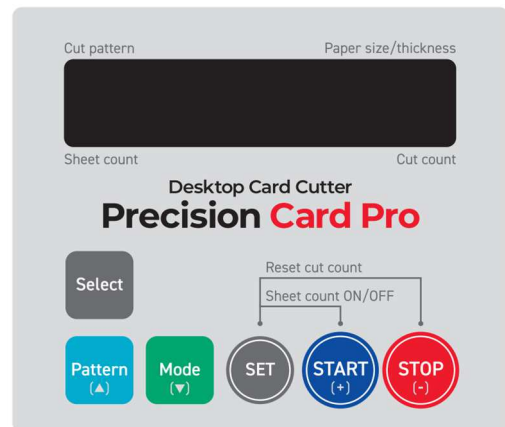
- [2] Pull out the paper until the Center marker (laser light) hits the cut mark.
- [3] Move the Paper feed table by turning the lateral position adjustment dial so that the laser light hits the center of the cut mark.
For details on how to make adjustments, refer to [7-1 (1) Lateral position adjustment dial].

The Center marker (laser light) is only a “reference” for the center position of the slit. Check if the adjusted cut position is correct for printing by running a test cut.

When adjusting the Center marker irradiation position or moving the position to an arbitrary position, refer to [7-2 Adjusting Center marker (laser light) irradiation position].

5-5 Perform test cut

Press the “START” key to perform the test cut.



5-6 Checking test cut results

If it is cut correctly, proceed to [Section 5-7].

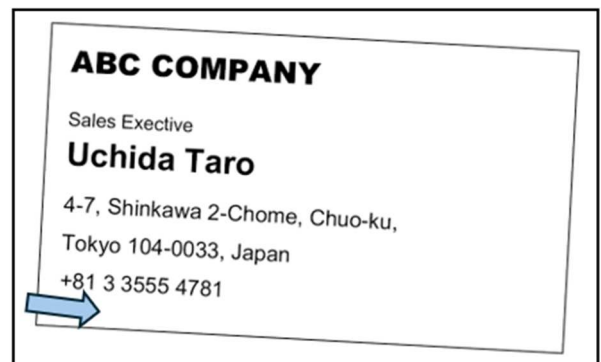
In case of abnormality, follow the procedure given below to make adjustments or reconfigure.

[1] When the paper is cut askew

Turn the skew adjustment dial, and move the Paper feed table using the skew scale as a reference.

- When the printing is slanted to the right (figure to the right)
→ Turn the dial clockwise.
- When the printing is slanted to the left
→ Turn the dial counterclockwise.

* For details, refer to [7-1 (2) Skew adjustment dial].



[2] When the paper is cut in the lateral direction by misalignment

Turn the lateral position adjustment dial, and move the Paper feed table referencing the Paper feed table scale or Center marker.

- When you want to move printing to the left
→ Turn the dial clockwise.
- When you want to move printing to the right
→ Turn the dial counterclockwise.

* For details, refer to [7-1 (1) Lateral position adjustment dial].



[3] When the paper is cut in the paper feed direction by misalignment.

The correction method is different for the cut modes “Edge” and “Mark”.

★When cut mode is “Edge”

⇒ Adjust “T.Margin”. To move the printing, increase the value if you want to move it upward, and decrease the value if you want to move it downward.

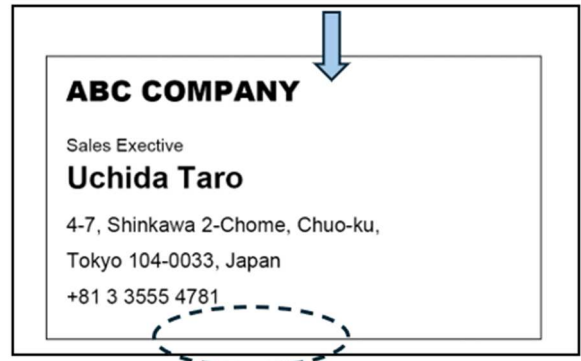
E.g.: To move it upward by 0.039”, change 0.433” to 0.472” when “T.Margin” is 0.433”.

★When cut mode is “Mark”

⇒ Adjust “T-ADJ”. To move the printing, adjust the value in (+) direction if you want to move it upward, and adjust the value in (-) direction if you want to move it downward.

E.g.: To move it upward by 0.039”, change 0.000” to 0.039” when “T. ADJ” is 0.0.

* For details, refer to [5-2-3 Changing initial values].



[4] When the cutting positions seem gradually moving

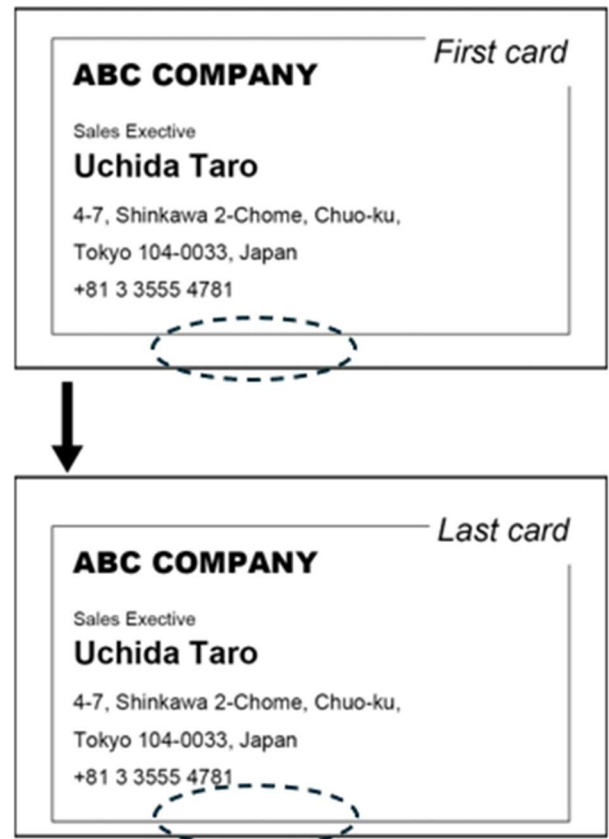
For cases where the first column is correct but gradually becomes misaligned in the feed direction for the second and third columns.

⇒ Adjust “W.Length”.

- Increase the value of “W.Length” if the image is moved downward as it gets closer to the fifth column (final column).

E.g.: If the margin of error for the first column and the fifth column is about 0.019” for [BUS 10] (Length 2.165”), change the Length to 2.169”.

* For details, refer to [5-2-3 Changing initial values].



[5] When the lateral cutting width is abnormal

Adjust the slitter adjustment dial referencing the slitting width scale.

* For details, refer to [5-3 Adjusting slitting width (slit location)].



5-7 Resetting counter


Reset to the initial values because [Sheet count] on the LCD display will be reduced and [Cut count] will be added when you run the test cut.

• To reset the counter, press the SET key and the STOP key at the same time.

* **For non-setting method of cut count**
Refer to [Appendix 2. About counter function].


5-8 Starting main operation (cutting)

- [1] Lower the Paper Feed Table Lever to the direction of the arrow to lower the lead edge of the Paper feed table. Lower the lead edge of the Paper feed table, and then set a sheet of paper.

 Caution	<p>Check that the cutting pattern matches the paper size. If the paper size is wrong, cut strips may remain in the machine, causing paper jams.</p>
---	--

* Make sure the set amount of paper does not exceed the “upper limit line of set paper”. (100 sheets of paper of thickness 0.008”)

- [2] Adjust the paper guide to the position where it slightly touches the sides of a paper, and secure it with the paper guide knob.

 Caution	<p>Pressing the paper guide too hard against the paper may cause the paper feed to slip.</p>
---	---

- [3] Lift the Paper Feed Table Lever.

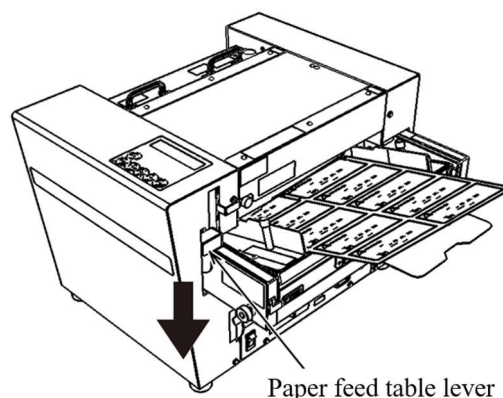
- [4] Press the “START” key. Paper feeding (cutting) starts.

If the cut count is set, the cutting finishes when it reaches the set count.

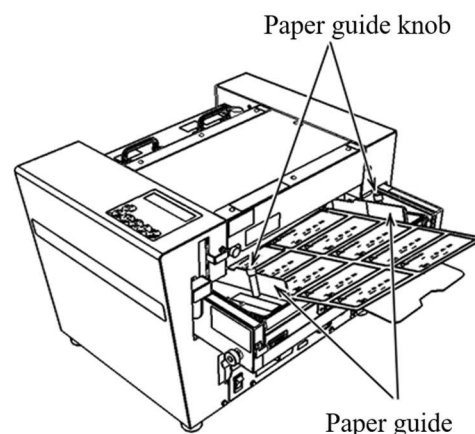
Supply paper if the set amount of paper was not enough for the set count.

If the cut count is not set, the cutting stops when the set papers run out.

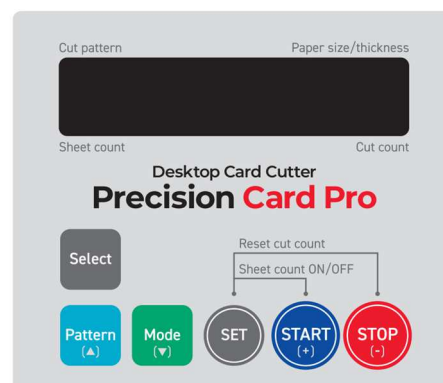
- [5] Turn OFF the Power switch when the entire process is finished.



Paper feed table lever



Paper guide



* **About power-saving mode**

When the machine is not operated for a certain amount of time (approximately 60 minutes), then it switches to the “power-saving mode”.

A short beep sound (alarm) will be heard when it switches to the “power-saving mode”.

