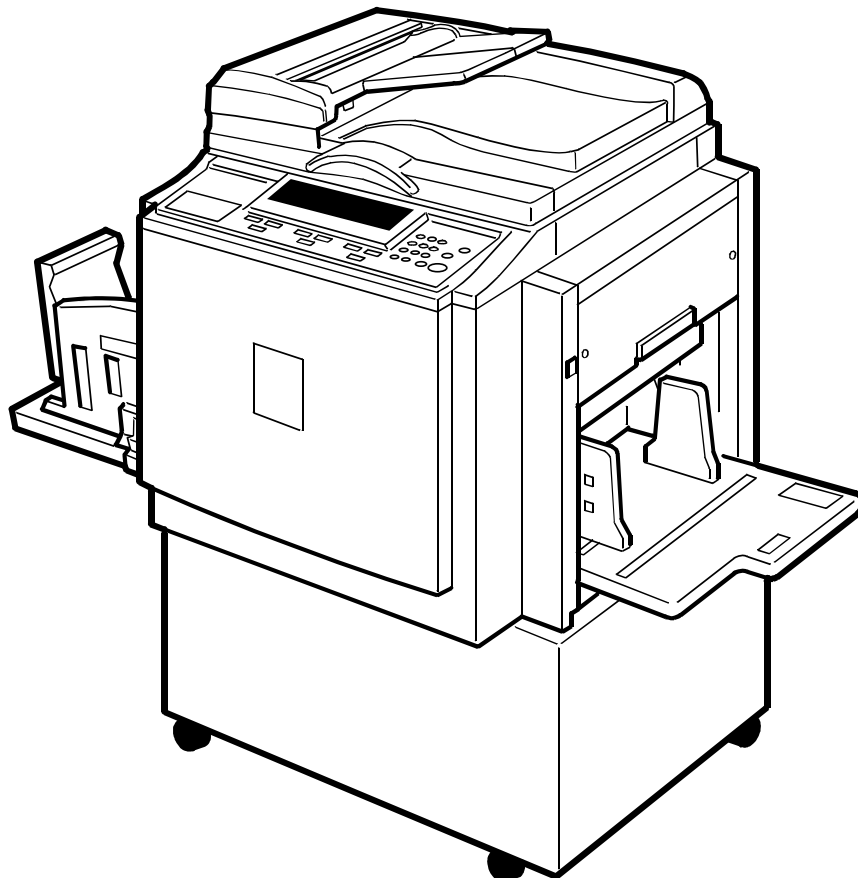


Operator Guide

LDD 030



Digital Duplicator

Introduction

This manual contains detailed instructions on the operation and maintenance of this machine. To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.


Please read the Safety Information before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.



Notes:

Some illustrations in this manual might be slightly different from the machine.

Certain options might not be available in some countries. For details, please contact your local dealer.



Two kinds of size notation are employed in this manual. With this machine refer to the inch version.

For good copy quality, Standard recommends that you use genuine Standard masters and inks.

Standard shall not be responsible for any damage or expense that might result from the use of parts other than genuine Standard parts in your Standard office product.

Power Source

120V, 60Hz, 5.0A or more

Please be sure to connect the power cord to a power source as above. For details about power source, see p.102 "Power Connection".

For safety, please read this manual carefully before you use this product and keep it handy for future reference.

Note to users in the United States of America

Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio /TV technician for help.

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note to users in Canada

Note:

This Class B digital apparatus complies with Canadian ICES-003.

Remarque concernant les utilisateurs au Canada

Avertissement:

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

In accordance with IEC 60417, this machine uses the following symbols for the main switch:

I means **POWER ON**.

O means **POWER OFF**.

Safety Information

When using this machine, the following safety precautions should always be followed.

Safety During Operation

In this manual, the following important symbols are used:

- | |
|--|
| <p>⚠ WARNING:
<i>Indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.</i></p> <p>⚠ CAUTION:
<i>Indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.</i></p> |
|--|

Safety During Operation

In this manual, the following important symbols are used:

- | |
|--|
| <p>⚠ WARNING:
<i>Indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.</i></p> <p>⚠ CAUTION:
<i>Indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.</i></p> |
|--|

⚠ WARNING:

- **Connect the power cord directly into a wall outlet and never use an extension cord.**
- **Disconnect the power plug (by pulling the plug, not the cable) if the power cable or plug becomes frayed or otherwise damaged.**
- **To avoid hazardous electric shock, do not remove any covers or screws other than those specified in this manual.**
- **Turn off the power and disconnect the power plug (by pulling the plug, not the cable) if any of the following occurs:**
 - **You spill something into the machine.**
 - **You suspect that your machine needs service or repair.**
 - **The external housing of your machine has been damaged.**

⚠ CAUTION:

- *Protect the machine from dampness or wet weather, such as rain, snow.*
- *Unplug the power cord from the wall outlet before you move the machine. While moving the machine, you should take care that the power cord will not be damaged under the machine.*
- *When you disconnect the power plug from the wall outlet, always pull the plug (not the cable).*
- *Do not allow paper clips, staples, or other small metallic objects to fall inside the machine.*
- *For environmental reasons, do not dispose of the machine or expended supply waste at household waste collection points. Disposal can take place at an authorized dealer.*
- *Be careful not to cut yourself on any sharp edges when you reach inside the machine to remove misfed sheets of paper or masters.*
- *Our products are engineered to meet high standards of quality and functionality, and we recommend that you use only the expendable supplies available at an authorized dealer.*

How to Read this Manual

Symbols

In this manual, the following symbols are used:

WARNING:

This symbol indicates a potentially hazardous situation that might result in death or serious injury when you misuse the machine without following the instructions under this symbol. Be sure to read the instructions, all of which are described in the Safety Information section.

CAUTION:

This symbol indicates a potentially hazardous situation that might result in minor or moderate injury or property damage that does not involve personal injury when you misuse the machine without following the instructions under this symbol. Be sure to read the instructions, all of which are described in the Safety Information section.

* The statements above are notes for your safety.

Important

If this instruction is not followed, paper might be misfed, originals might be damaged, or data might be lost. Be sure to read this.

Preparation

This symbol indicates the prior knowledge or preparations required before operating.

Note

This symbol indicates precautions for operation, or actions to take after misoperation.

Limitation

This symbol indicates numerical limits, functions that cannot be used together, or conditions in which a particular function cannot be used.

Reference

This symbol indicates a reference.

[]

Keys built into the machine's operation panel.

What You Can Do with this Machine

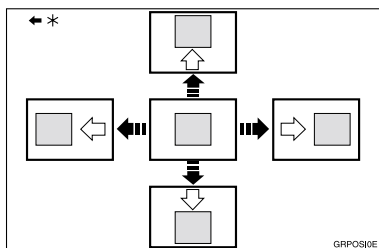
Below is a quick summary of this machine's features and where to look in for more information.

❖ Standard Printing

See p.13 "Standard Printing".

❖ Adjusting the Print Image Position

See p.18 "Adjusting the Print Image Position".



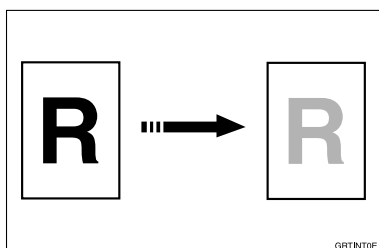
* Paper feed direction

❖ Adjusting the Print Image Density

See p.20 "Adjusting the Print Image Density".

❖ Tint Mode

See p.21 "Tint Mode".



❖ Fine Mode

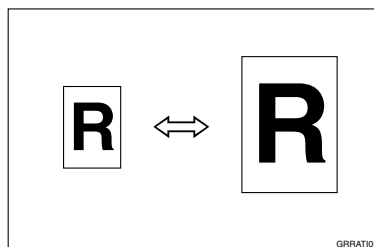
See p.22 "Fine Mode".

❖ Changing the Print Speed

See p.23 "Changing the Printing Speed".

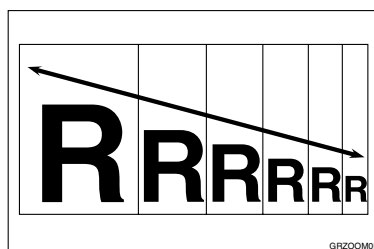
❖ Preset Reduce/Enlarge

See p.25 "Preset Reduce/Enlarge".



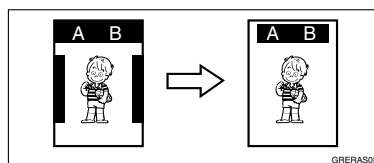
❖ Zoom

See p.27 "Zoom".



❖ Edge Erase

See p.28 "Edge Erase".



❖ Printing on Thick or Thin Paper

See p.30 "Printing on Thick or Thin Paper".

❖ Selecting Original Type

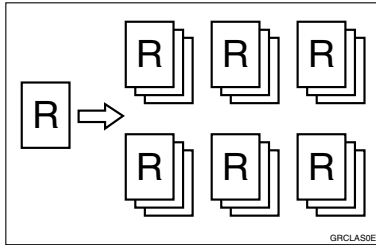
See p.31 "Selecting Original Type".

❖ Economy Mode

See p.33 "Economy Mode".

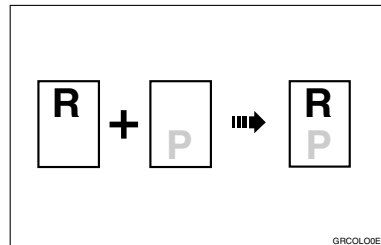
❖ **Class Mode**

See p.34 "Class Mode".



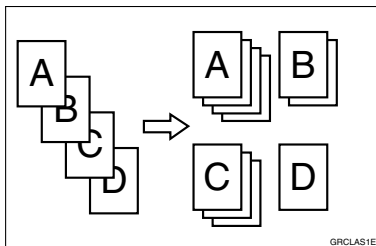
❖ **Printing in Two Colors**

See p.52 "Printing in Two Colors".



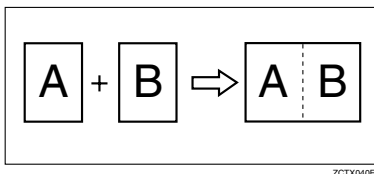
❖ **Memory Mode**

See p.36 "Memory Mode".



❖ **Combining Originals**

See p.39 "Combining Originals".



❖ **Skip Feed Printing**

See p.41 "Skip Feed Printing".

❖ **Program**

See p.42 "Program".

❖ **Security Mode**

See p.44 "Security Mode".

❖ **Making Color Prints**

See p.50 "Making Color Prints".

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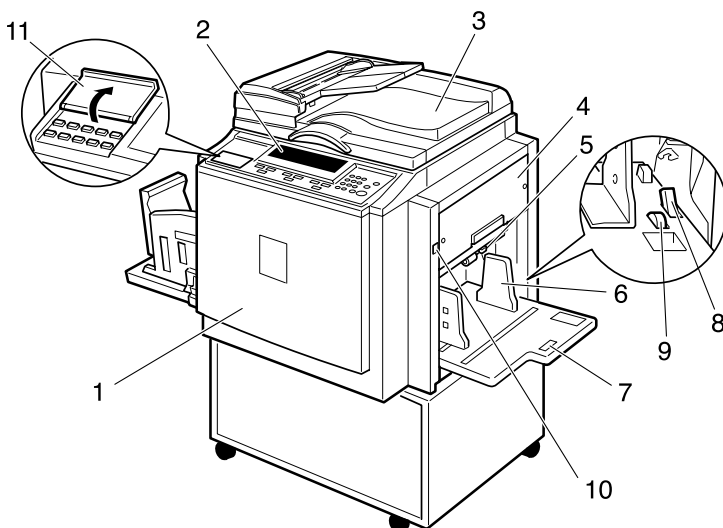
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Machine Exterior



ZFRH020E

1. Front door

Open for access to the inside of the machine.

2. Operation panel

Operator controls and indicators are located here. See p.4 "Operation Panel".

3. Exposure glass cover or document feeder (option)

Lower this cover over an original before printing.

4. Master tray

Pull out this unit when installing the master.

5. Feed roller pressure lever

Use to adjust the contact pressure of the paper feed roller according to paper thickness.

6. Paper feed side plates

Use to prevent paper skew.

7. Paper feed tray

Set paper on this tray for printing.

8. Paper feed side plate lock lever

Use to lock or unlock the paper feed side plates.

9. Side tray fine adjusting dial

Use to shift the paper feed tray sideways.

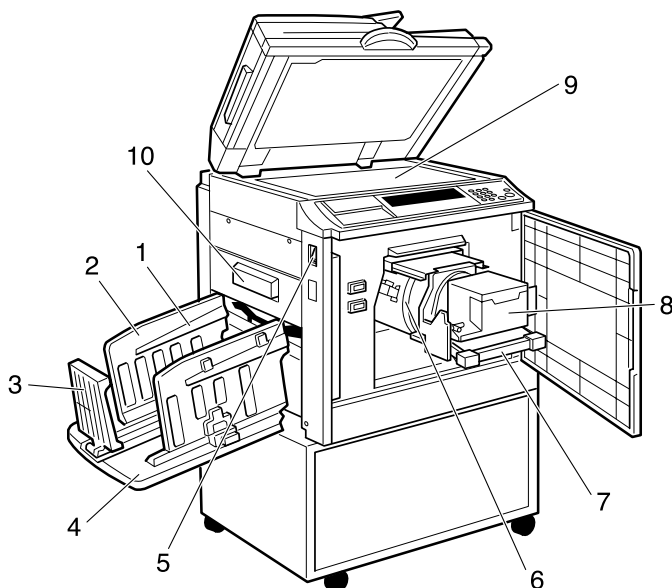
10. Paper feed tray down key

Press to lower the paper feed tray.

11. Behind cover

Flip up when you use the keys underneath.

Machine Interior



ZFRH050E

1. Paper alignment wings

Lift or lower the wings depending on the type of paper being used.

2. Paper delivery side plates

Use to align the prints on the paper delivery tray.

3. Paper delivery end plate

Use to align the leading edge of prints.

4. Paper delivery tray

Completed prints are delivered here.

5. Main switch

Use to turn the power on or off.

6. Drum unit

The master is wrapped around this unit.

7. Drum unit lock lever

Lift to unlock and pull out the drum unit.

8. Ink holder

Set the ink cartridge in this holder.

9. Exposure glass

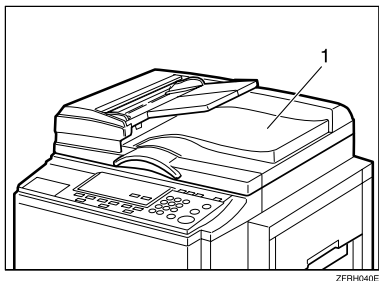
Position originals here face down for printing.

10. Master eject box

Pull out this box to remove the used masters.

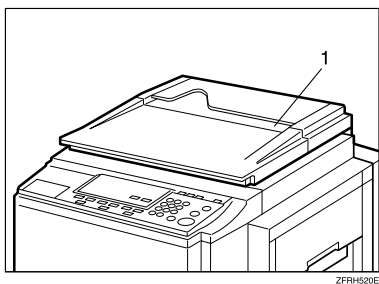
Options

◆ Document feeder



1. Document feeder

◆ Exposure glass cover



1. Exposure glass cover

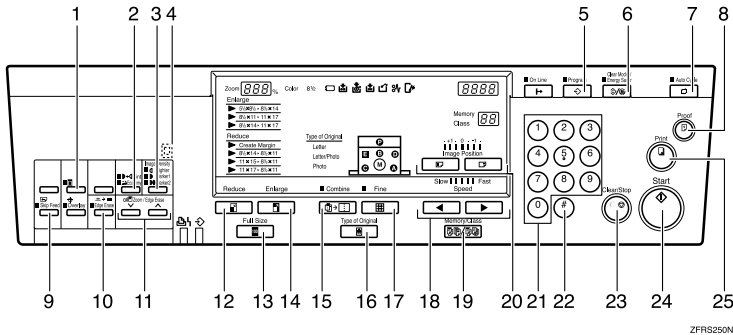
Note

Other options:

- A3, 11" × 17" Color Drum
- A4, 8¹/₂" × 11" Black Drum
- Tape Dispenser
- Key Counter

Operation Panel

Keys



1. **【Security】** key

Press to make prints of confidential documents. See p.44 “Security Mode”.

2. **【Tint/Economy】** key

Press to make halftone prints. See p.21 “Tint Mode”.

Press to save ink. See p.33 “Economy Mode”.

3. **【Image Density】** key

Press to make prints darker or lighter. See p.20 “Adjusting the Print Image Density”.

4. **Check Indicator**

Lights when you have selected one or more of the functions, and lets you know that even if the behind cover is lowered.

5. **【Program】** key

Press to input or recall user programs. See p.42 “Program”.

6. **【Clear Modes/Energy Saver】** key

- **Clear Modes**
Press to clear the previously entered job settings.
- **Energy Saver**
Press to switch to and from Energy Saver mode. See p.17 “Energy Saver Mode”.

7. **【Auto Cycle】** key

Press to process the master and make prints automatically.

8. **【Proof】** key

Press to make proof prints.

9. **【Skip Feed】** key

Press to select skip feed printing. See p.41 “Skip Feed Printing”.

10. **【Edge Erase】** key

Press to select Edge Erase mode. See p.28 “Edge Erase”.

11. **【∨】 and 【∧】** keys (Scroll keys)

Press to adjust the reproduction ratio. See p.27 “Zoom”.

Press to select size and direction of paper or original in Edge Erase. See p.28 “Edge Erase”.

12. **【Reduce】** key

Press to reduce the image. See p.25 “Preset Reduce/Enlarge”.

13. **【Full Size】** key

Press to make full size prints.

14. **【Enlarge】** key

Press to enlarge the image. See p.25 “Preset Reduce/Enlarge”.

15. [Combine] key

Press to combine originals onto 1 print.
See p.39 "Combining Originals".

16. [Type of Original] key

Press to select Letter, Photo, or Letter/Photo mode. See p.31 "Selecting Original Type".

17. [Fine] key

Press to select the fine image. See p.22 "Fine Mode".

18. [◀] and [▶] keys (Speed keys)

Press to adjust the printing speed. See p.23 "Changing the Printing Speed".

19. [Memory/Class] key

Press to select Memory or Class mode. See p.34 "Class Mode", p.36 "Memory Mode".

20. [Image Position] key

Press to shift the image forwards or backwards. See p.18 "Adjusting the Print Image Position".

21. Number keys

Press to enter the desired number of prints and data for selected modes.

22. [#] key

Press to enter data in selected modes.

23. [Clear/Stop] key

Press to cancel a number you have entered, or to stop printing.

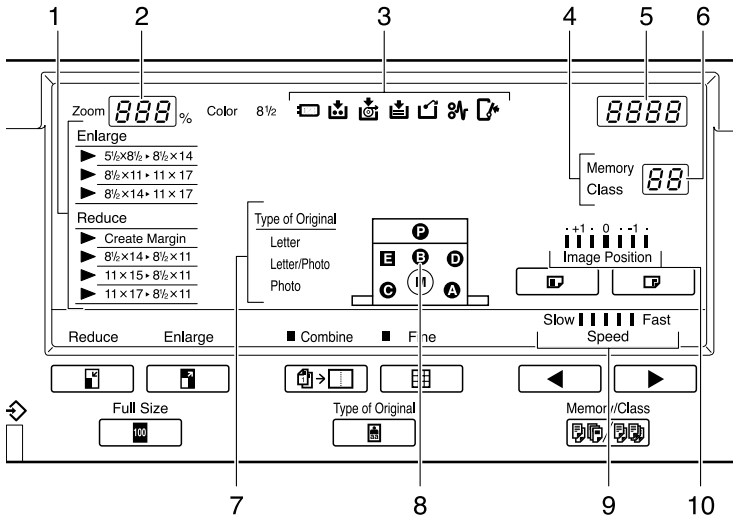
24. [Start] key

Press to make a master.

25. [Print] key

Press to start printing.

Indicators



ZFRS260N

1. Magnification indicators

Show the preset magnification that is selected. See p.25 "Preset Reduce/Enlarge".

2. Zoom counter

Shows the reproduction ratio in zoom mode. See p.27 "Zoom".

3. Error indicators

Light to inform you of the status of the machine. See p.71 "Troubleshooting".

4. Memory/Class indicator

Lights when Memory or Class mode is selected. See p.34 "Class Mode", p.36 "Memory Mode".

5. Counter

Shows the number of prints entered. While printing, it shows the number of prints remaining.

6. Memory/Class counter

Shows the number entered in Memory/Class mode or User Tools.

7. Original type indicators

Show the type of original that is selected. See p.31 "Selecting Original Type".

