SHARP

MODEL

AR-M160
AR-M205

DIGITAL MULTIFUNCTIONAL SYSTEM

OPERATION MANUAL
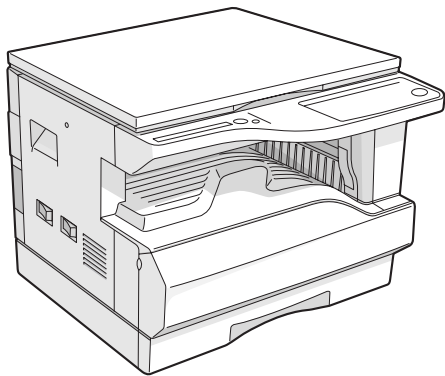
AR-M160
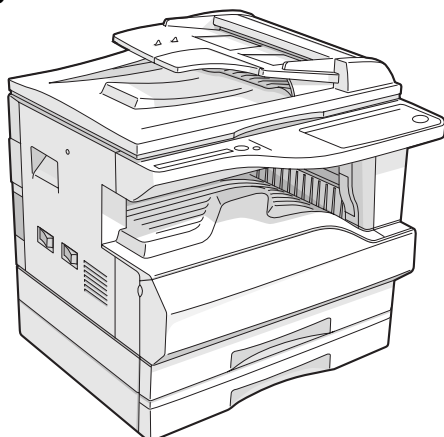
AR-M205

FOR YOUR RECORDS ...

To protect against loss or theft, record and retain for reference the copier's serial number located on the back of the unit.

Model Number _____

Serial Number _____

Date of Purchase _____

Place of Purchase _____

Authorized Sharp Copier
Service Department Number _____

CONTENTS

1 BEFORE USING THE MACHINE

2 COPY FUNCTIONS

3 CONVENIENT COPY FUNCTIONS

4 PRINTER/SCANNER FUNCTIONS

CAUTIONS

Follow the cautions below when using this machine.

CAUTION LABEL ON THE MACHINE

The label (⚠ ♨) in the fusing area of the machine indicates the following:

⚠: Caution, risk of danger

♨: Caution, hot surface

CAUTIONS ON USING

⚠ Warning:
- The fusing area is hot. Exercise care in this area when removing misfed paper.
- Do not look directly at the light source. Doing so may damage your eyes.

⊙ Caution:
- Do not switch the machine rapidly on and off. After turning the machine off, wait 10 to 15 seconds before turning it back on.
- Machine power must be turned off before installing any supplies.
- Place the machine on a firm, level surface.
- Do not install the machine in a humid or dusty location.
- When the machine is not used for a long time, for example for consecutive holidays, turn the power switch off and remove the power cord from the outlet.
- When moving the machine, be sure to turn the power switch off and remove the power cord from the outlet.
- Do not cover the machine with a dust cover, cloth or plastic film while the power is on. Doing so may prevent heat radiation, damaging the machine.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- The socket-outlet shall be installed near the machine and shall be easily accessible.

IMPORTANT POINTS WHEN SELECTING AN INSTALLATION SITE

Improper installation may damage the machine. Please note the following during initial installation and whenever the machine is moved.

⊙Caution	If the machine is moved from a cool place to a warm place, condensation may form inside the machine. Operation in this condition will cause poor copy quality and malfunctions. Leave the machine at room temperature for at least 2 hours before use.

Do not install your machine in areas that are:

- **damp, humid, or very dusty**

- **exposed to direct sunlight**
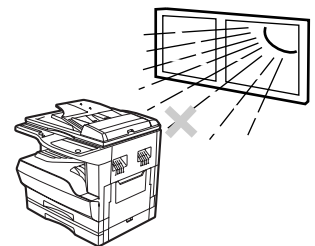
- **poorly ventilated**
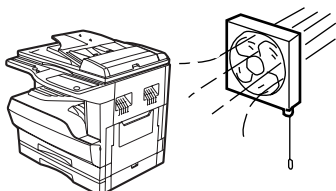
- **subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.**

The machine should be installed near an accessible power outlet for easy connection and disconnection.

Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements. Also make certain the outlet is properly grounded.

Note Connect the machine to a power outlet which is not used for other electric appliances. If a lighting fixture is connected to the same outlet, the light may flicker.

Be sure to allow the required space around the machine for servicing and proper ventilation.

00" (00cm)

00" (00cm)

00" (00cm)
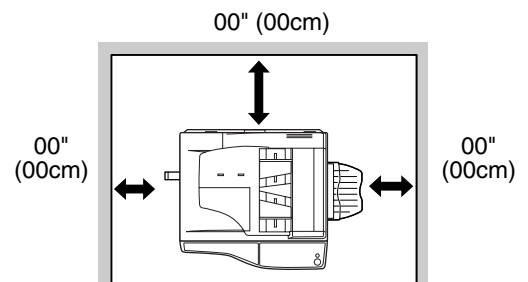
A small amount of ozone is produced within the machine during operation.
The emission level is insufficient to cause any health hazard.
Note:
The present recommended long term exposure limit for ozone is 0.1 ppm (0.2 $\mathrm{mg/m^3}$) calculated as an 8 hr. time-weighted average concentration.
However, since the small amount that is emitted may have an objectionable odor, it is advisable to place the machine in a ventilated area.

CAUTIONS ON HANDLING

Be careful in handling the machine as follows to maintain the performance of this machine.

Do not drop the machine, subject it to shock or strike it against any object.

Store spare toner cartridges in a cool dry place without removing from the package before use.

• If they are exposed to direct sunlight or excessive heat, poor copies may result.

Do not touch the photoconductive drum (green portion).

• Scratches or smudges on the drum will cause dirty copies.

Safety precautions:
This Digital Copier is rated Class I and complies with 21 CFR 1040.10 and 1040.11 of the CDRH standards. This means that the machine does not produce hazardous laser radiation. For your safety, observe the precautions below.
• Do not remove the cabinet, operation panel or any other covers.
• The machine's exterior covers contain several safety interlock switches. Do not bypass any safety interlock by inserting wedges or other items into switch slots.

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ENVIRONMENTAL INFORMATION

As an ENERGY STAR® Partner, SHARP has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

"BATTERY DISPOSAL"
THIS MACHINE CONTAINS MANGANESE DIOXIDE BATTERY WHICH MUST BE DISPOSED OF PROPERLY.
CONTACT YOUR SHARP DEALER OR SERVICER FOR INSTRUCTIONS.

This product utilizes tin-lead solder, and a fluorescent lamp containing a small amount of mercury.
Disposal of these materials may be regulated due to environmental considerations.
For disposal or recycling information, please contact your local authorities or the Electronics Industries Alliance:
www.eia.org

USING THE MANUAL

This machine has been designed to provide convenient copying features in a minimum amount of office space and with maximum operational ease. To get full use of all machine features, be sure to familiarize yourself with this manual and the machine. For quick reference during machine use, keep this manual in a handy location.

ABOUT THE OPERATION MANUALS

The operation manuals for the machine are as follows:

Operation Manual (Digital Multifunctional System)

This manual contains explanations of the product and procedures for using the machine as a copier.

Online Manual (on the accessory CD-ROM)

This manual explains the procedures for using the machine as a printer or a scanner.

SOFTWARE SETUP GUIDE

This manual contains instructions for installing the software that allows the machine to be used with your computer and procedures for establishing initial printer settings.

THE MEANING OF "R" IN ORIGINAL AND PAPER SIZE INDICATIONS

Some original and paper sizes can be placed in either the portrait or landscape orientations. To differentiate between landscape and portrait, the landscape orientation size indication will contain an "R". These are indicated as 8-1/2" x 11"R, 5-1/2" x 8-1/2"R, etc. Sizes that can be placed only in the landscape orientation (11" x 17", 8-1/2" x 14") do not contain the "R" in their size indication.

Size indication with "R"

Landscape orientation

Size indication without "R"

Portrait orientation

5
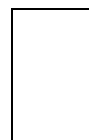
CONVENTIONS USED IN THIS MANUAL

⚠️**Warning** Warns the user that injury to the user or damage to the machine may result if the contents of the warning are not properly followed.

⚠️**Caution** Cautions the user that damage to the machine or one of its components may result if the contents of the caution are not properly followed.
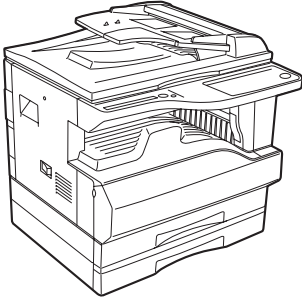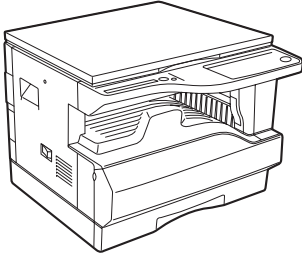
📝**Note** Notes provide information relevant to the machine regarding specifications, functions, performance, operation and such, that may be useful to the user.

SPF AND RSPF

This operation manual refers to the Single Pass Feeder as the "SPF", and the Reverse Single Pass Feeder as the "RSPF".

STANDARD FEATURES

Both the single-tray and two-tray models are explained in this manual, as well as the SPF/RSPF options and the document cover.

Model	AR-M205 (Two-tray model)	AR-M160 (Single-tray model)
Appearance	(With RSPF installed) The above illustration is used in instances where a function and/or the operation of the machine is the same on both models.	
Copy speed	20CPM	16CPM
Automatic two-sided copying/printing	Available	Not available
Document cover/SPF/RSPF	• Select RSPF or document cover	• Document cover is standard, SPF is an option (RSPF cannot be installed)
Printer function	• Can be used as a GDI printer (USB 1.1 port and parallel port are standard) • Printing on up to 11" x 17" paper is possible	
Scanner function	• Can be used as a color scanner compatible with TWAIN, STI, and WIA (only in Windows XP) • Maximum scanning size is 11" x 17" • Only USB port is supported (parallel port cannot be used; cannot be used in Windows 95/NT 4.0)	
Paper feed units	Two (250 x 2)	One (250 x 1)

Inch series and AB series (metric) references

Both specifications are quoted where applicable.
• The AB series specifications are quoted in parentheses.
  For example:
  Page 00 . . . . 000" (W) x 000" (H) x 000" (D) (590 mm (W) x 545 mm (H) x 470mm (D)) (using document cover)

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MAIN FEATURES

High-speed laser copying

- First-copy time at 600 dpi* is only 7.2 seconds (except when exiting power save mode or immediately after power on).
- Copying speed is 20 copies per minute at 600 dpi, This is ideal for business use and provides a big boost to workplace productivity.
  * Resolution indicates how much detail can be reproduced in a printed or scanned image, and is measured in dpi ("dots per inch").

High-quality digital image

- High-quality copies are possible in normal mode at 300 dpi and in photo mode at 600 dpi.
- In addition to automatic exposure adjustment, two original modes can be selected: "TEXT" for text-only originals, and "PHOTO" for photographs. The exposure can be adjusted to five levels in each mode.
- The photo mode copying function allows clear copying of delicate halftone original images such as monochrome photos and color photos.

Enhanced copying features

- Zoom copies can be made from 25% to 400% in 1% increments at 600 dpi.
  (When the SPF/RSPF is being used, the zoom copy ratio range is 50% to 200%.)
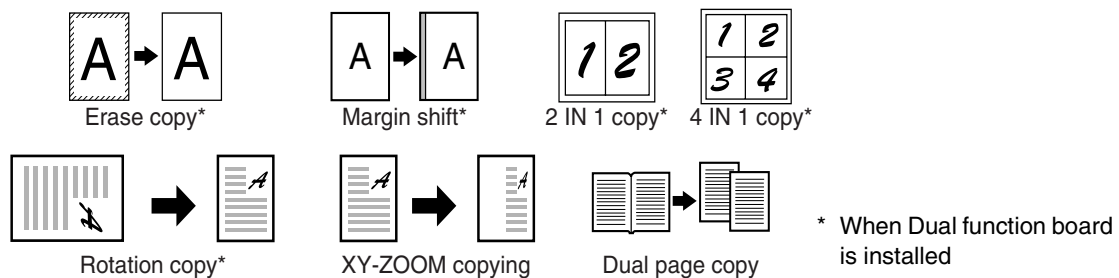- Continuous copying of up to 99 copies is possible. (Can be changed to a maximum of 999 copies in the user programs.)
- The user programs allow customized machine settings and management. Access to the machine can be controlled by enabling audit mode.
- Automatic two-sided copying can be performed.
- The optional Dual function board can be installed to enable use of Rotation copy and other convenient functions.

Erase copy*   Margin shift*   2 IN 1 copy*   4 IN 1 copy*

Rotation copy*   XY-ZOOM copying   Dual page copy

* When Dual function board is installed

Scan once/Print many

- The machine is equipped with a memory buffer allowing the machine to scan an original once and make up to 999 copies of the scanned image. This improves workflow, reduces operating noise from the machine and reduces wear and tear on the scanning mechanism, which provides for a higher reliability.

Laser printer function

- The accompanying printer driver can be installed to enable use of the machine as a printer. (See the accompanying SOFTWARE SETUP GUIDE.)

Color scanner function

- The accompanying scanner driver can be installed and the machine connected to a computer using a USB cable to enable use as a scanner. (See the accompanying SOFTWARE SETUP GUIDE.)

Peripheral devices

- The SPF enables automatic feeding and copying of originals without the need to open the original cover and replace each original.
- The RSPF automatically turns two-sided originals over to enable two-sided copying.
- The optional Dual function board can be installed to enable multi-function copying. In addition, the printer driver for the Dual function board can be used together with a USB 2.0 connection to enable high-speed printing.

Environmentally friendly design

- The center tray is housed inside the machine to save space.
- Preheat and auto power shut-off modes are provided to reduce power consumption when the machine is not in use.

1 Chapter 1
BEFORE USING THE MACHINE

This chapter contains basic information that should be read before using the machine.

PART NAMES AND FUNCTIONS

EXTERIOR
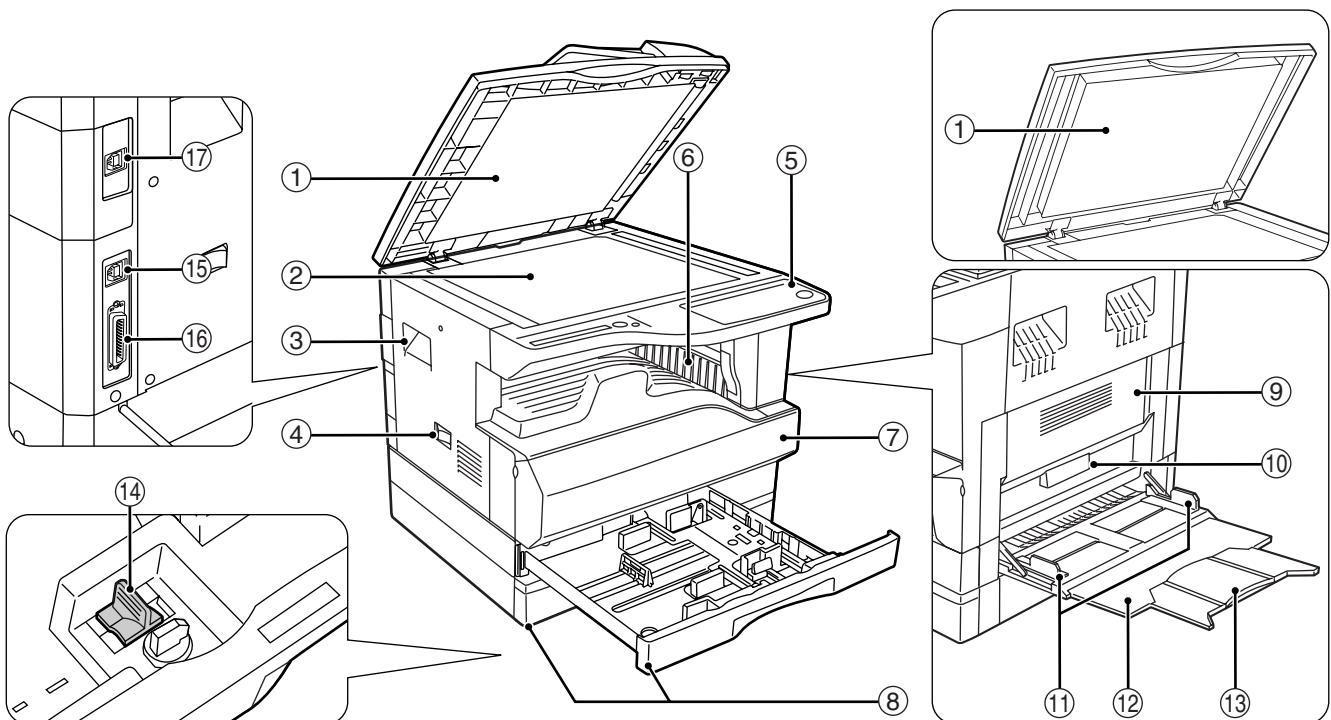
① **Document feeder cover (when the SPF/RSPF is installed) /document cover (when the document cover is installed)**

Open to make copies from the document glass. (p.00)

② **Document glass**

Place an original that you wish to scan face down here. (p.00)

③ **Handles**

Use to move the machine. (p.00)

④ **Power switch**

Press to turn the machine power on and off. (p.00)

⑤ **Operation panel**

Contains operation keys and indicator lights. (p.00)

⑥ **Paper output tray**

Copies and prints are delivered to this tray. (p.00)

⑦ **Front cover**

Open to remove paper misfeeds and perform machine maintenance. (p.00)

⑧ **Paper trays**

Each tray holds 250 sheets of paper. (p.00)

⑨ **Side cover**

Open to remove paper misfeeds and perform machine maintenance. (p.00)

⑩ **Side cover handle**

Lift and pull to open the side cover. (p.00)

⑪ **Bypass tray guides**

Adjust to the width of the paper. (p.00)

⑫ **Bypass tray**

Paper including special paper (such as transparency film) can be fed from the bypass tray. (p.00)

⑬ **Bypass tray extension**

Pull out when feeding large paper such as 8-1/2" x 14" and 11" x 17". (p.00)

⑭ **Charger cleaner**

Use to clean the transfer charger.(p.00)

⑮ **USB 1.1 port**

Connect to your computer to use the printer and scanner functions. (p.00)

INTERIOR

1
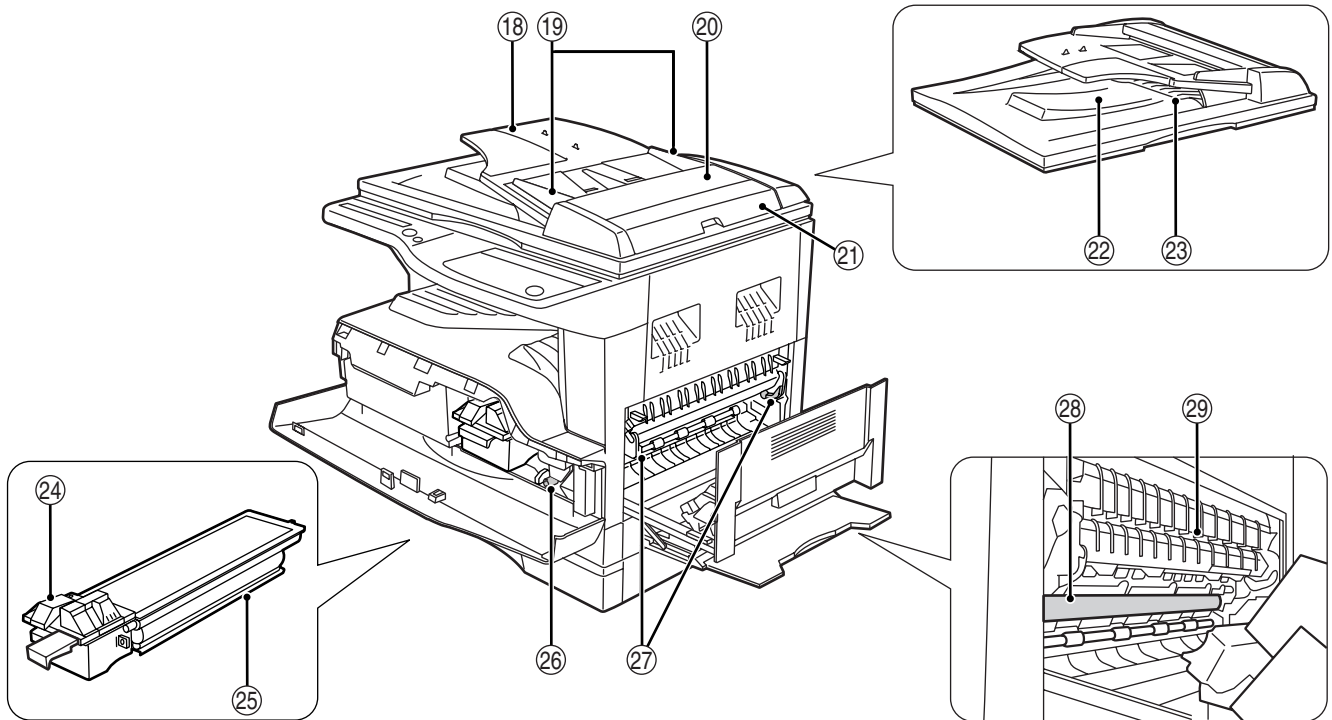
⑯ **Parallel port**

Connect to your computer to use the printer function. (p.00)

⑰ **USB 2.0 port (when the Dual function board is installed)**

Connect to your computer to use the printer and scanner functions. (p.00)

⑱ **Document feeder tray (when the SPF/RSPF is installed)**

Please the original(s) that you wish to scan face up here. Holds up to 40 originals.