“Power Saving” will be displayed on the LCD during the power-saving mode.

You can cancel the power-saving mode by pressing any key on the Operation panel.



Caution

The machine may be damaged if you have too many cut strips in the Waste box.

As a rough estimation, throw away the cut strips that have accumulated in the Waste box after cutting about 1000 business cards (see Note). Note that the amount of cut strips that have accumulated in the Waste box is different depending on the cutting pattern. (Note: For Cutting pattern BUS 10 Thickness 0.008”)

When you throw away the cut strips in the Waste box, you must make sure the machine is in the standby state or the power is turned off, for safety reasons.

The machine cannot be operated without inserting the Waste box into the machine.

The machine may be damaged if you have too many workpieces in the Ejection tray.

Make sure the loading capacity of the Ejection tray does not exceed the “upper limit line of the workpiece”.

The maximum loading capacity is 1.968”. (250 sheets with thickness of 0.008”)

When you pull out the workpiece from the Ejection tray, you must make sure the machine is in the standby state or the power is turned off, for safety reasons.

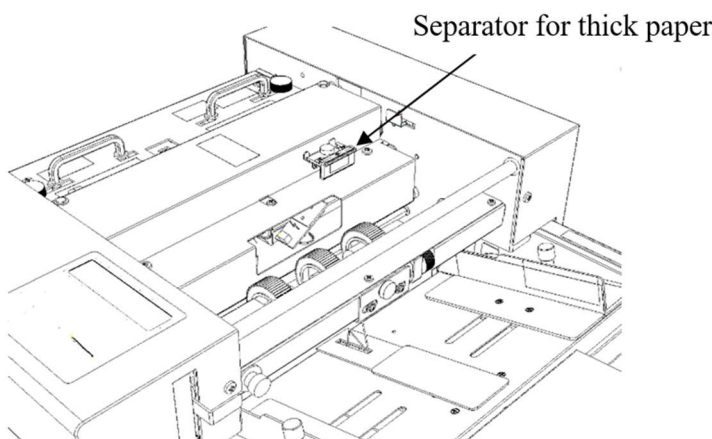
There may be problems such as “the ejected paper turned upside down” and “the ejected order is altered” depending on the cutting pattern.


When there are problems with ejection, place a spacer of approximately $\rightarrow 0.787''$ to $1.574''$ in height (such as a business card box) on the Ejection tray, to raise the bottom and straighten up the Ejection tray.

When cutting in the postcard size ($3.937''$ to $5.905''$ in Length), throw away the cut strips that have accumulated in the Waste box after cutting about 100 postcards as a rough estimation.

The lead edge of the paper may be lifted (lifting of the surface layer of the paper) depending on the paper.

When there is a lift, it can be alleviated by replacing the Separator with a “Separator for thick paper”. For how to replace the Separator, refer to [8-2 Parts/consumables to be regularly replaced].



 Caution	<p>Keep your fingers, hands, and hair away from the Paper Feed Rubber Roller while feeding or cutting the paper. You might get caught and “injured”.</p>
	<p>Do not remove the Ejection tray and Waste box while feeding or cutting the paper, and keep your hands/fingers and other parts away.</p>

6 Setting User Patterns

Up to 10 user patterns can be set.

All 10 items are set to the same data (BUS 10 lead edge detection cutting mode value) in the default setting.

Make a pattern to be used that overwrites these data.

Start the setting on the screen in the standby state.

- [1] Press the “Select” key and select “User 01”.

[U s e r 0 1]	L T R / N o r m
1 0	0

- [2] Select the user number to be used (set) with the “Pattern” key.

[U s e r 0 2]	L T R / N o r m
1 0	0

- [3] Press the “Mode” key to change the setting item screen.
Then, select the required setting item using the “Pattern” or “Mode” key.
The selected item is indicated with ⇒ on the left side of the screen.

→ D e t e c t	E d g e
C a r d s	5

- [4] Change the value of the selected item using the “START” key or the “STOP” key.

→ D e t e c t	M a r k - B
C a r d s	5

- [5] Press the “SET” key to set.

[U s e r 0 1]	L T R / N o r m
1 0	0

- [6] Press the “Pattern” or “Mode” key to select the setting items successively.
For the range of each setting item that can be set, refer to [Appendix 1. Setting range for each cutting pattern].


The setting of the selected user mode is complete when the setting of all setting items are finished.
(There are menus that cannot be set for some items.)

Press the “SET” key to go back to the user cutting mode.

Note:

The details of setting set in this section shall be recorded as the set values of the new cutting pattern in [Appendix 10. Cutting pattern set value Revision history memo].

To reset the set value to the factory default state, turn on the power while pressing the “Mode” key until “Starting” is displayed
A message “Factory reset comp” appears on the LCD, and the set value of the cut size is initialized to the factory default set value.

 Caution	<p>If the “BM (back margin)” shown in [5-2-2 (Fig. 4)] is set to less than 0.197”(5 mm), the warning “Your BM setting is less than 5mm.” will be displayed on the LCD.</p> <p>If BM becomes less than 0.197”(5 mm), the cut off parts of the paper back margin (back margin cut strip) becomes difficult to remove. This may cause trouble such as ejection of back margin cut strips with the workpieces, paper jam caused by papers being caught by the back margin cut strips, and damage due to the Cutter slicing the stack of back margin cut strips.</p> <p><u>A setting where the BM (back margin) is 0.197” or more is recommended.</u></p> <p><u>Also, never set the BM to 0.118” or less.</u></p>
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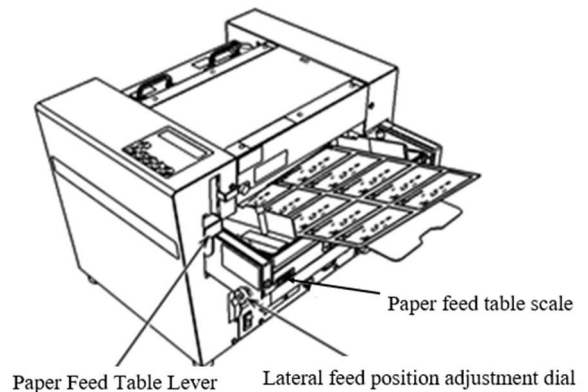
7 How to Adjust Mechanical Adjustment Items

7-1 Adjusting Paper feed table

(1) Lateral position adjustment dial

When the paper is cut in the lateral direction by parallel misalignment

Lower the paper feed lever and turn the lateral position adjustment dial to make adjustments.
Make adjustments referencing the Paper feed table scale or the Center marker.

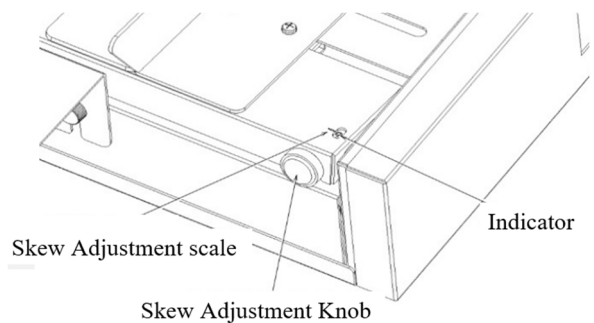


Note:

- The reference position (central value) of the machine is where the long line in the center of the Paper feed table scale and the Indicator meet.
- One mark of the Paper feed table scale changes 0.039".
- **Should not be moved exceeding the scale range.**

(2) Skew adjustment dial

When the paper is cut askew, make adjustments by turning the skew adjustment dial using the skew scale as a reference.



Note:

- The reference position (central value) of the machine is where the long line in the center of the skew scale and the Indicator meet.
- As a rough estimation, 1 mark of the skew scale changes approximately 0.066". (* The amount of skew for the first column and the fifth column at the BUS 10 cutting.)
- **Should not be moved exceeding the scale range.**

(3) Pressure adjustment for paper feed and paper separator

Set the Paper Feed Pressure Lever to “0”.

The pressure can be set in 3 steps:

-1, 0, +1.

Lift the lever slightly and it moves smoothly.

The higher the number, the stronger the paper feed pressure and the more force is applied to feed the paper.

If Double feed occur frequently, lower the paper feed pressure.

If Slips occur frequently, increase the paper Feed pressure.

Set the Separator Pressure Lever to “0”.

The pressure can be set in 5 steps:

0, 1, 2, 3, 4.

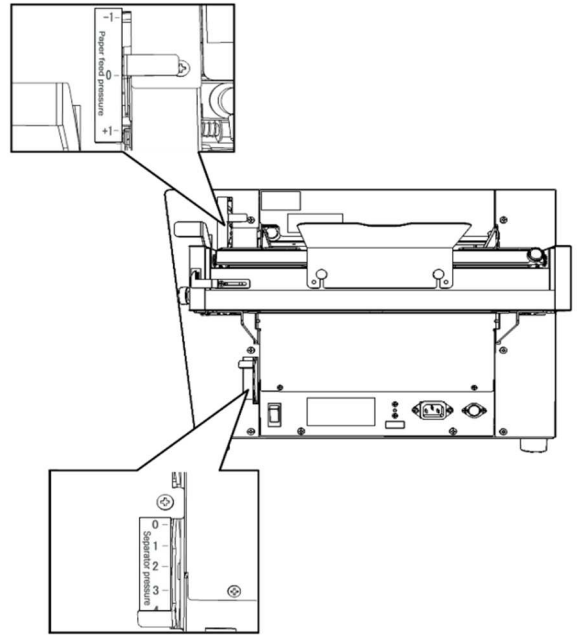
The higher the number, the stronger the separator pressure and the more force is applied to push the paper from below.

If Double feed occur frequently, increase the separator pressure.

If Slips occur frequently, lower the separator pressure.

For the position of the Separator, refer to [2-4 Names of each part].