8. Machine indicators

Show the jammed area with the indicator. See p.74 "Clearing Misfeeds".
Show the opened cover/unit with the indicator. See p.85 "When the Open Cover/Unit Indicator (Light) Lights".

9. Speed indicators

Show the printing speed that is selected. See p.23 "Changing the Printing Speed".

10. Image position indicators

Show the print image position that is selected. See p.18 "Adjusting the Print Image Position".

1. Operation


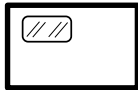
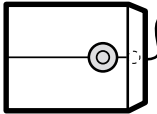
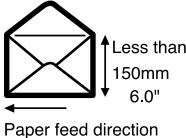
Print Paper

The following limitations apply:

	Paper Size		Paper Weight
	Metric	Inch	
Paper feed tray	A3 ☐, B4 ☐, A4 ☐ ☐, B5 ☐ ☐, A5 ☐, B6 ☐, A6 ☐, Others (Vertical: 70 - 297mm, Horizontal: 148 - 432mm)	11" × 17" ☐, 8 ¹ / ₂ " × 14" ☐, 8 ¹ / ₂ " × 11" ☐ ☐, 5 ¹ / ₂ " × 8 ¹ / ₂ " ☐ ☐, Others (Vertical: 2.76" - 11.7", Horizontal: 5.83" - 17")	47.1 - 209.3g/m ² , 12.5 - 55.6 lb

Non-recommended paper:

- Roughly cut paper
- Paper of different thickness in the same stack
- Envelopes heavier than 85g/m², 22 lb.
- Folded, curled, creased, or damaged paper
- Damp paper
- Torn paper
- Slippery paper
- Rough paper
- Paper with any kind of coating (such as carbon)
- Short grain paper
- Thin paper that has low stiffness
- Paper that is prone to generate a lot of paper dust
- Grained paper loaded with the direction of the grain perpendicular to the feed direction
- Certain types of long thin envelopes e.g. international mail envelopes
- The following types of envelopes:

Envelopes with glue or gum	Envelopes with windows	Envelopes with round tags	Open envelopes
			

If you print on rough grained paper, the copy image might be blurred.

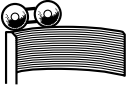
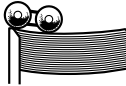
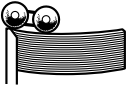

You can use A3 (297 × 420mm) or 11" × 17" originals or printing paper. When you want to print the entire image of an A3, 11" × 17" original, select Reduce mode because the maximum print areas are as follows:

- Metric version: 290 × 409mm, 11.4" × 16.1"
- Inch version: 290 × 415mm, 11.4" × 16.3"

When you use A3, 11" × 17" and 209.3g/m², 55.6 lb paper, slow the printing speed down to setting 1, 2, or 3.

Important


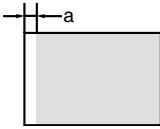
- ❑ Correct curls in the paper before placing it in the machine. When you cannot correct the paper curl, stack the paper with the curl face down or face up as shown in the illustration. If paper is curled, it might wrap around the drum or stains might appear.

	Right	Wrong
Thin Paper		
Thick Paper		

TPEY990E

Originals

- The maximum original size you can place on the exposure glass is $304.8 \times 432\text{mm}$, $12" \times 17"$.
- If you use originals that have bold letters or solid images at the leading edges, you might get prints with dirty edges. In this case, place the original face down with the widest margin toward the paper delivery tray or raise the printing speed.
- Place originals after correction fluid and ink have completely dried. Not taking this precaution could mark the exposure glass and cause marks to be printed.
- The first 5mm , $0.2"$, of the leading edge cannot be printed. Make sure the leading edge margin is at least 5mm , $0.2"$.

Original	Print
	

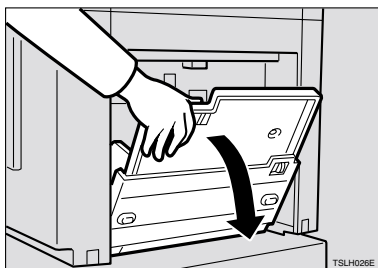
$a = 5\text{mm}$, $0.2"$

Preparation for Printing

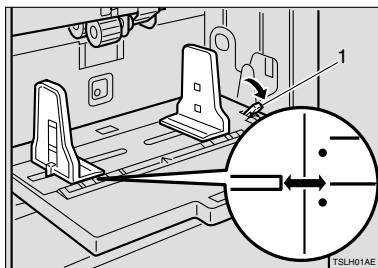
1

Loading Paper

- 1 Carefully open the paper feed tray.

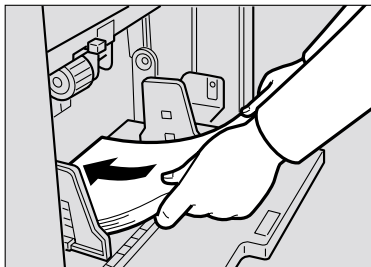


- 2 Shift the paper feed side plate lock lever forward. Adjust the side plates to match the paper size.

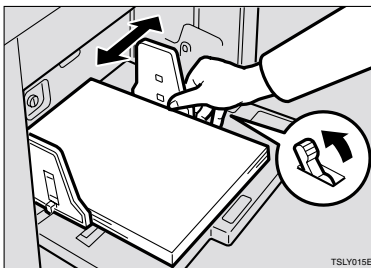


1: Paper feed side plate lock lever

- 3 Load paper on the paper feed tray.

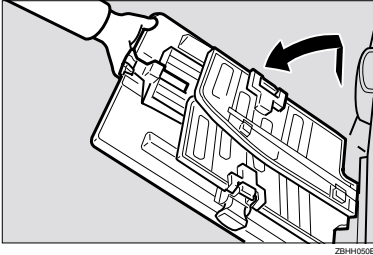


- 4 Make sure that the paper feed side plates touch the paper lightly. Shift the lock lever backward.

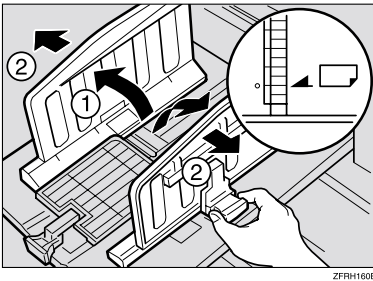


Setting Up the Paper Delivery Tray

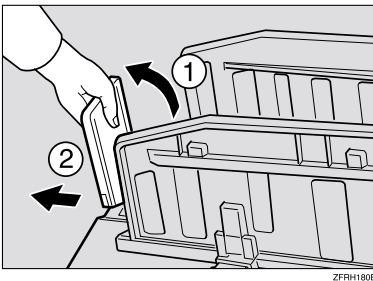
- 1 Raise the paper delivery tray slightly, and then gently lower it.



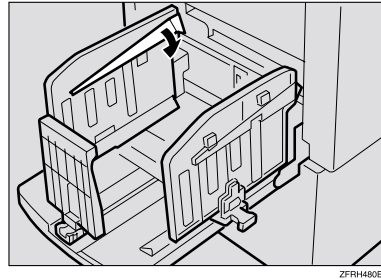
- 2 Lift the paper delivery side plates and adjust them to the paper size.



- 3 Lift the paper delivery end plate and move it to match the print paper size.



- 4 Lower or lift the paper alignment wings.



Note

- When the guides are up, you might not be able to load the unit to full capacity (1,000 sheets) depending on the paper you are using.
- Lift the paper alignment wings when B5 prints are curled.

When you use 81.4 g/m², 21.6 lb or thicker paper

- 1 Lower the paper alignment wings.

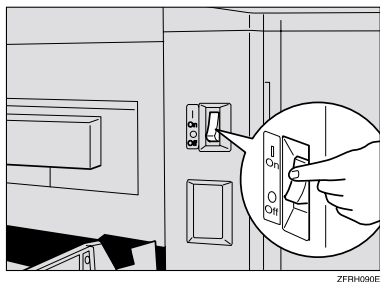
When you use 81.4 g/m², 21.6 lb or thinner and B5 or smaller paper

- 1 Lower the paper alignment wings.

When you use 81.4 g/m², 21.6 lb or thinner and A4, 8 1/2 × 11" or larger paper

- 1 Lift the paper alignment wings.

5 Turn on the main switch.



Reference

When the prints are not delivered in a neat stack, see p.90 "When the Prints are Thrown Over the Paper Delivery Tray".

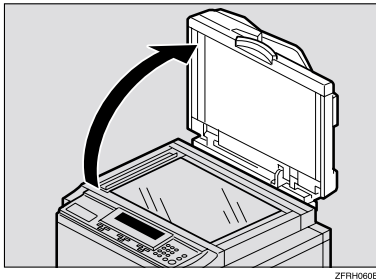
Standard Printing

The operations are different depending on whether you use Auto Cycle mode or not. With this mode, the machine can process masters and make prints at one stroke. The default setting of this mode is on. You can change the default setting. See "15. Auto Cycle Mode" on ⇒ p.57 "User Tools Menu".

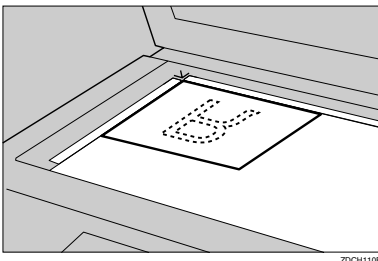
Reference

When you use the optional document feeder, see p.46 "Placing Originals in the Document Feeder".

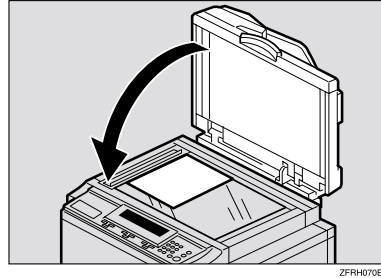
1 Lift the exposure glass cover.



2 Place the original face down on the exposure glass. The original should be aligned to the rear left corner.

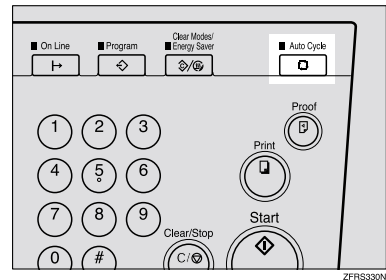


3 Lower the exposure glass cover.

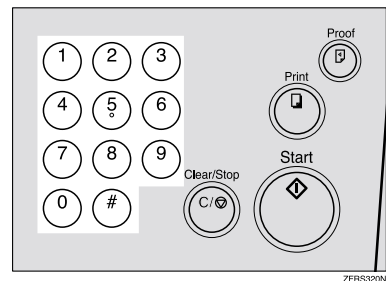


When Auto Cycle is on

1 Make sure that Auto Cycle mode is selected.



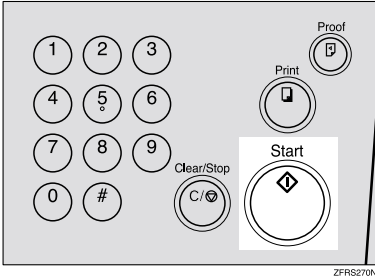
2 Enter the number of prints with the number keys.



Note

- Up to 9999 prints can be entered at one time.
- To change the number entered, press the **[Clear/Stop]** key and enter the new number.

3 Press the [Start] key.



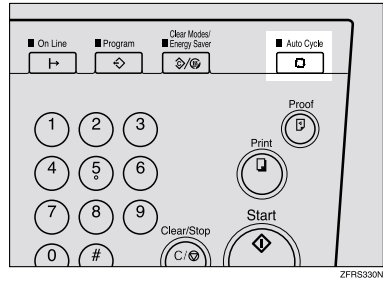
Printing starts automatically after trial print is delivered.

Note

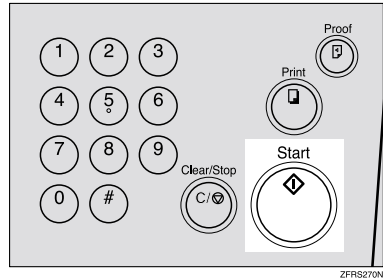
- After printing is completed, the same number of prints is automatically set for the next job.
- To stop the machine during the multi-print run, press the **[Clear/Stop]** key. See p.24 “Stopping a Multi-print Run”.
- To return the machine to the initial condition after printing, press the **[Clear Modes/Energy Saver]** key.

When Auto Cycle is off

1 Make sure that Auto Cycle mode is not selected.

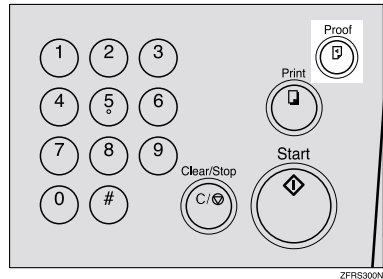


2 Press the [Start] key.



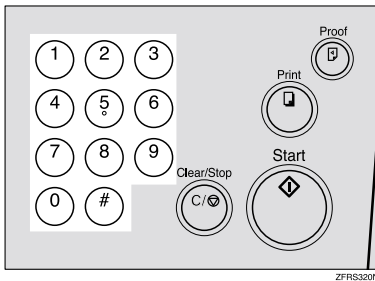
A trial print is delivered to the paper delivery tray.

3 Press the [Proof] key and check the image density and the image position of the proof print.

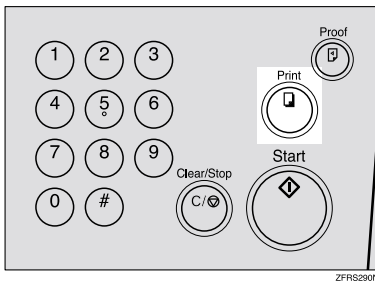


Note

- ❑ If the image position is not correct, adjust it using the **[Image Position]** keys or the fine adjustment dial. See p.18 “Adjusting the Print Image Position”.
- ❑ If the image density is slightly dark or light, adjust the image density using the **[◀]** or **[▶]** key. See p.20 “Adjusting the Print Image Density”.

4 Enter the number of prints with the number keys.**Note**

- ❑ Up to 9999 prints can be entered at one time.
- ❑ To change the number entered, press the **[Clear/Stop]** key and enter the new number.

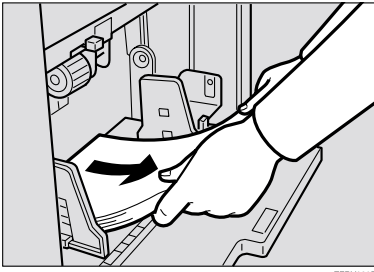
5 Press the [Print] key.**Note**

- ❑ After printing is completed, the same number of prints is automatically set for the next job.
- ❑ To stop the machine during the multi-print run, press the **[Clear/Stop]** key. See p.24 “Stopping a Multi-print Run”.
- ❑ To return the machine to the initial condition after printing, press the **[Clear Modes/Energy Saver]** key.

Restoring Paper Feed and Paper Delivery Trays

1

- 1** Remove the paper from the paper feed tray.

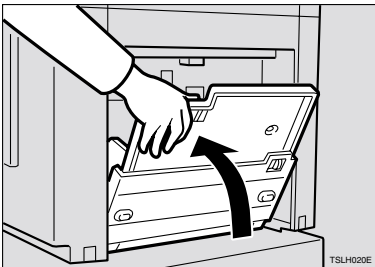


The paper feed tray will lower.

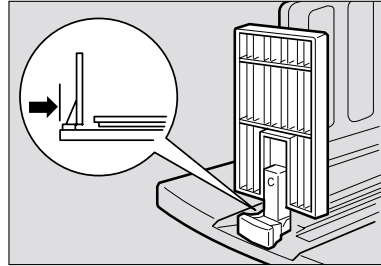
- 2** Turn off the main switch.



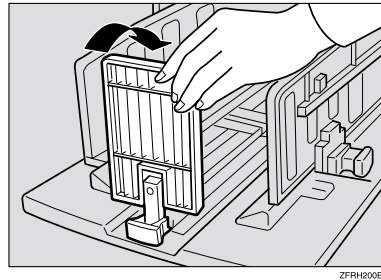
- 3** Close the paper feed tray.



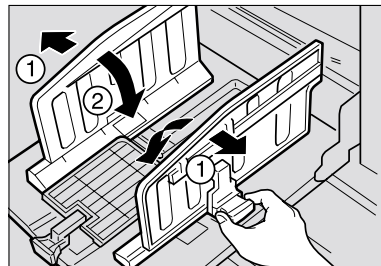
- 4** Move the paper delivery end plate until the plate handle is flush with the end of the tray.



- 5** Lower the paper delivery end plate.



- 6** Move the side plates to the sides, then lower them.



- 7** Close the tray.

Energy Saver Mode

If you do not operate the machine for a certain period after printing, or when you press and hold the **【Clear Modes/Energy Saver】** key for three seconds, the panel display turns off and the machine enters Energy Saver mode. When you press the **【Clear Modes/Energy Saver】** key again, the machine returns to the ready condition. In Energy Saver mode, the machine uses less electricity.

See “4. Auto Energy Saving” on p.57 “User Tools Menu”.

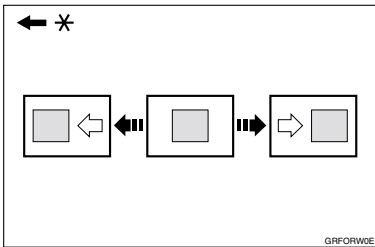
Adjusting the Print Image Position

1

After master making, you can adjust the print image position to suit your needs. There are two ways:

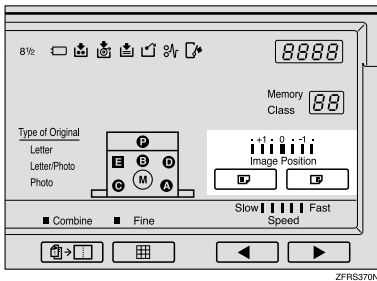
- ◆ **Forward or Backward**
Use the **[Image Position]** keys.
- ◆ **Right or Left**
Use the side tray fine adjusting dial.

Forward or Backward



* Paper feed direction

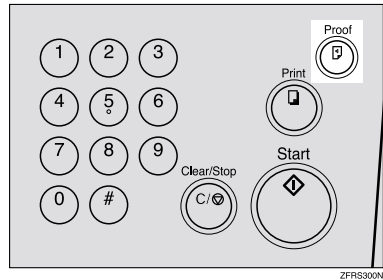
- 1 Press the left **[Image Position]** key to move the image forwards, the right key to move it backwards.



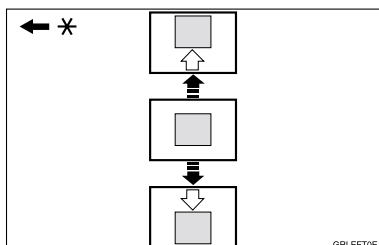
Note

- The **[Image Position]** keys shift the image up to 15mm, 0.6" each way in 0.5mm, 0.02" steps. When the indicator changes, the image position shifts about 5mm, 0.2".
- When you shift the image forwards, leave a margin (more than 5mm, 0.2") at the leading edge. If there is no margin, paper might wrap around the drum and cause a misfeed.

- 2 Press the **[Proof]** key to check the image position.



Right or Left



* Paper feed direction

1 Turn the side tray fine adjusting dial as shown in the illustrations.

◆ Shifting the image to the right



◆ Shifting the image to the left

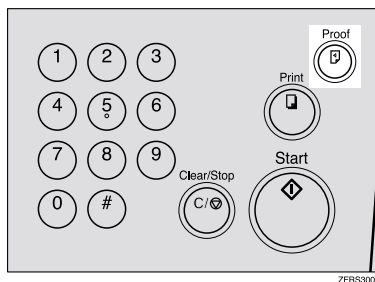


Note

- The image position can be shifted up to 10mm, 0.4" each way. Each division on the scale is 2mm, 0.08".

2 Adjust the paper delivery side plates to the print paper position.

3 Press the **[Proof]** key to check the image position.



1

Adjusting the Print Image Density

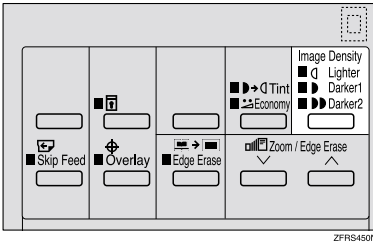
1

You can adjust the print image density to suit your needs. There are two ways:

- ❖ **Before Making a Master**
Use the **[Image Density]** key.
- ❖ **After Making a Master**
Use the **[◀]** or **[▶]** key.

Before Making a Master

- 1 Use the **[Image Density]** key before pressing the **[Start]** key.

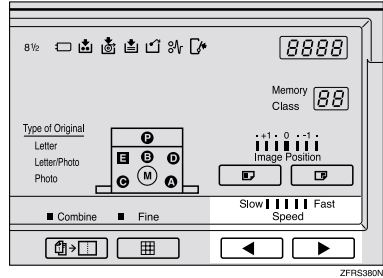


Note

- When you use originals with colored background such as blue or red, adjust the image density to lighter to prevent printing with dirty background.