⑲ **Original guides (when the SPF/RSPF is installed)**

Adjust to the size of the originals.

⑳ **Feeding roller cover (when the SPF/RSPF is installed)**

Open to remove misfed originals. (p.00)

㉑ **Document conveyor cover (when the SPF/RSPF is installed)**

Open to remove misfed originals. (p.00)

㉒ **Exit area (when the SPF/RSPF is installed)**

Originals exit the machine here after copying/scanning. (p.00)

㉓ **Reversing tray (when the RSPF is installed)**

Pull out to remove misfed originals. (p.00)

㉔ **Toner cartridge lock release lever**

To replace the toner cartridge, pull out the toner cartridge while pushing on this lever.

㉕ **Toner cartridge**

Contains toner. (p.00)

㉖ **Roller rotating knob**

Turn to remove misfed paper. (p.00, p.00)

㉗ **Fusing unit release levers**

To remove a paper misfeed in the fusing unit, push down on these levers and remove the paper. (p.00)

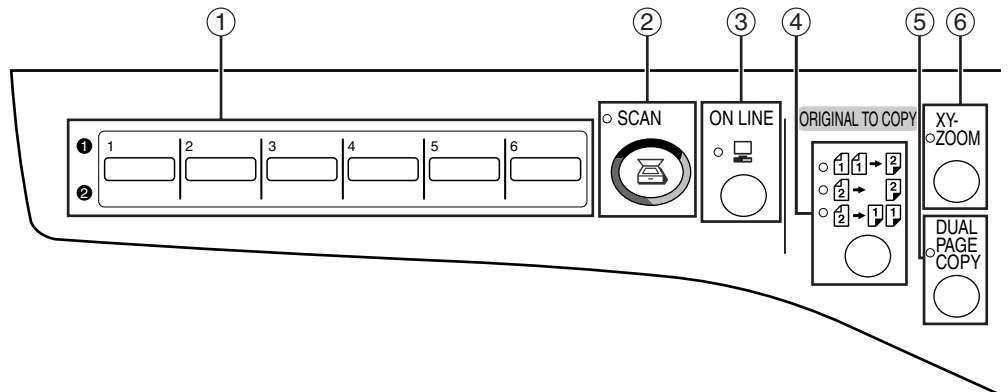| ⚠Warning	The fusing unit is hot. Do not touch the fusing unit when removing misfed paper. Doing so may cause a burn or the injury.

㉘ **Photoconductive drum**

Copy images are formed on the photoconductive drum. (p.00)

㉙ **Paper feed guide**

Paper is fed through this guide to make a copy. (p.00)

OPERATION PANEL

① **SCAN MENU key**

Use to scan by means of the provided Button Manager software. (p.00)

② **SCAN key/indicator**

Use to scan by means of the provided Button Manager software. (p.00)

③ **ON LINE key/indicator**

Press to toggle the machine between online and off-line. The indicator lights up when the machine is online, and goes off when the machine is off-line. The indicator blinks while the machine is receiving print data or sending scan data. (p.00)

④ **ORIGINAL TO COPY key/indicators (when automatic two-side copying is supported)**

Press to select one-sided and two-sided copy modes. (p.00)

One-sided copies from two-sided originals.

Two-sided copies from two-sided originals.

Two-sided copies from one-sided originals.

⑤ **DUAL PAGE COPY key/indicator**

Use to make separate copies of the two pages of an open book or other two-page original. (p.00)

⑥ **XY-ZOOM key/indicator**

Press to change the horizontal and vertical copy ratios independently. (p.00)

⑦ **SORT/GROUP key/indicators**

Press to select the "SORT" or "GROUP" mode. (p.00)

⑧ **ORIGINAL DATA indicator (when the Dual function board is installed)**

Blinks when the memory becomes full of scanned original image data. (p.00)

⑨ **2 IN 1 / 4 IN 1 key/indicators (when the Dual function board is installed)**

Press to select the "2 IN 1" or "4 IN 1" mode. (p.00)

⑩ **ERASE key/indicators (when the Dual function board is installed)**

Press to select the "EDGE ERASE", "CENTER ERASE" or "EDGE + CENTER ERASE" mode. (p.00)

⑪ **MARGIN SHIFT key/indicator (when the Dual function board is installed)**

Shifts text or image on the copy to leave a binding margin on the left (or top) edge of the copy. (p.00)

⑫ **AUTO/TEXT/PHOTO key/indicators**

Use to select the exposure mode: "AUTO", "TEXT", or "PHOTO". (p.00)

⑬ **AUDIT CLEAR key**

Closes an open account. (p.00)

⑭ **AUTO PAPER SELECT indicator**

Paper of the proper size will be automatically selected depending on the original size and selected copy ratio when this indicator is on. (p.00)

⑮ **Alarm indicators**

[👤] Maintenance indicator (p.00)

[⋰] Toner cartridge replacement required indicator (p.00)

[☼] Developer replacement required indicator (p.00)

[⬜] Paper required indicator (p.00)

[8ᴧ] Misfeed indicator (p.00)

⑯ **POWER SAVE indicator**

Lights up when the machine is in a power save mode. (p.00)

1
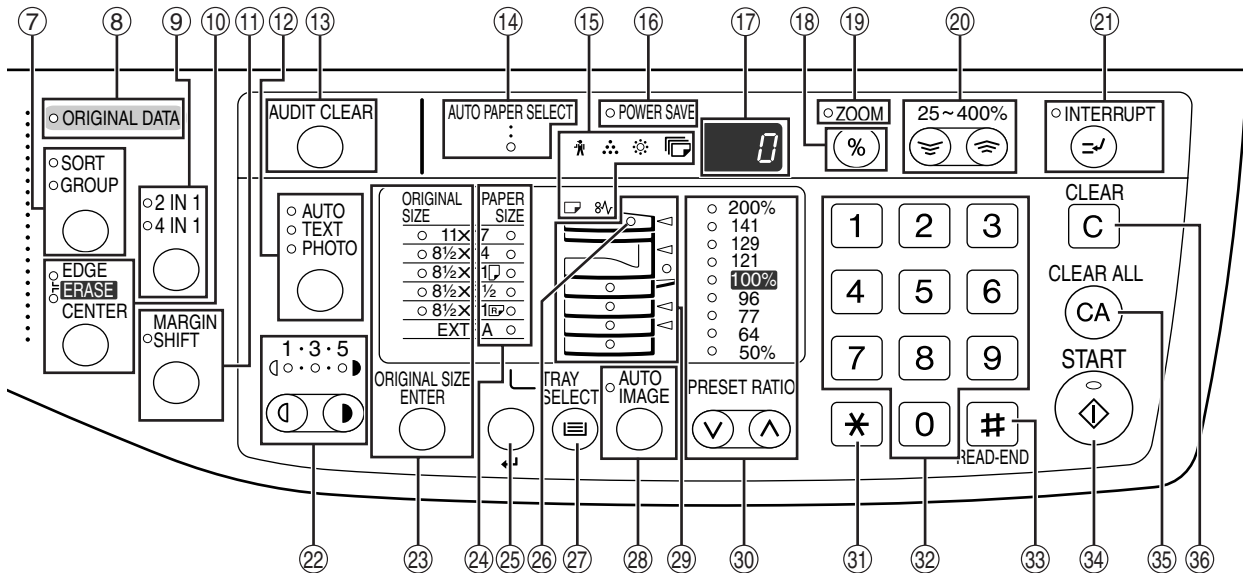
⑰ **Display**

Shows the set number of copies, as well as the copy ratio, user program function or setting code, or an error code when an error occurs.

When the [SCAN] key is pressed to enter scan mode, the display shows the port used (U_1 for USB 1.1 or U_2 for USB 2.0). When Button Manager is used, the display shows a program number. (p.00, p00, p00)

⑱ **Copy ratio display key**

Hold down when the machine is not in use to display the copy ratio in the copy quantity display. (p.00)

⑲ **ZOOM indicator**

Lights up when a zoom ratio is set. (p.00)

⑳ **Zoom keys**

Use to select any reduction or enlargement copy ratio from 25% to 400% in increments of 1%. (p.00)

㉑ **INTERRUPT key and indicator**

Interrupts a copy run. (p.00)

㉒ **Light and Dark keys/indicators**

Use to adjust the TEXT or PHOTO exposure level. (p.00)

㉓ **ORIGINAL SIZE ENTER key/indicators**

Use to enter the original size. (p.00)

㉔ **PAPER SIZE indicators**

Shows the selected copy paper size. (p.00)

㉕ **PAPER SIZE ENTER key**

Use to set the paper size in the paper trays. (p.00)

㉖ **SPR/RSPF indicator (when the SPF/RSPF is installed)**

Lights up when originals are set in the document feeder tray. (p.00)

㉗ **TRAY SELECT key**

Use to manually select a paper tray. (p.00)

㉘ **AUTO IMAGE key/indicator**

Press for automatic copy ratio selection. (p.00)

㉙ **Paper feed location/misfeed location indicators**

The selected paper feed location is shown by a lit indicator (○). (p.00)

The general location of misfed paper is shown by a blinking red indicator (◄). (p.00)

㉚ **PRESET RATIO selector keys/indicators**

Use to select preset reduction/enlargement copy ratios. (p.00)

㉛ **[✳] key**

Use to check the total number of pages scanned. (p.00)

㉜ **Numeric keys**

Use to select the desired copy quantity or to make user program entries. (p.00)

㉝ **READ-END key (♯)**

Use to check the total number of copies made (p.00). To begin printing copies after the original has been scanned for two-sided copying or other copy jobs that use the document glass. (p.00)

㉞ **START key**

Press to make a copy (p.00). Also press to exit "Auto power shut-off" mode and to set a user program.

㉟ **CLEAR ALL key**

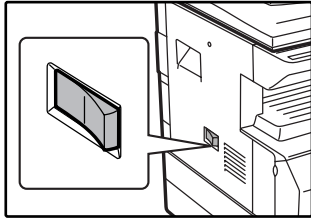Clears all selected settings and returns the machine to the initial settings. (p.00)

㊱ **CLEAR key**

Clears the copy quantity display or terminates a copy run.

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POWER ON AND OFF

The power switch is located on the left side of the machine.

POWER ON

### Turn the power switch to the "ON" position

It will take about 45 seconds for the machine to warm up.
While the machine is warming up, the POWER SAVE indicator will blink. (The POWER SAVE indicator will go off when the machine is ready to copy.)
However, you can make desired settings and press the [START] key (Ⓘ) during warm-up. Copying will start after warm-up.

POWER OFF

### Make sure that the machine is not in operation and then turn the power switch to the "OFF" position.
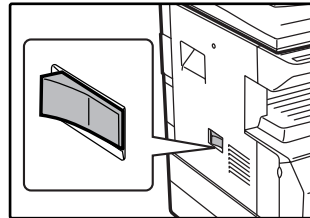
If the power switch is turned off while the machine is in operation, a misfeed may occur and the job that was in progress will be canceled.

Check the following to make sure the machine is not in operation:
• Is the START indicator lit? (Initial state)
• Is the POWER SAVE indicator lit? ("Preheat mode" or "Auto power shut-off" mode) (p.00)

> **Note**
> • "Auto clear" is initially set to return the copy settings to the initial settings when the [CLEAR ALL] key (Ⓒ) is pressed, and after one minute elapses after a copy job is finished. When "Auto clear" operates, all previous settings are cleared. The setting for "Auto clear" can be changed in the user programs. (p.00)
> • The machine is initially set to automatically enter power save mode if not used for copying, printing, or scanning for a preset period of time. This setting can be changed in the user programs. (p.00)

Power Save Modes

The machine has two power save modes to reduce overall power consumption thereby reducing the cost of operation. In addition, these modes conserve natural resources and help reduce environmental pollution. The two power save modes are preheat mode and auto power shut-off mode.

Preheat mode

When the machine enters the "Preheat mode", the POWER SAVE indicator will light up and other indicators will remain on or off as before. In this condition, the fuser in the machine is maintained at a lower heat level, thereby saving power. To cancel "Preheat mode", press any key on the operation panel. "Preheat mode" also turns off automatically when a print job is received or when an original is placed for copying or scanning.

Auto power shut-off mode

If the "Auto power shut-off" mode is enabled, the machine will automatically turn off the power once a programmed length of time has elapsed without any machine operation after the last copy of a run is made or the power is first turned on. (Based the guidelines of the international Energy Star program.) To cancel "Auto power shut-off", press the [START] key (Ⓘ). "Auto power shut-off" also turns off automatically when a print job is received or when scanning is begun from a computer.

> **Note**
> The preheat activation time and the "Auto power shut-off time" can be changed using user programs. It is suggested that you set times that are appropriate for your usage of the machine. (p.00)

Initial settings

The machine assumes the initial settings when it is first turned on, when the [CLEAR ALL] key (Ⓒ) is pressed, and approximately one minute after the last copy is made in any mode.
Copy ratio: 100%, **Exposure**: Automatic
Copy quantity: 0, All special copier modes: Off
Auto paper selection: On, **Paper feed station**: The tray selected in the "Default tray setting" in the user programs.

LOADING PAPER

The paper required indicator (⬜) will light up when there is no copy paper in the selected paper feed station, or when the selected paper tray is not installed or is improperly installed.

PAPER

For best results, use only SHARP recommended paper.

Type of paper feeding	Type of media	Size	Weight	Capacity
Paper tray1 Paper tray2 250-sheet paper feed unit 2x250-sheet paper feed unit	Standard paper Recycled paper	11" x 17" (Ledger) 8-1/2" x 14" (Legal) 8-1/2" x 11" (Letter) 5-1/2" x 8-1/2"* (Invoice)	00 lbs. to 00 lbs. (56 g/m^2 to 90 g/m^2)	250 sheet
Bypass tray	Standard paper Recycled paper Transparency film Labels Thick paper	11" x 17" (Ledger) 8-1/2" x 14" (Legal) 8-1/2" x 11" (Letter) 5-1/2" x 8-1/2"* (Invoice)	00 lbs. to 00 lbs. (56 g/m^2 to 200 g/m^2)	Up to 100 sheets of heavy paper from 00 lbs. to 00 lbs. (56 g/m^2 to 200 g/m^2) can be loaded. Paper heavier than this must be loaded one sheet at a time.
	Envelopes	Commercial10 Monarch		5 sheet

* 5-1/2" x 8-1/2" paper must be loaded in paper tray 1 or the bypass tray. (p.00) If loaded in paper tray 2 or in the 250-sheet paper feed unit / 2 x 250-sheet paper feed unit, a misfeed may occur.

Special papers
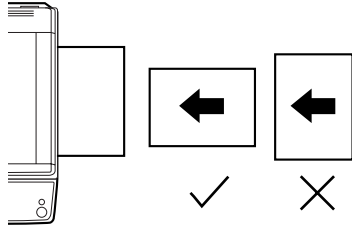
Follow these guidelines when using special papers.

● **Envelopes**
Do not use the following envelopes, as misfeeds will occur.
- Envelopes with metal tabs, clasps, strings, holes, or windows.
- Envelopes with rough fibers, carbon paper, or glossy surfaces.
- Envelopes with two or more flaps.
- Envelopes with tape, film, or paper attached to the flap.
- Envelopes with a fold in the flap.
- Envelopes with glue on the flap to be moistened for sealing.
- Envelopes with labels or stamps.
- Envelopes that are slightly inflated with air.
- Envelopes with glue protruding from the seal area.
- Envelopes with part of the seal area peeled off.

● **Load 2- or 3-holed paper so that the side with the holes faces away from the paper feed intake.**

● **Use SHARP recommended transparency film and label sheets. Using other than SHARP recommended paper may result in misfeeds or smudges on the output. If other than SHARP recommended media must be used, feed each sheet one at a time using the bypass tray (do not attempt continuous copying or printing).**

● **There are many varieties of special paper available on the market, and some cannot be used with this machine. Before using special paper, contact a SHARP service center.**

● **Before using other than SHARP recommended paper, make a test copy to see if the paper is suitable.**

Important points when inserting paper in the bypass tray

- Up to 100 sheets of standard copy paper can be set in the bypass tray.
- Be sure to place 5-1/2" x 8-1/2" size paper horizontally as shown in the following diagram ( ).

- When loading envelopes, make sure that they are straight and flat and do not have loosely glued construction flaps (not the closure flap).
- Special papers except SHARP recommended transparency film, labels, and envelopes must be fed one sheet at a time through the bypass tray.

- When adding paper, first remove any paper remaining in the tray, combine it with the paper to be added and then reload as a single stack. The paper to be added must be the same size and type as the paper already in the tray.
- Do not use paper that is smaller than the original. This may cause smudges or unclean images.
- Do not use paper that has already been printed on by a laser printer or plain paper fax machine. This may cause smudges or unclean images.
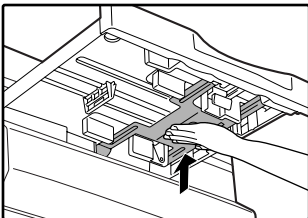
LOADING PAPER

Make sure that the machine is not copying or printing, and then follow these steps to load paper.

Loading the paper tray

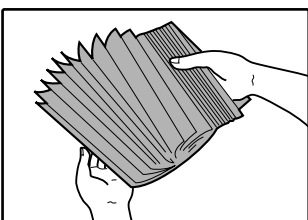**1 Lift and pull out the paper tray until it stops.**
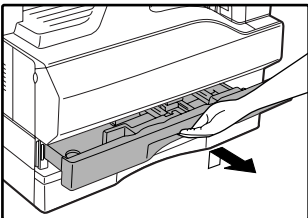
2 Push the pressure plate down until it locks in place.

Push the center of the pressure plate down until it locks into place.

3 Fan the paper.

If the paper is not fanned, double-feeds or misfeeds may occur.

4 Load paper into the tray. Make sure the edges go under the corner hooks.
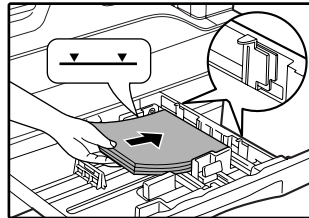
Note
- Do not load paper higher than the line on the tray (up to 250 sheets).
- Make sure that the paper fits under the tab on the right side of the tray.
- Make sure the stack of paper is straight before loading it. When adding paper, take the remaining paper out and combine it into a single stack with the new paper.

5 Push the paper tray firmly back into the machine.
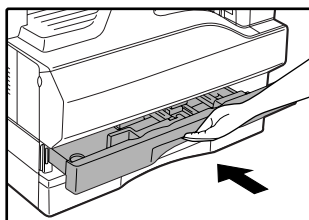
Loading the bypass tray

1 **Unfold the bypass tray.**
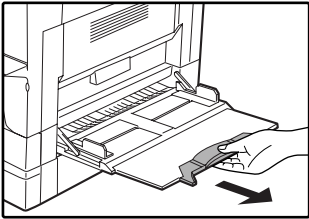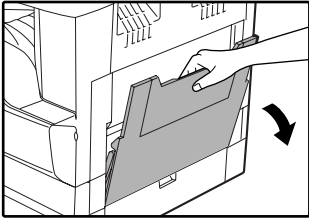
When feeding 8-1/2" x 14" or 11" x 17" sized paper, pull out the bypass tray extension.

2 **Set the paper guides to the copy paper width.**

3 **Insert the paper (print face down) all the way into the bypass tray.**

1

CHANGING A TRAY'S PAPER SIZE SETTING

Follow these steps to change a tray's paper size setting.

Note
- The paper size setting cannot be changed when the machine has stopped temporarily due to running out of paper or a misfeed, or during interrupt copying.
- During printing (even in copy mode), the paper size setting cannot be changed.
- 5-1/2" x 8-1/2" size paper can only be selected in paper tray 1.
- Do not load paper that is a different size than the paper size setting. Copying will not be possible.
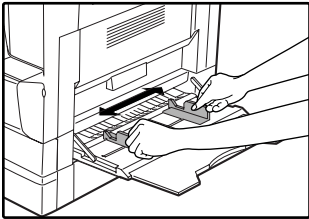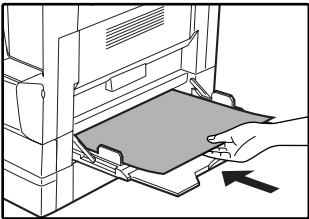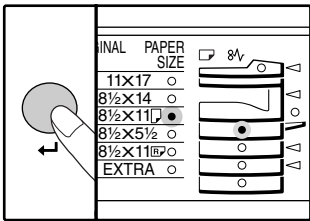
1 Hold down the [PAPER SIZE ENTER] key for more than 5 seconds to set the selected paper size.