Paper Feed Pressure Lever



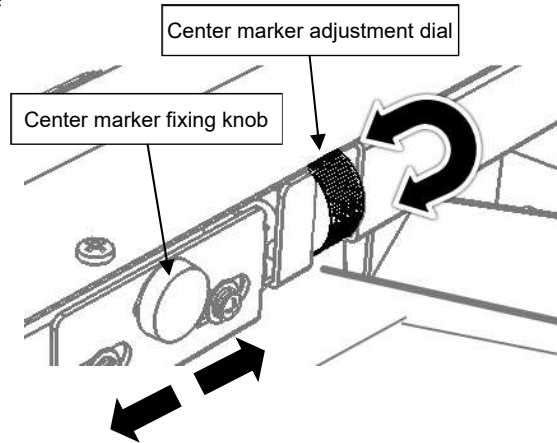
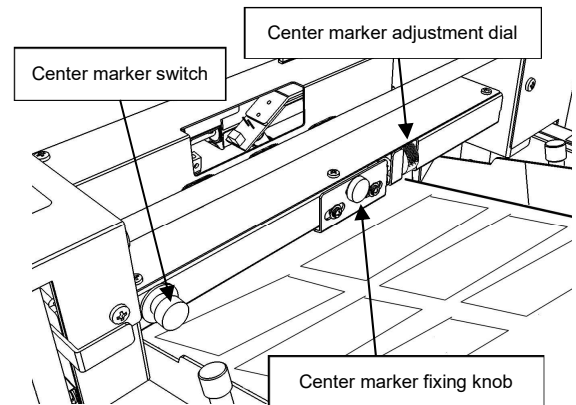
Separator pressure lever

7-2 Adjusting Center marker (laser light) irradiation position

The irradiation position of the Center marker is aligned to the center of the center gutter of the slit, by factory default.

Follow the procedure given below to adjust the irradiation position, or to change it to an arbitrary position.

- [1] Remove the Top cover.
- [2] Place the paper on the Paper feed table.
- [3] Loosen the Center marker fixing knob.
- [4] Press the Center marker switch to make the Center marker emit light.
It lights up for approximately 10 seconds. If the light is turned off during the adjustment, press the Center marker switch again to make it light up.
- [5] Turn the Center marker adjustment dial and move the irradiation position.
 - Turn upward → Moves to the counter-operation side
 - Turn downward → Moves to the operation side
- [6] When it moved to the targeted position, tighten firmly to fix the Center marker fixing knob.



Caution

Make sure not to look directly at the laser light emitted from the opening, as there is a risk of damaging your eyes.

8 Maintenance and Inspection

8-1 Maintenance and inspection

(1) Waste box

Throw away the cut strips that have accumulated every day when the work is finished.

(2) Ejection tray

Take out the business cards or postcards and clean them with a rag soaked in alcohol every day when the work is finished.

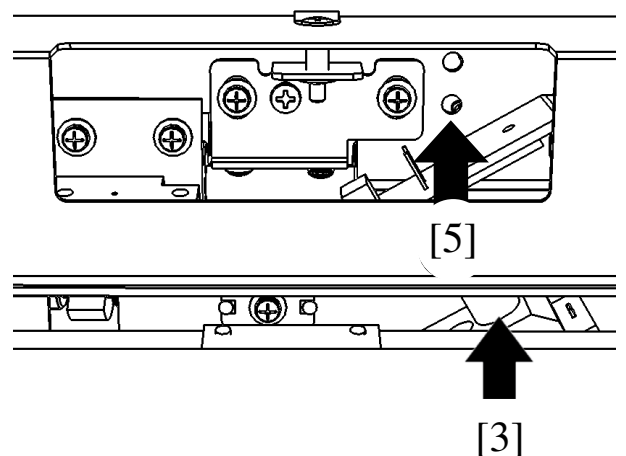
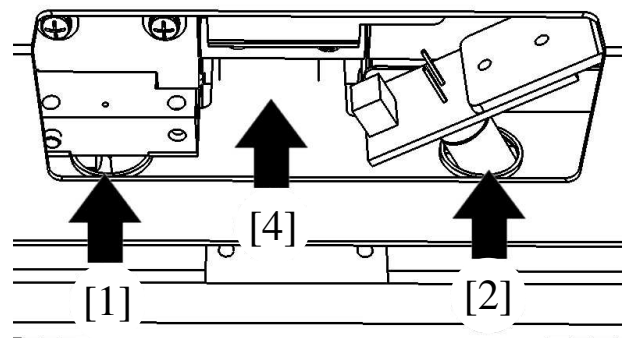
(3) Sensor

Clean the sensor according to the following [Sensor cleaning procedure] as it becomes unable to detect due to “dust” and “dirt”.

The timing of cleaning is when a trouble occurs frequently, such as the frequent occurrence of paper jams, or the occurrence of “Detect Mark Error” even when the mark on the paper is in the normal position, or the failure to release “Paper JAM” even when there is no paper left. Follow the procedure given in the figure below, as it may be caused by a dirty sensor.

<Sensor cleaning procedure>

- 1) Turn OFF the Power switch.
- 2) Spray the air duster from the opening of the cutter cover to each sensor part of [1][2][3][4][5].
- 3) Turning ON Power switch and check the operation.



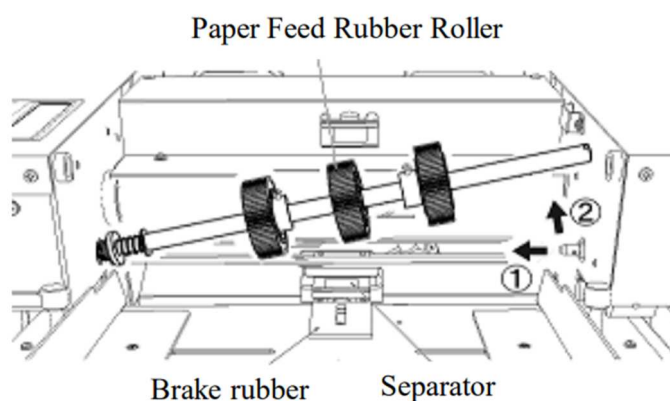
(4) Paper Feed Rubber Roller


When the roller has paper dust or ink adhered to it, it may cause accuracy failure, paper feeding failure, or contamination.

When the work is finished, always keep the roller clean by brushing off the paper dust, and then cleaning it with a rag soaked in appropriate cleaner.

<Paper Feed Rubber Roller cleaning procedure>

Turn off the power, remove the Top cover, and clean the Paper Feed Rubber Roller shown in the figure below.



 Caution	Never use highly volatile solvents such as acetone and thinner.
	Be sure to turn off the power when cleaning the Paper Feed Rubber Roller.
	There are protrusions and blades inside the machine. There is a risk of “injury” when you touch them firmly with your hands and fingers. Be very careful when you work.

8-2 Parts/consumables to be regularly replaced

Some of the electronic parts such as the blades, Paper Feed Rubber Rollers, and Antistatic brush included in this machine require periodical replacement due to wear and tear.

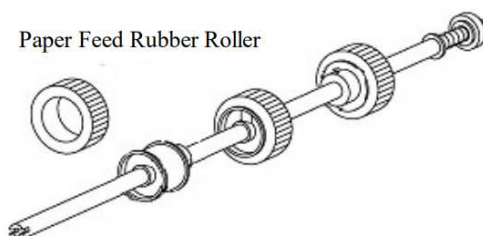
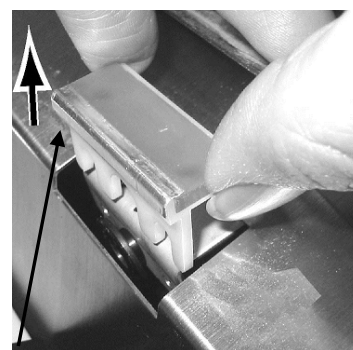
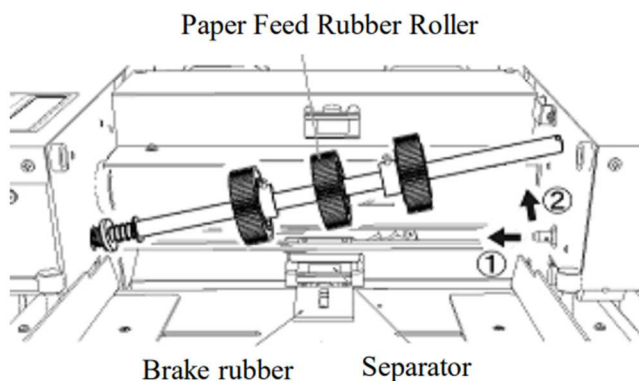
When the timing has arrived that requires the periodical replacement or the periodical maintenance, “Maintenance Time” appears on the LCD, and “!” appears on the right side of the set “Sheet count” on the operation screen.

Starting	[BUS 10]	LTR／Norm
Maintenance Time	10 !	

Consult your supplier and perform the maintenance if this appears.

[Major periodical replacement parts and replacement timing]

- Separator: When the misalignment of the paper or double feeding is noticeable.
- Brake rubber: When the contamination and damage became prominent, and paper feeding failure has occurred.
- Paper Feed Rubber Roller: When the contamination and damage became prominent, and paper feeding failure has occurred.
- Cutter: Approximately 100,000 pattern of LTR paper 10-up pattern are cut.
(This varies depending on the status of use, such as the paper thickness)
- Slitter blade: Approximately 150,000 pattern of LTR paper 10-up pattern are cut.
(This varies depending on the status of use, such as the paper thickness)
- Antistatic brush: When the contamination and damage became prominent, and the business card is misaligned in the ejection part.
- Center marker: When it becomes dim, flickers, or is not lit.

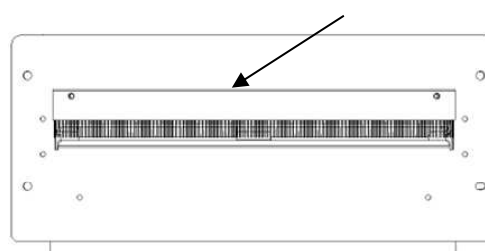


Separator

<How to remove>

Remove the Paper Feed Rubber Roller,
and pull out upward.

Antistatic brush



9 Troubleshooting

9-1 How to handle alarms

When the safety device is in operation, or when there is a paper jam or failure, a buzzer will sound and the error content will appear on the LCD, and then the machine stops.

[1] Check the error content.


(E.g.)

Paper JAM (feed) E12

Turn off the power after checking the error content.

[2] Take action in accordance with [9-2 How to troubleshoot].