After Making a Master

- 1 Press the **[▶]** key to increase the speed and press the **[◀]** key to reduce the speed.



Note

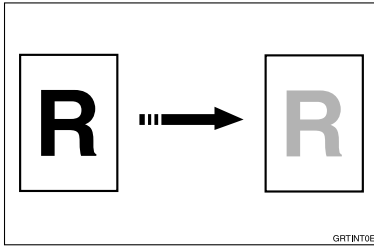
- The faster the printing speed becomes, the lighter the printing density is. If you want darker prints, decrease the printing speed.

Reference

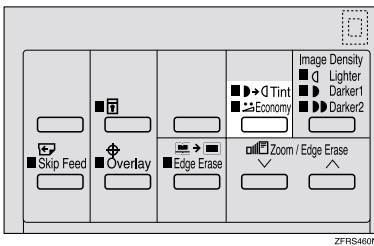
For details about printing speed, see p.23 "Changing the Printing Speed".

Tint Mode

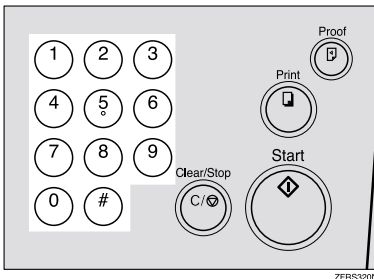
Use this function to make halftone prints.



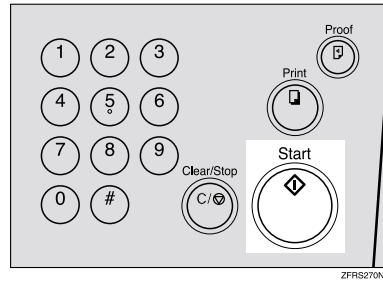
- 1 Press the **[Tint/Economy]** key to light the upper indicator.



- 2 Place your originals on the exposure glass or in the optional document feeder.
- 3 Enter the number of prints with the number keys.



- 4 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

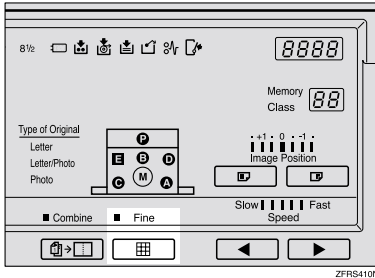
- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

Fine Mode

Use this function to make clear prints.

1

1 Press the **[Fine]** key.

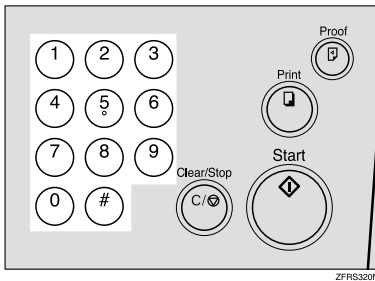


Note

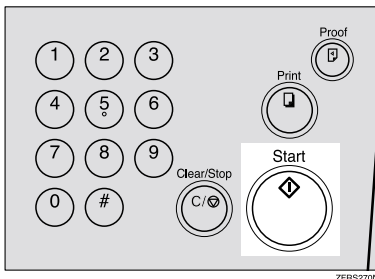
- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 “When Auto Cycle is off”.

2 Place your originals on the exposure glass or in the optional document feeder.

3 Enter the number of prints with the number keys.



4 Press the **[Start]** key.

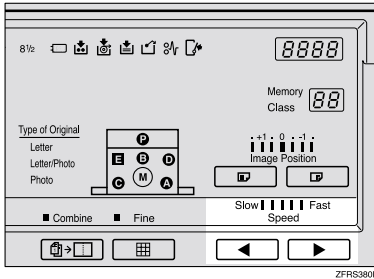


Printing starts automatically after trial print is delivered.

Changing the Printing Speed

Use the [◀] or [▶] key to adjust the speed of the machine with the image density and printing paper.

- 1 Press the [▶] key to increase the speed and press the [◀] key to reduce the speed.



Note

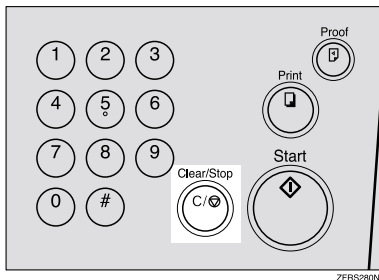
- The following speeds are available:
 - Setting 1: 60 sheets/minute
 - Setting 2: 75 sheets/minute
 - Setting 3: 90 sheets/minute
 - Setting 4: 105 sheets/minute
 - Setting 5: 120 sheets/minute
- As a default setting, setting 3 is selected.
- The faster the printing speed becomes, the lighter the printing density is, and vice versa.

Stopping a Multi-print Run

1

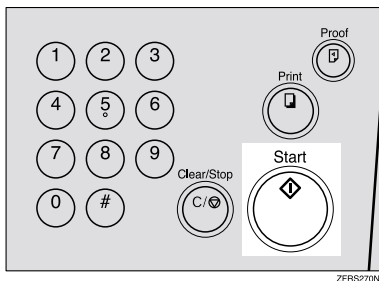
Stopping a Multi-print Run to Print Another Original

1 Press the **[Clear/Stop]** key.



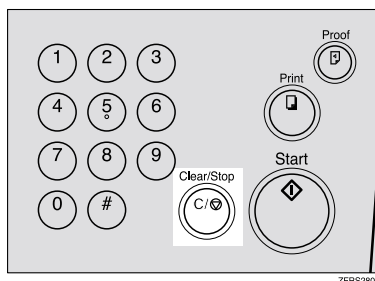
2 Place the new original on the exposure glass or in the optional document feeder.

3 Enter the number of prints and press the **[Start]** key.



Changing the Number of Prints Entered and Check the Completed Prints

1 Press the **[Clear/Stop]** key.

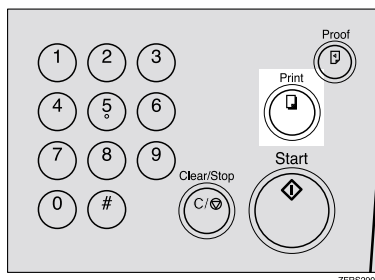


2 Change the number of prints or check the completed prints.

Note

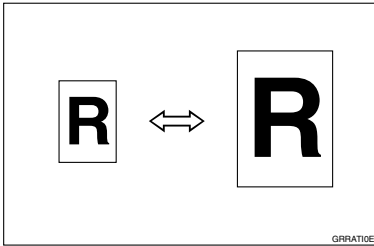
- To change the number of prints, press the **[Clear/Stop]** key, and then enter the new number of prints with the number keys.

3 Press the **[Print]** key.



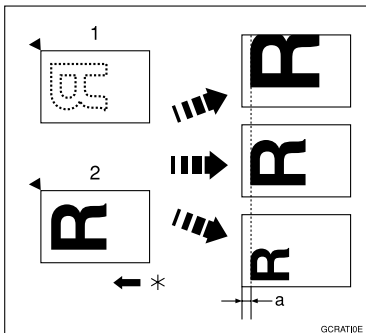
Preset Reduce/Enlarge

Use this function to have originals reduced or enlarged by a preset ratio. A total of 7 ratios are available (3 enlargement ratios, 4 reduction ratios).



Note

- The leading edge of the print image does not shift when a print image is made with this function.



- Place on the exposure glass
- Place in the optional document feeder

* Paper feed direction

a = 5mm, 0.2"

- You can select a ratio regardless of the size of an original or printing paper. With some ratios, parts of the image might not be printed or margins will appear on prints.
- Prints can be reduced or enlarged as follows:

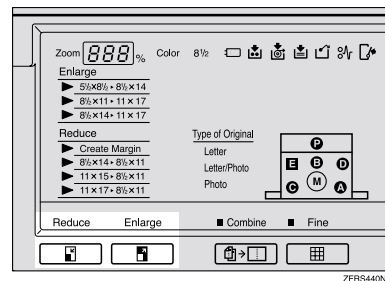
Metric version

Ratio (%)	Original → Print paper size
141	A4 → A3, A5 → A4, B5 → B4
122	A4 → B4, A5 → B5
115	B4 → A3, B5 → A4
93	—
87	A3 → B4, A4 → B5
82	B4 → A4, B5 → A5
71	A3 → A4, A4 → A5, B4 → B5

Inch version

Ratio (%)	Original → Print paper size
155	5 1/2" × 8 1/2" → 8 1/2" × 14"
129	8 1/2" × 11" → 11" × 17", 5 1/2" × 8 1/2" → 8 1/2" × 11"
121	8 1/2" × 14" → 11" × 17"
93	—
77	8 1/2" × 14" → 8 1/2" × 11"
74	11" × 15" → 8 1/2" × 11"
65	11" × 17" → 8 1/2" × 11", 8 1/2" × 11" → 5 1/2" × 8 1/2"

- Select the desired reduction or enlargement ratio using the **[Reduce]** key or the **[Enlarge]** key.

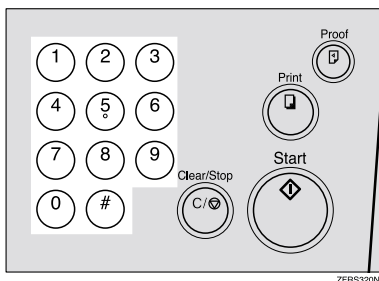


- Make sure that the original and the print paper are the correct size.

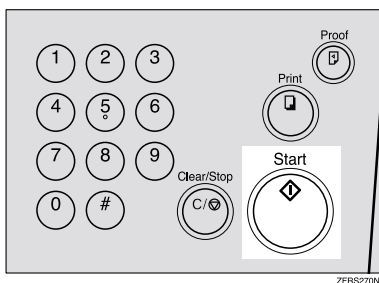
3 Place your originals on the exposure glass or in the optional document feeder.

1

4 Enter the number of prints with the number keys.



5 Press the **[Start]** key.



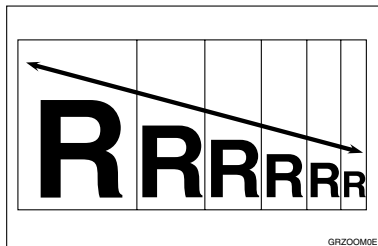
Printing starts automatically after trial print is delivered.

Note

- ❑ If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 “When Auto Cycle is off”.

Zoom

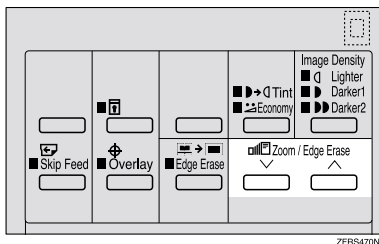
Use this function to fine-tune the reproduction ratio in 1% steps.



Note

- The range in which you can select a ratio is 50–200%

- 1** Select the desired reproduction ratio with the **[V]** or **[^]** key.

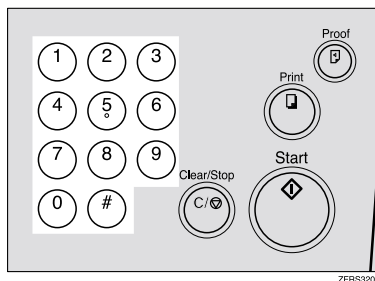


The ratio is displayed on the zoom counter.

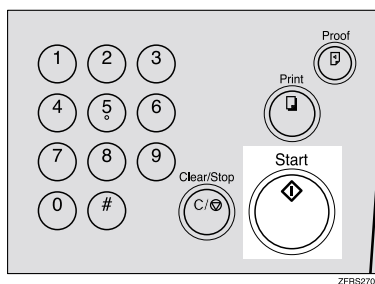
Note

- You can select a preset ratio which is near the desired ratio, then adjust the ratio with the **[V]** or **[^]** key.
- 2** Place your originals on the exposure glass or in the optional document feeder.

- 3** Enter the number of prints with the number keys.



- 4** Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

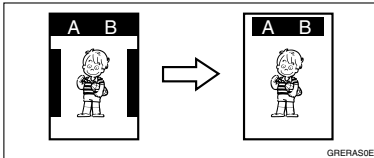
- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 “When Auto Cycle is off”.

Edge Erase

1

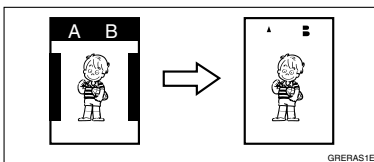
Use this function to erase all four margins of the original image.

❖ Using Edge Erase mode



❖ When not using Edge Erase mode

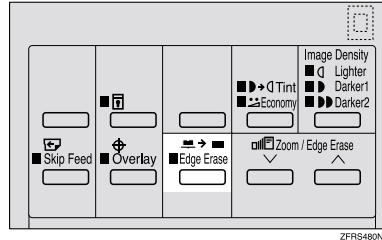
When printing from thick books, or similar originals, the binding margin at the edges might appear on prints. The machine erases these margins automatically. If you do not use Edge Erase mode using the following kind of originals, the images to be printed might be also erased.



📎 Note

- ❑ You can adjust the size of the margins with the user tools. The default value is 2mm, 0.1". See "13. Margin Erase Area" on p.57 "User Tools Menu".

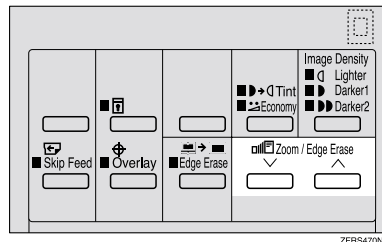
1 Press the [Edge Erase] key.



📎 Note

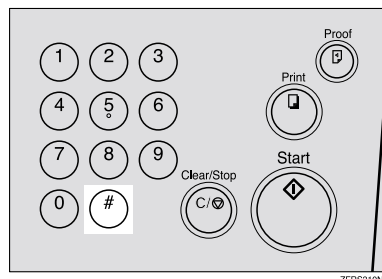
- ❑ To cancel this mode, press the [Edge Erase] key again.

2 Press the [∨] or [∧] key to select the paper size and direction.



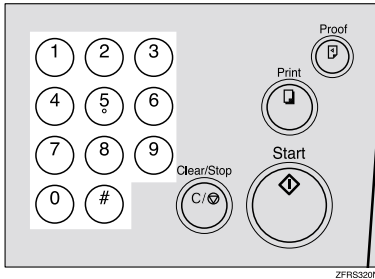
The paper size and direction is displayed on the counter.

3 When you reach the desired paper size and direction, press the [#] key.

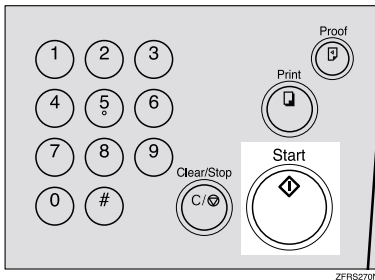


4 Place your original on the exposure glass or in the optional document feeder.

5 Enter the number of prints with the number keys.



6 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

- ❑ If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 “When Auto Cycle is off”.

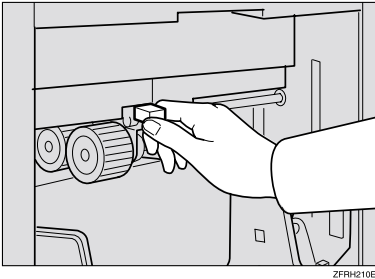
Printing on Thick or Thin Paper

1

When you make prints on thick (127.9 to 209.3g/m², 34.0 to 55.6 lb), standard (52.3 to 127.9g/m², 13.9 to 34.0 lb) or thin (47.1 to 52.3g/m², 12.5 to 13.9 lb) paper, perform the following steps.

Pressure Lever Position

1 Shift the feed roller pressure lever to the **Thick, Standard, or Thin** paper position.



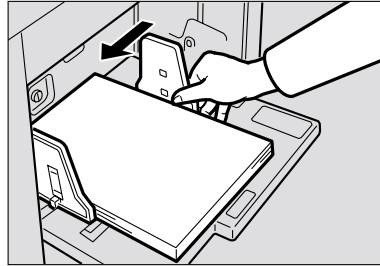
Note

Shift the lever according to the paper weights as shown in the following table.

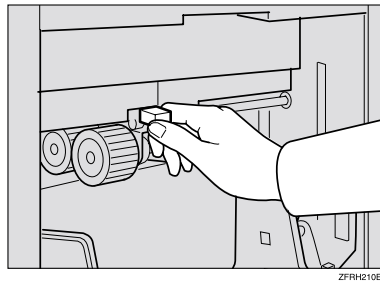
	Metric Version	Inch Version
Thick	127.9 — 209.3g/m ²	34.0 — 55.6 lb
Standard	52.3 — 127.9g/m ²	13.9 — 34.0 lb
Thin *1	47.1 — 52.3g/m ²	12.5 — 13.9 lb

*1 When paper is smaller than B5, 5¹/₂" × 8¹/₂" and heavier than 81.4g/m² (21.6 lb), move the feed roller pressure lever to the Thin paper position.

2 Make sure that paper feed side plates touch the paper lightly.



3 When you finish prints, shift the feed roller pressure lever to the **Standard** paper position.



Selecting Original Type

Select one of the following three types to match your originals:

❖ **Letter mode**

Select when originals contain only letters (no pictures).

❖ **Letter/Photo mode**

Select when originals contain photographs or pictures with letters.

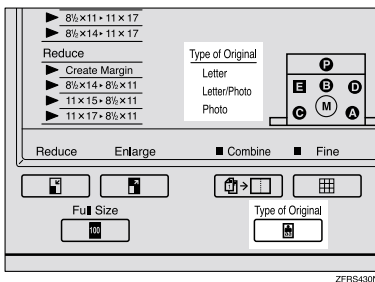
❖ **Photo mode**

Select when originals contain photographs or pictures with delicate tones.

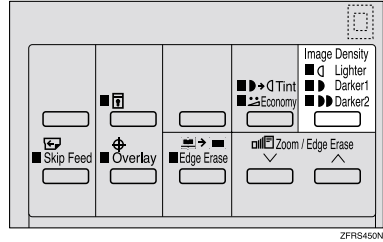
Note

- Moire patterns might occur when screened originals are printed.
- When using Photo mode to print originals with both letter and photographs, the letter will appear lighter. To avoid this, select Letter/Photo mode with the **[Type of Original]** key.

1 Press the **[Type of Original]** key once or more to select the desired mode.

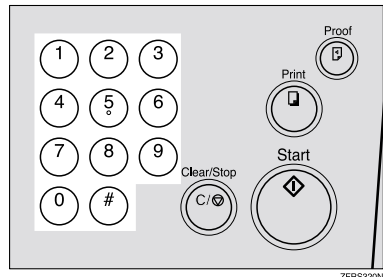


2 Press the **[Image Density]** key to adjust the image density.

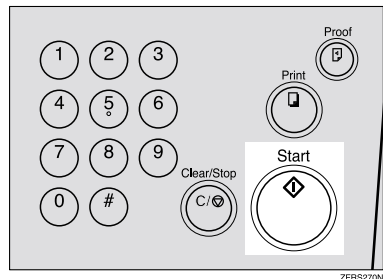


3 Place your originals on the exposure glass or in the optional document feeder.

4 Enter the number of prints with the number keys.



5 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

 **Note**

- If you want to check the print image, press the **【Auto Cycle】** key to turn off Auto Cycle mode before pressing the **【Start】** key. For details, see p.14 “When Auto Cycle is off”.

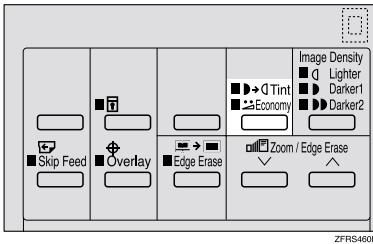
Economy Mode

Use this function when you want to save ink.

Note

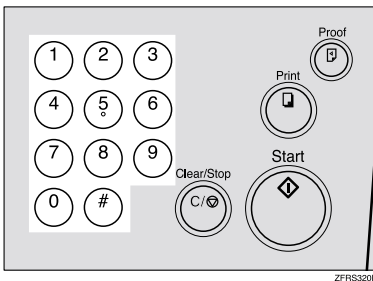
- Prints will come out lighter.

- Press the **[Tint/Economy]** key to light the lower indicator.

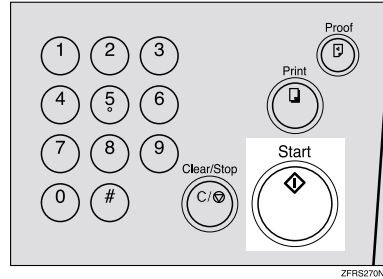


- Place your originals on the exposure glass or in the optional document feeder.