The currently selected paper feed location indicator will light and the corresponding paper size (which is currently set) indicator will light steadily. All other indicators will go out.

2 Use the [TRAY SELECT] key to select the paper tray for which you wish to change the paper size setting.
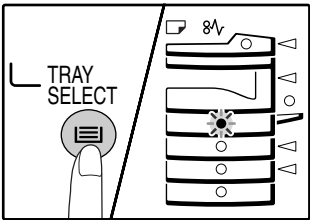
Each time the [TRAY SELECT] key is pressed, a paper tray will be indicated with a blinking paper feed location indicator.

3 Use the [ORIGINAL SIZE ENTER] key to select the paper size.
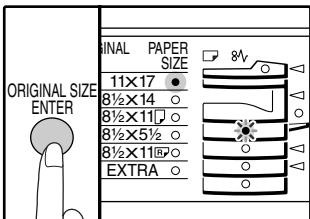
The indicator of the selected paper size lights up. To select 5-1/2" x 8-1/2" size, select "SPECIAL".

4 Squeeze the lock lever of the front guide and slide the front guide to match the width of the paper, and move the left guide to the appropriate slot as marked on the tray.

Left guide
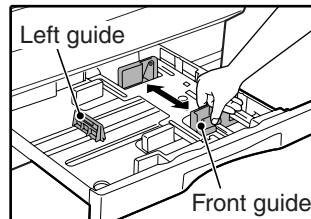
Front guide

- The front guide is a slide-type guide. Grasp the locking knob on the guide and slide the guide to the indicator line of the paper to be loaded.
- The left guide is an insert-type guide. Remove it and then insert it at the indicator line of the paper to be loaded.

5 Press the [START] key (ⓢ) and then the [PAPER SIZE ENTER] key.
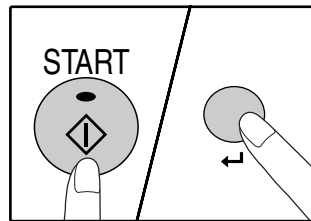
START

To change the paper size setting of another tray, repeat steps 2 to 3 after pressing the [START] key (ⓢ).

Note
Affix the paper size label for the paper size selected in step 4 to the label position on the right end of the tray.

2

Chapter 2
COPY FUNCTIONS

This chapter explains basic copying functions such as normal copying, reduction or enlargement, and exposure adjustment.

NORMAL COPYING

This section explains how to make a regular copy.
If auditing mode has been enabled (p.00), enter your 3-digit account number.

ORIGINAL PLACEMENT

Copying from the document glass

Note An original up to 11" x 17" can be placed on the document glass.

1 **Open the document cover/SPF/RSPF, and place the original.**
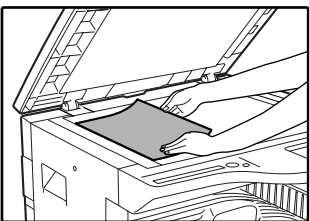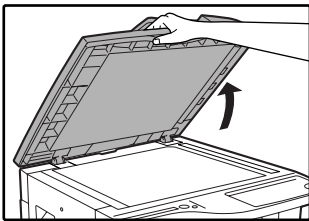
Place the original face down on the document glass. Align it with the original size scale.

2 **Close the document cover/SPF/RSPF.**
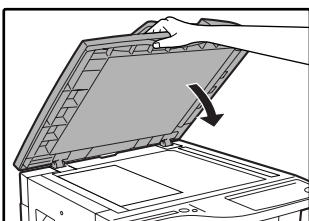
Removing the document cover
To copy large originals like newspapers, remove the document cover. To remove the cover, lift straight up as shown. To replace the cover, do the reverse. The SPF/RSPF cannot be removed.
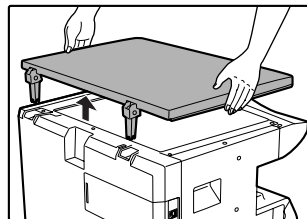
Copying books or originals with folds or creases
Press down on the document cover/SPF/RSPF while copying as shown. If the document cover/SPF/RSPF is not completely closed, shadows may appear on the copy or it may be fuzzy. Fan originals with folds or creases well before placing.
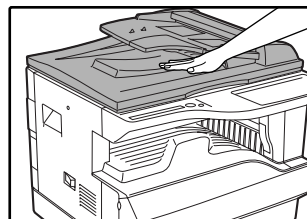
3 Press the [ORIGINAL SIZE ENTER] key and select the original size.
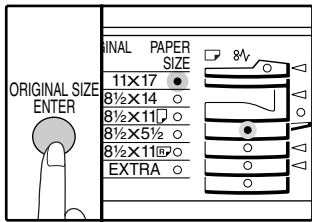
When the original size is selected, the tray with paper of the same size is automatically selected.

- Make sure that the ORIGINAL SIZE indicator lights up.
- If the indicator does not light up, there is no paper of the same size in the trays.
  Change the paper in a tray, or use the bypass tray.
- To copy on paper of a different size than the original, select the paper with the [TRAY SELECT] key.
- The bypass tray is not selected automatically.

4 Select copy settings.

See the following pages to select the copy settings that you wish to use.
- Select the resolution and exposure:
  "MAKING A COPY DARKER OR LIGHTER". (p.00)
- Change trays:
  "SELECTING THE TRAY". (p.00)
- Set the number of copies:
  "SETTING THE NUMBER OF COPIES". (p.00)
- Enlarge or reduce a copy:
  "REDUCTION/ENLARGMENT/ZOOM". (p.00)
- Perform automatic two-sided copying on a model that supports this feature:
  "AUTOMATIC TWO-SIDED COPYING". (p.00)
- Copy using the [DUAL PAGE COPY] key:
  "DUAL PAGE COPYING". (p.00)
- When the Dual function board is installed, copy using sort/group, 2 IN 1 / 4 IN 1, margin shift, or erase functions:
  "CONVENIENT COPY FUNCTIONS". (p.00)

Copying from the SPF/RSPF

1 Make sure that an original has not been left on the document glass. Close the SPF/RSPF.

5 Press the [START] key (⊙) to begin copying.
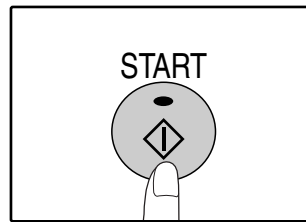
The copy is delivered to the output tray. The output tray can hold up to 250 sheets of paper. About one minute after copying ends, "Auto clear" activates and restores the copy settings to the initial settings. (p.00)

> **Note** Press the [CLEAR] key (C) to stop copying in the middle of a run.

2 Adjust the original guides to the size of the original(s).
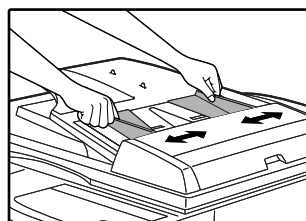
3 **Set the original(s) face up in the document feeder tray.**
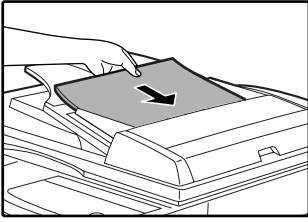
● The ORIGINAL SIZE indicator corresponding to the size of the original lights up.
● Insert the original into the document feeder tray as far as it will go. When the original is set, the SPF/RSPF indicator will light up.
● Make sure that the ORIGINAL TO COPY indicators are not lit. (When automatic two-sided copying is supported.)
● Make sure that the PAPER SIZE indicator is lit.
● If the indicator is not lit, paper of the same size as the original is not loaded in the trays. Change the paper in a tray, or use the bypass tray.
● To copy on paper of a different size than the original, select the paper with the [TRAY SELECT] key.
● The bypass tray is not selected automatically.

Note Do not place originals of different sizes together in the document feeder tray. This may cause misfeeds.

Originals that can be used in the SPF/RSPF

Originals that are 11" x 17" to 5-1/2" x 8-1/2" and 15 lbs. to 24 lbs. (56 g/m^2 to 90 g/m^2) can be used. A maximum of 40 pages can be placed at once.

Note
• Make sure that there are no paper clips or staples on the original.
• Straighten curled originals before placing them in the document feeder tray. Curled originals may cause misfeeds.
• When using the margin shift function, check the position of the margins carefully. (p.00)

Auto paper selection

This function automatically selects the paper that is the same size as the original (only 11" x 17", "8-1/2" x 14", 8-1/2" x 11"R, and 8-1/2" x 11" paper).
• If a zoom setting is selected after placing the original, the paper size that is appropriate for the zoom setting will be automatically selected.
• "Auto paper selection" is canceled if the auto zoom select function is enabled (p.00) or if a tray is selected with the [TRAY SELECT] key. Auto paper select resumes operation when the [CLEAR ALL] key (ⓒⒶ) is pressed or when "Auto clear" activates.
"Auto paper selection" can be disabled in the user programs. (p.00)

Originals that cannot be used in the SPF/RSPF

The following originals cannot be used. These may cause misfeeds or smudging and unclear images.
• Transparencies, tracing paper, other transparent or translucent paper, and photographs.
• Carbon paper, thermal paper.
• Originals that are creased, folded, or torn.
• Glued originals, cut-out originals.
• Originals with binder holes.
• Originals printed using an ink ribbon (thermal transfer printing), originals on thermal transfer paper.

Stream feeding mode

If "Stream feeding mode" is enabled in the user programs (p.00), the SPF/RSPF indicator will blink for about 5 seconds after all originals are fed. If a new original is placed in the SPF/RSPF during this time, the original will automatically feed in and copying will begin.

**4** **Select copy settings.**

See the following pages to select the copy settings that you wish to use.
● Select the resolution and exposure:
  "MAKING A COPY DARKER OR LIGHTER". (p.00)
● Change trays:
  "SELECTING THE TRAY". (p.00)
● Set the number of copies:
  "SETTING THE NUMBER OF COPIES". (p.00)
● Enlarge or reduce a copy:
  "REDUCTION/ENLARGMENT/ZOOM". (p.00)
● Perform automatic two-sided copying on a model that supports this feature:
  "AUTOMATIC TWO-SIDED COPYING". (p.00)
● When the Dual function board is installed, copy using sort/group, 2 IN 1 / 4 IN 1, margin shift, or erase functions:
  "CONVENIENT COPY FUNCTIONS". (p.00)

**5** **Press the [START] key (ⓧ) and start copying.**
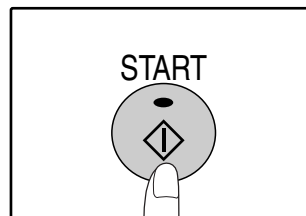
The copy is delivered to the output tray. The output tray can hold up to 250 sheets of paper. About one minute after copying ends, "Auto clear" activates and restores the copy settings to the initial settings. (p.00)

Note Press the [CLEAR] key (Ⓒ) to stop copying in the middle of a run.

2

MAKING A COPY DARKER OR LIGHTER

Automatic exposure adjustment is initially enabled. This function automatically adjusts the copy image according to the original being copied. If you wish to select the exposure level yourself, follow the steps below. (Select from two original types and five exposure levels for each original type.) The exposure level used in automatic exposure adjustment can also be changed. ("ADJUSTING THE AUTOMATIC EXPOSURE LEVEL" (p.00))

Original types

● AUTO ......Automatic exposure adjustment is enabled and the exposure is automatically adjusted according to the original being copied. The exposure is lowered for colored areas and background shadows.
● TEXT.......The exposure is raised for light areas and lowered for dark backgrounds to make text easier to read.
● PHOTO ...Halftones in the photo are reproduced with greater clarity.

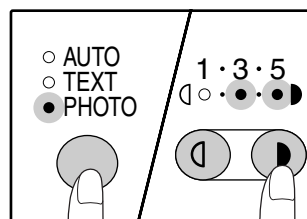**1 Press the [AUTO/TEXT/PHOTO] key to select the original type.**
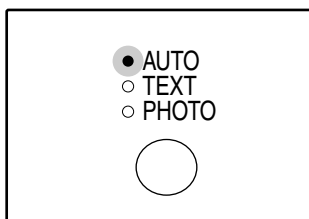
To adjust the exposure of a text original manually, press until the TEXT indicator lights. To copy a photo, press until the PHOTO indicator lights.

Note To return to automatic adjustment, press until the AUTO indicator lights.

2 Press the [Light] key (◐) or [Dark] key (◑) to adjust the exposure.

For a darker image, press the dark key (◑). For a lighter image, press the light key (◐). If halftone (2 and 4) is selected, the indicators will light simultaneously.

Note **Exposure value guidelines**
1 – 2 Dark originals like newspapers
3 Normal originals
4 – 5 Colored text or text written in pencil

SELECTING THE TRAY

When the original is placed on the document glass and the original size is selected, or when the original is placed in the SPF/RSPF, the tray with the same size of paper as the original is automatically selected. If you wish to use a tray other than the automatically selected tray (for example you wish to enlarge or reduce the copy or use the bypass tray), press the [TRAY SELECT] key to select the desired tray.
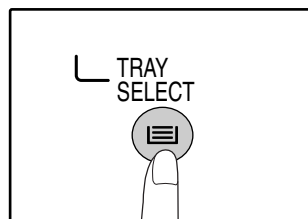
Note • If the desired paper size indicator does not light up. change the paper in the tray to the desired paper size.
• Automatic ratio selection (p.00) does not operate when the bypass tray or a tray set for a special paper size is selected.

Auto tray switching

If the tray runs out of paper during copying and there is another tray with the same size of paper and the same feeding orientation (horizontal or vertical), the other tray is automatically selected and copying continues. "Auto tray switching" can be disabled in the user programs. (p.00)

SETTING THE NUMBER OF COPIES

Press the numeric keys to set the number of copies.
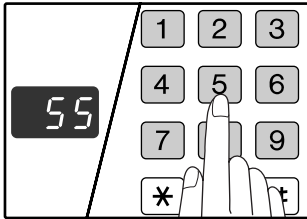
- The set number of copies appears in the display. A maximum of 99 copies (factory default setting) can be set.
- If you wish to make only a single copy, copying is possible with the display showing "0".

Note If you enter the wrong number, press the [CLEAR] key (C) and enter the correct number.

Important note when making a large number of copies

The maximum number of copies can be changed from 99 to 999 in the user programs. (p.00) When the maximum number of pages that can be held in the output tray (250) are output, copying will temporarily stop. When this happens, promptly remove the copies and press the [START] key ( ) to resume copying. Copying will also stop after 500 pages and 750 pages. Remove the pages and resume copying in the same way.

2

REDUCTION/ENLARGMENT/ZOOM

Reduction and enlargement ratios can be selected automatically with the [AUTO IMAGE] key or manually with the [PRESET RATIO] selector keys (,) and/or the [ZOOM] keys (,). The zoom function enables precise copy ratio selection from 25% to 400% in increments of 1%. Ratios that can be selected will vary depending on whether the original is placed on the document glass or in the SPF/RSPF.

Original position	Selectable ratios
Document glass	25% – 400%
SPF/RSPF	50% – 200%

AUTOMATIC RATIO SELECTION

Note When automatic ratio selection is enabled, the ratio cannot be selected manually.

1 **Place the original(s) in the document feeder tray or on the document glass.**

2 **If the original is placed on the document glass, select the original size. (P.00)**

Note Automatic ratio selection can only be used when the original size is 11" x 17", 8-1/2" x 14", 8-1/2" x 11" or 8-1/2" x 11"R. It cannot be used for other sizes.

3 **Use the [TRAY SELECT] key to select the paper tray with the desired paper size.**
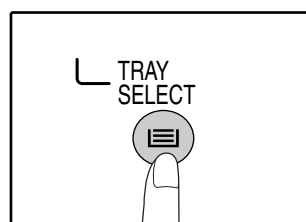
This feature will not work when using copy paper of non-standard size or when using the bypass tray.

4 **Press the [AUTO IMAGE] key.**
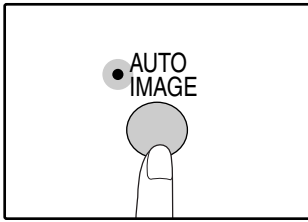
The AUTO IMAGE indicator lights up and the appropriate ratio for the original size and paper size is selected. (The indicator of the selected ratio will light up.)

Note
- If the ORIGINAL SIZE indicator blinks, change the orientation of the placed original.
- If the copy is made when a PRESET RATIO selector indicator is blinking, the copied image may run off the page.

5 **Set the number of copies and press the [START] key (⊛).**

The copy will be delivered to the output tray.

Note
- To cancel automatic ratio selection, press the [AUTO IMAGE] key again.
- When copying from the SPF/RSPF, automatic ratio selection will be automatically canceled after copying is complete.

MANUAL RATIO SELECTION

Copies can be reduced down to 25% or enlarged up to 400%. The [PRESET RATIO] selector keys (⌄, ⌃) can be pressed to quickly select a ratio from among eight preset ratios. In addition, the [Zoom] keys (⌄, ⌃) can be pressed to select the ratio in increments of 1%.
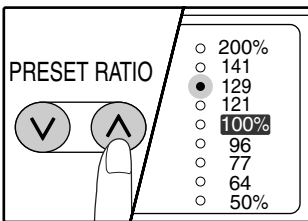
1 **Place the original in the document feeder tray or on the document glass.**

2 **If the original is placed on the document glass, select the original size. (p.00)**

3 **Use the [PRESET RATIO] selector keys (⌄, ⌃) and [Zoom] keys (⌄, ⌃) to select the desired copy ratio.**

Selecting a preset ratio
Press the [PRESET RATIO] selector key (⌃) to move up through the preset ratios.
Press the [PRESET RATIO] selector key (⌄) to move down through the preset ratios.

PRESET RATIO
- 200%
- 141
- 129
- 121
- 100%
- 96
- 77
- 64
- 50%
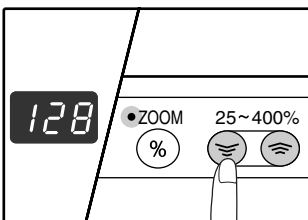
Fine adjustment of the ratio
Any ratio from 25% to 400% can be set in increments of 1%.

128 •ZOOM 25~400%

Press a [PRESET RATIO] selector key (⌃ or ⌄) to set the approximate ratio, then press the [Zoom] keys (⌄ or ⌃) to increase or decrease the ratio.
When a [Zoom] key is pressed, the ZOOM indicator will light up and the zoom ratio will appear in the display for about two seconds.

Note
- To verify a zoom setting without changing the zoom ratio, Hold down the [Copy ratio display] key (%). When the key is released, the display will return to the normal display.
- If the copy is made when a PRESET RATIO selector indicator or the ZOOM indicator is blinking, the copied image may run off the page. To ensure that the image fits on the page, lower the copy ratio until the indicator stops blinking and lights steadily.
- If the PAPER SIZE indicator is not lit, check the size of paper in the tray and go to step 3.

4 **Select the number of copies and other copy settings, and then press the [START] key (⊛).**

The copy will be delivered to the output tray.

Note
To return the ratio to 100%, press the [PRESET RATIO] selector key (⌄ or ⌃) until the 100% indicator lights up.

SELECTING THE VERTICAL AND HORIZONTAL COPY RATIOS SEPARATELY

(XY ZOOM copying)

The XY ZOOM feature allows the horizontal and vertical copy ratios to be changed independently.

Example: Reduction only in the horizontal direction.
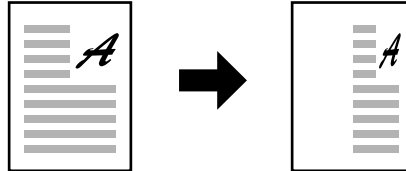
Note
- This feature cannot be used with the 2 IN 1 or 4 IN 1 feature. (p.00)
- To use the XY ZOOM feature with the DUAL PAGE COPY feature, set the DUAL PAGE COPY feature first and then the XY ZOOM feature.
- If the AUTO IMAGE function has been set, the XY ZOOM feature cannot be set. If the XY ZOOM feature is set, the AUTO IMAGE function cannot be set.
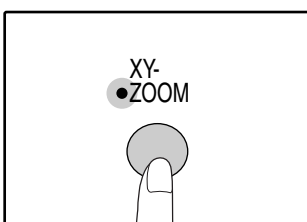
2

Ratios that can be selected will vary depending on the position of the original.

Original position	Selectable ratios
Document glass	25% – 400%
SPF/RSPF	50% – 200%

1 **Place the original(s) in the document feeder tray or on the document glass.**

2 **If the original is placed on the document glass, select the original size. (p.00)**

3 **Press the [XY-ZOOM] key.**

XY-ZOOM Indicator lights up.
The current value for the vertical direction will appear in the display.