[3] Turn on the power again, and check that the error is resolved.

 Caution	<p>When the machine has stopped, and if there is a paper that is fed midway (remaining paper), the paper jam message will be displayed when the power is turned on.</p> <p>At this time, while the pattern key is pressed, the transport motor rotates to discharge. The feed roller and the cutter will move at this point. Make sure that your hands and fingers are not caught between them.</p>
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9-2 How to troubleshoot

When the following problem occurs during feeding or cutting, check its cause/action, and take that action.

Contact your supplier if no method is described, or if the problem is not improved.

Error display	Cause	Action
Internal Error E01	Electrical system failure	Contact your supplier.
Memory E02	Electrical system failure	Contact your supplier.  Caution When the “Memory error” occurs, each set value of the cut size is reset to the factory default value.
Cover Opening E03	[1] The Top cover is detached. [2] The Waste box is detached.	[1] Set the Top cover in the correct position.
Cover Opening W04	[3] The Top cover or Waste box is damaged [4] Electrical system failure	[2] Set the Waste box in the correct position. [3] Contact your supplier. [4] Same as above
Slitter, no detect W05	The slitter is not set correctly.	Check the slitter installation.

Error display	Cause	Action
No Paper/ W10' Feed Table Down	There is no paper	<ul style="list-style-type: none"> [1] Place the paper on the Paper feed table. [2] Lower the Paper Feed Table Lever to raise the lead edge of the Paper feed table.
Feed Slip E11	Paper feed slip Contamination or failure of sensor	<ul style="list-style-type: none"> [1] Increase the paper feed pressure. [2] Decrease the Separator pressure. [3] Set again so that the Paper guide is pressed lightly against the paper. [4] Use the specified papers. [5] Set the paper so that its cutting burrs are facing up.
Paper JAM (feed) E12	<ul style="list-style-type: none"> [1] Fed the papers that have unspecified size. [2] Contamination or failure of sensor [3] Remaining papers (Note) [4] The size of the fed paper and the paper set in the cut size setting do not match. [5] To prevent the electrical system failure from occurring again, check [Section 5-2-3 Changing initial values] again. <p>It may be affected by the static electricity. Follow [Section 9-5 How to discharge static electricity] to discharge the electricity from the paper.</p> <ul style="list-style-type: none"> [6] The Top cover is detached or is not set correctly. [7] The Waste box is detached. [8] The Top cover or Waste box is damaged [9] Electrical system failure 	<ul style="list-style-type: none"> [1] Use the papers of the specified size. (Maximum length: 14") [2] Remove dirt. Refer to [Section 8-1] or contact your supplier. [3] When there are remaining papers, turn off the power and follow the procedure in [Section 9-3] to handle them. [4] Set the paper with correct size or set the cut size. [Section 5-2] [5] Contact your supplier if the paper on the Paper feed table is not fed at all. [6] Set the Top cover in the correct position. [7] Set the Waste box in the correct position. [8] Repair or replace the Top cover or the Waste box. [9] Contact your supplier.

Error display	Cause	Action
Double Feed E13 (Pile Up)	Two or more papers are fed together.	[1] Decrease the paper feed pressure. [2] Increase the Separator pressure. [3] Use the specified papers. [4] Loosen the papers thoroughly.
Double Feed E14	Two or more papers are fed overlappedfed.	[1] Decrease the paper feed pressure. [2] Increase the Separator pressure. [3] Use the specified papers. [4] Loosen the papers thoroughly.
Paper is E15 Too Short	The length of a paper is shorter than the cut size that is set.	Enter the cut size that matches the paper size.
Paper Feed Error E21 (Paper Edge)	The paper does not reach the lead edge detection sensor.	[1] Increase the paper feed pressure. [2] Decrease the Separator pressure. [3] Use the specified papers. [4] Loosen the papers thoroughly.
Detect Mark Error Check Mark E22	[1] The detection is not set correctly. [2] The mark printing is light, or small. [3] The base color is that of the paper that cannot be used. [4] The lateral feed position of the Paper feed table is not aligned. [5] The natural light is too strong. [6] Electrical system failure or sensor failure	[1] Check [Section 5-2-3 Setting detection]. [2] Print or use a paper according to the [Section 5-2-2-b Conditions for mark detection]. [3] Same as above [4] Same as above. Or, match the mark printing to the center of the Paper feed table. [5] Move this machine to a place where no strong light such as direct sunlight is applied. [6] Contact your supplier.
Paper JAM E23 (Mark Sensor)	[1] A multiple paper feeding occurred. [2] Fed the papers that have unspecified thickness. [3] The Cutter unit is worn out. [4] It may be affected by the electrical system failure and the static electricity. Follow [Section 9-5 How to discharge static electricity] to discharge the electricity from the paper.	[1] If there is a paper that is fed midway, pull out that paper. Loosen the papers to be cut next thoroughly, and set them on the Paper feed table. [2] Use the papers of the specified thickness (0.003"~0.015") [3] Contact your supplier if the messages described in [Section 8-2] are displayed. [4] Contact your supplier.
Cutter Broken E30	[1] Cutter mechanical section failure [2] Electrical system failure	[1] Contact your supplier. [2] Same as above
Cutter Locked E31		

Other problem	Cause	Action
The cut start position varies.	[1] The paper is strongly curled. [2] A paper with a base color that cannot be used is used. [3] The mark printing is light, or small. [4] The lateral feed position of the Paper feed table is not aligned. [5] Contamination of sensor	[1] For the limitations of paper curl amount, refer to [Section 3-2]. [2] Use papers that meets the conditions of [Section 3]. [3] Print or use a paper according to the [Section 5-2-2-b Conditions for mark detection]. [4] Refer to [Section 5-6 [2]]. [5] Clean the sensor. [Section 8-1]
The cut position of the detection mark is misaligned uniformly.	The mark printing is light, or small.	Follow [Section 5-6] to make adjustments.
The paper is fed but not cut by the cutter.	A paper with a base color that cannot be used is used.	Use the paper with a base color that matches the specification. [Section 3-1]
The cut size varies.	[1] Contamination of feed roller [2] The size of the fed paper and the paper set in the cut size setting do not match.	[1] Clean the contamination. [Section 8] [2] Set the paper with correct size or set the cut size.
The paper is fed midway and stops.	[1] The paper guide is pressed too hard. [2] The paper is overloaded. [3] The Paper Feed Rubber Roller is dirty or worn out.	[1] Try again so that the Paper guide is pressed lightly against the paper. [2] Check the paper loading capacity and the lead edge position of the paper, and load again. [3] Check the contamination of the Paper Feed Rubber Roller and its vertical movement.
A loud sound is heard while cutting, and the cut failure occurs on the first sheet.	The static electricity is generated, and the gutter and the back margin cut strips are stuck on the blade and sliced.	[1] Try the static electricity discharge method on [Section 9-5-(1)].
The paper is jammed.	[1] The influence of cut strips sticking to the blade due to static electricity [2] The influence of the curled or folded paper, and the paper feed slip [3] The influence of ejection jam	[1]Try the static electricity discharge method on [Section 9-5-(1)]. [2]Do not use the papers that are described in [Section 3-2]. [3]Do not pull out the workpiece from the Ejection tray during operation. Also, make sure the ejection height does not exceed the upper limit line of the workpiece.

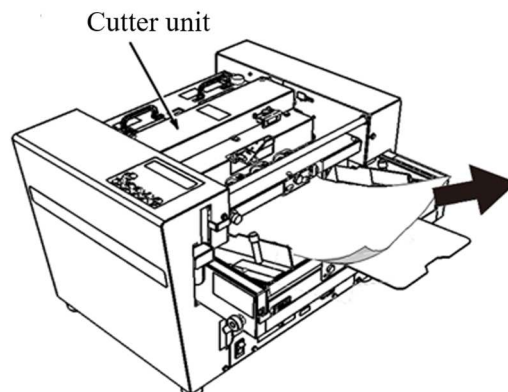
9-3 Clearing paper jam

(1) Paper jam in the paper feed part

Pull out the paper directly, if the paper did not reach the feed roller inside.

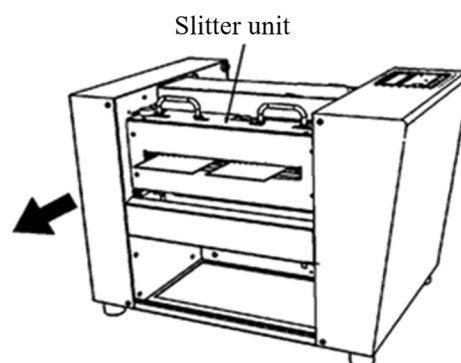
(2) Double feed

- [1] Pull out the paper at the lower side.
- [2] Press the “Pattern” key, and send the paper to the ejection side.
- [3] Remove the long cut strip in the Waste box.



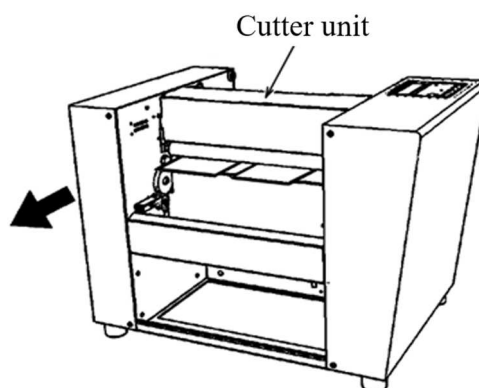
(3) Paper jam in the paper ejection part

Press the “Pattern” key on the error screen, and send the paper to the ejection side.



(4) Paper jam in the Slitter unit and Cutter unit

- [1] Turn off the power.
- [2] Remove the Adjustable slitter unit using the method described in [Section 9-4].
- [3] Pull out the paper that remains in the Cutter unit by hand.
- [4] Pull out the paper that remains in the Adjustable slitter unit by hand.
- [5] Install the Adjustable slitter unit using the method described in [Section 9-4].



Caution

When clearing the paper jam inside the Cutter unit, make sure to have the power turned off. There is a blade inside the Cutter unit. There is a risk of “injury” when you touch them with your hands and fingers. Pay attention when you perform operation.