- Enter the number of prints with the number keys.



- Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

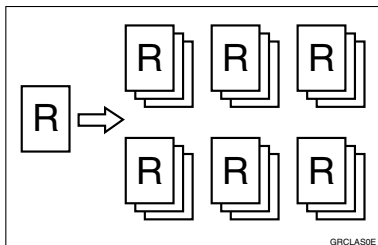
Note

- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

Class Mode

1

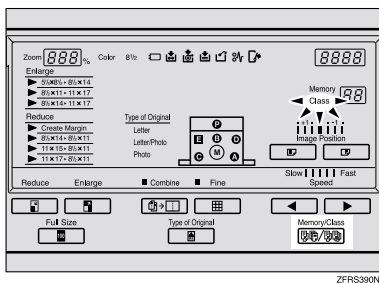
Use this function to make sets of prints from the same original. The same number of prints is made for each set.



Note

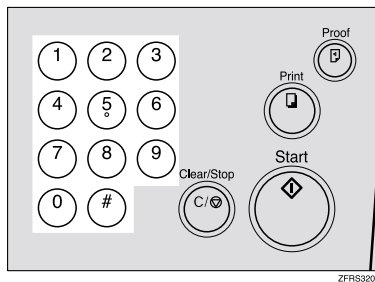
Up to 99 sets of prints can be selected for one original.

1 Press the **[Memory/Class]** key to light the class indicator.

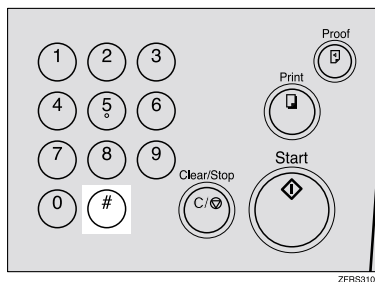


2 Place one original on the exposure glass or in the optional document feeder.

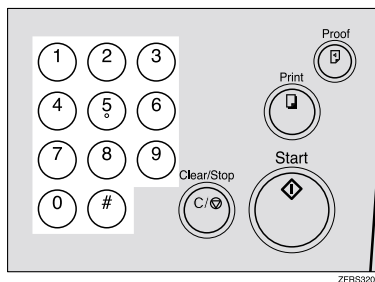
3 With the number keys, enter the number of prints for each set to be made from the original.



4 Press the **[#]** key.



5 With the number keys, enter the desired number of sets.

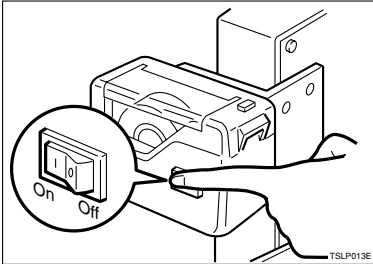


The number of sets is displayed on the Memory/Class counter.

Note

The maximum number of sets that can be made is 99.

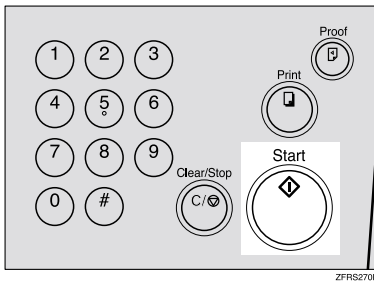
- 6** If you use the optional tape dispenser, turn on the tape dispenser power switch.



Note

- The optional tape dispenser automatically feeds out strips of paper which separate the printing groups on the paper delivery tray.

- 7** Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

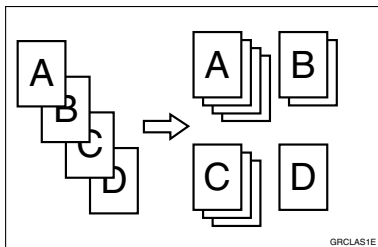
Note

- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

- If the power switch of the optional tape dispenser is turned off or the tape dispenser is not installed in the machine, the group printing cycle stops after each set is delivered. Remove the set of prints from the paper delivery tray and press the **[Print]** key to start the next group printing cycle.

Memory Mode

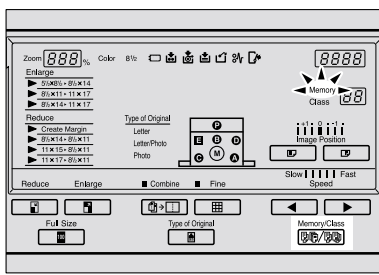
Use this function to make sets of prints from different originals.



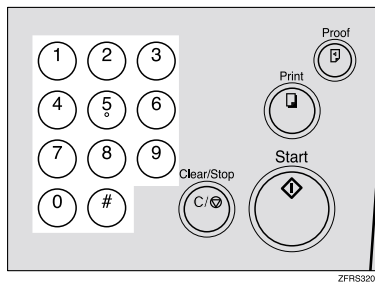
Reference

For details about how to use the optional document feeder with this function, see p.48 “Memory Mode Using the Document Feeder”.

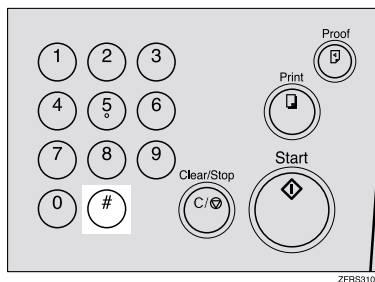
1 Press the **[Memory/Class]** key to light the memory indicator.



2 With the number keys, enter the desired number of prints for the first original.



3 Press the **[#]** key.



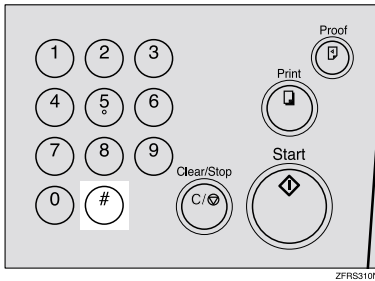
This stores the number of prints to be made for the first original in memory 1.

4 Repeat steps **2** and **3** for each original.

Note

- The number of prints for up to 25 originals can be stored.

- 5** Press the **[#]** key again.

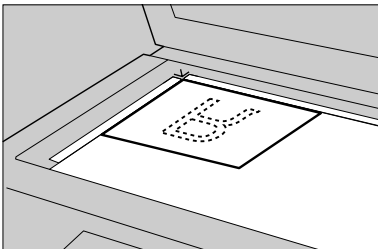


The memory returns to memory 1.

Note

- If you store the number of prints for 25 originals, the memory number returns to 1. It is not necessary to press the **[#]** key.

- 6** Place the first original face down on the exposure glass.



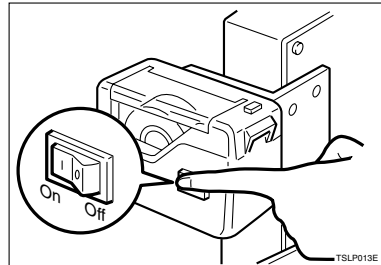
Note

- Place originals one sheet at a time in the same order that you stored them in memory.

Reference

For details about how to use the optional document feeder with this function, see p.48 "Memory Mode Using the Document Feeder".

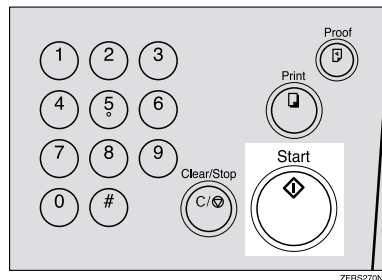
- 7** If you use the optional tape dispenser, turn on the tape dispenser power switch.



Note

- The optional tape dispenser automatically feeds out strips of paper which separate the printing groups on the paper delivery tray.

- 8** Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

1

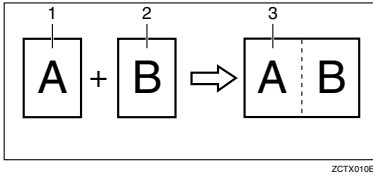
9 After the first print is completed, place the second original on the exposure glass, and then press the **【Start】** key.

 **Note**

- Repeat this step until you have finished printing.

Combining Originals

Use this function to print 2 separate originals on a single sheet of paper.



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1, 2: $8\frac{1}{2}'' \times 11''$ or $5\frac{1}{2}'' \times 8\frac{1}{2}''$.

3: $11'' \times 17''$, $8\frac{1}{2}'' \times 14''$, $8\frac{1}{2}'' \times 11''$ or $5\frac{1}{2}'' \times 8\frac{1}{2}''$.

Note

- The following tables list the reproduction ratios used.

Metric version

		Original Size			
		A4	B5	A5	B6
Paper Size	A3	100%	115%	141%	163%
	B4	87%	100%	122%	141%
	A4	71%	82%	100%	115%
	B5	61%	71%	87%	100%
	A5	50%	58%	71%	82%
	B6	—	50%	61%	71%

Inch version

		Original Size	
		$8\frac{1}{2}'' \times 11''$	$5\frac{1}{2}'' \times 8\frac{1}{2}''$
Paper Size	$11'' \times 17''$	100%	129%
	$8\frac{1}{2}'' \times 14''$	77%	100%
	$8\frac{1}{2}'' \times 11''$	65%	100%
	$5\frac{1}{2}'' \times 8\frac{1}{2}''$	50%	65%

- If the master length of the first original is shorter than 91mm, 3.6", Combining Originals mode is disabled.

- You can set the machine to cancel Combining Originals mode after finishing your print job with the user tools. See "21. Cancel Combine" on p.57 "User Tools Menu".

- Any image closer than 5mm, 0.2" to the leading edge of the first original will not be printed. Also, any image closer than 4mm, 0.16" to the leading edge of the second original will not be printed. When the image is too close to the leading edge, use copies of the originals with the image shifted at least 5mm, 0.2" for the first original (4mm, 0.16" for the second original) from the leading edge.

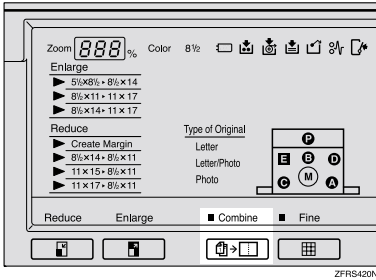
- You can select different image settings for the first and second original.

- Make sure that the paper feed side plates touch the paper lightly. If they do not, the two original images will not appear at the proper position on the prints.

Reference

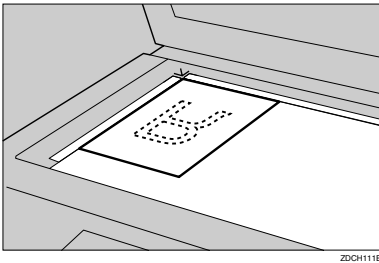
For details about how to use the optional document feeder with this function, see p.47 "Combining Originals Using the Document Feeder".

1 Press the **[Combine]** key.



2 Check the print paper size, and then select the desired reproduction ratio.

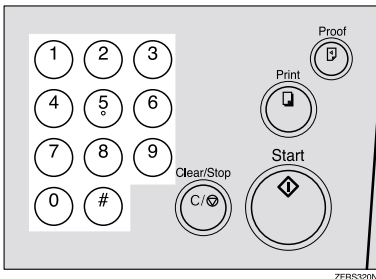
3 Place the first original face down.



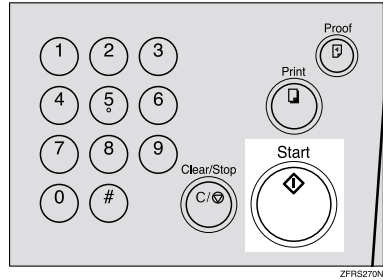
Note

- ❑ The first original will be printed on the left side of the paper.

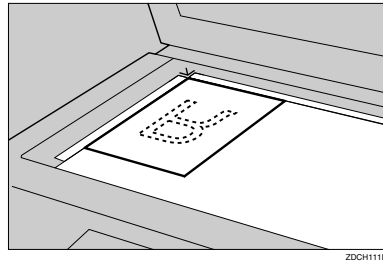
4 Enter the number of prints with the number keys.



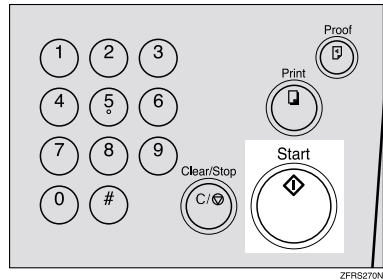
5 Press the **[Start]** key.



6 The beeper sounds after the first original has been stored. Place the second original face down.



7 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

- ❑ If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

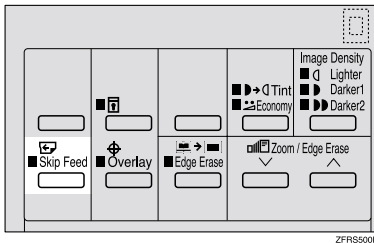
Skip Feed Printing

If the backs of prints are dirty, you can increase the time between prints using the **[Skip Feed]** key. When one sheet of paper is fed, the drum rotates twice. This gives you the chance to remove prints one by one from the paper delivery tray or insert one sheet of paper between two prints.

Note

- You can select how many times the drum rotates with the user tools. See "22. Skip Feed Number" on p.57 "User Tools Menu".

1 Press the **[Skip Feed]** key.

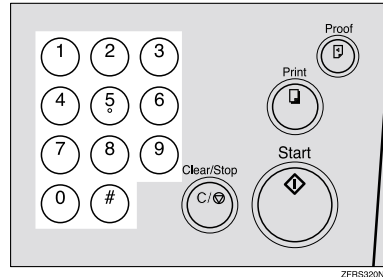


Note

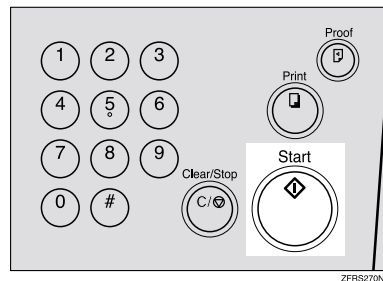
- You can temporarily change the default value. While holding down the **[Skip Feed]** key, press the number of the drum rotations from 2 to 9 with the number keys.

2 Place your originals on the exposure glass or in the optional document feeder.

3 Enter the number of prints with the number keys.



4 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

Program

You can store up to 9 frequently used print job settings in machine memory, and recall them for future use.

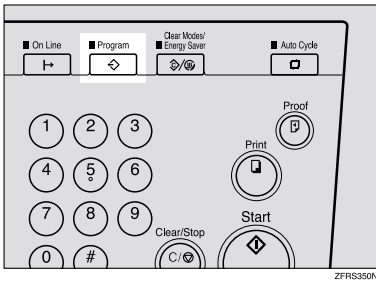
Note

- ❑ The stored programs are not cleared when you turn off the main switch.
- ❑ The stored programs cannot be deleted. If you want to change a stored program, overwrite it.

Storing Your Settings

1 Make the necessary print settings you want to put into memory.

2 Press the **[Program]** key.



"Pro0" is displayed on the counter.

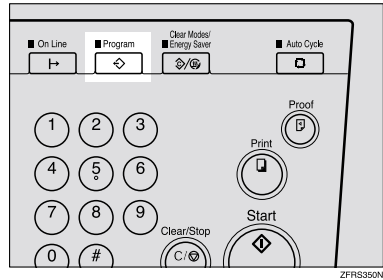
3 Hold down the program number you want to store the settings in for at least 3 seconds.

Note

- ❑ Make sure that the previous job settings stored under the selected program number are overwritten.

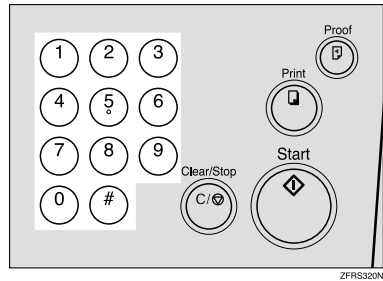
Recalling a Program

1 Press the **[Program]** key.

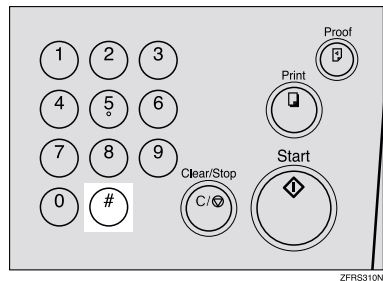


"Pro0" is displayed on the counter.

2 Select the program number you want to recall with the number keys.



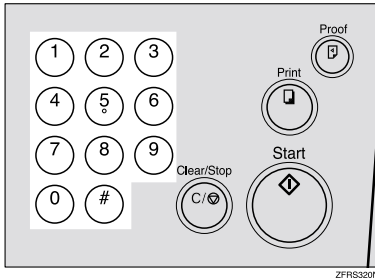
3 Press the **[#]** key.



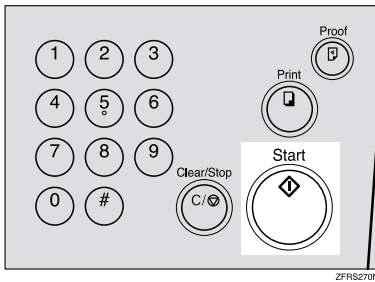
The stored settings are recalled.

4 Place your originals on the exposure glass or in the optional document feeder.

5 Enter the number of prints with the number keys.



6 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

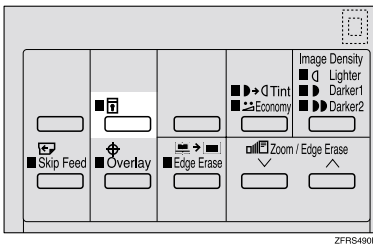
- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

Security Mode

1

This function prevents others from making prints of confidential documents from the master. For example, if you print some documents with sensitive information, use this function after making your prints so that nobody can access that master again.

- 1** Make your prints.
- 2** Hold down the **[Security]** key for at least 3 seconds.



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Note

- If you press the **[Proof]** key or the **[Print]** key after setting Security mode, the beeper sounds and you cannot make prints.
- You cannot cancel Security mode even if you turn off the main switch.
- If you make the next master, Security mode is canceled.
- You cannot pull out the drum unit before making the next master.

2. Optional Functions

Optional Document Feeder

Insert a stack of originals in the document feeder. They will be fed automatically.

Originals

Placing the following originals in the document feeder might cause misfeeds or damage to the originals.

Place the following kinds of originals on the exposure glass:

- Originals heavier than 127.9g/m², 34 lb
- Originals lighter than 52.3g/m², 14 lb
- Originals smaller than 148mm × 210mm, 5.9" × 8.3"
- Originals larger than 297mm × 864mm, 11.6" × 34.0"
- Stapled or clipped originals
- Perforated or torn originals
- Curled, folded, or creased originals
- Originals with any kind of coating, such as thermal fax paper, art paper, aluminum foil, carbon paper, or conductive paper
- Bound originals such as books
- Damaged originals
- Originals with glue on them
- Pasted originals
- Originals written in pencil
- Thin originals that are a little stiff
- Originals with index tabs
- Transparent originals such as OHP transparencies or translucent paper

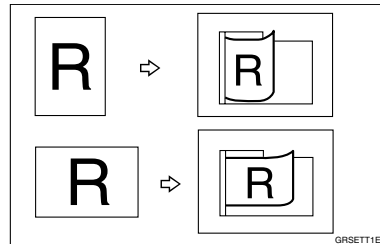
The following original sizes placed in the document feeder can be detected.

Metric version	A3 <input type="checkbox"/> , B4 <input type="checkbox"/> , A4 <input type="checkbox"/> , B5 <input type="checkbox"/> , A5 <input type="checkbox"/>
Inch version	11" × 17" <input type="checkbox"/> , 8 1/2" × 14" <input type="checkbox"/> , 8 1/2" × 11" <input type="checkbox"/> , 5 1/2" × 8 1/2" <input type="checkbox"/>

Note

- Place originals after correction fluid and ink have completely dried. Not taking this precaution could mark the exposure glass and cause marks to be printed.

For standard printing functions, set originals as shown below.



You cannot place originals of different sizes at the same time.

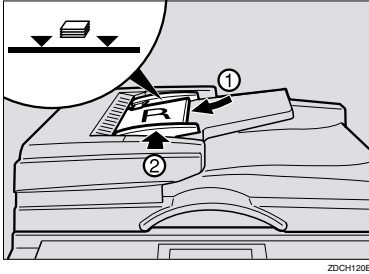
When you use thin originals, place one original at a time in the document feeder or place them on the exposure glass.

The first 5mm, 0.2", of the leading edge and the last 2mm, 0.08" of the trailing edge cannot be printed. Make sure the leading edge margin is at least 5mm, 0.2", and the trailing edge margin is at least 2mm, 0.08".

Do not stack originals above the limit mark.

Placing Originals in the Document Feeder

- 1 Adjust the guide to the original size.
- 2 Insert the aligned originals face up in the document feeder until they stop.