4 **Use the [PRESET RATIO] selector keys (∨, ∧) and [Zoom] keys (⤓, ⤒) to change the copy ratio in the vertical direction.**
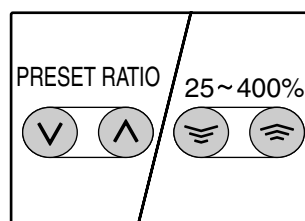
Press the [PRESET RATIO] selector keys (∨, ∧) to select a ratio close to the desired ratio, and then press the [Zoom] keys (⤓, ⤒) to adjust the ratio in increments of 1%.
The ratio appears in the display.

5 **Press the [Copy ratio display] key (%).**
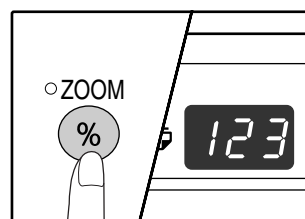
The selected ratio for the vertical direction will be entered.

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6 **Use the [PRESET RATIO] selector keys (⌄, ⌃) and [Zoom] keys (⤓, ⤒) to change the copy ratio in the horizontal direction.**

Press the [PRESET RATIO] selector keys (⌄, ⌃) to select a ratio close to the desired ratio, and then press the [Zoom] keys (⤓, ⤒) to adjust the ratio in increments of 1%.
The ratio appears in the display.

7 **Press the [Copy ratio display] key (%).**

The selected ratio for the horizontal direction will be entered and the display will change to the copy quantity display.

8 **Press the [START] key (⊙).**

The copy will be delivered to the output tray.

✎Note
- To verify the copy ratios, press and hold down the [Copy ratio display] key (%). The vertical and horizontal ratios will be alternately displayed.
- If you need to change the ratios, press the [PRESET RATIO] selector keys (⌄, ⌃) and the [Zoom] keys (⤓, ⤒) to reset the ratios, beginning with the vertical ratio. (step 3 to step 6)
- To cancel XY ZOOM copy, press the [XY-ZOOM] key. The XY-ZOOM indicator will go off, indicating that the function is canceled.

TWO-SIDED COPYING USING THE BYPASS TRAY

To perform manual two-sided copying, follow these steps.

Example: Copying originals A and B onto each side of one sheet of paper

Original A   Original B   Final copy

1 **Copy original A.**
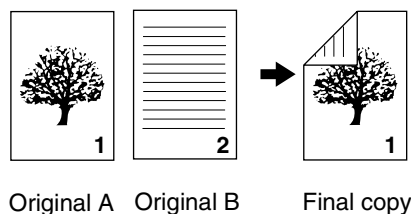
Copied original A   Original A
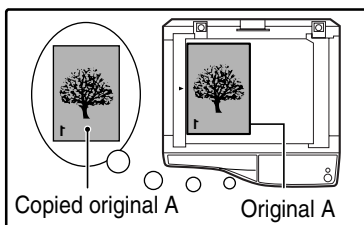
2 **Place original B as shown below.**
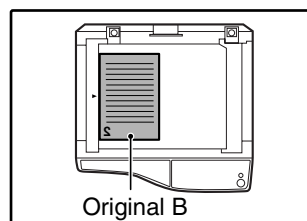
Original B

Portrait-oriented original:
If the original is a portrait-type original, place it in the same orientation as original A.
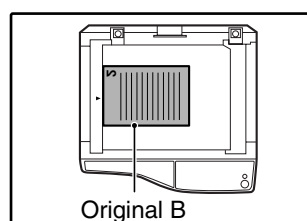
Original B

Landscape-oriented original:
If the original is a landscape-type original, place it with the top edge opposite to the position where the top edge of original A was placed.

3 **Turn the copy of original A over, and without changing the position of the edge closest to you, insert it in the bypass tray.**
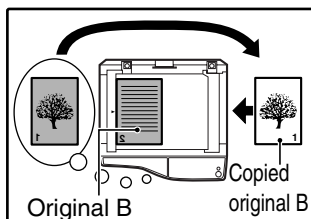
Insert the paper all the way in.

Original B | Copied original B
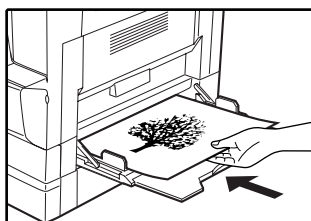
Note
- Copies made on the back side of paper should always be made one sheet at a time using the bypass tray.
- Straighten curled or wavy paper before using it. Curled paper may cause misfeeds, creases, or a poor-quality image.

4 **Select the bypass tray with the [TRAY SELECT] key, and then press the [START] key ( ).**
The copy is delivered to the output tray.

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AUTOMATIC TWO-SIDED COPYING
(Only on models that support automatic two-sided copying)

On models that support automatic two-sided copying, two originals placed on the document glass can be copied onto each side of a single sheet of paper. In addition, an RSPF can be used to copy two originals onto one sheet of paper, or one two-sided original onto two sheets of paper, or one two-sided original onto each side of one sheet of paper.

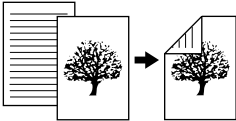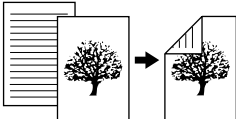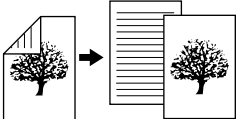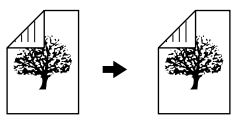|	Original → Paper			Usable paper
Document glass	One-sided original → Two sides			11" x 17", 8-1/2" x 14", 8-1/2" x 11", 8-1/2" x 11"R, 5-1/2" x 8-1/2" • The bypass tray cannot be used.
SPF				11" x 17", 8-1/2" x 14", 8-1/2" x 11", 8-1/2" x 11"R, • Special paper and 5-1/2" x 8-1/2" paper cannot be used. • The bypass tray cannot be used.
RSPF	One-sided original → Two sides	Two-sided original → One side	Two-sided original → Two sides	

> **Note**
> • To use paper in the bypass tray, make a two-sided copy as explained in "TWO-SIDED COPYING USING THE BYPASS TRAY" (p.00).
> • When performing automatic two-sided copying of a one-sided original, or one-sided copying of a two-sided original, the image on the back can be rotated 180 degrees to reverse the top and bottom (image rotation in duplex copying). To rotate the image 180 degrees, enable the setting as explained in "IMAGE ROTATION IN DUPLEX COPYING" (p.00) or in the user programs (p.00), and then follow the steps below. In particular, when a one-sided portrait original is placed in a horizontal orientation (8-1/2" x 14" or 8-1/2" x 11" size) for two-sided copying, the top and bottom of the images on the front and back of the paper will be opposite to each other, and thus this function can be conveniently used to make the top and bottom of the images agree.

11" x 17" or 8-1/2" x 14" size portrait

Orientation of the placed original

Normal automatic two-sided copying

The top and bottom of the images on the front and back are reversed.

If the orientation of two-sided copying is changed

The top and bottom of the images on the front and back are the same.
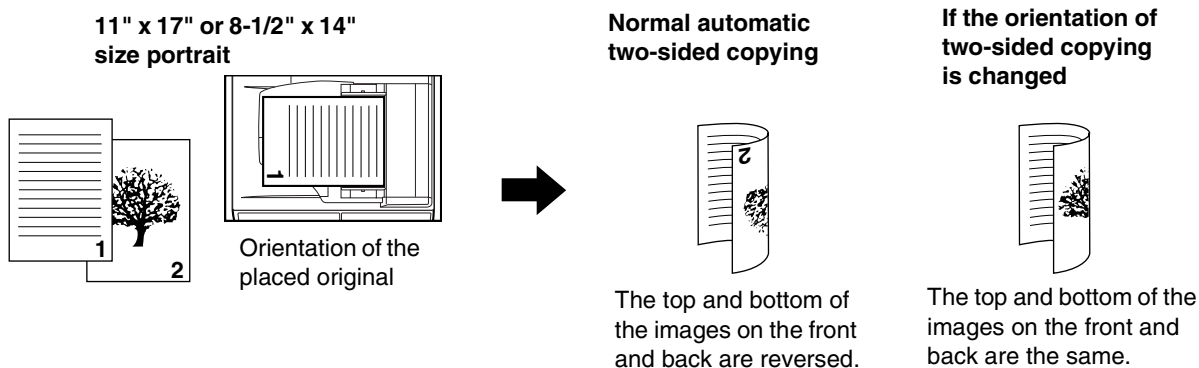
Using the document glass

1 **Place the original that you wish to copy onto the front side of the paper on the document glass and close the document cover/SPF/RSPF.**

2 **Select the original size. (p.00)**

3 **Press the [ORIGINAL TO COPY] key, and make sure that the ⌐⌐→⌐ indicator is lit.**

ORIGINAL TO COPY

4 **Press the [START] key (⊙).**

The ⌐⌐→⌐ indicator blinks, and the original is scanned into memory.

Note
- If you need to clear the data scanned into memory, press the [CLEAR ALL] key (CA).
- If you wish to cancel two-sided copying and just make a copy of the first original, press the [READ-END] key (#).

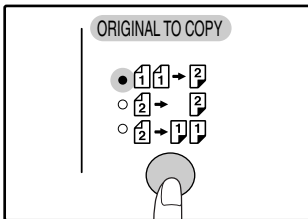**5** **Remove the first original and then place the original that you wish to copy onto the back side of the paper on the document glass. Close the document cover.**
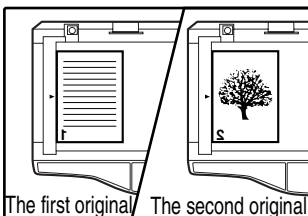
Place the second original in the same orientation as the first original.

The first original / The second original

6 **Press the [START] key (⊙).**

The copy will be delivered to the output tray.

Using the SPF/RSPF

1 **Place originals in the SPF/RSPF. (P.00)**

If you place an odd number of originals for one-sided to two-sided copying, the last page will be one-sided.

2 **Press the [ORIGINAL TO COPY] key and select the two-sided copy mode that you wish to use.**

ORIGINAL TO COPY
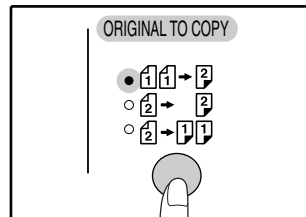
When using an RSPF, the copy mode is selected in the following order:
- one-sided to two-sided ⌐⌐→⌐
- two-sided to two-sided ⌐→ ⌐
- two-sided to one-sided ⌐→⌐⌐

3 **Select the number of copies and other copy settings, and press the [START] key (⊙).**

The copy will be delivered to the output tray.

Note
- To cancel automatic two-sided copying, press the [CLEAR ALL] key (CA).
- Do not touch the reversing tray while automatic two-sided copying is in progress.

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IMAGE ROTATION IN DUPLEX COPYING

This function is used to invert the top and bottom of the image on the front side of the paper during two-sided copying.

1 **Hold down the [ORIGINAL TO COPY] key until the 🔲🔲→🔲 indicator blinks.**
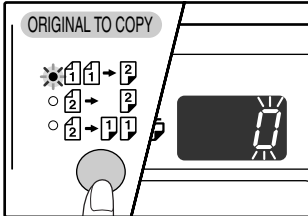
The currently set setting code blinks in the first digit of the number of copies display.

2 **Press a numeric key to enter the setting code.**
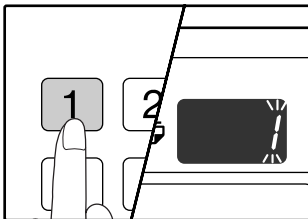
To enable the setting, press [1] key. To disable the setting, press [0] key. The factory default setting is "0". The entered number appears in the first digit of the number of copies display.

3 **Press the [START] key (◯).**
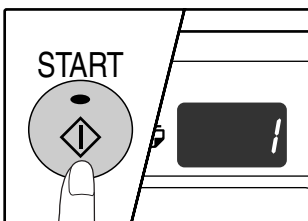
The selected setting code stops blinking and lights steadily. This completes the setting.

4 **Press the [ORIGINAL TO COPY] key to exit the setting.**
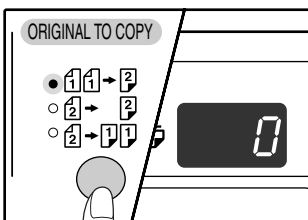
The display returns to the normal number of copies display.

✎Note | Image rotation in duplex copying can also be enabled or disabled in the user programs. (p.00)

DUAL PAGE COPYING

A dual page original can be automatically separated into two pages during copying. This feature is convenient for making copies of books and other dual page originals on individual sheets of paper.

Original   Final copy
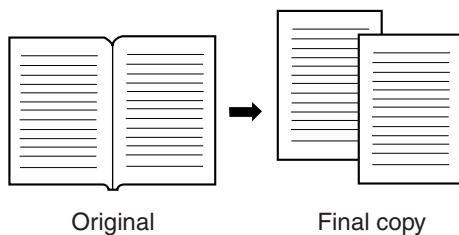
Note
- 8-1/2" x 11" paper is used for dual page copying.
- When rotation copy is enabled (the dual function board must be installed) 8-1/2" x 11" paper can also be used.
- Dual page copying can be enabled when two-sided copying is enabled.
- When used in combination with XY ZOOM copying, enlargement is not possible.
- Dual page copying cannot be used in combination with the following functions:
  - Enlargement
  - 2 IN 1/4 IN 1 copying (when the Dual function board is installed)
  - Center erase (when the Dual function board is installed)
- If dual page copying is selected when a ratio has been set, the ratio setting will be canceled.
- Dual page copying cannot be selected when an original is placed in the SPF/RSPF.

1 **Place the original on the document glass, aligning the division between the pages with the size marker (8-1/2" x 11"). Close the document cover/SPF/RSPF.**
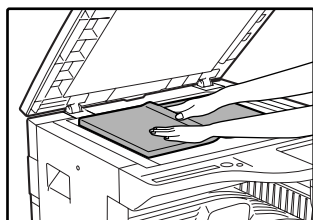
Copying will begin from the page to the right of the size marker.

Note To keep the copies in the correct page order when performing dual page copying over multiple pages, make sure that the original is always placed on the document glass with the smaller page number to the right.

2 **Press the [DUAL PAGE COPY] key and make sure that the DUAL PAGE COPY indicator is lit.**

DUAL PAGE COPY

3 **Make sure that the 8-1/2" x 11" tray is selected.**

4 **Select the number of copies and other copy settings, and press the [START] key (⊙).**
The copy will be delivered to the output tray.

**Note** To cancel dual page copying, press the [DUAL PAGE COPY] key. The DUAL PAGE COPY indicator will go off, indicating that the function is canceled.

2
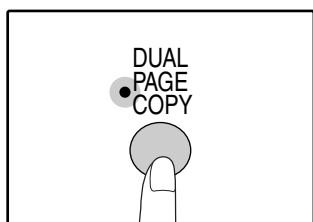
INTERRUPTING A COPY RUN
(Interrupt copying)

A copy run can be temporarily interrupted to allow another copy job to be performed. When the other job is finished, the copy run will resume using the original copy settings.

> **Note** Interrupt copying is not possible when the user programs are being configured, or when automatic two-sided copying, sort/group copying, or 2 IN 1 / 4 IN 1 copying is being performed.

1 Press the [INTERRUPT] key to interrupt the copy run.
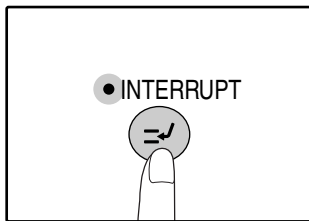
The INTERRUPT indicator will light up and the display will show "0". The INTERRUPT indicator will blink until the page that was being copied when the [INTERRUPT] key was pressed is finished.

> **Note**
> • If the SPF/RSPF is being used, the copy run will not stop until the set number of copies is completed.
> • **If auditing mode is enabled:**
>   "- - -" will appear in the number of copies display. Enter your 3-digit account number. Copying will not be possible unless a correct account number is entered. (p.00)

2 Remove the previous original(s) and place the original(s) of the interrupt copy job.

3 Press the [START] key ( ).
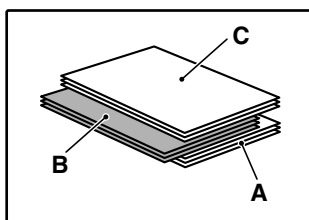
The copy will be delivered to the output tray slightly offset from the copies of the interrupted run. (Shifter function)
The Shifter function can be disabled in the user programs. (p.00)

A: Copies made before the interrupt copy job
B: Interrupt copy job
C: Copies made after the interrupt copy job

4 When the copy job is finished, press the [INTERRUPT] key and remove the original(s).

The INTERRUPT indicator will go off, indicating that the interrupt function is no longer operating. The copy settings will automatically revert to the settings selected for the copy run before the run was interrupted.

5 Replace the previous original(s) and press the [START] key ( ).

The interrupted copy run will resume.

3

Chapter 3
CONVENIENT COPY FUNCTIONS

This chapter explains convenient copy functions that can be used when the Dual function board is installed.

ROTATING THE IMAGE 90 DEGREES
(Rotation copy)

When auto paper selection or auto ratio selection are in operation and the original is placed in a different orientation (vertical or horizontal) than the paper, the original image will be automatically rotated 90 degrees to enable correct copying onto the paper.
This function is convenient for copying 11" x 17", 8-1/2" x 14" originals, which can only be placed horizontally, onto paper that is loaded vertically.
The rotation copy function is initially enabled. It can be disabled in the user programs. (p.00)

> **Note**
> • Rotation copy will not operate when a copy is enlarged to a paper size greater than 8-1/2" x 11". In this case, place the original in the same orientation as the paper.
> • When 2 IN 1/4 IN 1 copy is used (p.00), rotation copy will operate even if disabled in the user programs.
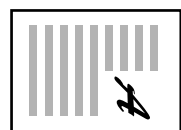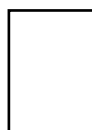
Orientation of the placed original   Orientation of the loaded paper   Final copy

SORT COPY / GROUP COPY

● Copies of multiple original pages can sorted into sets. (Sort copy)
● Copies of multiple original pages can be grouped by page. (Group copy)

> **Note** The electronic sort board can scan approximately 100 standard originals (8-1/2" x 11"), however, the number will vary for photos and other types of originals.
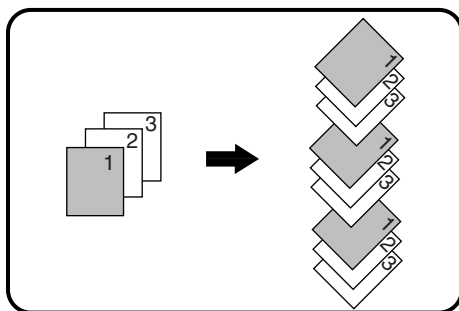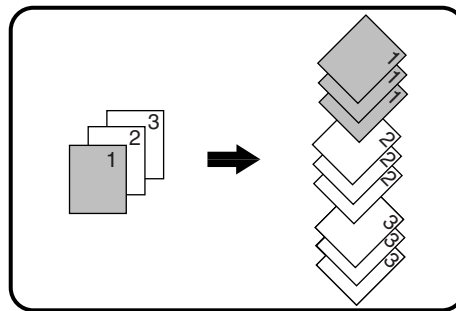
Sort copy   Group copy

Sort/Group copy using the document glass

1 **Place the first original. (p.00)**

2 **Select the original size. (p.00)**

3 **Press the [SORT/GROUP] key to select the desired mode.**
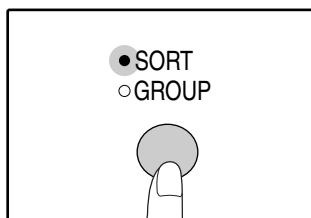
● SORT
○ GROUP

The modes are selected in the order "SORT", "GROUP", "Off".

4 **Press the [START] key (⟳) and place the next original.**

The original is stored in memory.

Note To clear the data in memory, press the [CLEAR ALL] key (CA) or [CLEAR] key (C).

5 **When all originals have been scanned, select the number of copies and other settings, and then press the [READ-END] key (♯).**

The copies are delivered to the output tray.

Note
- To cancel the Sort/Group copy job, press the [CLEAR] key (C).
- To cancel Sort or Group mode, press the [SORT/GROUP] key repeatedly until the SORT/GROUP indicators are both off.

Sort/Group copy using the SPF/RSPF

1 **Place the originals. (p.00)**

2 **Press the [SORT/GROUP] key to select the desired mode.**

● SORT
○ GROUP

The modes are selected in the order "SORT", "GROUP", "Off".

3 **Select the number of copies and other settings, and then press the [START] key (⟳).**

The copies are delivered to the output tray.

Note
- To cancel the Sort/Group copy job, press the [CLEAR] key (C).
- To cancel Sort or Group mode, press the [SORT/GROUP] key repeatedly until the SORT/GROUP indicators are both off.