When you send the jammed paper to the ejection side, a long cut strip will be discharged from the slitter to the Waste box. Please be sure to empty the cut strips in the Waste box. The long cut strip in the Waste box may prevent the cutting waste from falling down, thus causing the paper jam.

9-4 How to replace Adjustable slitter unit


There are three types of multi-unit for the Adjustable slitter unit that can adjust the blade position.

The standard [TU-1] is “4 blades” with the center gutter 10 mm → 0.393” and the slitter unit that is adjustable on both sides.

[Options (sold separately)]


· TU-2: “3 blades” with the center 1 blade and the slitter unit that is adjustable on both sides. Mainly for postcard cut

· TU-3: No center blade. “2 blades” with the slitter unit that is adjustable on both sides. Mainly for strip cut

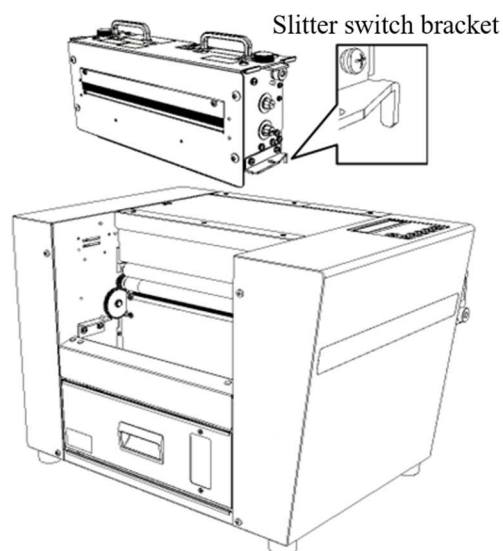
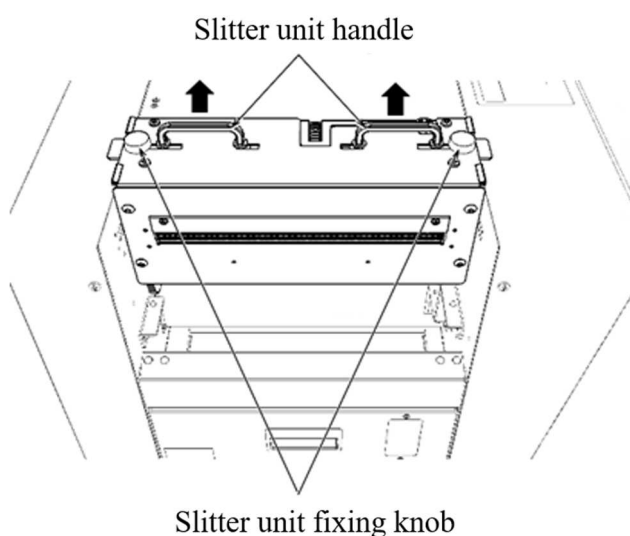
 Caution	Please handle with special care, as it is very dangerous when dropped during the unit replacement.
	When performing the replacement, be sure to turn off the Power switch, and remove the power cord from the outlet.
	There are protrusions and blades inside the machine. There is a risk of “injury” when you touch them firmly with your hands and fingers. Pay attention when you perform operation.


(1) <How to remove>

- [1] Loosen the fixing knob on both sides, slide the handle inside, and then pull it out from the rectangular holes on the main unit.

 Caution	When you start loosening the fixing knob, stop there and do not rotate it too much. The fixing knob falls down if it is rotated too much.
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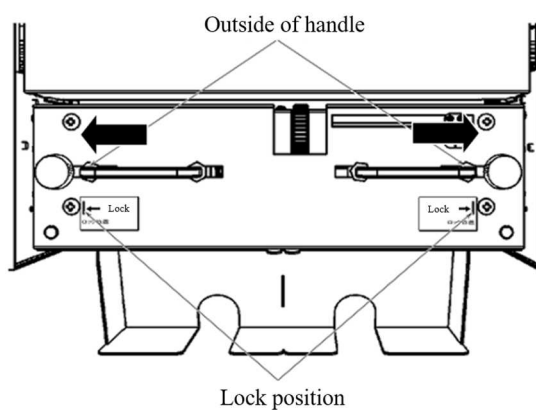
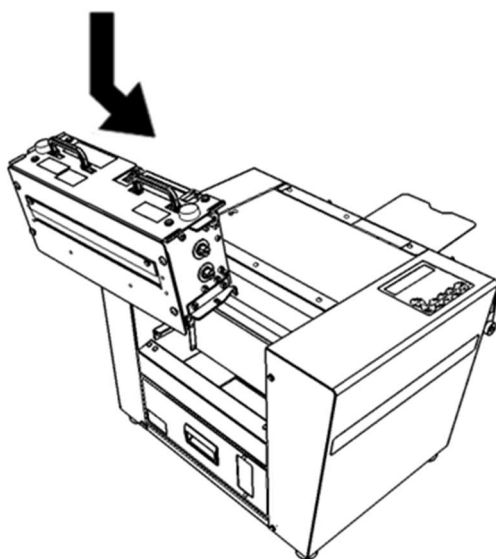
- [2] Hold the handles on both sides, and remove it using both hands to lift it in parallel.



 Caution	When the Adjustable slitter unit is removed, make sure that you do not bend or break the slitter switch tab.
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(2) Notes for installation

- [1] Hold the handles on both sides securely, and set it on to the main unit slowly from the upper side.
After setting, sway the upper side of Adjustable slitter unit lightly back and forth to check if it does not significantly rattle. If it does, lift up the Adjustable slitter unit a bit and set again.
- [2] Slide the outside of the handle to the “lock position” on the nameplate. Then, tighten and fix the two fixing knobs.
- [3] Insert the power cord into the outlet, and turn ON the Power switch for a test run. Cut one sheet of paper and check that the Adjustable slitter unit is not rattling or generating any noise.



9-5 To prevent troubles

To prevent troubles, pay attention to the following when operating this machine.

(1) Static electricity failure

- Multiple papers may be fed, cut position failure may occur, or cut strips may rise in the air.
- The cut strips may not be stored properly in the Ejection tray but separately, and may rise in the air.
- The cut strips may sticks or winds around on the Cutter unit.
- The cut strips may mix into the Ejection tray.

How to discharge static electricity

- The prints that are output from the laser printer should have enough air in between the papers, avoid friction, and be left as they are for a certain period of time (approximately 15 minutes).
- It is effective to keep the humidity inside the work room at 50% or more.
However, if the humidity is too high, it may crease the paper and have negative impact on the paper feed.
- Do not stack up a large amount of prints. Instead, place them separately.
- If you are inserting the gutter for cutting, we recommend cutting in a pattern with the gutter size as long as possible, to avoid the influence of static electricity.

(2) Paper jam failure

- Do not cut the papers that are described in [Section 3-2].
- A setting where the BM (back margin) is 0.196" or more is recommended.
Also, never set BM to 0.118" or less.
- Do not cut the papers that have burrs and a lot of paper dust.
- Do not cut the paper that is largely curled after printing.
- Do not pull out the workpiece from the Ejection tray during operation.
- Make sure the ejection height does not exceed the upper limit line of the workpiece.
- Run [8 Maintenance and Inspection] every day when the work is finished.

10 Options

In this machine, there are options for the Adjustable slitter unit that cuts postcards, strips, and business cards.

For specifications, please consult your supplier.

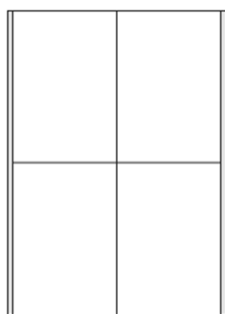
To implement operation/work, sufficient consideration should always be given to safety.

By replacing the Adjustable slitter unit, you can cut postcards and strips.

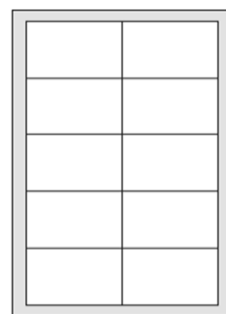
< Example of cutting >

[TU-2 3-blade unit]

Example of postcard finish from A4 backing paper

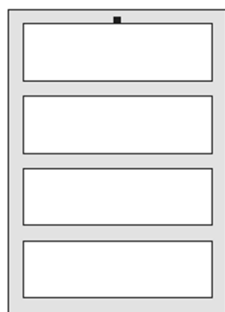


Example of business card cut without center gutter



[TU-3 Strip unit (2-blade)]

Example of strip cut

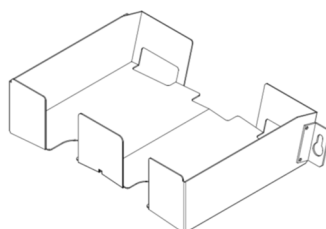


Example of A4 → A5 size finish



[ST-150 Postcard tray]

Ejection tray for postcard size



11 About Disposal

For the disposal of the machine that you have purchased, entrust it to the industrial waste disposal authority or dispose of it yourself according to the local regulations of the area you reside.

Appendix

1. Setting range for each cutting pattern

a. Types and setting ranges of [BUS] mode (lead edge detection cutting mode)

Cut Pattern	Detection method	Cards (1/2 of total number of imposition)	T.Matrgin	W.Length	Gutter	Size	Paper thickness (* 5)	Ex(* 6)	T.ADJ	Sheets
BUS. 10	Edge (*1)	5(*1)	0 0.118"~1.377"	1.850"~2.401"	0 (*1)	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1 - 100
BUS. G10	Edge (*1)	5(*1)	0 0.118"~1.377"	1.850"~2.401"	0.078"~1.181"	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1 - 100
BUS. G12	Edge (*1)	6(*1)	0 0.118"~1.377"	1.850"~2.401"	0.078"~1.181"	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1 - 100

b. Types and setting ranges of [■ BUS] mode (mark detection cutting mode)

Cut Pattern	Detection method	Cards (1/2 of total number of imposition)	T.Matrgin	W.Length	Gutter	Size	Paper thickness (* 5)	Ex(* 6)	T.ADJ	Sheet
■BUS. 10	Mark-B ■ Mark-W □	5(*1)	(*2)	1.850"~2.401"	0 (* 1)	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1-100
■BUS. G10	Mark-B ■ Mark-W □	5(*1)	(*3)	1.850"~2.401"	0.078"~1.181"	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1-100
■BUS. G12	Mark-B ■ Mark-W □	6(*1)	(*4)	1.850"~2.401"	0.078"~1.181"	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1-100

c. Setting range for “user” (initial value is the same as a. [BUS] mode_BUS 10)

Cut Pattern	Detection method	Cards (1/2 of total number of imposition)	T.Matrgin (* 7)	W.Length	Gutter	Size	Paper thickness (* 5)	Ex(* 6)	T.ADJ	Sheet
User (01-10)	Edge Mark-B ■ Mark-W □	0-6	0/0.118"~1.377"	1.850"~ 5.905"	0.078"~ 1.181"	LTR/LGL/Ex	Norm/ Thick / Thin	5.039"~14"	±0.393"	1-100

*1: Fixed

*2: This depends on the position of the cut mark. It is recommended to print the cut mark in the position 0.500" from the lead edge of the paper.