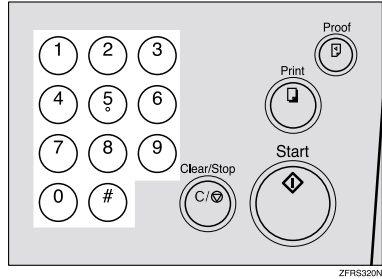
! Limitation

- ❑ Approximately 50 originals (80g/m², 21 lb) can be inserted at one time in the document feeder. The first (top) original will be fed first.

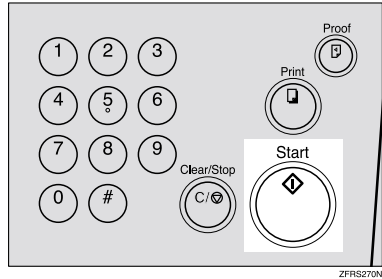
📎 Note

- ❑ To avoid a multi-sheet feed, shuffle the originals before placing them in the document feeder.
- ❑ The guides must fit snugly against both sides of the stack.

- 3 Make the desired settings, and then enter the number of prints with the number keys.



- 4 press the **[Start]** key.



Printing starts automatically after trial print is delivered.

📎 Note

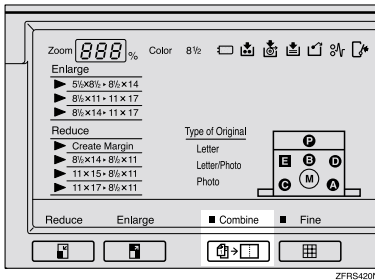
- ❑ If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 “When Auto Cycle is off”.

Combining Originals Using the Document Feeder

Reference

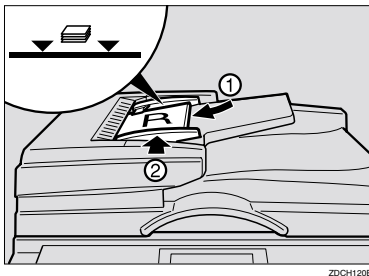
For details about Combining Originals, see p.39 “Combining Originals”.

1 Press the **[Combine]** key.



2 Check the print paper size, and then select the desired reproduction ratio.

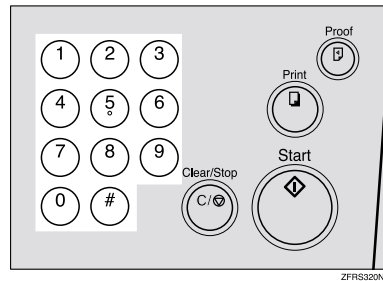
3 Insert the 2 originals face up in the document feeder.



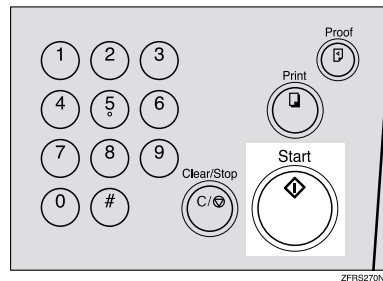
Note

- The first original will be printed on the left side of the paper.

4 Enter the number of prints with the number keys.



5 Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

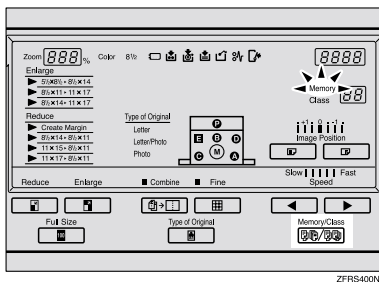
- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 “When Auto Cycle is off”.
- After the first original is on the master, the second original is fed.
- If you place only one original, the beeper sounds after the first original is on the master. Place the second original and the desired image settings. Then, press the **[Start]** key.

Memory Mode Using the Document Feeder

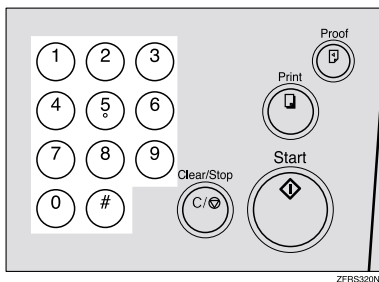
Reference

For details about Memory mode, see p.36 “Memory Mode”.

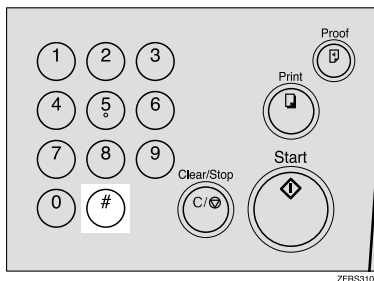
- 1 Press the **[Memory/Class]** key to light the memory indicator.



- 2 With the number keys, enter the desired number of prints for the first original.



- 3 Press the **[#]** key.



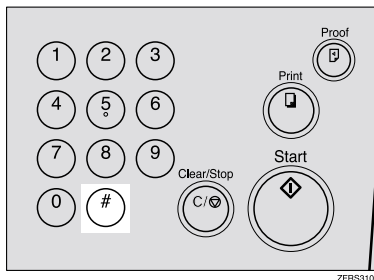
This stores the number of prints to be made for the first original in memory 1.

- 4 Repeat steps 2 and 3 for each original.

Note

- ❑ The number of prints for up to 25 originals can be stored.

- 5 Press the **[#]** key again.

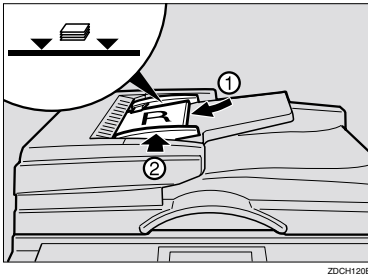


The memory returns to memory 1.

Note

- ❑ If you store the number of prints for 25 originals, the memory number returns to 1. It is not necessary to press the **[#]** key.

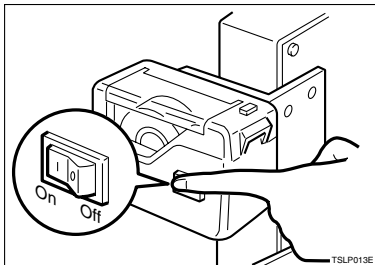
- 6** Insert originals face up in the document feeder.



Note

- To prevent original misfeeds, do not place originals of different sizes.

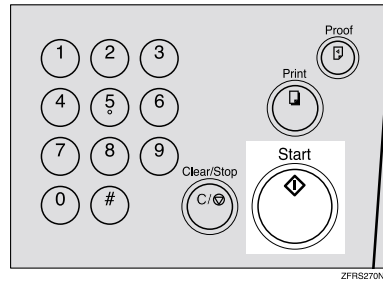
- 7** If you use the optional tape dispenser, turn on the tape dispenser power switch.



Note

- The optional tape dispenser automatically feeds out strips of paper which separate the printing groups on the paper delivery tray.

- 8** Press the **[Start]** key.



Printing starts automatically after trial print is delivered.

Note

- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".
- If the power switch of the optional tape dispenser is turned off or the tape dispenser is not installed in the machine, the group printing cycle stops after each set is delivered. Remove the set of prints from the paper delivery tray and press the **[Print]** key to start the next group printing cycle.

Color Printing Using the Optional Color Drum

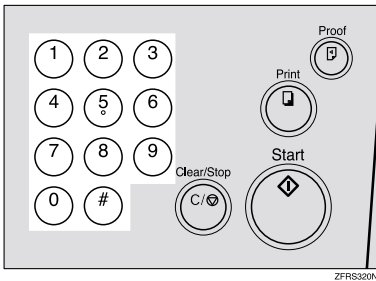
A3, 11" × 17" color drum units (red, blue, green, brown, yellow, purple, navy, maroon, orange, teal and gray) are available as options in addition to the standard black unit. For making color prints, a separate A3, 11" × 17" drum unit is necessary for each color.

Note

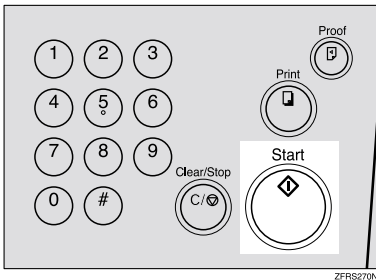
- ❑ If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

Making Color Prints

- 1** Make sure that the "Color" is displayed on the operation panel.
- 2** Make the desired settings, and then enter the number of prints with the number keys.



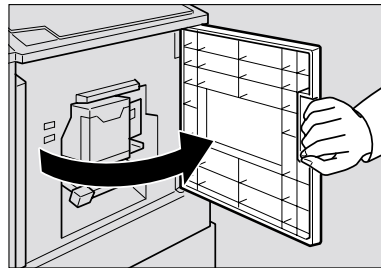
- 3** Press the **[Start]** key.



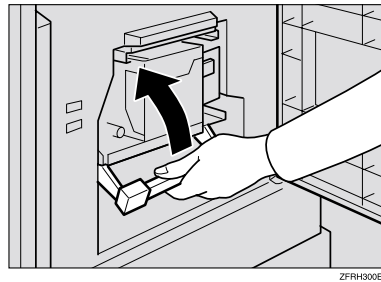
Printing starts automatically after trial print is delivered.

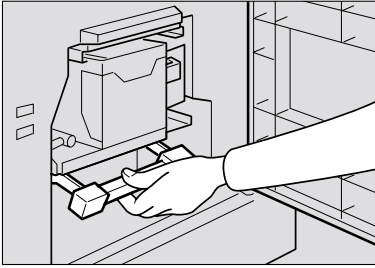
Changing the Color Drum Unit

- 1** Open the front door.

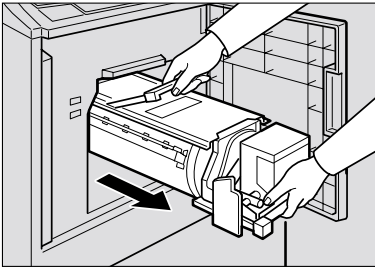
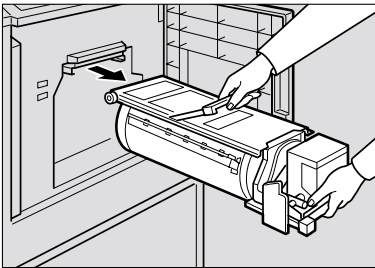


- 2** Lift the drum unit lock lever until it locks in position.

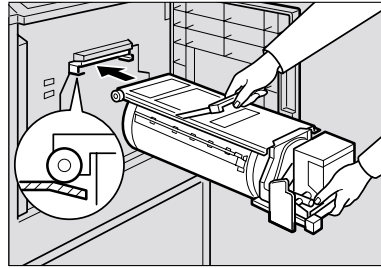
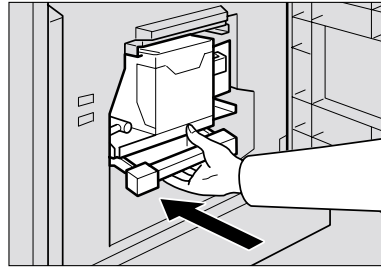
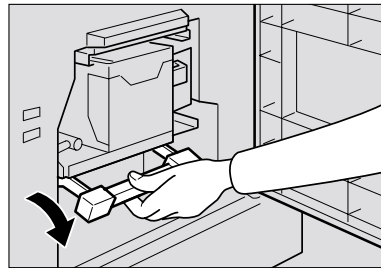


3 Pull out the drum unit handle.**Note**

- If you cannot pull out the drum unit, push the drum unit handle, then pull out the drum unit.

4 Hold the rail on the drum and slide out the drum while pulling the release towards you.**5** Remove the drum unit from the machine while holding the upper drum stay.**Note**

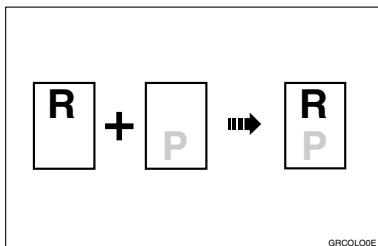
- Be careful not to let the drum unit fall.

6 Insert the color drum unit along the guide rail.**7** Slide in the drum unit until it locks in position.**8** Lower the drum unit lock lever.**9** Close the front door.**Note**

- Make sure that the open cover/unit indicator (L*) turns off, and the "Color" is displayed on the operation panel.

Printing in Two Colors

After printing in one color, you can print in another color on the same side of the print.



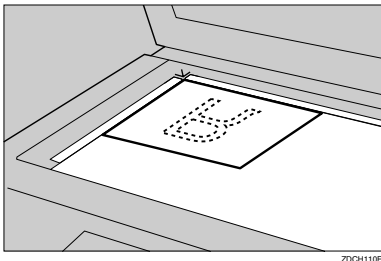
Important

- Let the ink on the prints dry for a while before printing on them again.
- If the prints are not dry, the paper feed roller might become dirty. In this case, wipe off the roller with a cloth.

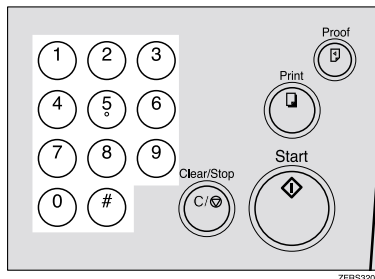
Note

- You cannot print in two colors at one time.

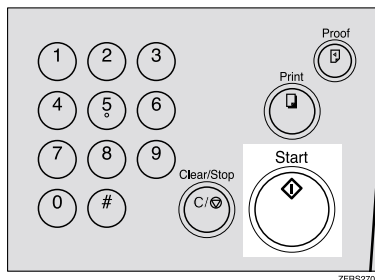
- 1 Prepare two originals. Place the first original on the exposure glass or in the optional document feeder.



- 2 Enter the number of prints with the number keys.



- 3 Press the **[Start]** key.

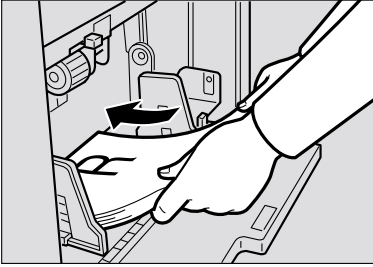


Printing starts automatically after trial print is delivered.

Note

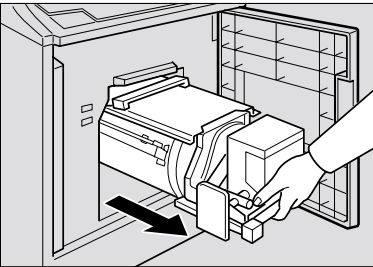
- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

- 4** Remove the prints from the paper delivery tray and place them on the paper feed tray again as shown in the illustration.



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- 5** Change the drum unit.

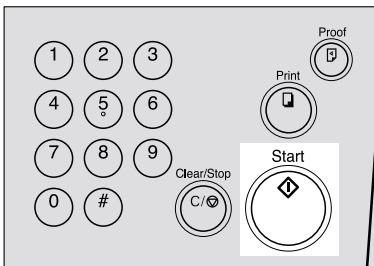


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Reference

See p.50 "Changing the Color Drum Unit".

- 6** Place the second original, and then press the **[Start]** key.



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Printing starts automatically after trial print is delivered.

Note

- If you want to check the print image, press the **[Auto Cycle]** key to turn off Auto Cycle mode before pressing the **[Start]** key. For details, see p.14 "When Auto Cycle is off".

3. User Tools

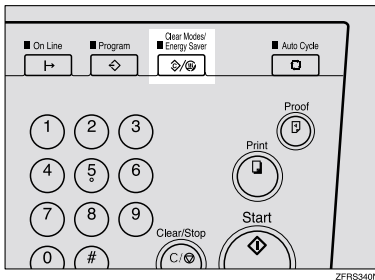
Accessing the User Tools

The user tools allow you to customize various default settings. This section is intended for the machine administrator.

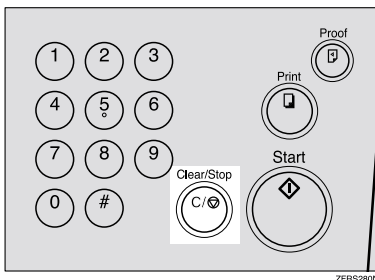
Reference

For the user tool menu, see p.57 "User Tools Menu".

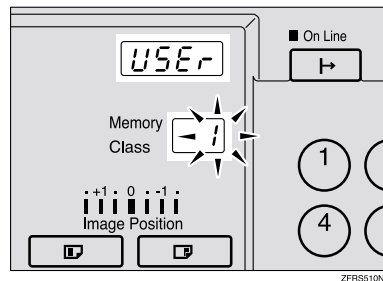
- 1** Press the **[Clear Modes/Energy Saver]** key.



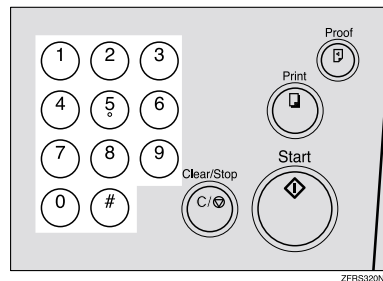
- 2** Hold down the **[Clear/Stop]** key for at least 3 seconds.



"USER" is displayed on the counter, and the number on the Memory/Class counter is blinking.



- 3** Enter the desired user tool number with the number keys.



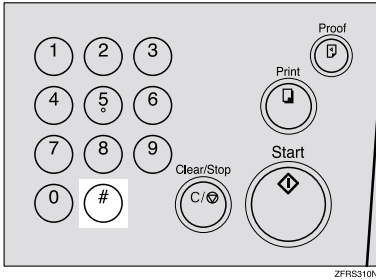
Reference

See p.57 "User Tools Menu".

Note

- The number can be entered with **[V]** and **[^]** keys (Scroll keys).
- When you want to leave the user tools, press the **[Clear Modes/Energy Saver]** key.

4 Press the **[#]** key.

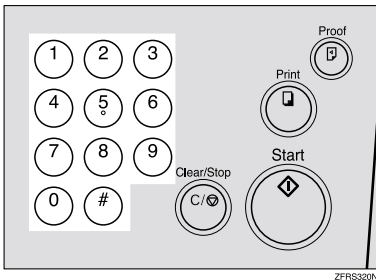


The number on the Memory/Class counter is fixed, and the number on the counter is blinking.

Note

- If you enter the wrong number, press the **[Clear Modes/Energy Saver]** key. Then, enter the desired number again.

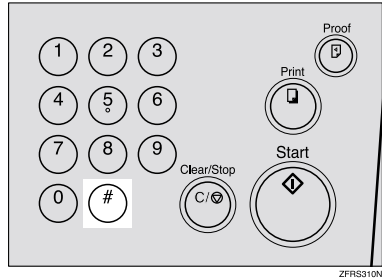
5 Enter the desired value or mode with the number keys.



Note

- There is no adjustment value in mode No.1 and No.2.






6 Press the **[#]** key to store the desired value or mode.












Note





- If you enter the wrong value or mode, press the **[Clear Modes/Energy Saver]** key. Then, go back to step 4.
- When you want to leave the user tools, press the **[Clear Modes/Energy Saver]** key.