If the memory becomes full
- If the memory becomes full while scanning the originals, the ORIGINAL DATA indicator will blink and "FUL" will appear in the display.
- To copy the originals that have been scanned up to that point, press the [READ-END] key (♯) if you are using the document glass, or the [START] key (⟳) if you are using the SPF/RSPF.
- To clear the data that has been scanned into memory, press the [CLEAR ALL] key (CA) or the [CLEAR] key (C).

If the output tray becomes full
When the maximum number of pages that can be held in the output tray (250) are output, copying will temporarily stop. When this happens, promptly remove the copies and press the [START] key (⟳) to resume copying.

Shifter function during Sort/Group copy
The shifter function shifts the position of each set or group of copies in the output tray for easy separation. The shifter function setting can be changed in the user programs. (p.00)

Shifter function
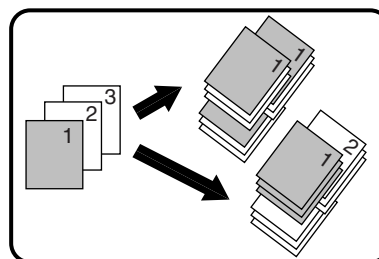
When shifter function is disabled
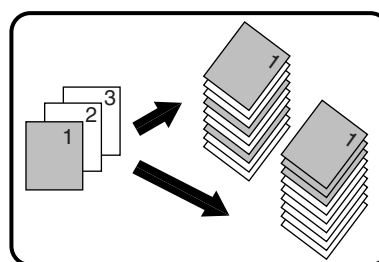
COPYING MULTIPLE ORIGINALS ONTO A SINGLE SHEET OF PAPER

(2 IN 1/4 IN 1 copy)

Multiple originals can be copied onto a single sheet of paper in a selected layout pattern.
This function is convenient for compiling multi-page reference materials into a compact format, or for providing an overview of all pages of a document on a single page.

2 IN 1 copy

1 2	1 / 2	2 1	2 / 1

Pattern 1   Pattern 2

4 IN 1 copy

1 2 / 3 4	1 3 / 2 4	2 1 / 4 3	3 1 / 4 2

Pattern 1   Pattern 2   Pattern 3   Pattern 4
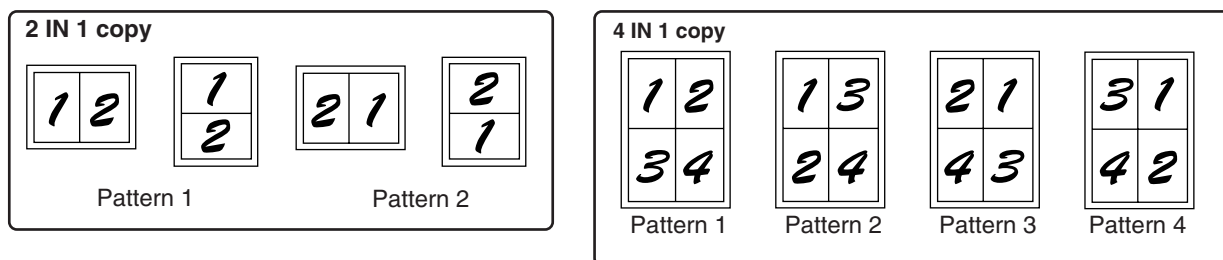
Note
- First select the layout pattern as explained in "Setting the layout pattern" (p.00), and select a border setting (solid line or broken line) in the user programs (p.00). When finished, follow the steps below.
- An appropriate ratio setting will be automatically selected based on the size of the originals, the size of the paper, and the selected number of originals. The smallest possible reduction setting is 25%. A smaller reduction ratio may be appropriate depending on the original size, paper size, and number of originals, however, 25% will be used and part of the images may be cut off.
- Even if Rotation copying is disabled in the user programs, the original images may be rotated if necessary depending on their orientation and the orientation of the paper.
- 2 IN 1 / 4 IN 1 copy cannot be used in combination with dual page copying (p.00), XY Zoom (p.00), margin shift (p.00), or erase copy. (p.00)

3

2 IN 1/4 IN 1 copy using the document glass

1 **Place the first original. (p.00)**

2 **Select the original size. (p.00)**

3 **Press the [2 IN 1/4 IN 1] key to select the desired mode.**

● 2 IN 1   ○ 2 IN 1
○ 4 IN 1   ● 4 IN 1
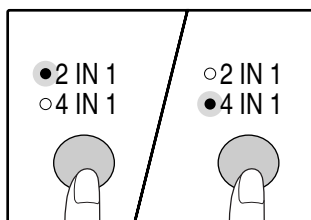
The mode is selected in the order "2 IN 1", "4 IN 1", "Off".

4 **Press the [START] key (⊕) and place the next original.**
The scanned original is stored in memory.

Note To clear the data in memory, press the [CLEAR ALL] key (CA) or the [CLEAR] key (C).

5 **When all originals have been scanned, select the number of copies and other settings, and the press the [READ-END] key (♯).**
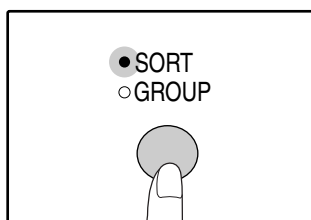The copy is delivered to the output tray.

Note
- To cancel 2 IN 1/4 IN 1 copying, press the [CLEAR] key (C).
- To cancel 2 IN 1/4 IN 1 copy mode, press the [2 IN 1/4 IN 1] key repeatedly until the 2 IN 1/4 IN 1 indicators are both off.

33

2 IN 1/4 IN 1 copy using the SPF/RSPF

1 Place the originals. (p.00)

2 Press the [2 IN 1/4 IN 1] key to select the mode.

● 2 IN 1
○ 4 IN 1　　　○ 2 IN 1
　　　　　　　● 4 IN 1

The mode is selected in the order "2 IN 1", "4 IN 1", "Off".

3 Select the number of copies and other settings, and press the [START] key (⊕).
The copy is delivered to the output tray.

📝**Note**
- To cancel 2 IN 1/4 IN 1 copying, press the [CLEAR] key (C).
- To cancel 2 IN 1/4 IN 1 copy mode, press the [2 IN 1/4 IN 1] key repeatedly until the 2 IN 1/4 IN 1 indicators are both off.
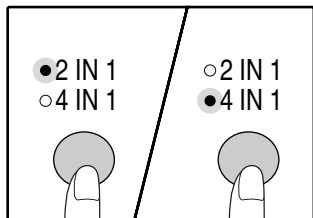
If the memory becomes full
- If the memory becomes full while scanning the originals, the ORIGINAL DATA indicator will blink and "FUL" will appear in the display.
- To copy the originals that have been scanned up to that point, press the [READ-END] key (♯) if you are using the document glass, or the [START] key (⊕) if you are using the SPF/RSPF.
- To clear the data that has been scanned into memory, press the [CLEAR ALL] key (CA) or the [CLEAR] key (C).

Setting the layout pattern

You can select the layout pattern for copying 2 original pages or 4 original pages onto one sheet of paper. The available layout patterns are shown on the first page of this section.

📝**Note**　The layout pattern can also be selected in the user programs. (p.00)

1 Use the [2 IN 1/4 IN 1] key to access the setting.

Selecting the layout for 2 IN 1 copy
With the 2 IN 1/4 IN 1 indicators off, hold down the [2 IN 1/4 IN 1] key until the 2 IN 1 indicator blinks.
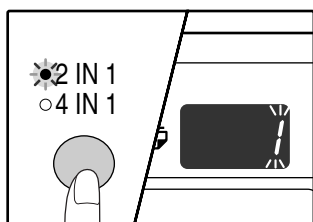
※ 2 IN 1
○ 4 IN 1

The setting code of the currently selected pattern will blink in the first digit of the display.

Selecting the layout for 4 IN 1 copy
With the 2 IN 1 indicator lit, hold down the [2 IN 1/4 IN 1] key until the 4 IN 1 indicator blinks.
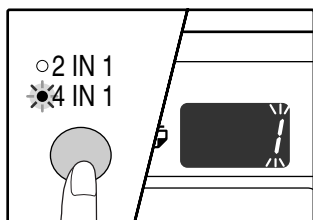
○ 2 IN 1
※ 4 IN 1

The setting code of the currently selected pattern will blink in the first digit of the display.

2 Select the setting code by pressing a numeric key.
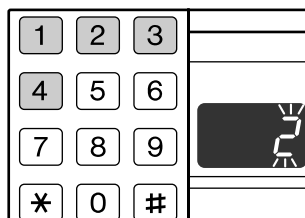
To select "Pattern 2", press the [2] key.

Function	Setting code
2 IN 1 layout	* 1 (Pattern 1) 2 (Pattern 2)
4 IN 1 layout	* 1 (Pattern 1) 2 (Pattern 2) 3 (Pattern 3) 4 (Pattern 4)

The factory default settings are indicated by " * ".
The entered number blinks in the first digit of the display.

3 Press the [START] key (⊕).

The selected setting code stops blinking and lights steadily. This completes the setting.

4 Press the [2 IN 1/4 IN 1] key to exit the setting.

The display returns to the number of copies display.

CREATING MARGINS WHEN COPYING
(Margin shift)

The MARGIN SHIFT feature, in its initial setting, automatically shifts the text or image to increase the margin by approximately 1/2" (10mm).
A margin can also be created at the top of the page on models that support automatic two-sided copying.

Example: Model that supports automatic two-sided copying

A → Margin → A   Margin → A
Original   Left edge   Top edge
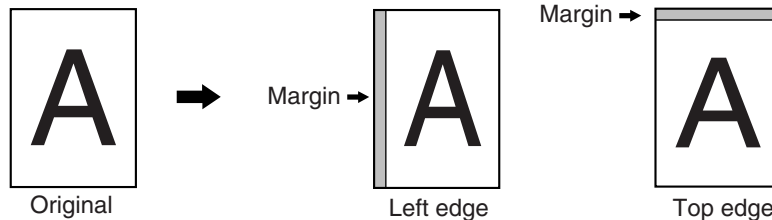
📝 Note	• This feature cannot be used with the 2 IN 1 or 4 IN 1 feature and rotation copying. • This feature cannot be used with non-standard size copy paper. (p.00) • You can also switch between the left margin and the top margin in the user programs. (p.00) • The margin width can be changed in the user programs. (p.00)

3

1 Place the original(s).
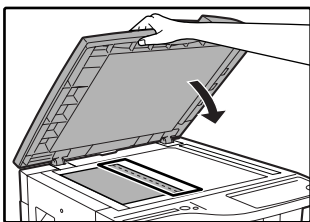
If you are using the document glass, place the side of the original where you wish to create the margin on the right.
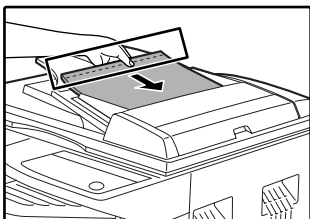
If you are using the SPF/RSPF, place the side of the original where you wish to create the margin on the left.

2 If the original is placed on the document glass, select the original size. (P.00)

When using the document feeder tray, make sure that the same ORIGINAL SIZE indicator as your original size lights up.

3 Select the margin position.

Follow this step if you are using a model that supports automatic two-sided copying. On other models, skip to the next step.

1 Hold down the [MARGIN SHIFT] key until the MARGIN SHIFT indicator blinks.

The currently selected setting code for the margin position blinks in the display.

1: Left edge   2: Top edge

2 Press the [1] key or the [2] key, and then press the [START] key (ⓢ).

The selected setting code for the margin position blinks.

3 Press the [MARGIN SHIFT] key.

The MARGIN SHIFT indicator stops blinking.

4 Press the [MARGIN SHIFT] key.
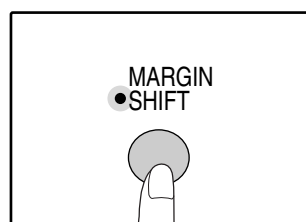
The MARGIN SHIFT indicator lights up.

MARGIN
●SHIFT

5 **Select the number of copies and other settings, and press the [START] key ( ).**

The copy is delivered to the output tray.

> **Note**
> • To cancel margin shift, press the [MARGIN SHIFT] key repeatedly until the MARGIN SHIFT indicator is off.
> • When margin shift is used in combination with automatic two-sided copying, a margin is also created automatically on the back side of the paper directly behind the margin on the front side.

ERASING SHADOWS AROUND THE EDGES OF A COPY

(Erase copy)

● This feature is used to erase shadows that appear around the edges of copies of books and other thick originals. The shadows are erased according to the size of the paper.
● The feature can also erase the shadow that appears down the center of books and other originals that open up. (CENTER ERASE)
● The factory default setting for the width of the erasure is approximately 1/2" (10 mm). The width can be changed in the user programs.

EDGE

A → A

Original | Final copy

CENTER ERASE

A B → A B

Original | Final copy

EDGE + CENTER ERASE

A B → A B

Original | Final copy

> **Note**
> • Center erase cannot be used in combination with dual page copy.
> • Erase copy cannot be used in combination with 2 IN 1/4 IN 1 copy. (p.00)
> • Erase copy cannot be used when the paper is a special size.
> • Erase copy cannot be used when copying from the bypass tray.

1 **Place the original(s). (p.00)**

2 **Select the original size. (p.00)**

3 **Press the [ERASE] key to select the desired erase mode.**
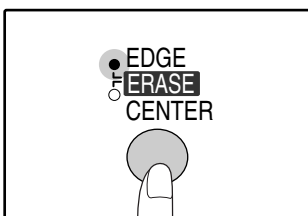
EDGE
ERASE
CENTER

To select the "EDGE + CENTER ERASE" mode, press the [ERASE] key until both the EDGE and CENTER indicators light up.

4 **Select the number of copies and other settings, and then press the [START] key ( ).**
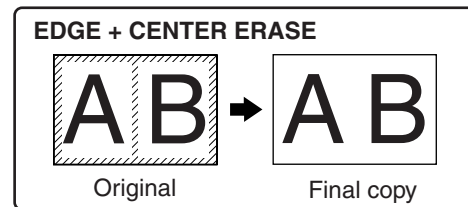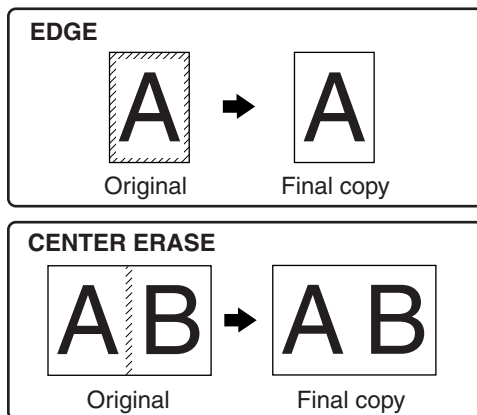
The copy is delivered to the output tray.

> **Note**
> To cancel erase copy, press the [ERASE] key repeatedly until the ERASE indicators are both off.

The machine includes a USB 1.1 port and a parallel port as standard equipment.
A computer can be connected to these ports to use the machine as a printer or a scanner. In addition, a Dual function board can be installed to enable the use of a USB 2.0 port, and the printer driver for the Dual function board can be used with this board for high-speed data exchange. To use the machine as a printer or scanner, the printer driver or scanner driver must first be installed as explained in the "SOFTWARE SETUP GUIDE".

> **Note**
> • If a problem occurs in printer or scanner mode, see "TROUBLESHOOTING". (p.00)
> • To use the printer driver for the Dual function board, your computer must be connected to the machine using the USB 2.0 port. If the USB 1.1 port is used, the machine will not attain the full printing speed or other features of the Dual function board.
> • Do not install the printer driver for the Dual function board when the Dual function board is not installed. If this is done, a warning message will print and printing will be canceled.

USING THE PRINTER MODE

The procedure for loading paper is the same as for loading copy paper. See "LOADING PAPER". (p.00)

> **Note**
> • Print jobs received while the machine is copying or being used in scanner mode will be stored in memory. When the copy job is finished or scanner mode is exited, the print jobs will begin printing.
> • Printing is not possible when the front or side cover is opened for machine maintenance, or when a misfeed occurs or the machine runs out of paper or toner, or when the drum cartridge reaches its replacement time.
> • If an original misfeed occurs in the SPF/RSPF, printing will not be possible until the misfed original is removed and the SPF/RSPF is restored to a usable state.

BASIC PROCEDURE FOR PRINTING

The basic procedure for printing is explained in the following. To use convenient printer functions, see the "Online Manual" or the printer driver help file.

1 **Make sure that paper is loaded in the tray.**

The procedure for loading paper is the same as for copying. See "LOADING PAPER" (p.00) and make sure the paper that you wish to use is loaded.

2 **Make sure that the ON LINE indicator on the operation panel is lit.**
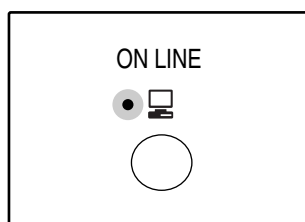
ON LINE

If the ON LINE indicator is not lit, press the [ON LINE] key. When the indicator is not lit, the machine is off-line and cannot print. When the indicator is blinking, the machine is printing a print job from memory.

3 **Open the file that you wish to print and select "Print" from the File menu.**

4 **Make sure that the printer driver for the machine is selected, and select print settings in the printer driver.**

For information on the settings in the printer driver, see the "Online Manual", the SOFTWARE SETUP GUIDE, or the printer driver help file.

5 **Click the "Print" button or the "OK" button to begin printing.**

The print job will be delivered to the output tray.

Note
- To pause a print job that is in progress, press the [ON LINE] key to switch the machine off-line.
- To cancel a print job, press the [CLEAR ALL] key (CA).
- To resume a paused print job, press the [ON LINE] key to switch the machine online.
- For limitations on copying in print mode, scanner mode limitations, and print mode limitations in copy and scanner mode, see "OPERATION IN COPY, PRINTER, AND SCANNER MODES". (p.00)

USING THE SCANNER MODE

The procedure for placing the original is the same as for copying. See "ORIGINAL PLACEMENT". (p.00)

Note
Scanner mode cannot be used at the following times:
- A misfeed has occurred (paper misfeed or original misfeed in the SPF/RSPF).
- The user programs are being used.
- The tray paper size is being set.
- Automatic exposure adjustment is in progress.
- Toner save mode is enabled.
- The machine is being used in copy mode.
- The front or side cover is open.

SCANNING USING THE KEYS ON THE MACHINE

The procedure for scanning using the [SCAN] key and [SCAN MENU] keys is explained in the following. When scanning is performed by this method, the application that has been set in Button Manager will automatically start and the scanned image will be pasted into the application.

Note
If the machine is in copy mode, press the [SCAN] key to switch to scanner mode and clear the previously set copy settings.

1 **Press the [SCAN] key.**
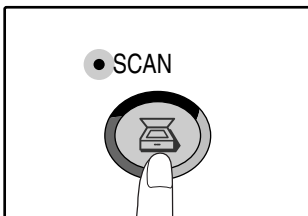
The machine enters scan mode.
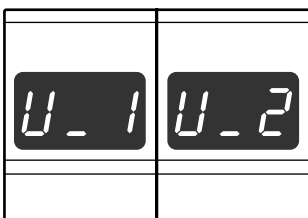
The display appears as shown at left. If the Dual function board is installed and your computer is connected using the USB 2.0 port, press the [SCAN] key once again so that "U_2" appears in the display.

2 **Place the original in the document feeder tray or on the document glass.**

3 **Press a [SCAN MENU] key to begin scanning.**
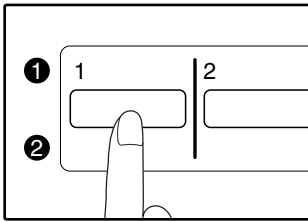
The display will show the number of the [SCAN MENU] key that you pressed, and the number will blink.

[SCAN MENU] keys and the Button Manager scan menu

The factory default settings for the [SCAN MENU] keys and Button Manager are as follows. For information on Button Manager settings, see the Button Manager help file.
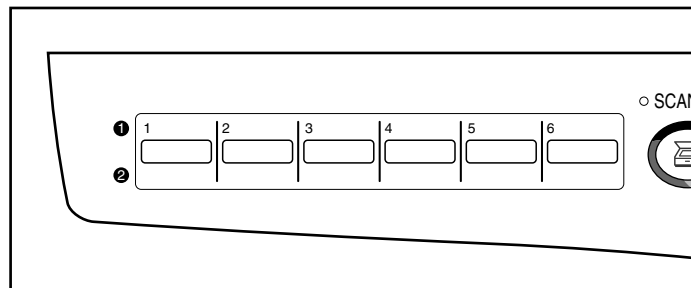
4

Key position	Name in display	Button Manager menu	Application that starts
1 (key on far left)	SC1	ScanMenu SC1	Sharpdesk (Full color)
2 (2nd key from left)	SC2	ScanMenu SC2	Sharpdesk (Monochrome)
3 (3rd key from left)	SC3	ScanMenu SC3	Email
4 (4th key from left)	SC4	ScanMenu SC4	FAX
5 (5th key from left)	SC5	ScanMenu SC5	OCR
6 (key on far right)	SC6	ScanMenu SC6	Microsoft Word

SCANNING FROM YOUR COMPUTER

The machine supports the TWAIN standard, making it possible to scan from TWAIN-compliant applications. The machine also supports WIA (Windows Image Acquisition), making it possible to scan from the "Scan and Camera Wizard" in Windows XP. See the Online Manual for the procedures for TWAIN and WIA scanning. For information on TWAIN and WIA settings, see the help file for the scanner driver or Windows Help.