*3: This depends on the position of the cut mark. It is recommended to print the cut mark in the position 0.251" from the lead edge of the paper.

*4: This depends on the position of the cut mark. It is recommended to print the cut mark in the position 0.374" from the lead edge of the paper.

*5: Select “Thin” when the paper is 16lb or more 28lb or less.
Select “Norm” when the paper is 28lb or more 72lb or less.
Select “Thick” if the paper is 72lb or more 87lb or less.

*6: Special paper size. This value becomes valid when you select “Ex” for size.

*7 : When the “Detection” is set to “Mark”, it depends on the position of the cut mark.

 Caution	<p>For the setting value of the cut size in the vertical direction, it may be initialized due to the failure of this machine. When you change the set value, we recommend recording it to [Appendix 10. Cutting pattern set value Revision history memo].</p>
	<p>If the cut size exceeds the paper length set in “Size”, or if it exceeds the maximum paper length, or if there are unentered settings in the user pattern, an error message will be displayed on the LCD. Enter it again.</p>
	<p>The cut size of the paper is influenced by the thickness of the paper, due to the structure of the machine. This machine is adjusted referencing the high quality paper that is 0.009” thick. Therefore, if the paper is thicker or thinner than this, there will be some misalignment between the set cut size and cut workpiece. If the paper is thick, the setting value should be longer, and if it is thin, make it shorter.</p> <p>In such cases, change the “Thickness” setting to “Thin” or “Thick”. For the guideline of the thickness setting, refer to [Appendix 1. Setting range for each cutting pattern *6].</p>
	<p>To operate this machine without any trouble, <u>it is recommended to set the cut pattern so that the value of BM (back margin)” changes from 0.197” to 0.472”</u> as shown in [5-2-2 (Fig. 4)]. The setting in which the value of BM is less than 0.196” can easily cause trouble, as the cut off parts of the paper back margin (back margin cut strip) becomes difficult to remove. A setting where the value of BM is 0.196” or more is recommended.</p> <p><u>Also, never set the value of BM to 0.118” or less.</u></p> <p>For the setting where the value of BM exceeds to 0.472”, note that the back margin cut strips tend to remain in front of the Cutter unit, and may cause paper jams.</p>

2. About counter function

This machine has a “Sheet counter” that can set the sheet count to be cut, and a “Cut counter” that can display the number of cut workpiece (columns).

(1) Sheet counter

You can enable/disable the sheet counter when the machine is in the standby state. While pressing and holding the “SET” key, press the “START” key.

When the sheet counter is valid, the sheet count will be displayed at the lower left hand corner of the LCD. It will not be displayed when it is not valid.

When the sheet counter is displayed, the machine stops automatically after the set number of backing sheet is processed. (Reduced count)

The number of sheets to be cut can be set in [Section 5-2-3 Changing initial values], in the range of 1 to 100 for "Sheet".

When the sheet counter is not shown, continue the process until the loaded papers are gone, and then stop.

(2) Cut counter

This is a five-digit (0 to 99999) counter that displays the completed number of the workpiece (columns). When you cut the “sheet that is printed Letter10-up”, the counter value will be raised +5.

To clear the counter to 0, while pressing and holding the “SET” key, press the “STOP” key when the machine is in the standby state.

It will also be cleared to 0 when the cut pattern is switched.



If any error occurs while cutting, the number (number of columns) of discharged workpiece may not match the counter value.

3. About detection (method)

There are two methods for detecting the cutting position on a paper: “Edge” and “Mark”.

- **Edge** : The lead edge of the paper is read by the sensor, and the cutting is performed referencing the lead edge.
- **Mark** : The pre-printed mark is read by the sensor, and the cutting is performed referencing the top edge surface of this cut mark.

It is effective to select this if the patterns printed on a paper is misaligned every time.

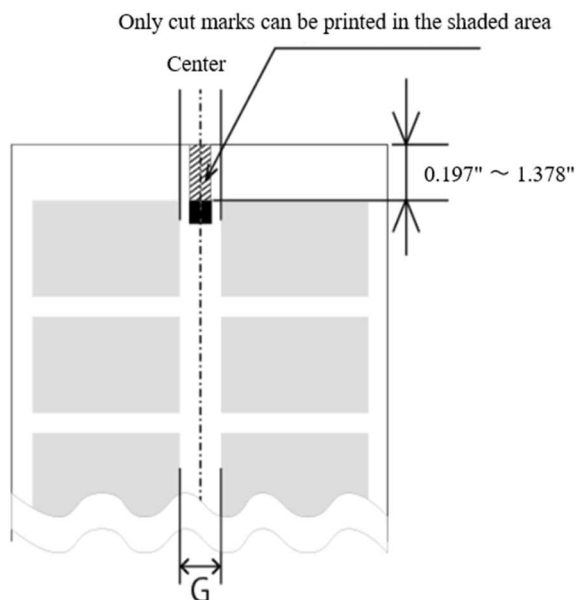
(1) Conditions for lead edge detection

The papers with a transparent or semi-transparent base color, or the papers that are too glossy, cannot detect the paper edge surface correctly. Do not use these as it may cause misalignment in cutting, or get discharged in its long form.

When the edge surface of the paper is strongly curled, it may cause variation to form at the detection position of the edge surface of the paper, and it needs to be corrected to approximately 0.196” or less.

(2) Conditions for Mark-B (Black cut mark) detection

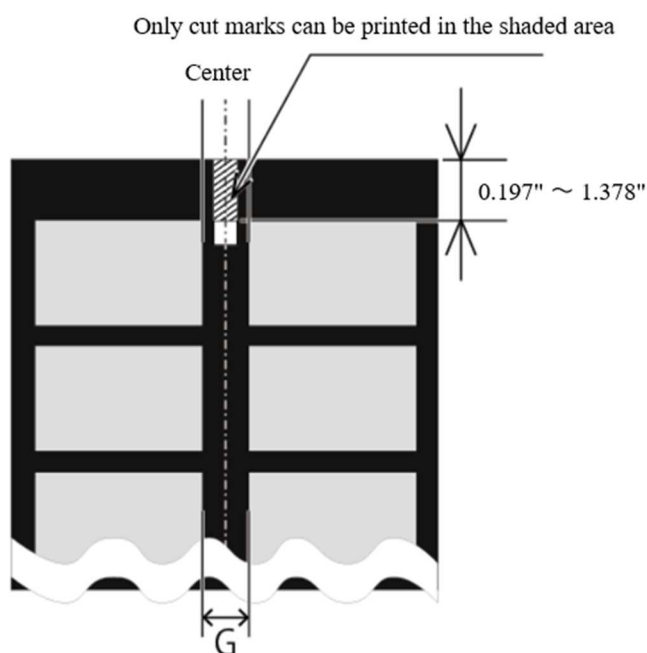
Print the mark according to the specification below, on the papers with the base color white or a light color close to white.




- [1] Print in the range of 0.196” to 1.377” from the lead edge of the paper.
- [2] Print in the center position of the paper.
- [3] Check that there is no contamination or shaded pattern or printing around the mark. Do not print the center cross mark, etc. between the lead edge of the paper and the mark.
- [4] Only for solid black printing.
- [5] The size of the mark is 0.236” × 0.236” (minimum). When the size of G is 0.393”, it is recommended to change the mark size to 0.236” × 0.236”.
- [6] Print the mark so that it is contained within ± 0.039” to the center of the paper.

(3) Conditions for Mark-W(White cut mark) detection

Print the mark according to the specification below, on the papers with the base color black or a darker color close to black.



- [1] Print in the range of **0.196" to 1.377"** from the lead edge of the paper.
- [2] Print in the center position of the paper.
- [3] Check that there is no contamination or shaded pattern or printing around the mark. Do not print the center cross mark, etc. between the lead edge of the paper and the mark.
- [4] Only for solid white printing.
- [5] The size of the mark is $0.236'' \times 0.236''$ (minimum).
When the size of G is $0.393''$, it is recommended to change the mark size to $0.236'' \times 0.236''$.
- [6] Print the mark so that it is contained within $\pm 0.039''$ to the center of the paper.

 Caution	<ul style="list-style-type: none"> · If the printing of the mark does not meet the conditions given above, the mark may not be detected or misaligned in cutting.
	<ul style="list-style-type: none"> · The papers with transparent or semi-transparent base color cannot be used.
	<ul style="list-style-type: none"> · When the cut mark is faded or when the color is irregular, it may cause variation to form at the cut position due to the lowering of detection accuracy.
	<ul style="list-style-type: none"> · When the edge surface of the paper is strongly curled, it may cause variation to form at the detection position of the cut mark, and it needs to be corrected to approximately 5 mm → <u>0.197"</u> or less.
	<ul style="list-style-type: none"> · The start position of cutting may be slightly misaligned due to the type of toner and ink, or the printing density. Adjust with the lead edge correction in such cases. For the correction method of lead edge, refer to "Appendix 4. About lead edge correction".

4. About lead edge correction

If the lead edge of the paper has a uniform curl, and if, under the printing conditions for mark, the lead edge cut length may be slightly different from the set value. Also, adjust the lead edge correction value as follows, in case the cut pattern setting is “0” at the leading edge and back margin, like the 4-up postcards.