User Tools Menu



No.	Mode	Function
1	Resettable Master Count	The total number of masters is displayed. To clear it, hold down the [Clear/Stop] key for at least 3 seconds.
2	Resettable Print Count	The total number of prints is displayed. To clear it, hold down the [Clear/Stop] key for at least 3 seconds.
3	Auto Reset	<p>The machine returns to its initial condition automatically after the job is finished. The automatic reset time can be set from 1 to 5 minutes or no.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>no</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: no • 1 – 5 minutes
4	Auto Energy Saving	<p>You can set the time until the Energy Saver mode starts.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>3 minutes</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: oFF • 1 – 120 minutes
5	Minimum Print Quantity	<p>You can set the minimum number of prints with the number keys.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>0</i> <input type="checkbox"/> Adjustment value: 0 – 9999
6	Maximum Print Quantity	<p>You can set the maximum number of prints with the number keys.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>9999</i> <input type="checkbox"/> Adjustment value: 0 – 9999
7	Copy Count Display	<p>The counter can be set to show the number of prints made (Up), or the number of prints left to be made (Down).</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF (Down)</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: oFF (Down) • 1: on (Up)

No.	Mode	Function
8	Buzzer On	<p>You can select whether the buzzer sounds when you press a key.</p> <p> Note</p> <p><input type="checkbox"/> Default: <i>oFF</i></p> <p><input type="checkbox"/> Adjustment value:</p> <ul style="list-style-type: none"> • 0: oFF • 1: on
9	Image Density	<p>You can select the image density at power on.</p> <p> Note</p> <p><input type="checkbox"/> Default: <i>Standard</i></p> <p><input type="checkbox"/> Adjustment value:</p> <ul style="list-style-type: none"> • 1: Standard • 2: Dark • 3: Darker • 4: Light
10	Original Type	<p>You can select the original image mode at power on.</p> <p> Note</p> <p><input type="checkbox"/> Default: <i>Letter mode</i></p> <p><input type="checkbox"/> Adjustment value:</p> <ul style="list-style-type: none"> • 1: Letter mode • 2: Letter/Photo mode • 3: Photo mode • 4: Tint mode
11	Ratio Priority	<p>You can select the primary reproduction ratio at power on.</p> <p> Note</p> <p><input type="checkbox"/> Default: <i>100%</i></p> <p><input type="checkbox"/> Adjustment value:</p> <ul style="list-style-type: none"> • 1: 65% • 2: 74% • 3: 77% • 4: 93% • 5: 100% • 6: 121% • 7: 129% • 8: 155%

No.	Mode	Function
12	Economy Mode	<p>You can select whether economy mode is selected at power on.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>
13	Margin Erase Area	<p>You can adjust the erase edge margin width in Edge Erase.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <ul style="list-style-type: none"> • Metric Version: <i>2mm</i> • Inch Version: <i>0.1"</i> <input type="checkbox"/> Adjustable value: <ul style="list-style-type: none"> • Metric Version: <i>0 – 20mm</i> • Inch Version: <i>0.0" – 0.8"</i> <input type="checkbox"/> To enter decimal values: <ol style="list-style-type: none"> ① Press the 【Program】 key, and enter a decimal point. ② Press the 【#】 key to fix the value.
14	Fine Mode	<p>You can select whether fine mode is selected at power on.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>
15	Auto Cycle Mode	<p>You can select whether Auto Cycle mode is selected at power on.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>on</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>
16	Paper Length Detect	<p>The machine detects the paper length on the paper feed tray.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>on</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>

No.	Mode	Function
17	Original Size Detect (Document feeder)	<p>When you set originals in the optional document feeder, the machine detects the size.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>on</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>
18	Photo Background	<p>When you make prints in Photo or Letter/Photo mode, the background of the prints might become dirty. You can prevent this.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>
19	Longer Paper	<p>You can select whether you use paper longer than 432mm, 17.0" or not.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>
20	Double Copy	<p>If you set an original on the exposure glass and press the [Combine] key and [Start] key, two identical images are printed on the one sheet.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i> <input type="checkbox"/> For details about Combining Originals, see p.39 "Combining Originals".

No.	Mode	Function
21	Cancel Combine	<p>You can select whether Combining Originals mode is cleared after finishing the print job.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustable value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i> <input type="checkbox"/> Even if you select "1" in this mode, Combining Originals mode is not cleared when the next original are set in the optional document feeder. <input type="checkbox"/> For details about Combining Originals, see p.39 "Combining Originals".
22	Skip Feed Number	<p>When you use the Skip Feed Printing function, you can select how many times the drum rotates while one sheet of paper is fed.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>2 times</i> <input type="checkbox"/> Adjustment value: 2 – 9 times
23	Memory Print	<p>Each print set or stack will contain the number of prints you program in Memory mode.</p> <p>If set to Memory, Memory mode will work.</p> <p>If set to Stack, Stack mode will work.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>Memory</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>Memory</i> • 1: <i>Stack</i> <input type="checkbox"/> For details about Memory mode, see p.36 "Memory Mode".
24	Auto Memory/Class Move	<p>In this function, the machine stops printing for 2 seconds after one set of prints are completed in Memory mode and Class mode. This gives you the chance to separate each set when you do not have an optional tape dispenser.</p> <p>For example, you can remove prints one by one from the paper delivery tray or insert one sheet of paper between the prints.</p> <p> Note</p> <ul style="list-style-type: none"> <input type="checkbox"/> Default: <i>oFF</i> <input type="checkbox"/> Adjustment value: <ul style="list-style-type: none"> • 0: <i>oFF</i> • 1: <i>on</i>

No.	Mode	Function
25	Quality Start Number	<p>You can select how many times the drum unit idles after the following time periods have passed.</p> <p>When you set the Quality Start function, the bold letter or solid images might be light.</p> <p> Note</p> <ul style="list-style-type: none"><input type="checkbox"/> Default: 0<input type="checkbox"/> Adjustment value: 0 – 3 times
26	Prints/Master Cost	<p>The optional key counter usually counts the number of prints made regardless of the number of masters used. For accounting purposes, it is possible for the key counter to be incremented by a value between 0 and 50 whenever a new master is used.</p> <p>Example: The key counter is adjusted to increase by 20 for each master fed. If 100 copies have been made and the master is replaced, the key counter will increase by 120.</p> <p> Note</p> <ul style="list-style-type: none"><input type="checkbox"/> Default: 0<input type="checkbox"/> Adjustment value: 0 – 50

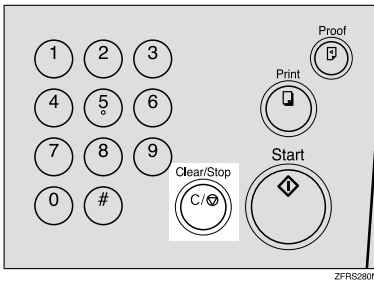
4. Replenishing Supplies

Loading Paper on the Paper Feed Tray

The load paper indicator (🚩) lights when the paper feed tray runs out of paper.

Replenishing Paper

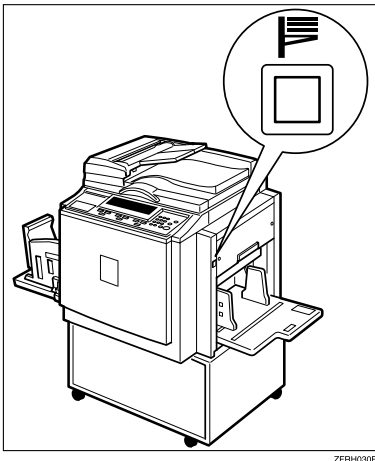
1 Press the [Clear/Stop] key.



Note

- ❑ This step is necessary only if you want to pause a print run to replenish paper.

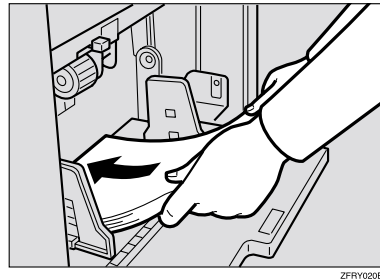
2 Press the paper feed tray down key.



Note

- ❑ The paper feed tray will lower without the key being pressed when the printing paper runs out.
- ❑ The top sheet might remain between the feed rollers. In this case, remove the top sheet.

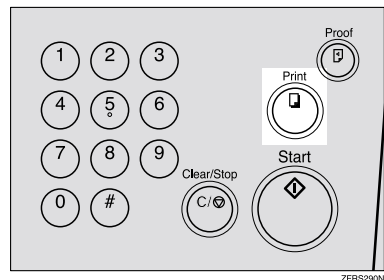
3 Load paper on the paper feed tray.



Note

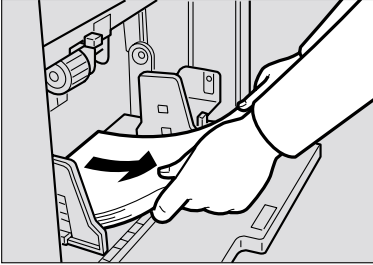
- ❑ Correct paper curl before setting the paper.

4 Press the [Print] key to resume printing.



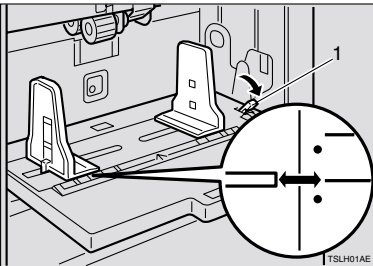
Changing the Paper Size

- 1** Remove the paper from the paper feed tray.



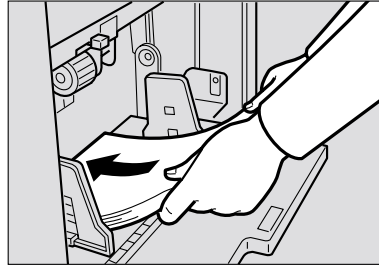
The paper feed tray will lower.

- 2** Shift the paper feed side plate lock lever forward. Adjust the paper feed side plates to match the paper size.



1: Paper feed side plate lock lever

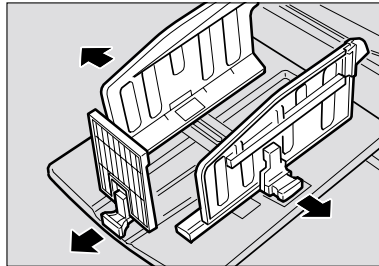
- 3** Load paper on the paper feed tray, and then shift the lock lever backward.



Note

- Correct any paper curl before setting the paper.
- Make sure that the side plates touch the paper lightly.

- 4** Adjust the side plates and the end plate of the paper delivery tray.



When the Add Ink Indicator (🖨️) Lights

The add ink indicator (🖨️) lights when it is time to supply ink.

⚠️ CAUTION:

- *If ink comes into contact with your eyes, rinse immediately in running water. For other symptoms, consult a doctor.*

⚠️ CAUTION:

- *Keep the ink or ink container out of reach of children.*

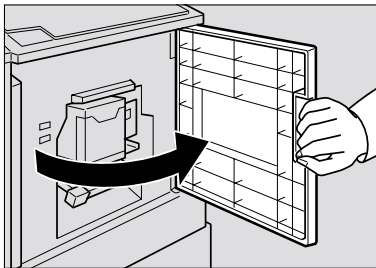
⚠️ CAUTION:

- *If ink is ingested, induce vomiting by drinking a strong saline solution. Consult a doctor immediately.*

⚠️ CAUTION:

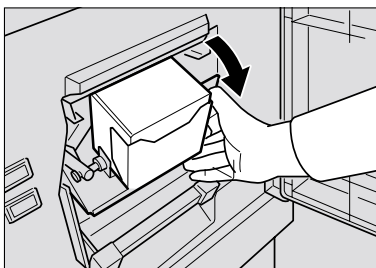
- *Our products are engineered to meet high standards of quality and functionality, and we recommend that you use only the expendable supplies available at an authorized dealer.*

1 Open the front door.



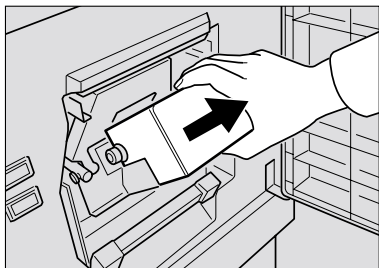
ZFRH280E

2 Pull out the ink holder.



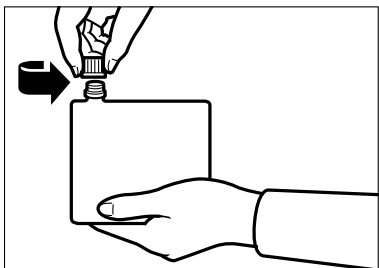
ZFRH390E

3 Remove the used ink cartridge.

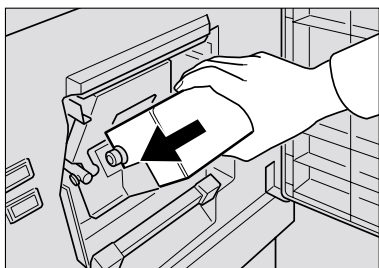


4 Remove the cap of the new ink cartridge.

4



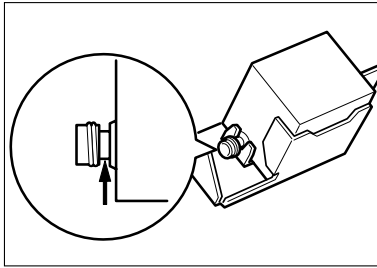
5 Insert the new cartridge into the ink holder.



6 Return the ink holder to its original position until it clicks.

 **Note**

- Always supply ink of the same color.
- Make sure to firmly insert the part indicated by the arrow mark into the guide.



ZFRH400E

7 Close the front door.

The machine will start idling to supply ink to the drum.

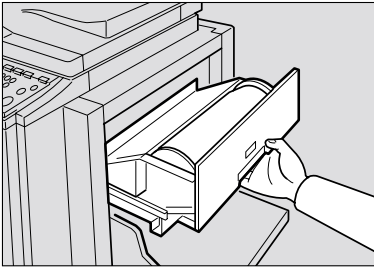
 **Note**

- It will stop when the correct amount of ink reaches the drum.

Master Roll Replacement

The master end indicator (🔆) is lit when it is time to replace the master roll.

1 Pull out the master tray.



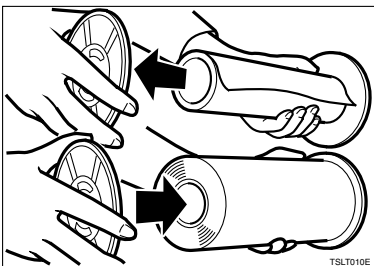
ZFRH220E

2 Open the plotter cover.



ZFRH240E

3 Remove the used master roll and pull out both spools. Then, insert both spools into a new master roll.

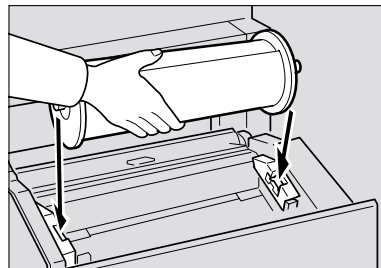


TSLT010E

Note

- ❑ When the **Master End** indicator lights, it is necessary to replace the master roll even if some master remains on the old roll.

4 The new master roll must be positioned as shown in the illustration.



ZFRH260E

5 Set the paper edge of the master roll as shown.



ZFRH271E

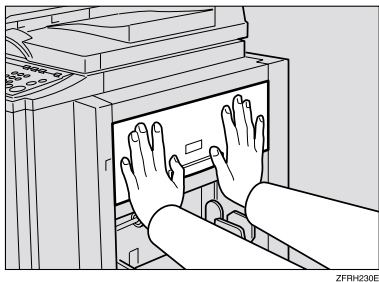
Note

- ❑ Rotate the spools backward to take up any slack in the master.

6 Close the plotter cover.



7 Push in the master tray.

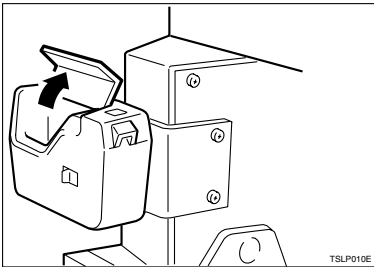


Placing a New Roll of Tape in the Tape Dispenser (Option)

Note

- ❑ Make sure that the main switch is turned on and the power switch of the tape dispenser is off.

1 Open the cover of the tape dispenser.



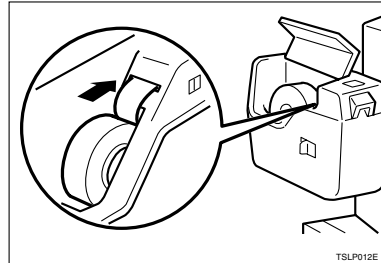
2 As shown, put the roll in the dispenser.



Note

- ❑ Make sure that the tape is installed in the proper direction. If it is not in the correct direction, the tape dispenser will not work correctly.

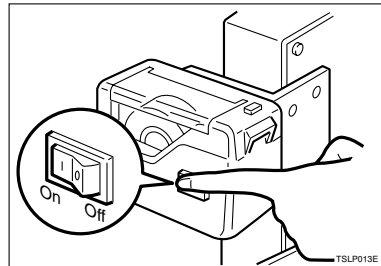
3 Feed the leading edge of the roll in the dispensing slot until it stops.



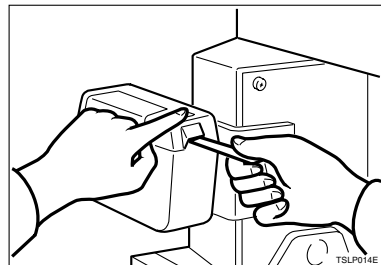
Note

- ❑ Push the tape as far as possible through the slot.

4 Turn on the power switch of the tape dispenser.



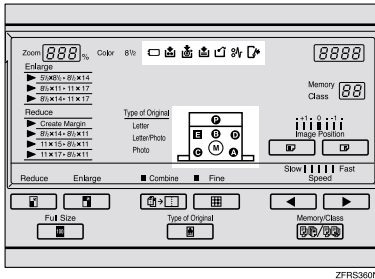
5 Press the manual cut button to trim off the leading edge of the tape.



5. Troubleshooting

Machine Operation Problems

If a malfunction or a misfeed occurs within the machine, the following indicators will light.



◆ When the misfeed indicator (⚡) lights with the machine indicators

Indicator	Page
⚡ and "P"	⇒ p.75 "When "⚡" and "P" light"
⚡ and "A"	⇒ p.77 "When "⚡" and "A" light"
⚡ and "B"	⇒ p.77 "When "⚡" and "B" light"
⚡ and "C"	⇒ p.78 "When "⚡" and "C" light"
⚡ and "D"	⇒ p.81 "When "⚡" and "D" light"
⚡ and "E"	⇒ p.82 "When "⚡" and "E" light"







⚠ CAUTION:

- *Be careful not to cut yourself on any sharp edges when you reach inside the machine to remove misfed sheets of paper or masters.*







📝 Note

- ❑ To prevent misfeeds, do not leave any torn scraps of paper within the machine.
- ❑ When clearing misfeeds, do not turn off the main switch. If you do, your copy settings are cleared.
- ❑ If misfeeds occur repeatedly, contact your service representative.


❖ When the open cover/unit indicator () lights

Indicator	Meaning	Page
	Close the front door.	⇒ p.85 "When the Open Cover/Unit Indicator () Lights"
 and "P"	Close the document feeder cover.	
 and "M"	Set the drum.	
 and "D"	Close the master tray.	
 and "E"	Close the master eject box.	

❖ When the supply/exchange indicators light

Indicator	Meaning	Page
	Load more paper.	⇒ p.63 "Loading Paper on the Paper Feed Tray"
	Load new ink cartridge.	⇒ p.65 "When the Add Ink Indicator () Lights"
	Load new master roll.	⇒ p.68 "Master Roll Replacement"
	Remove the used master.	⇒ p.88 "When the Master Eject Indicator () Lights"

❖ When other indicators light

Indicator	Meaning	Page
	Set the key counter.	⇒ p.89 "When Other Indicators Light"

Printing Problems

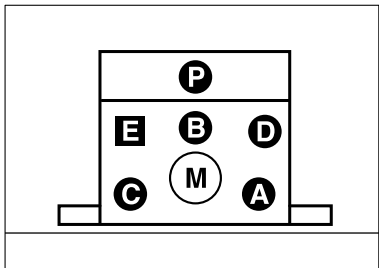
Problem	Cause	Action
When you try to set several functions at a time, you cannot set some functions.	Some functions cannot be used together.	⇒ p.105 "Combination Chart"
Parts of the image are not printed in Edge Erase mode.	Erase margin is too wide.	Set a narrower erase margin with the service program. ⇒ p.57 "User Tools Menu"
	Edge margins of original are too narrow.	
Prints are blank or parts of the image are not printed.	The paper feed side plates are not set correctly.	Make sure that the paper feed side plates touch the paper lightly.
2nd printing with another drum is unsatisfactory.	The 1st print image is still wet.	Wait until the 1st image becomes dry.
An uneven solid image appears.	Large solid image wrinkles the master.	Increase the print speed or select photo mode.

5

Combining Originals Mode

Problem	Cause	Action
Prints are blank or parts of the image are not printed.	Original size and direction are not correct.	You cannot use originals of different sizes and directions in Combining Originals mode. Use originals of same size and direction.
Print image is not correct.	Original set order is not correct.	Place originals face up into the optional document feeder. The first original should be on the top.
		Place original face down on the exposure glass. The first original should be set first.

🔧 Clearing Misfeeds



The machine indicator shows the area where jams occur.

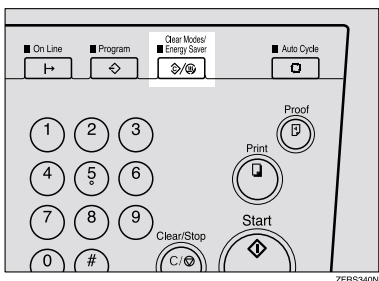
5

🚨 Important

- ❑ When clearing misfeeds, do not turn off the main switch. If you do, your print settings are cleared.

💡 After clearing misfeeds

Press the **[Clear Modes/Energy Saver]** key to clear the error indicators.