OPERATION IN COPY, PRINTER, AND SCANNER MODES

Some operations cannot be performed simultaneously when the machine is being used in printer mode, copy mode, or scanner mode.

Modes		Copying	Printing	Scanning from a computer	Scanning from the machine
Copy	Copy key input	Yes	Yes	Yes	No
	During copying	Yes*1	No*2	No	No
Printer	During printing	Yes*3	No	Yes*4	Yes*5
Scanner	During scan preview/ during scanning	No	No*6	No	No

*1 Can be used after pressing the [INTERRUPT] key.

*2 Printing will begin when the [CLEAR ALL] key (CA) is pressed after the copy job is finished, or when the [ON LINE] key is pressed to switch the machine online. Printing will also begin after the set auto clear time elapses, or after 60 seconds if auto clear is disabled.

*3 The print job is paused and copying begins. However, automatic two-sided copying is not possible. A two-sided print job will not be paused and copying will not begin until the job is finished.

*4 Scanning is possible when the machine and computer are connected using both the parallel and USB ports, and printing is set to take place using the parallel port in the printer driver. In this case the scan job is stored and scanning begins when the print job is finished.

*5 The scan job is stored and scanning begins when the print job is finished.

*6 The print job is stored in the computer and printing begins when the scan job is finished.

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5

Chapter 5
USER SETTINGS

This chapter explains how to set the automatic exposure level, toner save mode, and the user programs, which are custom settings that control fine points of the machine's operation.

ADJUSTING THE AUTOMATIC EXPOSURE LEVEL

The exposure level used in automatic exposure adjustment, which automatically adjusts the copy exposure according to the original, can be adjusted. If copies tend to be too dark or too light when automatic exposure adjustment is used, follow the steps below to adjust the automatic exposure level.
The automatic exposure level can be adjusted separately for the document glass and the SPF/RSPF.

> **Note**
> • When the automatic exposure level is changed, the basic exposure for "TEXT" and "PHOTO" also changes accordingly.
> • The copy, scanner and printer functions cannot be used while the automatic exposure level is being adjusted.

1 **Place the original. (p.00)**

> **Note** To adjust the automatic exposure level in the SPF/RSPF, place the original in the SPF/RSPF. (p.00)

2 **Press the [AUTO/TEXT/PHOTO] key to select "PHOTO".**

3 **Hold down the [AUTO/TEXT/PHOTO] key until the AUTO indicator blinks.**
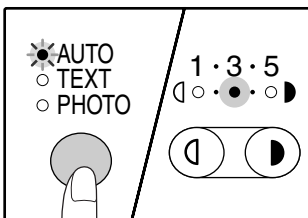
The exposure level indicators show the current setting.

4 **Press the [Light] key ( ) or [Dark] key ( ) to lighten or darken the automatic exposure level as desired.**
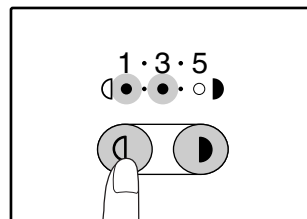
5 **Press the [AUTO/TEXT/PHOTO] key to complete the setting.**

The AUTO indicator stops blinking and lights steadily.

> **Note** After adjusting the automatic exposure level, it is recommended that you make a test copy to check the new level.

ENABLING TONER SAVE MODE

Toner save mode can be enabled to reduce toner consumption by about 10%.

1 **Press the [AUTO/TEXT/PHOTO] key to select "TEXT".**

2 **Hold down the [AUTO/TEXT/PHOTO] key until the PHOTO indicator blinks.**
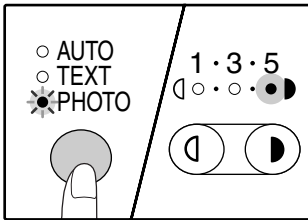
The exposure level indicators show the current setting.

3 **To enable toner save mode, press the [Light] key (◐). To disable toner save mode, press the [Dark] key (◑).**
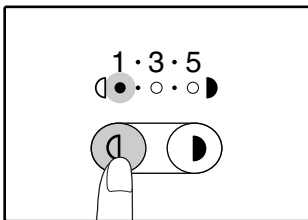
4 **Press the [AUTO/TEXT/PHOTO] key to complete the setting.**

The PHOTO indicator stops blinking and lights steadily.

CUSTOMIZING SETTINGS
(User programs)

The user programs allow you to customize the machine to match your needs.

USER PROGRAMS

Program number	Program name	Setting codes/ factory default setting (factory default setting appears in bold)	Explanation
1	Auto clear	1: OFF 2: 10 sec. 3: 20 sec. **4: 60 sec.** 5: 90 sec. 6: 120 sec.	• Auto clear automatically returns the copy settings to the initial settings (p.00) when a certain period of time elapses after a copy is made. This program is used to select the period of time. Auto clear can also be disabled.
2	Preheat mode	**1: 20 sec.** 2: 60 sec. 3: 90 sec. 4: 120 sec.	• If the machine is not used for a certain period of time with the power on, preheat mode automatically lowers the temperature of the heater in the fusing unit to save power. This program is used to select the period of time. Preheat mode can also be disabled. • When preheat mode turns on, the POWER SAVE indicator lights up.
3	Auto power shut-off time setting	**1: 5 min.** 2: 30 min. 3: 60 min. 4: 120 min. 5: 240 min.	• If the machine is not used for a certain period of time with the power on, auto power shut-off automatically turns off the power to the fusing unit, enabling more power to be saved than with preheat mode. This program is used to select the period of time. • When auto power shutoff activates, the POWER SAVE indicator lights up and all other indicators go off.
4	Stream feeding mode[*1]	**0: OFF** 1: ON	• When copying using the SPF/RSPF, during the period of time that the SPF/RSPF indicator blinks after an original has been scanned (about 5 seconds), a subsequent original can be placed and automatically fed into the machine.
5	Auto power shut-off	0: OFF **1: ON**	• Use this setting to enable or disable auto power shut-off.
6	2 IN 1/4 IN 1 borderline setting[*2]	**1: OFF** 2: Solid line 3: Broken line	• When copying multiple originals onto a single sheet of paper (2 IN 1/4 IN 1 copy), this function can be used to print a solid or broken borderline around each original image.

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Program number	Program name	Setting codes/ factory default setting (factory default setting appears in bold)	Explanation
7	Rotation copying*2	0: OFF **1: ON**	• When the auto paper select function is enabled and there is no paper that is the same size as the original and loaded in the same orientation, this function will automatically select paper of the same size that is loaded in the opposite orientation, and rotate the image 90 degrees so that it is copied on the paper in the correct orientation. • When the auto ratio select function is operating and the original and paper are loaded in opposite orientations, this function rotates the image so that it is copied on the paper in the correct orientation.
8	Auto paper selection	0: OFF **1: ON**	• This function automatically selects paper that is the same size as the original placed in the SPF/RSPF, or the same size as that selected with the [ORIGINAL SIZE] key (only for sizes 11" x 14", 8-1/2" x 14", 8-1/2" x 11", 8-1/2" x 11"R, and 5-1/2" x 8-1/2"). The function can be disabled.
9	Auto tray switching	0: OFF **1: ON**	• If the paper runs out during printing and there is paper of the same size and orientation in another tray, this function automatically switches to that tray (excluding the bypass tray). The function can be disabled.
10 to 15	Auditing mode	–	See "Enabling Audit Mode". (p.00)
16	Erase width adjustment*2	1: 0" (0 mm) 2: 1/4" (5 mm) **3: 1/2" (10 mm)** 4: 3/4" (15 mm) 5: 1" (20 mm)	• Use this setting to set the width of erasure of shadows that appear around the edges and at the binding margin when a book or similar original is copied.
17	Layout in 2 IN 1 copy*2	**1: Pattern 1** 2: Pattern 2	• Use this setting to select the layout pattern when two original pages are copied onto a single sheet of paper (see page 00 for the layout patterns).
18	Layout in 4 IN 1copy*2	**1: Pattern 1** 2: Pattern 2 3: Pattern 3 4: Pattern 4	• Use this setting to select the layout pattern when four original pages are copied onto a single sheet of paper (see page 00 for the layout patterns).
19	Offset of paper output tray	0: OFF **1: ON**	• When enabled, this function offsets the position in the output tray of interrupt copy jobs and sets of copies during sort/group copy.
20	Image rotation in duplex copying*3	**0: OFF** 1: ON	• When an original is placed horizontally, this function is used to invert the top and bottom of the image so that the tops and bottoms of the copies match.
21	Location of the margin*2, *3	**1: Left edge** 2: Top edge	• Use this setting to switch between the margin at the top edge and the margin at the left edge.
22	Margin width*2	1: 0" (0 mm) 2: 1/4" (5 mm) **3: 1/2" (10 mm)** 4: 3/4" (15 mm) 5: 1" (20 mm)	• Use this setting to set the margin width.

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| Program number	Program name	Setting codes/ factory default setting (factory default setting appears in bold)	Explanation
23	Resolution in Auto/ Text mode	**1: 300dpi** 2: 600dpi	• The copy resolution in auto and text mode is normally 300 dpi. If high-quality copies are preferred, use this setting to change the resolution to 600 dpi.
24	Memory allocated to printer mode	1: 30% 2: 40% **3: 50%** 4: 60% 5: 70%	• Use this to change the proportion of machine memory used for printer mode.
25	Key auto repeat	0: OFF **1: ON**	• Use this setting to select whether or not holding down a key causes repeated input of the key. For keys that normally cause a set value to increase when held down (for example, holding down the [ZOOM] key (⤨, ⤧)), this program can be used to have the set value not change when the key is held down.
26	Key press time	**1: Minimum** (current response speed) 2: 0.5 sec. 3: 1.0 sec. 4: 1.5 sec. 5: 2.0 sec.	• Use this setting to select how long a key must be pressed for the input to be accepted. By selecting a longer time, you can prevent settings from being changed by the accidental pressing of a key.
27	Audible signals volume	**1: Low** (current volume) 2: High 3: OFF	• This sets the volume of beep signals. (p.00)
28	Base setting beep signal	**0: OFF** 1: ON	• Use this to sound a beep when a base setting is selected.
29	Number of copies limit	**1: 99 copies** 2: 999 copies	• Use this setting to change the maximum number of copies that can be selected from 99 to 999.
30	Use close paper size	**0: OFF** 1: ON	• When this function is enabled, printing in printer mode will automatically continue using a different size of paper if the specified size of paper runs out in all trays. This feature does not function in copy mode.
31	Default tray setting	**1: Tray 1** 2: Tray 2 3: Tray 3 4: Tray 4 5: Bypass tray	• Use this program to select a default tray. This tray is automatically selected each time the power is turned on or each time the machine reverts to the initial settings.
32	Default exposure mode	**1: AUTO** 2: TEXT 3: PHOTO	• Use this program to set "AUTO", "TEXT", or "PHOTO" as the default exposure mode.

[1] On models with a SPF/RSPF.
[2] On models with a dual function board.
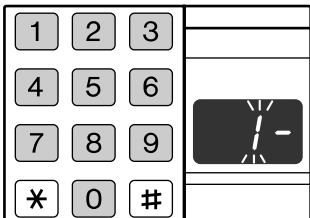[3] On models with automatic two-sided copying.

SELECTING A SETTING FOR A USER PROGRAM

1 **Hold down the [Light] key ( ) until the alarm indicators (, , , ,) blink.**
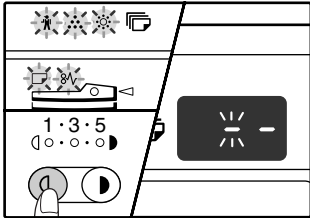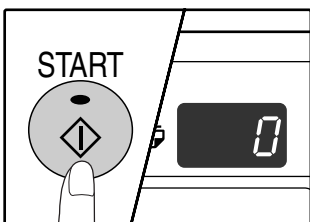
"- -" appears in the display.

2 **Enter the program number with the numeric keys.**

- See "USER PROGRAMS" (p.00 to p.00) for the program numbers.
- The selected program number blinks.
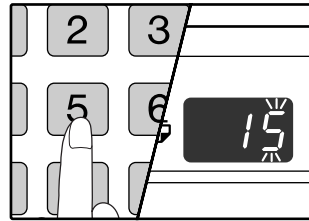- To select "Auto clear", press the [1] key.

Note If you enter the wrong number, press the [CLEAR] key (C) and then enter the correct number.

3 **Press the [START] key ( ).**

START

- The selected program number stops blinking and lights steadily.
- The currently selected setting code blinks in the 1st digit of the display.
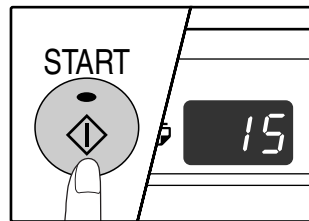
4 **Enter the desired setting code by pressing a numeric key.**

- For the setting codes, see "USER PROGRAMS". (p.00 to p.00)
- The selected setting code blinks.
- To select 90 seconds, press the [5] key.

Note If you enter the wrong number, press the [CLEAR] key (C) and return to step 2.

5 **Press the [START] key ( ).**

START

The selected setting code stops blinking and lights steadily.

Note To select a setting for another user program, press the [CLEAR] key (C) and then return to step 2.

6 **Press the [Light] key ( ) to complete the settings.**

The alarm indicators (, , , ,) go off and the display returns to the number of copies display.

Audible signals (key entry beep, invalid key beep, base setting beep)

The machine sounds three different types of beep signals: a key entry beep that sounds when a valid key is pressed, an invalid key beep that sounds when an invalid key is pressed, and a base setting beep that sounds when a base setting is selected. The base setting beep is initially disabled. If you wish to enable the base setting beep, see "Base setting beep signal" on page 00. If you wish to change the volume of the beep signals or disable them, see "Audible signals volume" on page 00.
The beep patterns of each type of beep signal are as follows:

Key entry beep .... One beep
Invalid key beep ....Two beeps
Base setting beep .... Three beeps

Base settings

The base settings are preset standard selections for each copy setting. The base settings are as follows:

Copy ratio 100%
Light and Dark indicator 3
Paper feed location .... tray 1
ORIGINAL SIZE ....8-1/2" x 11"
AUTO/TEXT/PHOTO .... AUTO

SETTINGS FOR AUDITING MODE

AUDITING MODE

When auditing mode is enabled, a count is kept of the number of copies made by each account (up to 20 accounts can be established), and the counts can be displayed and totaled as necessary. In auditing mode, the display shows "- - -", and this indicates that a 3-digit account number must be entered in order to use the machine for copying.

> ✎**Note** The administrator of the machine should complete the following settings:
> • Enable auditing mode (p.00)
> • Store account numbers (p.00)

AUDITING MODE SETTINGS

Program number	Program name	Setting codes/ factory default settings (factory default settings are indicated in bold)	Explanation
10	Enabling/ disabling auditing mode	**0: OFF** 1: ON	Use to enable or disable auditing mode. Auditing mode is initially disabled.
11	Account number entry	None	Use to set up account numbers. Up to 20 accounts can be established.
12	Account number change	None	Use to change an account number.
13	Account number deletion	**0: Delete single account** 1: Delete all accounts	Use to delete an account number. A single account number can be deleted, or all account numbers at once.
14	Number of copies per account	None	This displays the number of copies made by each account. The maximum count is 49,999. If this number is exceeded, the count will start over from 0.
15	Resetting account	**0: Reset single account** 1: Reset all accounts	Use to reset the copy count of an account to 0. The copy count of a single account or of all accounts can be reset.

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SELECTING AUDITING MODE SETTINGS

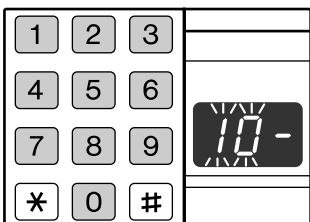## 1 Hold down the [Light] key (◎) until the alarm indicators (🏃, ⁝⁝, ☼, 🖙, 8ᐱ) blink.
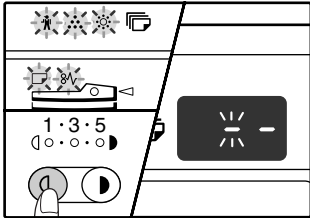
"- -" appears in the display.

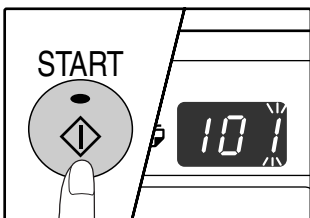## 2 Enter the program number with the numeric keys.

- See "AUDITING MODE SETTINGS" (p.00 to p.00) for the program numbers.
- The selected program number blinks.
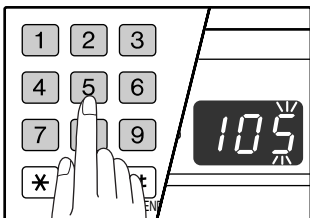- To select "Auditing Mode", enter "10".

> **Note** If you enter the wrong number, press the [CLEAR] key (C) and then enter the correct number.

3 Press the [START] key (◉).

- The selected program number stops blinking and lights steadily.
- The currently selected setting code blinks in the 1st digit of the display.

4 Enter a setting for the selected program.

- For the procedure for each setting, see "AUDITING MODE SETTINGS". (p.00)
- For the setting codes, see "AUDITING MODE SETTINGS". (p.00 to p.00)
- The selected setting code blinks.

> **Note**
> - If you enter the wrong number, press the [CLEAR] key (C) and return to step 2.
> - If "E" (error code) blinks in the first digit of the display, press the [CLEAR] key (C) and return to step 2.

5 Press the [Light] key (◎) to complete the settings.

The alarm indicators (🏃, ⁝⁝, ☼, 🖙, 8ᐱ) go off and the display returns to the number of copies display.

Enabling/disabling auditing mode

1 **Press the [1] key to enable auditing mode or the [2] key to disable it, and then press the [START] key (⊚).**

Note: After enabling auditing mode, use "Account number entry" to establish account numbers for each account (up 20 accounts can be established).

2 **Press the [CLEAR] key (C).**

Account number entry

If 20 accounts have already been established, the error code "11E" will appear in the display.

1 **Use the numeric keys to enter a 3-digit number (any number except "000") and then press the [START] key (⊚).**

Note:
- If you enter "000" or a number that has already been stored, the number will blink in the display. Enter a different number. (Up to 20 accounts can be established.)
- Repeat the same procedure to enter any other account numbers that you wish to establish.
- Keep a record of what group is using each account number (account names cannot be stored, so keep a record to prevent confusion when totaling account counts).

2 **Press the [CLEAR] key (C).**

Account number change

Use this procedure to change an account number. If no account numbers have been established, the error code "12E" will appear in the display.

1 **Press the [Copy ratio display] key (%) to select the account number that you wish to change, and then press the [START] key (⊚).**

The display will show 3 blinking hyphens "- - -".

2 **Press the numeric keys to enter a new account number (any 3-digit number except "000"), and then press the [START] key (⊚).**

Note:
- If you enter "000" or a number that has already been stored, the number will blink in the display. Enter a different number.
- To change another account number, repeat steps 1 and 2.

3 **When finished, press the [CLEAR] key (C).**

Account number deletion

Use this procedure to delete account numbers. A single account number can be deleted, or all account numbers at once.

If no account numbers have been established, the error code "13E" will appear in the display.

[Deleting all accounts at once]

Press the [1] key and then press the [START] key (⊚).

All account numbers will be deleted.

[Deleting a single account]

1 **Press the [0] key.**

2 **Select the account number to be deleted with the [Copy ratio display] key (%) and then press the [START] key (⊚).**

Note: To delete another account number, enter the program number for "Account Number Deletion" (13) once again in step 2 of "SELECTING AUDITING MODE SETTINGS" (p.00), and repeat the deletion procedure.

Number of copies per account

Use this procedure to display the copy count of each account. If no account numbers have been established, the error code "14E" will appear in the display.

1 **Select the account number with the [Copy ratio display] key (%).**

2 **Hold down the [0] key.**

The copy count of the selected account will appear in the display while you hold down the [0] key. The count is displayed sequentially as shown below.

Example: 12,345 copies
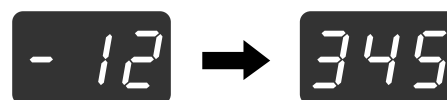
Note: To view the copy count of another account, repeat steps 1 and 2.

3 **When finished, press the [CLEAR] key (C).**

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Resetting account

The copy count of a single account or of all accounts can be reset to 0. If no account numbers have been established, the error code "15E" will appear in the display.

[Resetting all accounts]

Press the [1] key and then press the [START] key (⑤).