[1] When Detection is “Edge”

- If T.Margin is not 0 (N/A), then setting a positive value for “T.ADJ” makes the lead edge cut length longer, and setting a negative value makes the length short.
- If T.Margin is 0 (N/A), then setting a positive value for “T.ADJ” makes the Length longer, and setting a negative value makes the Length short.

[2] When Detection is “Mark-B” or “Mark-W”

This is determined by checking for a cut mark on the cut piece of the lead edge of paper.

- When there is some cut mark left and cut, set “T.ADJ” to a negative value.
- When there is no cut mark left and if there is a blank part in the gutter in between the workpieces, set “T.ADJ” value to a positive value.

 Caution	If the value of “T.ADJ” is adjusted unnecessarily, the cut off parts of the back margin might remain before the Cutter unit, causing paper jams and cutting failures.
	When adjusting the value of “T.ADJ”, compare the set value of the Lead edge and the actual cut piece, and adjust only if there is a misalignment.

5. Adjustable range for each Adjustable slitter unit

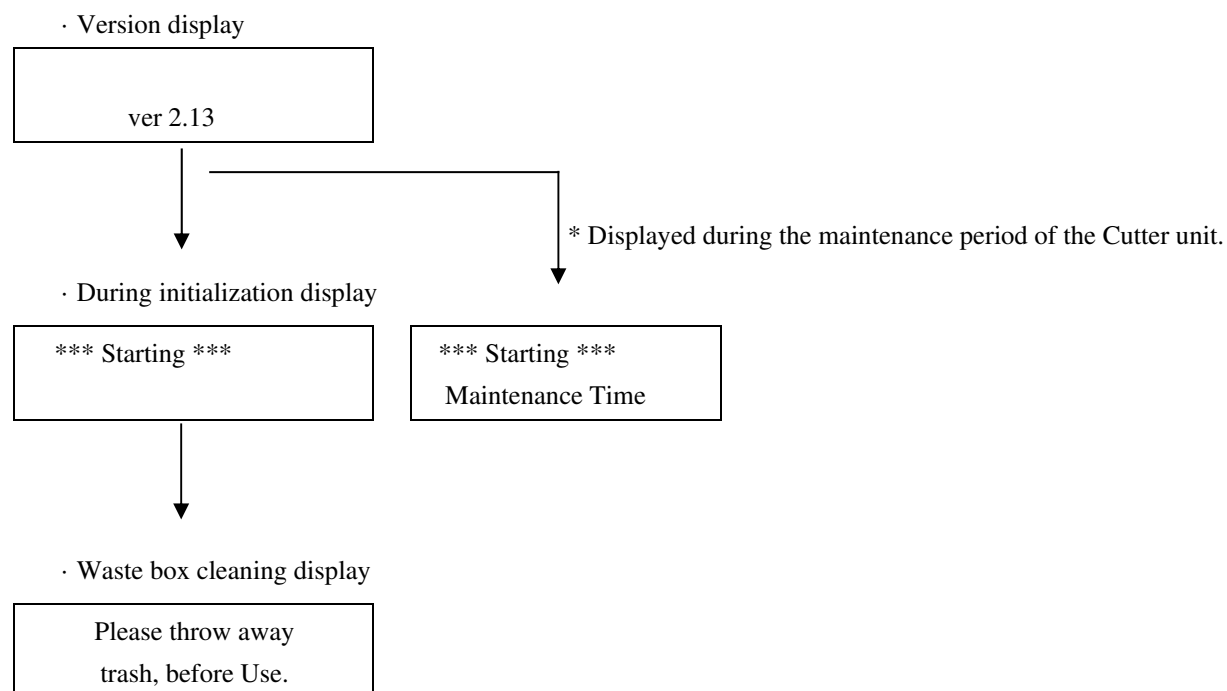
Unit name	W Slitting width	G Center gutter	Remark
TU-1	45mm – 100mm 1.771”~3.937”	10mm →0.393”	(Normal) Multi unit (4 blades)
TU-2 (SU-2)	50mm – 105mm 1.968”~4.133”	0mm 0.000”	(Option) 3-blade unit
TU-3 (SU-3)	100mm – 210mm 3.937”~8.267”	None	(Option) Strip unit (2 blades)

6. List of operation key

		Operation keys	Function
Standby	1	Select	Cut Pattern Selection ("BUS.10" ⇒ "■BUS.10" ⇒ "User01")
	2	Pattern	Read of cut pattern memory. Scroll forward.
	3	SET + Pattern	Read of cut pattern memory. Scroll backward.
	4	Mode	Cut size setting menu selection
	5	START	Start cutting.
	6	STOP	Stop cutting.
	7	SET + START	Sheet count ON/OFF
	8	SET + STOP	Reset cut count
	9	Select + Pattern	When paper is jammed, transport motor rotates in forward direction.
	10	Mode + Power ON	Initialization of cut size setting value. (Reset to factory default values.)
When changing the cutting pattern	11	Pattern	Item selection. / Scroll backward.
	12	Mode	Item selection. / Scroll forward.
	13	SET	Store cut size settings.
	14	Mode + SET	Interruption of cut size setting.
	15	START	Each press increases the cut size setting by approximately 0.004 inches.
	16	STOP	Each press decreases the cut size setting by approximately 0.004 inches.
	17	Start + Pattern	Each press increases the cut size setting by approximately 0.398 inches.
	18	Stop + Pattern	Each press decreases the cut size setting by approximately 0.398 inches.
When error has occurred	19	Pattern	The transport roller rotates while the button is pressed.
	20	SET	Clear the error.

7. Display and menu

1) Power on



2) Standby state

Edge detection	Mark detection	User
[BUS. 10] LTR/Norm 10 0	[■BUS. 10]LTR/Norm 10 0	[User01] LTR/Norm 10 0
[BUS. G10] LTR/Norm 10 0	[■BUS. G10]LTR/Norm 10 0	·
[BUS. G12] LGL/Norm 10 0	[■BUS. G12]LGL/Norm 10 0	·
		[User10] LTR/Norm 10 0

8. Changing cutting pattern

(1)	→Detect Cards 5	Edge
-----	--------------------	------

→Detect Cards 5	Mark-B
--------------------	--------

→Detect Cards 5	Mark-W
--------------------	--------

(2)	→Cards 5 T.Margin 0.500"
-----	-----------------------------

(3)	→T.Margin 0.500" W.Length 2.000"
-----	-------------------------------------

(4)	→W.Length 2.000" Gutter 0.000"
-----	-----------------------------------

(5)	→Gutter 0.000" Size LTR
-----	----------------------------

(6)	→Size LTR Thick Norm
-----	-------------------------

→Size LGL Thick Norm

→Size EX Thick Norm

(7)	→Thick Norm Ex 11.000"
-----	---------------------------

→Thick Thic Ex 11.000"

→Thick Thin Ex 11.000"

(8)	→Ex 11.000" T.ADJ +0.000"
-----	------------------------------

(9)	→T.ADJ +0.000" Sheet 10
-----	----------------------------

(10)	→Sheet 10 Detect Edge
------	--------------------------

9. List of selected items → Setting

NO.	SETTING ITEM	DISPLAY	NUMBER, RANGE
1	Detection method	Detection	"Edge/Mark-B/Mark-W (Mark-B "Black"■, Mark-W "White□")"
2	Imposition Count	Cards	0 / 1～6
3	"Leading Edge Cut Length"	T. Margin	0 / 0.118"～1.377"
4	Workpiece Length	W.Length	Business card : 1.850" ～ 2.401" Postcard : 5.629"～5.905" User Ex : 1.850"～5.905"
5	Gutter length	Gutter	0 / 0.078"～1.181"
6	Paper size election	Size	LTR/LGL/ Ex
7	Paper thickness setting	Thick	Norm/Thick/Thin
8	Supported paper sizes	Ex	5"～14"
9	Tip Adjustment	T.ADJ	±0.393"
10	Number of sheets	Sheet	1～100

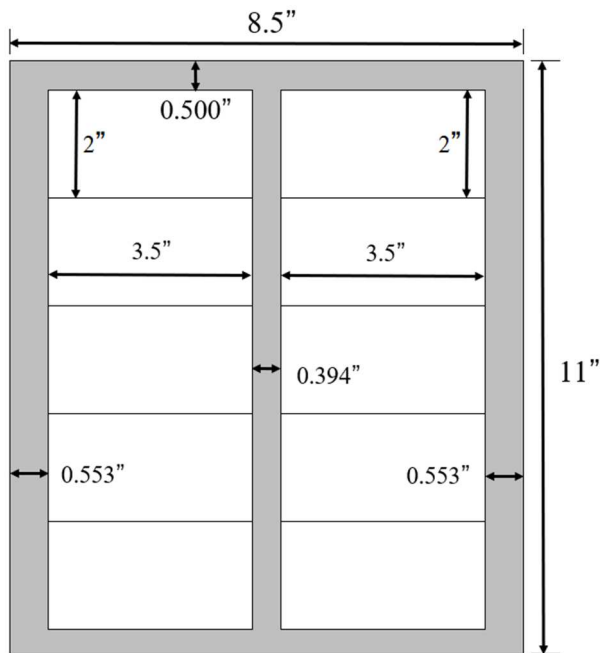
10. Cutting pattern set value Revision history memo

Use to record the set value of the changed cutting pattern.

a: Lead edge detection cutting pattern

(BUS 10) Layout size table

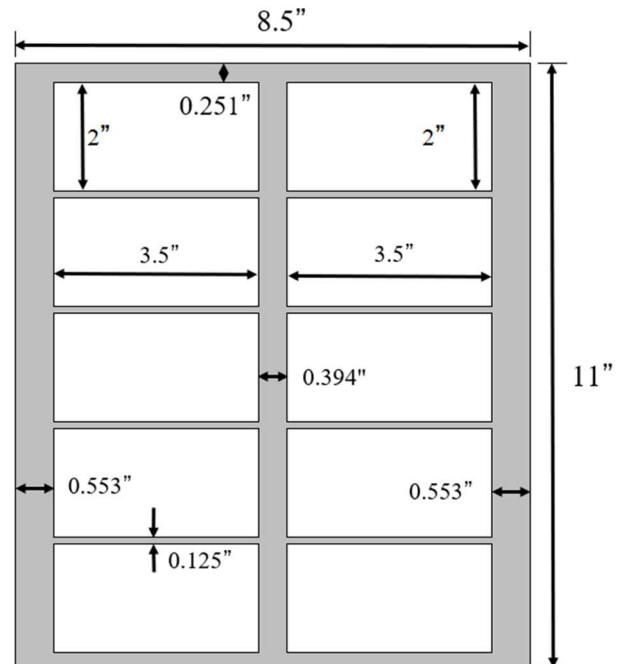
Letter Size



■ This is the part that is cut off as trash.