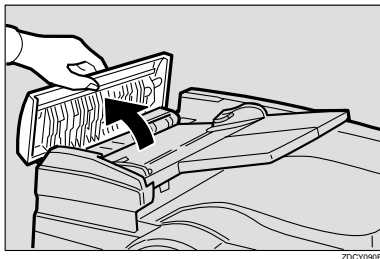


When “ Original misfeeds occur when using the optional document feeder.

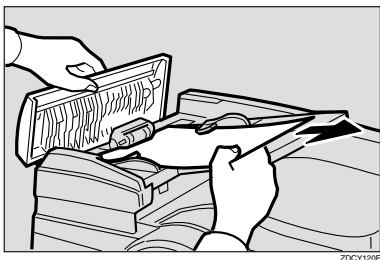
Note

- These indicators will light when the machine is equipped with the optional document feeder.

1 Open the document feeder cover.

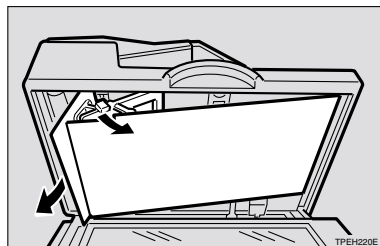


2 Pull out the original gently.



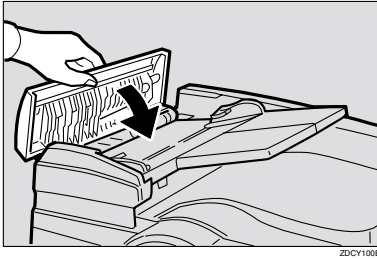
3 If you cannot remove the misfed original in step **2**, lift the document feeder.

4 Pull the green knob towards you and remove the original.



5 Return the document feed sheet to its original position.

6 Close the document feeder cover until it clicks in position.



To prevent original misfeeds:

Place the following kinds of originals on the exposure glass.

- Originals heavier than 128g/m², 34 lb
- Originals lighter than 52g/m², 14 lb
- Originals smaller than 148mm × 210mm, 5.9" × 8.3"
- Originals larger than 297mm × 864mm, 11.6" × 34.0"
- Stapled or clipped originals
- Perforated or torn originals
- Curled, folded, or creased originals
- Originals with any kind of coating, such as thermal fax paper, art paper, aluminum foil, carbon paper, or conductive paper
- Bound originals such as books
- Damaged originals
- Originals with glue on them
- Pasted originals
- Originals written in pencil
- Thin originals that have low stiffness
- Originals with index tabs
- Transparent originals such as OHP transparencies or translucent paper

Note

- Do not mix different sizes of originals in the optional document feeder.
- Remove staples or clips of originals. Fan originals that have had staples or clip removed.
- Do not stack originals above the limit mark.

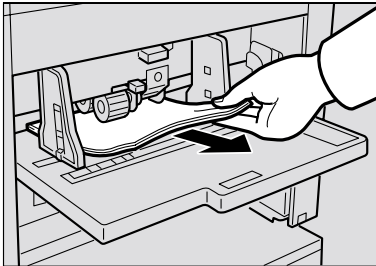
When “A” and “A” light

Paper misfeeds occur in the paper feed section.

⚠ CAUTION:

- *Be careful not to cut yourself on any sharp edges when you reach inside the machine to remove misfed sheets of paper or masters.*

1 Slowly but firmly pull out the paper.



📌 Note

- If the indicators still light, open the front cover and close it completely.

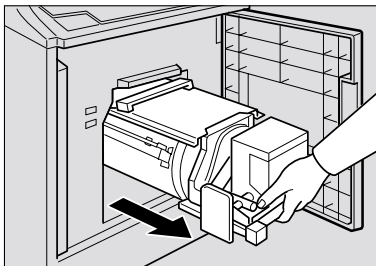
🔍 Reference

See p.79 “To prevent paper misfeeds:”

When “B” and “B” light

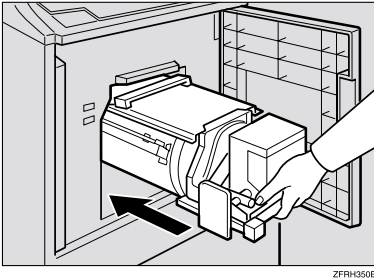
The master or paper is wrapped around the drum, or paper misfeeds occur inside the machine.

1 Lift the lever to unlock the drum unit, and then pull out the unit.



2 Remove the misfed paper.

- 3 Insert the drum unit until it locks in position, and then lower the drum unit lock lever.



- 4 Close the front door.

 **Reference**

See p.79 "To prevent paper misfeeds:"

5

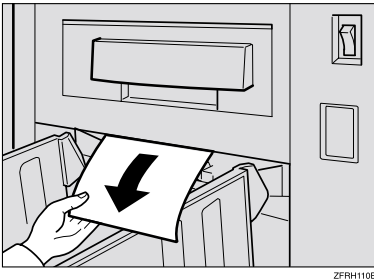
When "⚠" and "C" light

Paper misfeeds occur in the paper delivery section.

 **CAUTION:**

- Be careful not to cut yourself on any sharp edges when you reach inside the machine to remove misfed sheets of paper or masters.

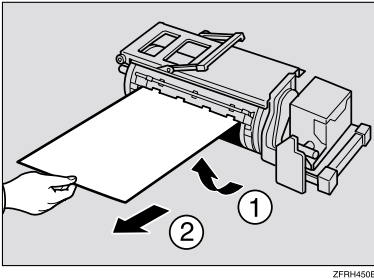
- 1 Remove the misfed paper.



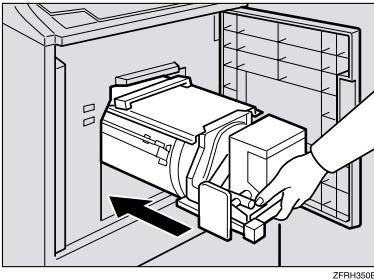
 **Note**

- Make sure that the paper delivery end plate and side plates are in the proper position.
- If a jam occurs with the current printing speed, reduce the speed.

- 2** If the paper is completely wrapped around the drum, pull out the drum unit and remove the misfed paper from the drum.



- 3** Insert the drum unit until it locks in position, and then lower the drum unit lock lever.

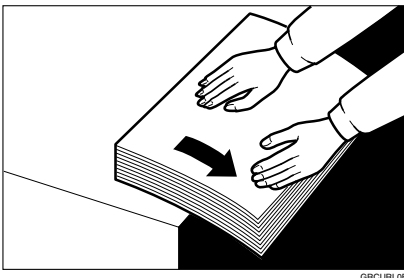


- 4** Close the front cover.

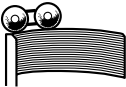
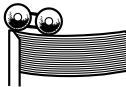
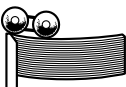
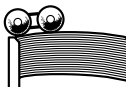
To prevent paper misfeeds:

If paper is curled or the original's leading edge margin is too narrow, the following action is necessary.

- When you use curled paper, correct the curl as shown.

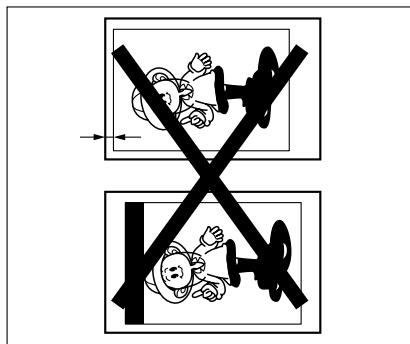


- When you cannot correct the paper curl, stack the paper with the curl face down or face up as shown in the illustration.

	Right	Wrong
Thin Paper		
Thick Paper		

TPEY990E

- When the leading edge margin of the original is less than 5mm, 0.2" or there is a solid image on the leading edge, insert the original with the widest margin first or make a leading edge margin by making a copy.

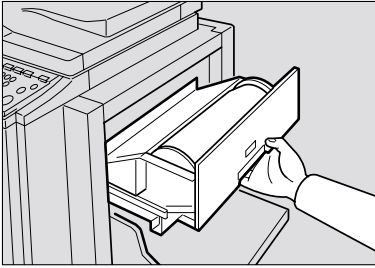


GRLEAD0E



When “ Master misfeeds occur in the master feed section.

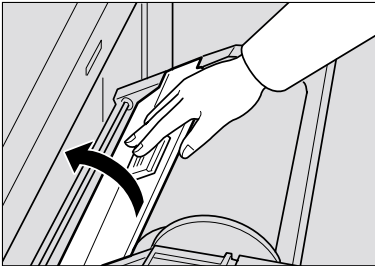
- 1** Pull out the master tray.



ZFRH4220E

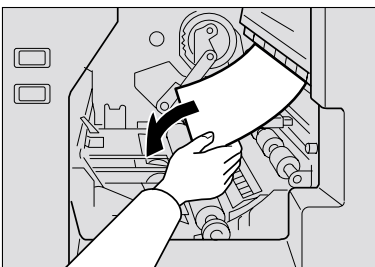
- 2** Open the plotter cover, and then remove the misfed master.

5



ZFRH4240E

- 3** If you could not remove the misfed master in steps **1** and **2**, pull out the drum and remove the misfed master from the inside.

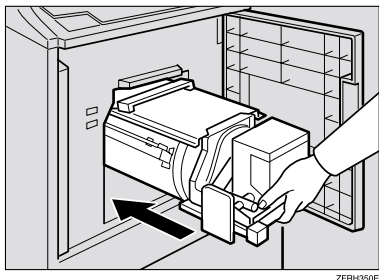


ZFRH420E

Reference

For details about how to remove the drum unit, see p.50 “Changing the Color Drum Unit”.

- 4 Insert the drum unit until it locks in position, and then lower the drum unit lock lever.



- 5 Close the front cover.

Note

- If the original misfeeds in the optional document feeder, see p.75 “When “**⚠**” and “P” light”.

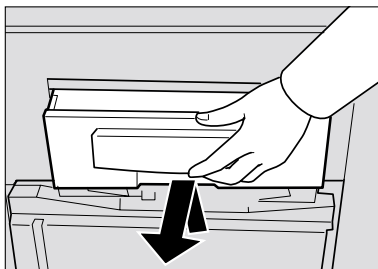
5

When “**⚠**” and “E” light

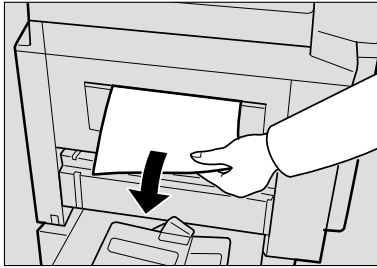
- 1 Check where the misfed master is. Remove the misfed master as follows:

When a master misfeed occurs in the master eject section

- 1 Pull out the master eject box.



2 Remove the misfed master.



ZFRH120E

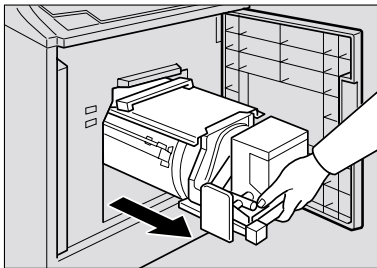
Note

- Be careful not to stain your hands with ink when you touch used masters.

3 Return the master eject box to its original position.

When a master misfeed occurs on the drum

1 Lift the lever to unlock the drum unit, and then pull out the unit.

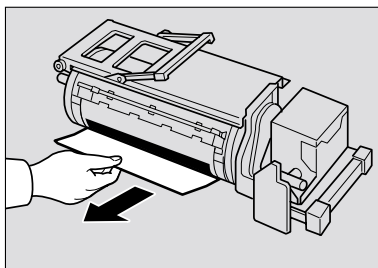


ZFRH340E

Reference

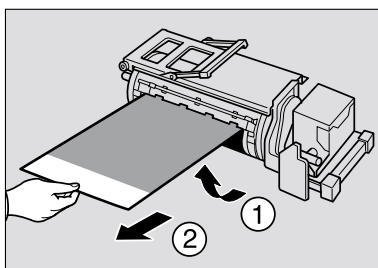
For details about how to remove the drum unit, see p.50 "Changing the Color Drum Unit".

2 Remove the master from the drum.



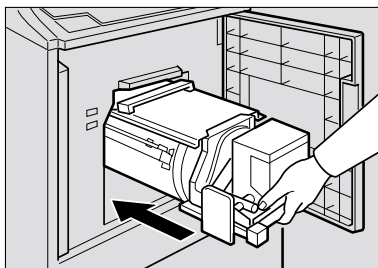
ZFRH440E

3 Pull the master out of the master clamp.



ZFRH460E

4 Insert the drum unit until it locks in position, and then lower the drum unit lock lever.



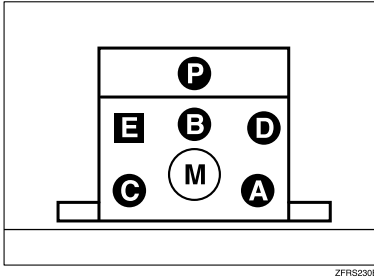
ZFRH350E

5 Close the front cover.

5

When the Open Cover/Unit Indicator (☐↻) Lights

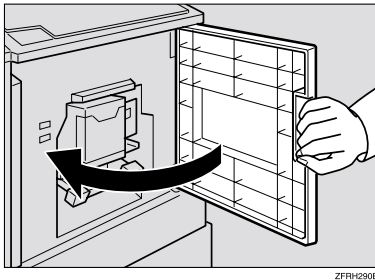
Make sure that the following door/units are closed.



The machine indicator shows the place where the door/units are not closed.

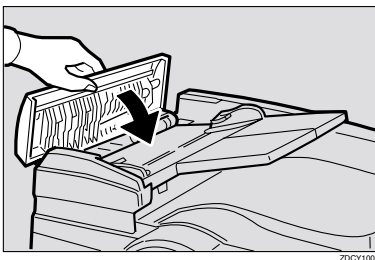
❖ ☐↻: Front door

Close the front door completely.



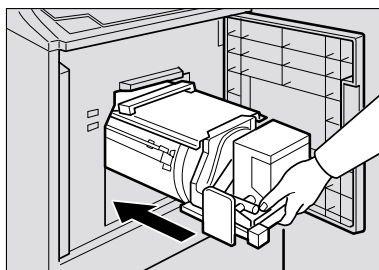
❖ ☐↻ and P: Document feeder (Option)

Close the document feeder cover until it locks in position.



❖ **Ⓜ and M: Drum unit**

Insert the drum unit until it locks in position, and then lower the drum unit lock lever.



ZFRH350E

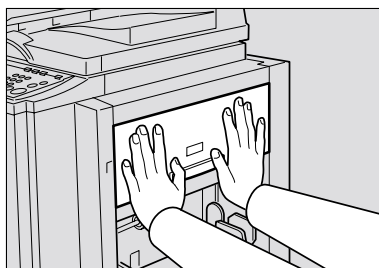
❖ **Ⓜ and D: Master tray**

① Make sure that the plotter cover inside of the master tray is closed.



ZFRH250E

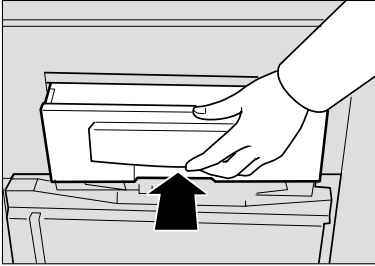
② Push in the master tray completely.



ZFRH230E

❖ **L* and E: Master eject box**

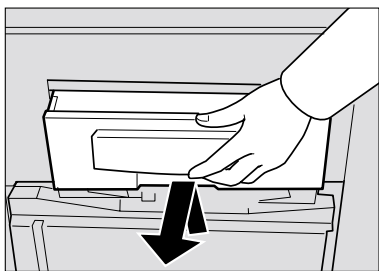
Push in the box until it touches the inside bracket.



When the Master Eject Indicator (🗑️) Lights

The master eject indicator (🗑️) lights when it is time to empty master eject box or when you need to set the master eject box.

- 1 Pull out the master eject box and remove the used masters.**



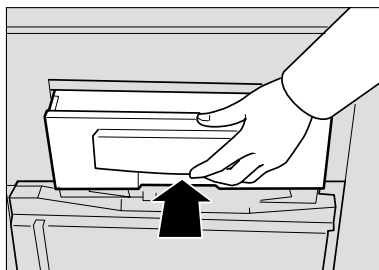
ZFRH131E

5

Note

- Spread an old newspaper, then turn the master eject box upside down on it to remove the used masters. Then, throw away the masters.

- 2 Install the master eject box. Push in the box until it touches the inside bracket.**



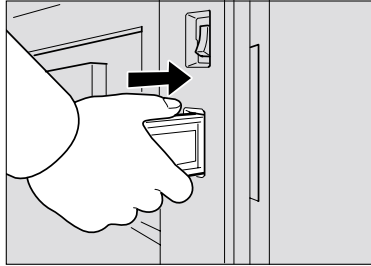
ZFRH140E

When Other Indicators Light

103

Set the key counter

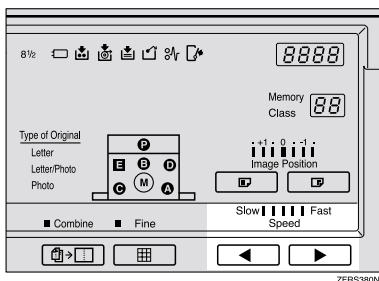
The key counter (option) is not set. Insert the key counter.



ZFRH150E

When the Prints are Thrown Over the Paper Delivery Tray

1 Reduce the printing speed by pressing the [◀] key.



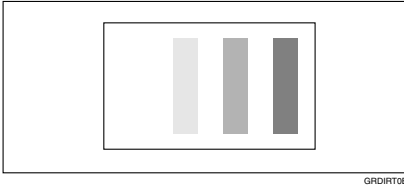
5

Note

- If a jam occurs with the current printing speed, reduce the paper delivery speed.

Poor Printing

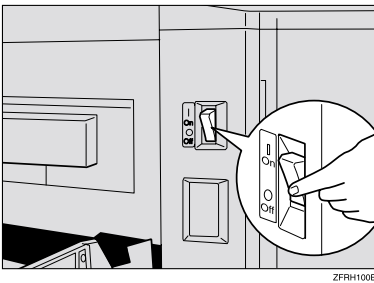
Dirt on the Back Side of Paper



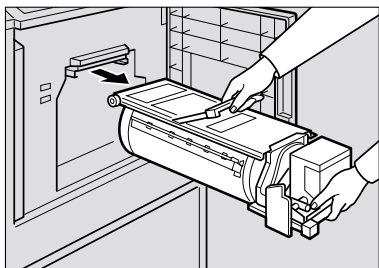
Note

- When you use paper smaller than the original, select the proper reduction ratio. Otherwise, you might get dirty background prints.
- When you use postcards, the background might be dirty because postcards do not absorb ink well.
- You might get prints with dirty background when printing at high speed under high temperature.

1 Turn off the main switch.



2 Pull out the drum unit.



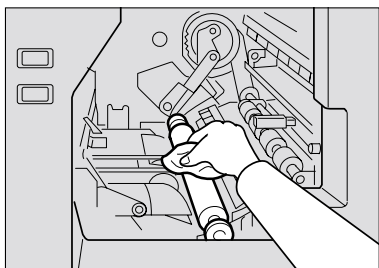
ZFRH4370E

Reference

For details about how to remove the drum unit, see p.50 "Changing the Color Drum Unit".

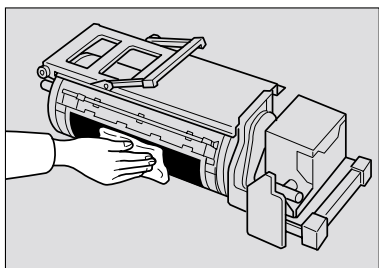
5

3 Clean the pressure roller with a clean cloth.



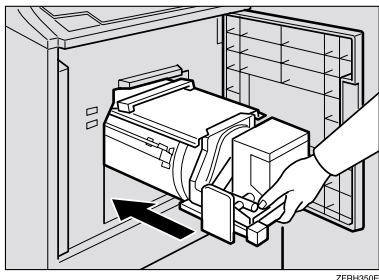
ZFRH430E

4 With a clean cloth, remove any ink that has accumulated on the trailing edge of the drum unit.



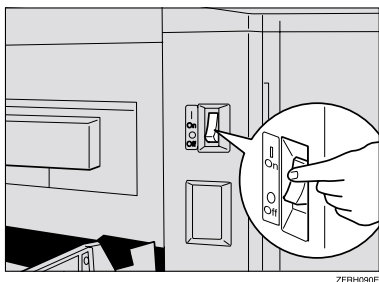
ZFRH470E

- 5** Insert the drum unit until it locks in position, and then lower the drum unit lock lever.