The copy counts of all accounts will be deleted.

[Resetting a single account]

1 **Press the [0] key.**

2 **Select the account number to be reset with the [Copy ratio display] key (⑧) and then press the [START] key (⑤).**

Note To reset another account, enter the program number for "Resetting account" (15) once again in step 2 of "SELECTING AUDITING MODE SETTINGS" (p.00), and repeat the resetting procedure.

Copying when auditing mode is enabled

When auditing mode is enabled, "- - -" appears in the display.
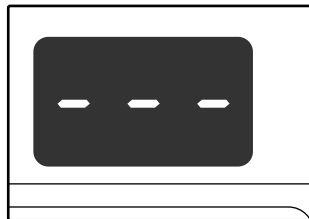
1 **Enter your 3-digit account number with the numeric keys.**

When you enter your account number, "0" appears in the display to indicate that copying is possible.

Note If you enter an incorrect number, press the [CLEAR] key (C) and then enter the correct number.

2 **Follow the appropriate steps to make the copy.**

Note If you are performing an interrupt copy (p.00), be sure to press the [INTERRUPT] key when finished to exit interrupt mode.

3 **When finished, press the [AUDIT CLEAR] key.**

AUDIT CLEAR

Note If a misfeed occurs or the paper runs out during copying, your session will not end even if the [AUDIT CLEAR] key is pressed.

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Chapter 6
TROUBLESHOOTING

This chapter describes troubleshooting and misfeed removal.

TROUBLESHOOTING

If you experience difficulty using the machine, check the following troubleshooting guide before calling for service. Many problems can be easily resolved by the user. If you are unable to solve the problem using the troubleshooting guide, turn off the power switch and unplug the machine.

MACHINE/COPYING PROBLEMS

PRINTING AND SCANNING PROBLEMS

MACHINE/COPYING PROBLEMS

The following problems are related to the general operation of the machine and copying.

Problem	Cause and solution	Page
The machine does not operate.	**Is the machine plugged into a power outlet?** → Plug the machine into a grounded outlet.	00
	Power switch ON? → Turn the power switch ON.	00
	Is the POWER SWITCH indicator blinking? → Indicates that the machine is warming up. Copies cannot be made until the machine has finished warming up.	00
	Is the front cover completely closed? → Close the front cover.	00
Copies are too dark or too light.	**Did you select the correct original type for the original?** → Select AUTO with the [AUTO/TEXT/PHOTO] key or press the light and dark keys to manually select an appropriate exposure. → If the copy is too light or too dark even though AUTO was selected with the [AUTO/TEXT/PHOTO] key, adjust the automatic exposure level.	00
Blank copies.	**Is the original placed face up in the SPF/RSPF or face down on the original table?** → Place the original face up in the SPF/RSPF or face down on the original table.	00
The paper size used for the copy is different from the selected paper size. (part of the image is cut off or there is too much blank space.)	**Was the original placed in the correct position?** → Place the original correctly.	00
	Was an appropriate ratio used for the size of the original and the size of the paper? → Press the [AUTO IMAGE] key to have the copy made using the appropriate ratio for the original and paper.	00
	Was the paper size changed in a tray without changing the paper size setting? → Be sure to change the paper size setting when changing the paper size in a tray.	00
Do wrinkles appear in the paper or does the image disappear in places?	**Is the paper outside of the specified size and weight range?** → Use copy paper within the specified range.	00
	Paper damp? → Replace with dry copy paper. During periods when the machine is not used for a long time, remove the paper from the tray and store it in a dark place in a bag to prevent moisture absorption.	00

Problem	Cause and solution	Page
Paper misfeed.	**Identify the location of the misfeed and remove the misfed paper.** → To remove the misfeed, see "MISFEED REMOVAL".	00
	Is the paper outside of the specified size and weight range? → Use copy paper within the specified range.	00
	Paper damp? → Replace with dry copy paper. During periods when the machine is not used for a long time, remove the paper from the tray and store it in a dark place in a bag to prevent moisture absorption.	00
	Paper properly installed? → Make sure the paper is properly installed.	00
	Pieces of paper inside machine? → Remove all pieces of misfed paper.	00
	Is too much paper loaded in the tray? → If the stack of paper is higher than the indicator line on the tray, remove some of the paper and reload so that the stack does not exceed the line.	00
	Do some sheets of paper stick together? → Fan the paper well before loading it.	00
	Do the guides on the bypass tray match the width of the paper? → Adjust the guides to match the width of the paper.	00
	Is the bypass tray extension pulled out? → When loading a large size of paper, pull out the extension.	00
	Is the bypass paper feed roller dirty? → Clean the roller.	00
	Is 5-1/2"x8-1/8" paper loaded in paper tray 2 or in the 250-sheet or 2 x 250-sheet paper feed unit? → 5-1/2" x 8-1/8" size paper must be loaded in paper tray 1 or the bypass tray.	00
Original size not selected automatically. (When the SPF/RSPF is installed.)	**Does the original include any large black solid areas?** → If the original includes any large black solid areas, the original size may not be detected automatically. Use the [ORIGINAL SIZE ENTER] key to select the paper size.	00
	Is the machine directly exposed to sunlight? → Install in a location that is not exposed to sunlight.	00
Copies are smudged or dirty.	**Is the underside of the document cover/SPF/RSPF dirty?** → Clean regularly.	00
	Original smudged or blotchy? → Use a clean original.	00
White or black lines appear on copies.	**Is the scanner glass in the SPF/RSPF dirty?** → Clean the long, narrow glass in the SPF/RSPF.	00
	Is the transfer charger dirty? → Clean the transfer charger.	00

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Problem	Cause and solution	Page
Paper size for a paper tray cannot be set.	**Is copying, or printing being performed?** → Set the paper size after copying or printing is complete.	00
	Has the machine stopped temporarily due to running out of paper or a misfeed? → Load paper or remove the misfeed, and then set the paper size.	00
	Is an interrupt copy job in progress? → Set the paper size after the interrupt copy job is finished.	00
	Is data being held in memory? → The original data indicator and the display will blink when data is held in memory because a copy job that uses automatic two-sided copying, dual page copy, 2 IN 1 / 4 IN 1 copy, or sort/group copy has stopped before it is finished (when the Dual function board is installed). → When the Dual function board is not installed, the display will blink when data is held in memory because a copy job has stopped before it is finished. Finish the interrupted copy job or clear the data from memory.	00
A copy job stops before it is finished.	**Is the output tray full?** → Long copy runs are automatically paused every 250 copies. Remove the copies in the output tray and press the [START] key (Ⓢ) to resume copying.	00
	Does "FUL" appear in the display? → The memory became full during sort/group copy or 2 IN 1 / 4 IN 1 copy. Copy only the originals that have been scanned to that point, or cancel the job and clear the data from memory.	00
	Is the tray out of paper? → Load paper.	00
Is the POWER SAVE indicator lit?	**Are any other indicators lit?** → If other indicators are lit, the machine is in preheat mode. Press any key on the operation panel to resume normal operation.	00
	Is only the POWER SAVE indicator lit? → If only the POWER SAVE indicator is lit, the machine is in auto power shut-off mode. Press the [START] key (Ⓢ) to resume normal operation.	00
Alarm indicators (⚡, ⋮⋮, ☼, ▭, 8⌄) are lit or blinking.	**See "INDICATORS AND DISPLAY MESSAGES" to check the meaning of the alarm indicators and error messages in the display, and take appropriate action.**	00
Lighting fixture flickers.	**Is the same power outlet used for the lighting fixture and the machine?** → Connect the machine to a power outlet which is not used for other electric appliances.	00

PRINTING AND SCANNING PROBLEMS

Problem	Cause and solution	Page
The machine does not print. (DATA indicator does not blink.)	**Is the machine set to ONLINE mode?** → Press the [ON LINE] key to turn on the ON LINE indicator.	00
	Correct printer cable properly connected between the machine and your computer? → Check both ends of the printer cable and make sure you have a solid connection. Try a known good cable. For information on cables, see "SPECIFICATIONS".	00
The machine does not print. (DATA indicator was blinking.)	**Copy job being performed?** → Wait until the copy job is complete.	00
Printing is slow.	**Simultaneous use of two or more application software programs?** → Start printing after quitting all unused application software programs.	00
	Is the machine connected to a USB 1.1 port (when the Dual function board is installed)? → If the printer driver for the Dual function board is installed, the machine must be connected to a USB 2.0 port to attain full printing speed.	00
The printed image is light and uneven.	**Is the paper loaded so that printing takes place on the front side of the paper?** → Some paper types have a front and back side. If the paper is loaded so that printing takes place on the back side, toner will not adhere well to the paper and a good image will not be obtained.	00
	Does the paper size setting in the printer driver match the size of the loaded paper? → Click the Paper tab in the printer driver and make sure the paper size setting is the same as the paper loaded in the machine.	00
The printed image is dirty.	**Are you using paper that is outside the specified size and weight range?** → Use copy paper within the specified range.	00
	Paper damp? → Replace with dry copy paper. During periods when the machine is not used for a long time, remove the paper from the tray and store it in a dark place in a bag to prevent moisture absorption.	00
	Did you set sufficient margins in the paper settings of your application? → The top and bottom of the paper may be dirty if the margins are set outside of the specified print quality area. → Set the margins in the software application within the specified print quality area.	00

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Problem	Cause and solution	Page
Is the printed image skewed or does it run off the paper?	**Is the paper size loaded in the tray the same as that specified in the printer driver?** → Check if the "Paper Size" options suit the size of the paper loaded in the tray. → If the "Fit To Page" setting is activated, make sure that the paper size selected from the drop-down list of the "Fit To Paper Size" option is the same as the size of the loaded paper.	00
	Is the orientation of document setting correct? → Click the "Paper" tab in the printer driver setup screen, and verify if the "Image Orientation" option is set to your requirements.	00
	Paper properly loaded? → Make sure the paper is properly loaded.	00
	Did you correctly specify the margins for the application in use? → Check the layout of the document margins and the paper size settings for the application you are using. Also check if the print settings are specified correctly to suit the paper size.	00
	Is the port setting correct? → If another printer driver is already installed, it is possible that the port setting is not correct. Open the printer driver and correctly configure the port setting for the port that is actually being used.	00
Lines in tables are not aligned correctly and gaps appear.	**Are the printer driver settings appropriate for both the paper and the print job?** → "Draft", "Normal" or "Photo" can be selected for the print quality in the "Advanced" tab of the printer driver setup screen. When "Photo" is selected, you can click the "Image Adjustment" button and adjust the brightness and contrast in the dialog box that appears. Adjust these settings appropriately for your print data and try printing again.	00
	Is your machine selected correctly in the current application for the print job? → When choosing "Print" from the "File" menu located in applications, be sure you have selected "SHARP AR-XXXX" (where XXXX is the model name of your machine) printer displayed in the "Print" dialog box.	00

	Has the printer driver been installed properly?
	→ Follow these steps to check and see if the printer driver is installed.
	  1 Click the "start" button, click "Control Panel", click "Printers and Other Hardware", and then click "Printers and Faxes". (On Windows 95/98/Me/NT 4.0/2000, click the "Start" button, select "Settings" and then click "Printers".)
	  2 Is the "SHARP AR-XXXX" printer driver icon shown (where XXXX is the model name of your machine)?
	  3 If the icon is shown but you still cannot print, the printer driver may not have been installed correctly. In this case, delete SHARP Personal MFP series software and then reinstall it.
		00

Problem	Cause and solution	Page
	Is the underside of the document cover/SPF/RSPF dirty? → Clean regularly.	00
	Original smudged or blotchy? → Use a clean original.	00
	Have you specified a suitable resolution? → Make sure that the resolution setting in the scanner driver is appropriate for the original.	00
	Are you scanning a large area (for example an entire 11" x 14") at high resolution? → If you attempt to scan a large area at high resolution and there is insufficient memory in the machine to hold the scanned data, scanning will take place at a lower resolution and the scanner driver will enhance the data to make up for the lower resolution. However, the quality of the enhanced image will not be as high as if scanning took place at the higher resolution. Use a lower resolution setting, or scan a smaller area.	00
Poor scanning quality.	**Have you specified a suitable value for the "B/W Threshold" setting?** → If you are scanning with a TWAIN-compliant application and are using "Mono 2 gradation (no Green)","Mono 2 gradation (no Red)" or "Mono 2 gradation (no Blue)" mode, make sure that a suitable value is specified for the "B/W Threshold" setting. A larger threshold value makes your output darker, while a small threshold value makes it lighter. To adjust the threshold automatically, click the "Auto Threshold" button on the "Image" tab of the "Custom Settings" screen.	00
	Are the brightness and contrast settings suitable? → If you are scanning with a TWAIN-compliant application and the resulting image has unsuitable brightness or contrast (for example it is too bright), activate the "Auto Brightness/Contrast Adjustment" setting on the "Main" tab of the "Custom Settings" screen. Click the "Brightness/Contrast" button to adjust the brightness and the contrast while viewing the scanned output image on the screen. If you are scanning with a WIA-compliant application or the "Scanner and Camera Wizard", click "Adjust the quality of the scanned picture" or the "Custom settings" button, and adjust the brightness and contrast in the screen that appears.	00
	Have you placed the original straight? → Place the original straight on the original table.	00
	Is the original placed in the correct position? → Place the original in the correct position.	00

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Problem	Cause and solution	Page
Unable to Scan the Image.	**If scanning is not possible, shut down your computer, turn off the machine's power switch, and unplug the machine's power cord. Next, start your computer, restore power to the machine, and try scanning again. If scanning is still not possible, check the following items.**	-
	Is your application TWAIN/WIA compliant? → If your application is not TWAIN/WIA compliant, scanning will not be possible. Make sure your application is TWAIN/WIA compliant.	00
	Have you selected the scanner driver of the machine in your application? → Make sure that the machine's scanner driver is selected in your TWAIN-compliant application.	00
	Have you specified all scanning preferences appropriately? → Scanning a large area in full color at high resolution results in a large amount of data and extended scanning times. The scanning preferences should be set appropriately for type of original to be scanned, i.e., Text, Text/Graphics, Photograph, Color, or Black & White.	00
	Is there enough computer memory? → Your computer may not have enough available memory to hold the document you want to scan. Lower the scan resolution. To scan a 11" x 17" original in full color at 600 dpi, the Dual function board and the 256 MB memory option are required.	00
	Do you have Administrator rights? → To use the machine to scan into Windows 2000/XP, you must log on as an Administrator.	00

Notice page printed

If you find that a notice page has been printed at the end of a print job, the print data received from the computer has not been printed as specified. Fix the problem as explained below and then try printing again.

What to do when a notice page is printed, 1

```
***************************************************
                    Notice Page
***************************************************

   The incorrect driver is chosen, a normal
output was not able to be excuted.
   Please select the appropriate driver.

   Please refer to the operation manual for
the solution method.
```

The above notice page is printed if you attempt to print using the print driver for the Dual function board when the Dual function board is not installed. Change to the standard print driver and print again. For information on changing printer drivers, see "Basic Printing" in the online manual.

What to do when a notice page is printed, 2

```
***************************************************
                    Notice Page
***************************************************

   The IMC memory full error had occurred,
a normal output was not able to be executed.

   Please refer to the operation manual for
the solution method.
```

The above notice page is printed when a print job containing more data than can be held in the memory of the dual function board is sent to the machine. To fix the problem, disable the ROPM function. If you need to use the ROPM function, set the print quality in the printer driver to "Draft", or increase the amount of memory on the Dual function board.

> **Note**
> The IMC memory is used to temporarily hold print data when the ROPM function is used. This memory is also used to temporarily hold the original image during copying. The proportion of IMC memory allocated to the printer function can be changed in the user programs of copy mode. See the user program "Memory allocated to printer mode". (p.00) It is also possible to expand memory by adding on a commercially available memory module. For more information on expansion memory, consult your dealer.

Removing the software

If you need to remove the software, follow these steps.

1 **Click the "start" button, and then click "Control Panel".**

On Windows 95/98/Me/NT 4.0/2000, click the "Start" button, select "Settings", and then click "Control Panel".

2 **Click "Add or Remove Programs".**

On Windows 95/98/Me/NT 4.0/2000, double-click the "Add/Remove Programs" icon.
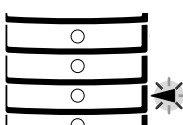
3 **Select the printer/scanner driver for the machine and Button Manager from the list, and remove the software.**

For more information, refer to your operating manual or to the help files for your operating system.

6

INDICATORS AND DISPLAY MESSAGES

If one of the following indicators lights up or one of the following messages appears in the display, check the meaning of the indicator or message in the following table and take appropriate action.
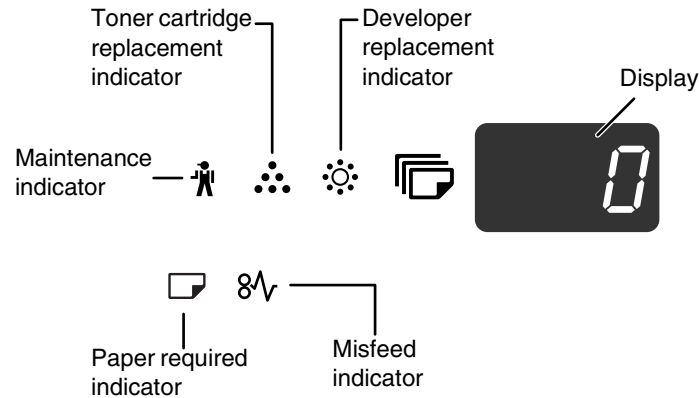
Indicator/message			Cause and solution	Page
⚒	**Maintenance indicator**	Lights steadily	It is time for maintenance. Please contact a SHARP service center.	00
☼	**Developer replacement indicator**	Lights steadily	It is time for maintenance. Please contact a SHARP service center. After the developer replacement indicator lights up, copies can only be made one at a time.	00
∴	**Toner cartridge replacement indicator**	Lights steadily	The toner cartridge is almost out of toner. Contact a SHARP service center to purchase a new toner cartridge.	00
		Blinks	The toner cartridge is out of toner. Replace the toner cartridge with a new cartridge (when the indicator blinks, the machine cannot be used).	00
▭	**Paper required indicator**	Lights steadily	The tray is out of paper. Load paper. It is also possible that the tray is not inserted completely into the machine. Make sure it is inserted correctly.	00
8ᐱ	**Misfeed indicator**	Blinks	A paper misfeed has occurred. Remove the misfeed as explained in "MISFEED REMOVAL".	00
	[CH] appears in display	Lights steadily	The side cover is open. Close the side cover.	00
		Blinks	The toner cartridge is not installed correctly. Reinstall the toner cartridge. If [CH] still blinks in the display after reinstalling the toner cartridge, contact a SHARP service center.	00
E1	**Letters and numbers appear in the display**		Write down the code that appears and then unplug the power cord and contact your dealer. Tell your dealer what code appeared and the circumstances under which it appeared.	00
Misfeed location indicator lights up at the optional 2 x 250-sheet/250-sheet paper feed unit 			The side cover of the 2 x 250-sheet/250-sheet paper feed unit is open. Close the side cover.	00

MISFEED REMOVAL

When a misfeed occurs, the misfeed indicator (8ᐱ) and a misfeed location indicator (◀) will blink and the machine will automatically stop.
Check the blinking misfeed location indicator to identify the location of the misfeed and remove it.

> **✐Note** The paper may tear when you remove a misfeed. In this event, be sure to remove all torn pieces of paper from the machine, taking care not to touch the photoconductive drum (the green part). Any scratches or damage to the surface of the drum will cause dirty copies.

Misfeed in the SPF/RSPF (p.00)

Misfeed in the bypass tray (p.00)

Misfeed in paper tray 1 (p.00)
Misfeed in paper tray 2 (p.00)
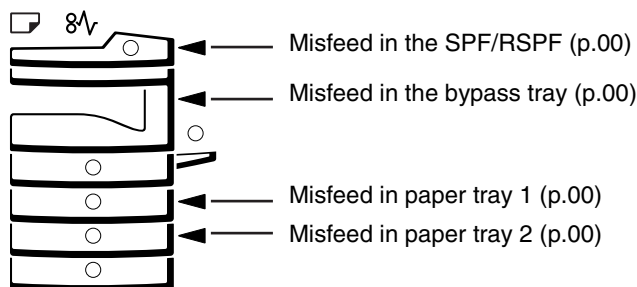
MISFEED IN THE SPF/RSPF

1 Remove the misfed original.
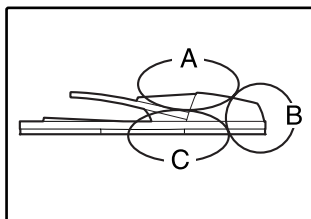
Check sections A, B, and C in the leftshows the illustration (see the next page), and remove the misfed original.

Section A
Open the feeding roller cover and remove the misfed original from the document feeder tray. Close the feeding roller cover.