(BUS gutter 10) Layout size table

Letter Size



■ This is the part that is cut off as trash.

Revision history

	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	5 (*1)	0.500"	2"	0	LTR	Norm	11"	0	10

Revision history

	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	5 (*1)	0.251"	2"	0.125"	LTR	Norm	11"	0	10

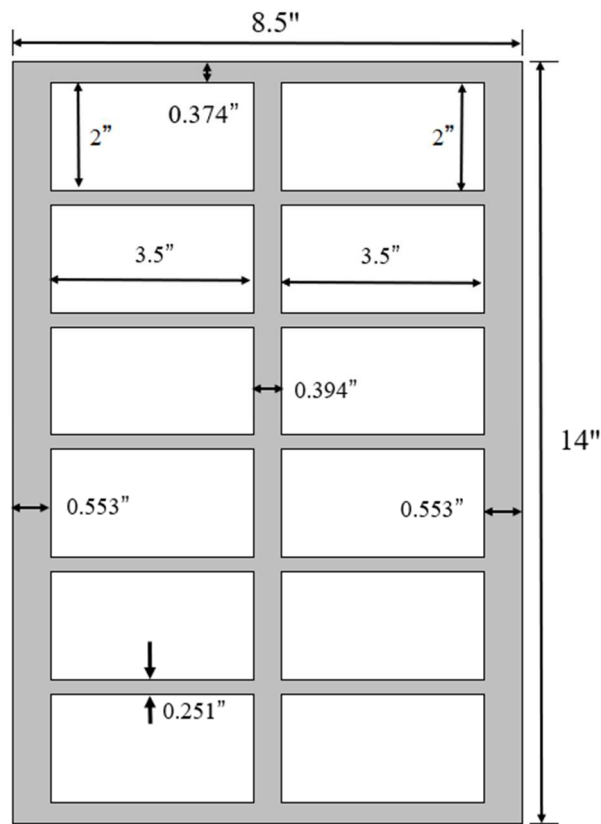
Note) *1: Fixed value


*2: Special paper size. This value becomes valid when you select "Ex" for size.

a: Lead edge detection cutting pattern

(BUS gutter 12) Layout size table

Legal Size



 This is the part that is cut off as trash.

Revision history

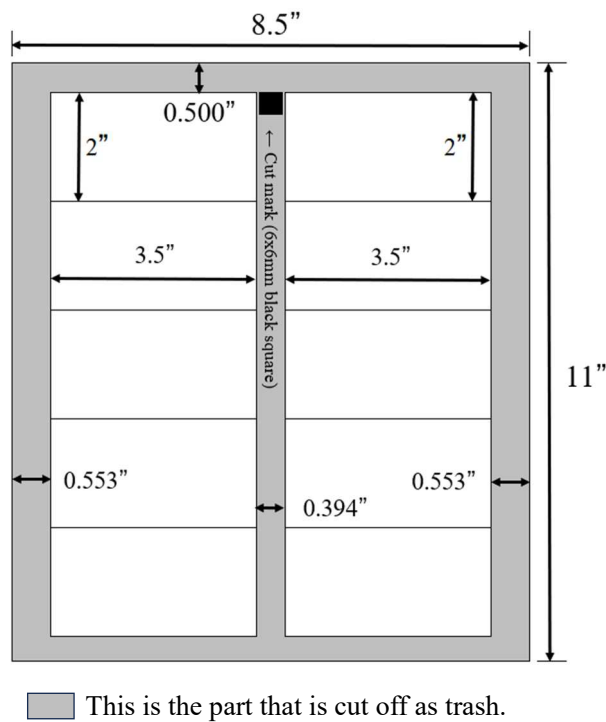
	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	6 (*1)	0.374"	2"	0.251"	LGL	Norm	14"	0	10

Note) *1: Fixed value

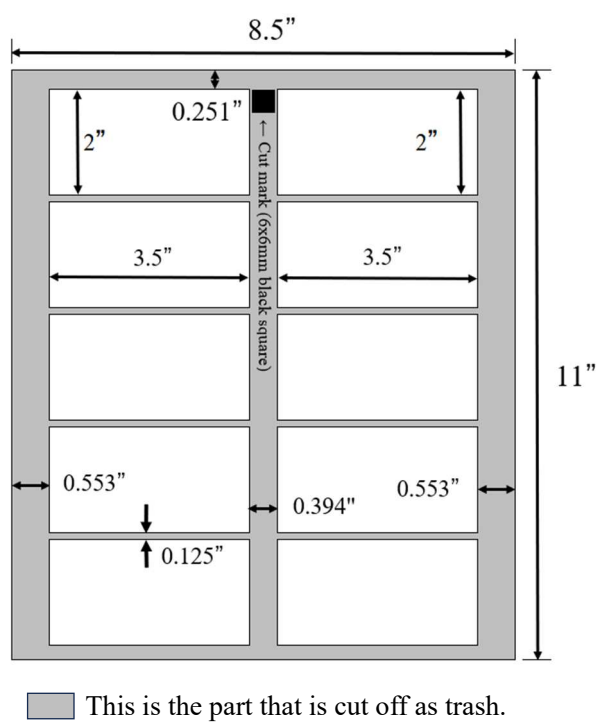
*2: Special paper size. This value becomes valid when you select “Ex” for size.

b: Cut mark detection cutting pattern

(■ BUS 10) Layout size table
Letter Size



(■ BUS gutter 10) Layout size table
Letter Size



Revision history

	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	5 (*1)	0.500"	2"	0	LTR	Norm	11"	0	10

Revision history

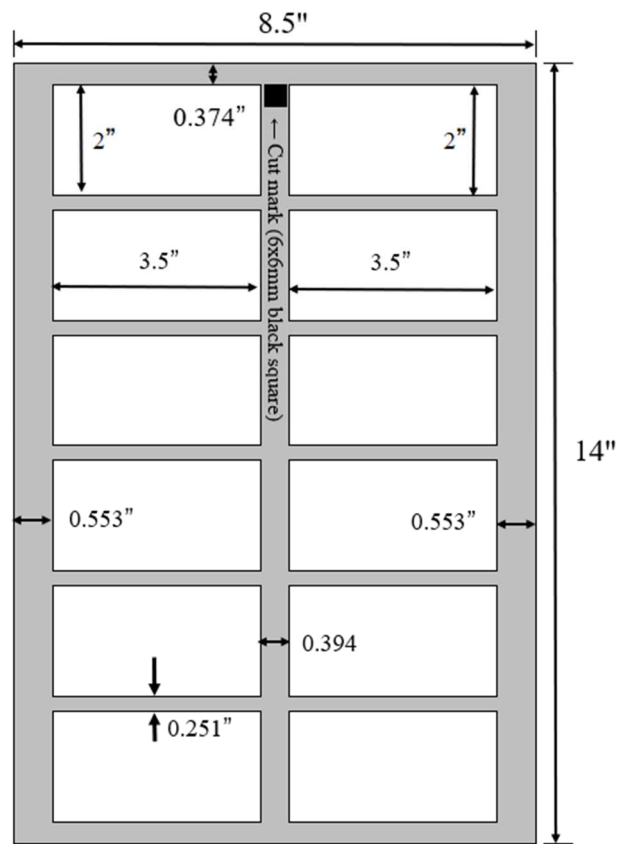
	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	5 (*1)	0.251"	2"	0.125"	LTR	Norm	11"	0	10

Note) *1: Fixed value
*2: Special paper size. This value becomes valid when you select “Ex” for size.
*3: This depends on the position of the cut mark.

b: Cut mark detection cutting pattern

(■ BUS gutter 12) Layout size table

Legal Size

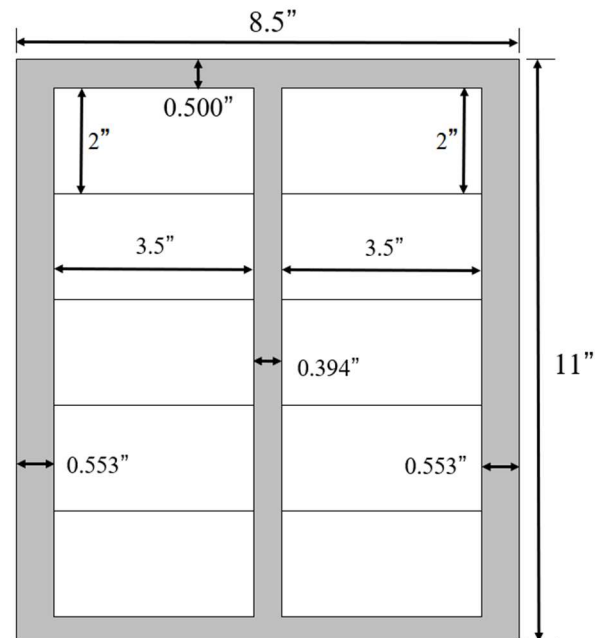


■ This is the part that is cut off as trash.

c: User cutting pattern

Initial value is the same as lead edge detection
(BUS 10)

Letter Size



■ This is the part that is cut off as trash.

Revision history

	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	6 (*1)	0.374"	2"	0.251"	LGL	Norm	14"	0	10

Revision history

	Detecti on	Cards	T. Margin	W. Length	Gutter (inch)	Size	Thick	Ex(*2) (mm)	T. ADJ	Sheet
Default	Edge (*1)	5 (*1)	0.500"	2"	0	LTR	Norm	11"	0	10

Note) *1: Fixed value

*2: Special paper size. This value becomes valid when you select “Ex” for size.

*3: This depends on the position of the cut mark.

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