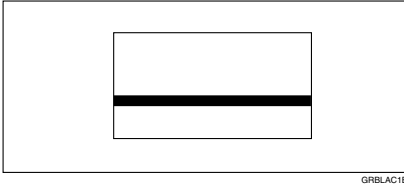


- 6** Close the front door.

- 7** Turn on the main switch.



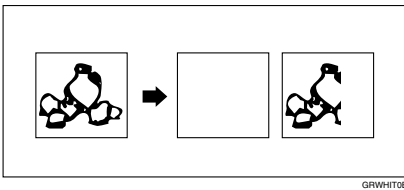
Dirt on the Front Side of Paper (Black Line/Stain)



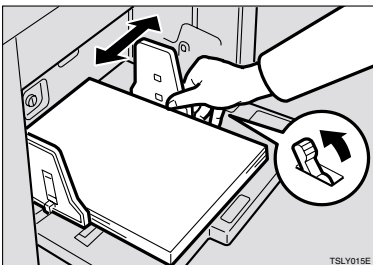
Note

- If there is no margin or if there is a solid image area near the leading edge of the original, make a margin of at least 5mm, 0.2" at the leading edge. Otherwise, the paper exit pawl might become dirty and cause black lines on prints.
- Check the exposure glass cover and clean it if dirty. See p.103 "Exposure Glass Cover".
- Check the exposure glass and clean it if dirty. See p.103 "Exposure Glass".
- When black lines or stains still appear on prints even if you clean the above, contact your service representative.

White Prints or Incomplete Prints



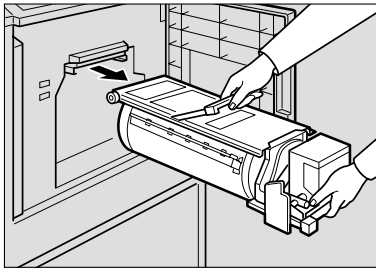
- Make sure that the paper feed side plates touch the paper lightly. Shift the lock lever backward.



- When you use the optional document feeder, make sure that the original guides contact the originals lightly.

When you get white or incomplete prints even if you check the items above, perform the following procedure.

1 Pull out the drum unit.

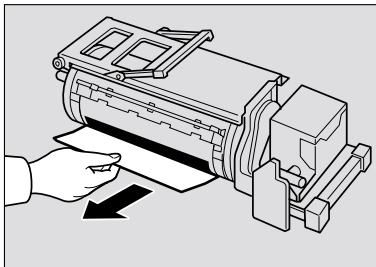


ZFRH370E

Reference

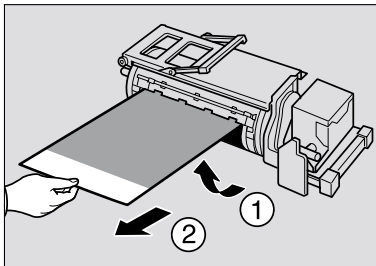
For details about how to remove the drum unit, see p.50 "Changing the Color Drum Unit".

2 Remove the master from the drum.



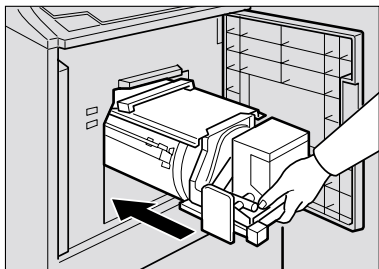
ZFRH440E

3 Remove paper that is stuck to the drum.



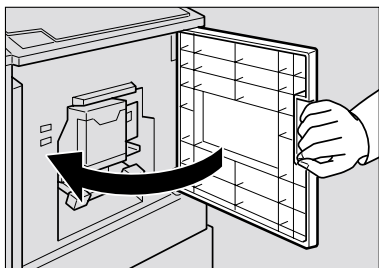
ZFRH460E

- 4** Insert the drum unit until it locks in position, and then lower the drum unit lock lever.



ZFRH350E

- 5** Close the front door.



ZFRH290E

5

Operation Notes

General Cautions

- While printing, do not turn off the main switch.
- While printing, do not open the door or covers.
- While printing, do not unplug the power cord.
- While printing, do not move the machine.
- Keep corrosive liquids, such as acid, off the machine.
- Open and close the door and covers softly.
- Do not put anything except originals on the machine.
- Do not spill liquid on the machine.
- When opening or closing the door or covers, keep hold of them so they don't fall.
- When removing the drum unit from the machine, be careful not to let the drum unit fall.
- Do not modify or replace any parts other than the ones specified in this manual.
- Do not operate the machine without covers. You might get your fingers caught in the machine, or the machine might be damaged because, for example, dust or the like might get inside.
- Since some parts of the machine are sharp and might cause injury, touch only the parts specified in this manual.
- If you clean rubber parts with benzine, wipe them with a dry cloth afterwards.
- Always turn the machine off when you have finished printing for the day.
- If the machine must be transported by vehicle, please contact your service representative.
- Make sure to make a few trial prints to check the image position because the image position of the trial print might not correspond with that of the original.
- If the image registration is not consistent, slow the printing speed down to Setting 1.
- When performing duplex or multicolored printing, leave the printed paper for a while before the next printing in order to let the ink dry on the printed paper. If this is not done, feed roller marks will appear on the print image.

- If the machine is not used for a long period, the image density might decrease because the ink on the drum might dry. Make extra prints until the image density recovers.
- When the machine is used in low temperature conditions, the image density might decrease. In this case, slow the printing speed down to step 1 or 2.
- When making duplex prints, misdetection of paper wrapping might occur if the paper delivery sensor detects a black area at the leading edge of the back side. Keep at least an 5mm, 0.2" margin at the leading edge of the back side of the printing paper.
- Press the **【Proof】** key to perform a test print as the first few prints might be light.
- When making duplex prints or when using non-white printing paper, the paper end sensor might malfunction and fail to detect the paper. In this case, place a blank sheet under the printing paper on the paper feed tray.
- The outer portion of the image might not be printed under low temperature. In this case, slow the printing speed down to step 1 or 2, or increase the room temperature.
- The paper exit pawl might contact the printing paper and cause black lines on the prints. In this case, increase the printing speed or make a new master with lighter image density mode.
- If you cannot pull out the drum, close the front cover again to rotate the drum. Pull out the drum after it stopped at the position.
- The leading edge of the prints might become stained if the edge touches the image of prints on the paper delivery tray.
- The ink of the print on the paper delivery tray might stick to the back side of the next print.
- When the machine is on and the power source is less than 90 % of the specified amount, printing quality will decrease. Therefore, make sure the supply from your electrical outlet is at least 90 % of the required amount.
- As various kinds and qualities of paper exist, some paper might be wrapped around the drum or cause misfeeds.
- If your hands are stained with ink:
 - Avoid prolonged or repeated contact with skin.
 - Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work period.
 - Ink is readily removed from skin by waterless hand cleaners followed by washing with soap and water.
- Be careful not to get any ink on your clothing while emptying the master eject box or while loading a new ink cartridge.
- The image density varies according to the printing speed and the room temperature. So, adjust the printing speed or increase the room temperature.

- When you make a lot of prints from a small image, ink might ooze out from the edges of the master, especially under high temperature and when printing in two or more colors. In this case, make a new master.
- Use ink made within one year. Ink stored for a long period tends to dry slowly and yield lower image density.
- While making a master, do not leave the exposure glass cover or optional document feeder open.
- In Letter/Photo mode, moire patterns might occur when screened originals are printed. In this case, make prints in Letter or Photo mode.
- When you use originals with light lettering, edges of the letters might be printed clearly and the inside of the letters might be light. In this case, increase the image density.
- When marks on the printing paper occur, clean the paper feed roller. See p.103 "Paper Feed Roller (paper feed tray)".
- If you make a print before the ink on the first print dries, the ink may adhere to the paper feed roller and soil the print. Before printing on the reverse side of a printed sheet or overprinting on a printed sheet, be sure that the ink on the first print is adequately dry. See p.103 "Paper Feed Roller (paper feed tray)".

Print Paper

- When the paper is curled, correct the curl, otherwise the paper might wrap around the drum or stains might appear.
- Postcards and the like do not absorb ink well. Offset images might appear on the rear side of subsequent prints. Solid image originals will cause offset image prints.

Originals

- If there is no margin or if there is a solid image area near the leading edge of the original, make at least a 5mm, 0.2", margin at the leading edge; otherwise, the paper might wrap around the drum or the paper exit pawl might become dirty and cause black lines on prints.
- If you use originals that have bold letters or solid images at the leading edges, you might get prints with dirty edges. In this case, insert the widest margin first, or raise the printing speed.
- If you use paste-up originals, make sure that the pasted parts hold firmly to the base sheet. If the thickness of the paste-up originals is more than 0.2mm and the space between the pasted parts is less than 2mm, 0.08", a shadow might appear on the print.

- Under the following conditions, the machine might not detect the original on the exposure glass. If you press the **【Start】** key again, the machine will start making a master anyway:
 - When you set a dark original on the exposure glass.
 - When the original is not centered according to the size marks on the right scale.
 - If you do not open the exposure glass cover at an angle of more than 25 degrees with the exposure glass when you replace originals.
 - If the machine is installed under a strong light.

Where to Put the Machine

Your machine's location should be carefully chosen because environmental conditions greatly affect its performance.

Environmental Conditions

Optimum environmental conditions

⚠ CAUTION:

- *Keep the machine away from humidity and dust. Otherwise a fire or an electric shock might occur.*
- *Do not place the machine on an unstable or tilted surface. If it topples over, an injury might occur.*

⚠ CAUTION:

- *If you use the machine in a confined space, make sure there is a continuous air turnover.*

⚠ CAUTION:

- *After you move the machine, use the caster fixture to fix it in place. Otherwise the machine might move or come down to cause an injury.*

- Temperature: 10 – 30 °C, 50 – 86 °F
- Humidity: 20 – 90 % RH
- A strong and level base.
- The machine must be level within 5mm, 0.2" both front to rear and left to right.
- Make sure to locate this machine in a large well ventilated room that has an air turnover of more than 30 m³/hr/person.

Environments to avoid

- Locations exposed to direct sunlight or strong light (more than 1500 lux).
- Locations directly exposed to cool air from an air conditioner or heated air from a heater. (Sudden temperature changes might cause condensation within the machine.)
- Places where the machine might be subjected to frequent strong vibration.
- Dusty areas.
- Areas with corrosive gases.

Power Connection

⚠ WARNING:

- **Connect the machine only to the power source described on the inside front cover of this manual. Connect the power cord directly into a wall outlet and do not use an extension cord.**
- **Do not damage, break or make any modifications to the power cord. Do not place heavy objects on it. Do not pull it hard nor bend it more than necessary. These actions could cause an electric shock or fire.**

⚠ CAUTION:

- *Unplug the power cord from the wall outlet before you move the machine. While moving the machine, you should take care that the power cord will not be damaged under the machine.*

⚠ CAUTION:

- *When you disconnect the power plug from the wall outlet, always pull the plug (not the cable).*

6

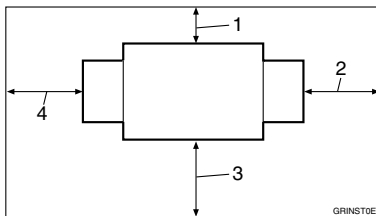
❖ Main Frame

- Make sure the plug is firmly inserted in the outlet.

Access to Machine

Place the machine near the power source, providing clearance as shown.

❖ Main Frame



1. More than 10 cm, 4.0"
2. More than 60 cm, 23.7"
3. More than 60 cm, 23.7"
4. More than 60 cm, 23.7"

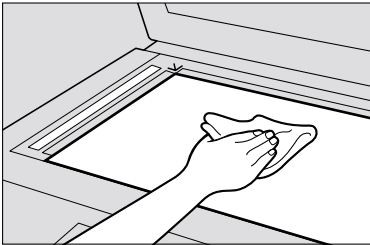
Maintaining the Machine

To maintain high print quality, clean the following parts and units regularly.

Main Frame

Exposure Glass

- 1** Lift the exposure glass cover or optional document feeder.
- 2** Clean the exposure glass with a damp cloth and wipe it with a dry cloth.



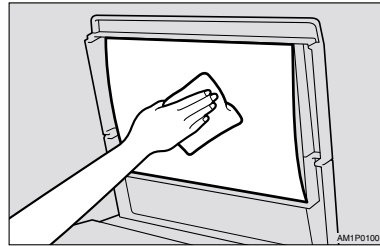
Z0CH130E

Note

- If you do not clean the exposure glass, marks on the glass will be printed.

Exposure Glass Cover

- 1** Lift the exposure glass cover.
- 2** Clean the exposure glass cover with a damp cloth and wipe it with a dry cloth.



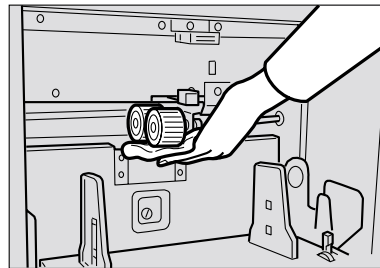
AM1P0100

Note

- If you do not clean the exposure glass cover, marks on the cover will be printed.

Paper Feed Roller (paper feed tray)

- 1** Wipe off the paper dust on the paper feed roller with a damp cloth, then wipe it with a dry cloth.



ZFRH510E

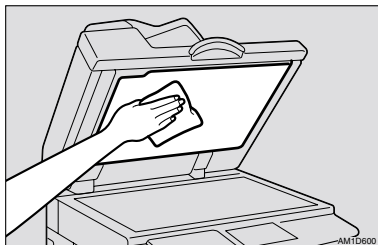
Note

- If you do not clean the paper feed roller, paper misfeeds tend to occur.

Optional Document Feeder

Cleaning the Sheet

- 1** Lift the document feeder.
- 2** Clean the sheet with a damp cloth and wipe it with a dry cloth.



Note

- If you do not clean the sheet, marks on the sheet will be printed.

Combination Chart

This combination chart shows which modes can be used together.

Blank	means that these modes can be used together.
×	means that these modes cannot be used together.

		Function chosen second													
		Preset Reduce/Enlarge	Auto Cycle	Memory mode	Class mode	Combining Originals	Zoom	Type of Original	Image Density	On-Line	Overlay	Economy mode	Tint mode	Fine mode	Edge Erase
Function specified earlier	Preset Reduce/Enlarge	--					×			×	×				
	Auto Cycle		--												
	Memory mode			--	×					×	×				
	Class mode			×	--					×	×				
	Combining Originals					--				×	×				
	Zoom	×					--			×	×				
	Type of Original							--		×			×		
	Image Density								--	×					
	On-Line	×		×	×	×	×	×	×	--			×	×	×
	Overlay	×		×	×	×	×				--			×	
	Economy mode											--	×		
	Tint mode							×		×		×	--		
	Fine mode										×	×		--	
Edge Erase										×				--	

7. Specification

Main Frame

- ❖ **Configuration:**
Floor standing
- ❖ **Printing Process:**
Full automatic one drum system
- ❖ **Original Type:**
Sheet/Book
- ❖ **Original Size:**
Maximum 304.8mm × 432mm, 12.0" × 17.0"
- ❖ **Pixel Density:**
300dpi (in Fine mode 400dpi)
- ❖ **Image Mode:**
Photo mode
Letter mode
Letter/Photo mode
- ❖ **Reduction Ratios:**
 - Inch version:
93 %, 77 %, 74 %, 65 %
 - Metric version:
93 %, 87 %, 82 %, 71 %
- ❖ **Enlargement Ratios:**
 - Inch version:
155 %, 129 %, 121 %
 - Metric version:
141 %, 122 %, 115 %
- ❖ **Printing Area:**
 - A3 drum:
More than 290mm × 410mm, 11.4" × 16.2"
 - A4 drum:
More than 200mm × 290mm, 7.8" × 11.4"
- ❖ **Printing Paper Size:**
Maximum 297mm × 432mm, 11.6" × 17.0"
Minimum 70mm × 148mm, 2.8" × 5.9"

❖ **Leading Edge Margin:**

5mm ± 2mm, 0.2" ± 0.08"



❖ **Print Paper Weight:**

47.1g/m² to 209.3g/m², 12.5 lb to 55.6 lb

❖ **Print Speed:**



60 – 120rpm (5 steps)

❖ **First Copy Time (Master Process Time):**

Less than 23.0 seconds (A4 , 8 1/2" × 11" )

(When setting an original on the exposure glass)

❖ **Second Copy Time (First Print Time):**

Less than 25.0 seconds (A4 , 8 1/2" × 11" )

(When setting an original on the exposure glass)

❖ **Color Printing:**

Drum unit replacement system (red, blue, green, brown, yellow, purple, navy, maroon, orange, teal and gray)

❖ **Image Position Adjustment:**

- Vertical:

More than + 10mm, - 10mm, + 0.39", - 0.39"

- Side:

15mm, 0.6" (for either side)

❖ **Paper Feed Tray Capacity:**

1,000 sheets (80g/m², 20 lb)

❖ **Paper Delivery Tray Capacity:**

1,000 sheets (80g/m², 20 lb)

❖ **Master Eject Box Capacity:**

50 masters

❖ **Dimensions (W × D × H):**

	Width	Depth	Height
Stored	790mm, 31.1"	700mm, 27.6"	640mm, 25.2"
Stored with document feeder	790mm, 31.1"	700mm, 27.6"	750mm, 29.5"
Set up	1360mm, 53.6"	700mm, 27.6"	640mm, 25.2"
Set up with document feeder	1360mm, 53.6"	700mm, 27.6"	750mm, 29.5"

❖ **Weight:**

- Main Frame: 80kg, 176.6 lb
- Main Frame with optional document feeder: 89kg, 196.5 lb

❖ **Noise Emission** *1

Sound Power Level

	Mainframe only	Complete System *3
During printing: Speed 1	74dB(A)	74dB(A)
During printing: Speed 3	78dB(A)	78dB(A)
During printing: Speed 5	81dB(A)	81dB(A)
Stand-by	48dB(A)	48dB(A)

Sound Pressure Level *2

	Mainframe only	Complete System *3
During printing: Speed 1	60dB(A)	60dB(A)
During printing: Speed 3	63dB(A)	63dB(A)
During printing: Speed 5	66dB(A)	66dB(A)
Stand-by	35dB(A)	35dB(A)

*1 The above measurement made in accordance with ISO 7779 are actual value.

*2 It is measured at the position of the operator.

*3 The Complete System consists of mainframe with full options.

❖ **Power Source:**

See the inside front cover of this manual.

❖ **Power Consumption:**

Stand-by	Less than 0.005kW
Master Making	0.160kW
Printing: Speed 1	0.170kW
Printing: Speed 3	0.190kW
Printing: Speed 5	0.220kW

❖ **Optional Equipment:**

- A3, 11" × 17" Color Drum
- A4, 8¹/₂" × 11" Black Drum
- Key Counter
- Tape Dispenser
- Document Feeder
- Exposure Glass Cover

Document Feeder (Option)

- ❖ **Original Type:**
Sheet
- ❖ **Original Weight:**
52.3g/m² to 127.9g/m², 13.9 lb to 34 lb
- ❖ **Original Size:**
Max. 297mm × 864mm, 11.7" × 34.0"
Min. 149mm × 210mm, 5.9" × 8.3"
- ❖ **First Copy Time (Master Process Time):**
Less than 28 seconds (A3, 11" × 17")
Less than 25 seconds (A4, 8¹/₂" × 11")
- ❖ **Second Copy Time (First Print Time):**
Less than 29 seconds (A3, 11" × 17")
Less than 26 seconds (A4, 8¹/₂" × 11")
- ❖ **Original Capacity:**
50 sheets (80g/m², 20 lb)
7.5mm, 0.3" height

Consumables

Name	Size	Remarks
Master:	Length: 125m, 410ft/roll Width: 320mm, 12.6" 2 Rolls/case	A3 drum More than 220 masters can be made per roll A4 drum More than 270 masters can be made per roll
Ink-Black	600ml/pack, 5 packs/case	Environmental conditions: -5 to 40°C, 10 to 95 % RH
Ink-Red	600ml/pack, 5 packs/case	
Ink-Blue	600ml/pack, 5 packs/case	
Ink-Green	600ml/pack, 5 packs/case	
Ink-Brown	600ml/pack, 5 packs/case	
Ink-Yellow	600ml/pack, 5 packs/case	
Ink-Purple	600ml/pack, 5 packs/case	
Ink-Navy	600ml/pack, 5 packs/case	
Ink-Maroon	600ml/pack, 5 packs/case	
Ink-Orange	600ml/pack, 5 packs/case	
Ink-Teal	600ml/pack, 5 packs/case	
Ink-Gray	600ml/pack, 5 packs/case	
Tape for Tape dispenser	35m (114.8ft)/roll	

Note

- Specifications are subject to change without notice.

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