Feeding roller cover
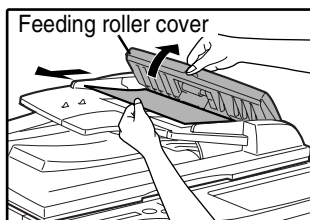
Section B
Open the SPF/RSPF and rotate the two release rollers in the direction of the arrow to feed the original out. Close the SPF/RSPF and then remove the original.

Roller
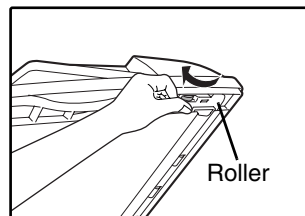
If a small original (5-1/2" x 8-1/2", etc.) is misfed, or if an original misfeed occurs in the reversing tray of the RSPF (if installed), open the document conveyor cover and remove the original. Close the document conveyor cover.

Document conveyor cover

6
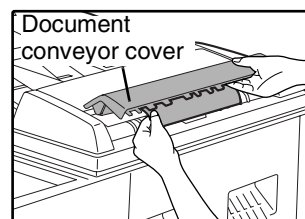
Section C
Remove the misfed original from the exit area.
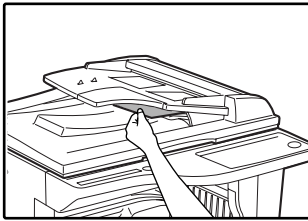
If the original cannot be easily removed from the exit area, open the moveable part of the document feeder tray and remove the original. If an RSPF is installed, remove the reversing tray and then remove the original.

Note After removing a misfed original from the exit area, be sure to attach the reversing tray securely to the exit area (when the RSPF is installed).

2 Open and close the SPF/RSPF to make the misfeed indicator stop blinking.
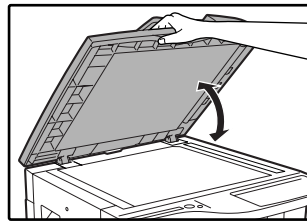
You can also make the misfeed indicator stop blinking by opening and closing the feeding roller cover or the document conveyor cover.

3 Return the originals indicated by the minus number in the display to the document feeder tray and press the [START] key (⊚).
Copying will resume from the originals that still remained when the misfeed occurred.
When an original is misfed in the SPF/RSPF, a number will appear in the display with a minus sign.
The number indicates the number of original pages that were not scanned correctly. After removing the misfeed, return the indicated number of original pages to the SPF/RSPF and resume copying.

MISFEED IN THE BYPASS TRAY

1 Pull the misfed paper out.
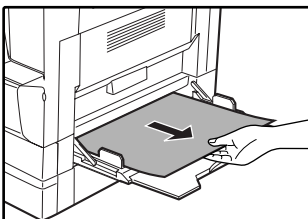
2 Lift the side cover slightly and slide it out until it stops. Close the side cover by pressing down on the handle on the cover.
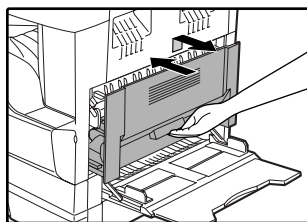
The misfeed indicator (8⋀) stops blinking and copying can be resumed.

Note
- When closing the side cover, press down on the handle.
- If the misfeed indicator (8⋀) does not stop blinking, check for torn pieces of paper in the machine.

MISFEED IN THE MACHINE

1 **Open the bypass tray. Lift the side cover slightly and slide it out until it stops.**
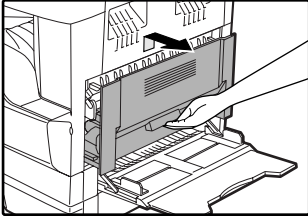
2 **Check the misfeed location. Remove the misfed paper following the instructions for each location in the illustration below.**

If paper is misfed here, go to "B. Misfeed in the fusing area".

If the misfed paper is visible side here, go to "C. Misfeed in the transport area".

If paper is misfed here, go to "A. Misfeed in the paper feed area".
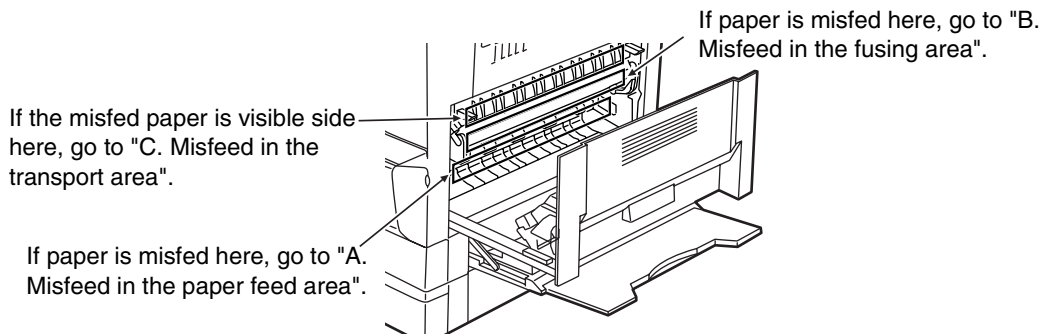
A. Misfeed in the paper feed area

1 **Push on both ends of the front cover and open it.**
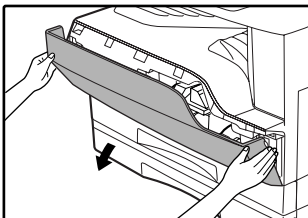
3 **Close the front cover and side cover.**
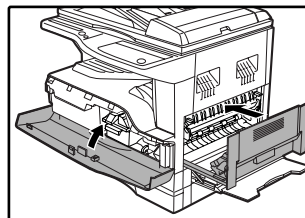
The misfeed indicator (8_V) will go out.

2 **Carefully remove the misfed paper. Turn the roller rotating knob in the direction of the arrow to assist in removing it.**
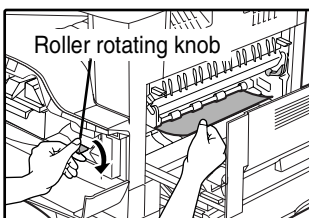
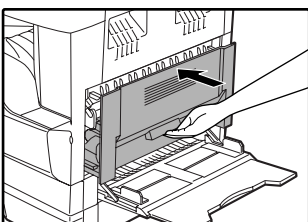Roller rotating knob

Be careful not to tear the misfed paper during removal.

⚠ Warning **The fusing unit is hot. Do not touch the fusing unit when removing misfed paper. Doing so may cause a burn or other injury.**

⚠ Caution Do not touch the photoconductive drum (green portion) when removing the misfed paper. Doing so may damage the drum and cause smudges on copies.

✎ Note
- When closing the front cover, press on both ends.
- When closing the side cover, press on the handle.
- If the misfeed indicator (8_V) does not stop blinking, check for torn pieces of paper in the machine.

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B. Misfeed in the fusing area

1 **Push on both ends of the front cover and open it.**
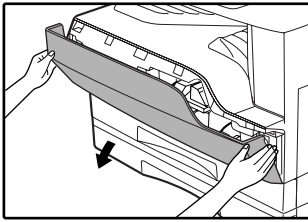
2 **Turn the roller rotating knob in the direction of the arrow.**

Roller rotating knob
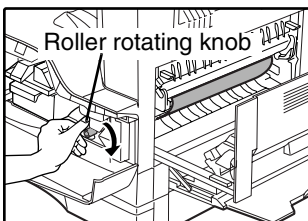
Be careful not to let unfixed toner on the misfed paper soil your hands or clothes.

3 **Carefully remove the misfed paper. Lower the fusing unit release levers to allow easier removal. Return the release levers to their operating positions.**

Fusing unit release lever

Be careful about unfixed toner on the misfed paper not to soil your hands or clothes.

⚠️ Warning	**The fusing unit is hot. Do not touch the fusing unit when removing misfed paper. Doing so may cause a burn or other injury.**

⚠️ Caution	• Do not touch the photoconductive drum (green portion) when removing the misfed paper. Doing so may damage the drum and cause smudges on copies. • Be careful about unfixed toner on the misfed paper not to soil your hands or clothes.

4 **Lift the fusing unit release lever.**
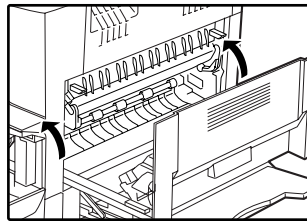
5 **Close the front cover and side cover.**
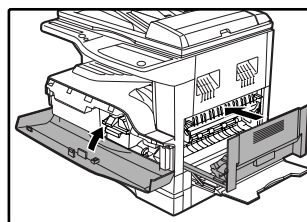
The misfeed indicator (8⌁ᵥ) will go out.

📝 Note	• When closing the front cover, press on both ends. • When closing the side cover, press on the handle. • If the misfeed indicator (8⌁ᵥ) does not stop blinking, check for torn pieces of paper in the machine.

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C. Misfeed in the transport area

1 **Open the paper guide by pressing down the projection on either side of the guide and remove the misfed paper.**
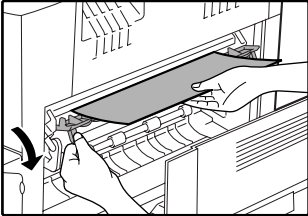
Be careful not to tear the misfed paper during removal.

⚠Warning | **The fusing unit is hot. Do not touch the fusing unit when removing misfed paper. Doing so may cause a burn or other injury.**

2 **If the misfed paper cannot be removed by the previous step but is visible in the paper output area, remove the paper by pulling it into the paper output area.**
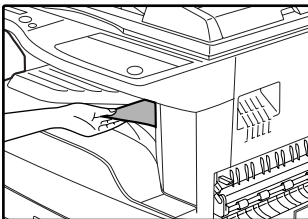
Be careful not to tear the misfed paper during removal.

3 **Close the side cover by pressing the handle on the cover.**

The misfeed indicator ($8\Lambda_V$) will go out.

✎Note
- When closing the side cover, press on the handle.
- If the paper was torn, make sure that no torn pieces remain in the machine.
- If the misfeed indicator ($8\Lambda_V$) does not stop blinking, check for torn pieces of paper in the machine.

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MISFEED IN PAPER TRAY 1

✎Note   Make sure that there is no misfed paper in the tray before pulling it out. (p.00, 00)

1   **Lift and pull out the upper paper tray 1 and remove the misfed paper.**
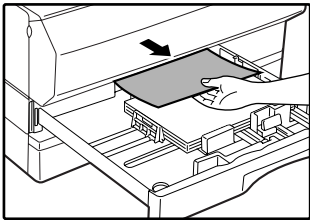
Be careful not to tear the misfed paper during removal.

2   **Close the paper tray.**
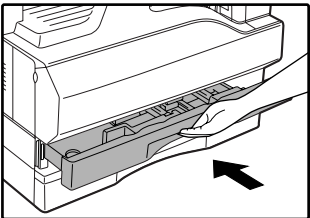
Push the paper tray in completely.

3   **Lift slightly on the side cover and slide the cover out until it stops. Close the side cover by pressing the handle on the cover.**
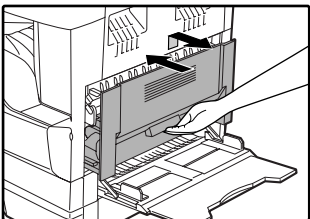
The misfeed indicator ($8\Lambda_V$) will go out.

✎Note
- When closing the side cover, press on the handle.
- If the misfeed indicator ($8\Lambda_V$) does not stop blinking, check for torn pieces of paper in the machine.

MISFEED IN PAPER TRAY 2

> **Note**
> - Make sure that there is no misfed paper in the tray before pulling it out. (p.00, p.00)
> - Use the following procedure to remove misfeeds that occur in the optional 250-sheet/250-sheet x 2 paper feed unit.

1 Open the side cover.
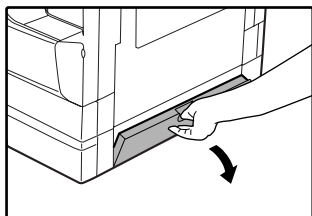
Grasp the handle to open the side cover.
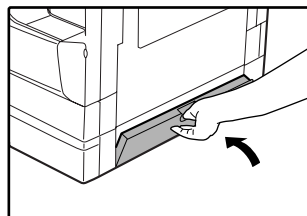
2 Remove the misfed paper.

Be careful not to tear the misfed paper during removal.

3 If the misfed paper is not seen in step 2, lift and pull out the lower paper tray 2 and remove the misfed paper.
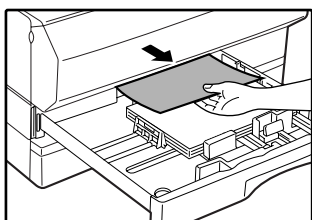
Be careful not to tear the misfed paper during removal.

4 Close the paper tray.

The misfeed indicator ($8\!\Lambda\!\!\!/$) will go out.

5 Close the side cover.

The indicator stops blinking and copying can be resumed.

> **Note**
> If the misfeed indicator ($8\!\Lambda\!\!\!/$) does not stop blinking, check for torn pieces of paper in the machine.

6
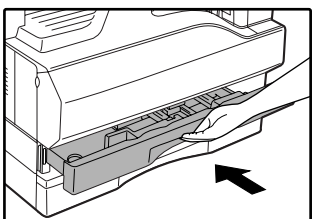
REPLACING THE TONER CARTRIDGE

When the toner cartridge replacement required indicator (⠿) lights up, the toner cartridge will need replacement soon. Obtain a new cartridge. When the toner cartridge replacement required indicator (⠿) blinks, the toner cartridge must be replaced before copying can be resumed.
Replace the toner cartridge by following the procedure below.

> **Note** When the toner cartridge replacement indicator (⠿) blinks, little toner remains and thus copies may be faint.

1 **Push on both ends of the front cover and open it.**
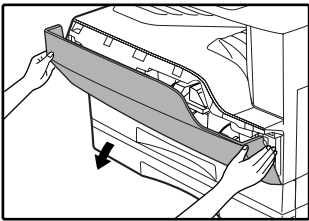
2 **Pull the toner cartridge out while pressing the lock release lever.**

Toner cartridge lock release lever
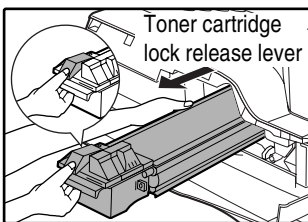
> **Caution** After removing the toner cartridge, do not shake it or tap on it. Doing so may cause toner to leak from the cartridge. Put the old cartridge immediately in the bag contained in the box of the new cartridge. Dispose of the old toner cartridge in accordance with local regulations.

3 **Remove the new toner cartridge from the bag. Grasp the cartridge on both sides and shake it horizontally four or five times. After shaking the cartridge, remove the tape.**

4 or 5 times

Shutter
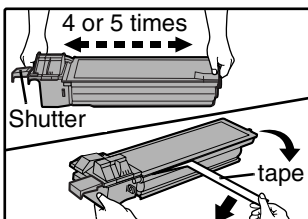
tape

> **Caution** • Grasp the grip when holding the cartridge. Do not hold the cartridge by the shutter.
> • Be sure to shake the cartridge only before the tape is removed.

4 **Insert the toner cartridge along the guides until it locks in place while pushing the lock release lever.**
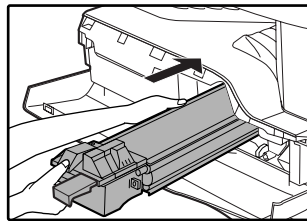
If there is any dirt or dust on the toner cartridge, remove it before installing the cartridge.

5 **Remove the tape from the shutter. Pull the shutter out of the toner cartridge.**
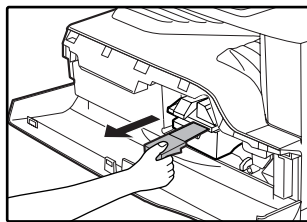
Discard the shutter.

6 **Close the front cover.**
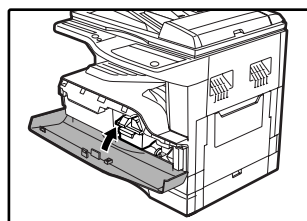
The toner cartridge replacement required indicator (⠿) will go out.

> **Note** • Even after a new toner cartridge is installed, the toner cartridge replacement required indicator (⠿) may still light up, indicating that copying cannot be resumed (toner is not fed sufficiently). In this case, open and close the front cover. The machine will feed toner again for about two minutes and then copying can be resumed.
> • Before closing the front cover, make sure that the toner cartridge is correctly installed.
> • When closing the front cover, press on both ends.
> • If the indicator does not stop blinking, check for torn pieces of paper in the machine.

Chapter 7

ROUTINE MAINTENANCE

This chapter explains how to keep the machine operating smoothly, including viewing the toner level indicator, copy count, and scan count, and cleaning the machine.
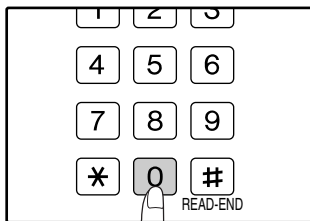
CHECKING THE TOTAL OUTPUT COUNT AND TONER LEVEL

CHECKING THE TOTAL OUTPUT COUNT

From the "0" display, you can check the total output count, total copy count, and total scan count as explained below.
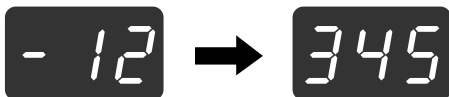
[Total output count]

Hold down the [0] key.

The total output count appears in the display while you hold down the key.

Example: Total number of pages output is 12,345.

$$- 12 \rightarrow 345$$

> **Note**
> • Each 11" x 17" size page is counted as two pages.
> • During a copy run, pressing the [0] key shows the number of completed copy pages, not the total output count.

[Total copy count]

Hold down the [READ-END] key (#).
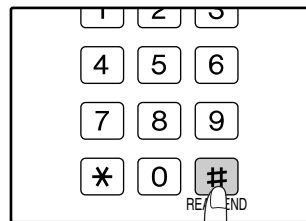
The total copy count appears in the display while you hold down the key.
The count display and counting method are the same as for the total output count.

> **Note**
> The total number of pages printed in printer mode can be calculated by subtracting the total copy count from the total output count.

[Total scan count]

Hold down the [✳] key.
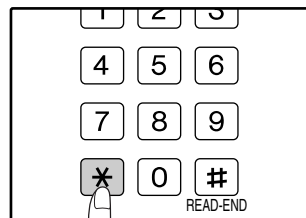
The total scan count appears in the display while you hold down the key.
The count display and counting method are the same as for the total output count.
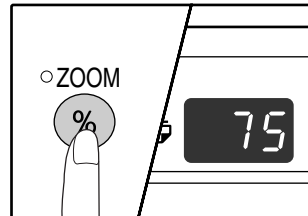
CHECKING THE TONER LEVEL

The toner level is indicated by a 6-level display. Use it as a guideline for replacing the toner cartridge.

1 Hold down the [Light] key ( ) until the alarm indicators (𝑖, ∴, ☼, ▭, 8ᐱ) blink.
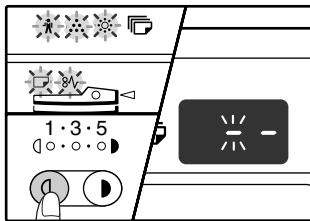
The display will show "- -".

2 Hold down the [Copy ratio display] key (%) for more than 5 seconds.

The display will show the toner level in increments of 25%.
The levels appearing in the display are "100%", "75%", "50%", "25%", "10%", "LO".

3 Press the [Light] key ( ) to return to the normal display.

The alarm indicators (𝑖, ∴, ☼, ▭, 8ᐱ) go off. The display returns to the number of copies display.

ROUTINE MAINTENANCE

CLEANING THE DOCUMENT GLASS/SPF/RSPF AND DOCUMENT COVER

If the document glass, SPF/RSPF, underside of the document cover, or the scanner for originals coming from the SPF/RSPF (the long narrow glass surface on the right side of the document glass) become dirty, the dirt may appear on copies. Always keep these parts clean.
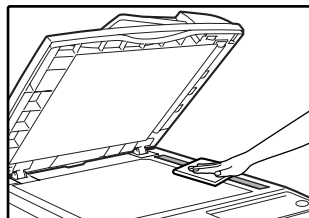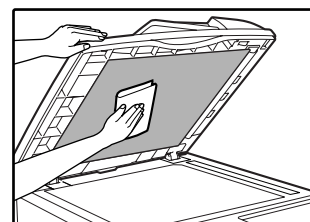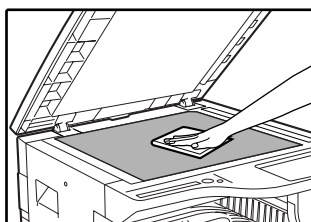
Stains or dirt on the document glass/SPF/RSPF will also be copied. Wipe the document glass, document cover portion of the SPF/RSPF and the scanning window on the document glass with a soft, clean cloth.
If necessary, dampen the cloth with water. Do not use thinner, benzene, or similar volatile cleaning agents.

⚠ **Warning** Do not use flammable spray to clean the machine. Gas from the spray may come in contact with the internal electrical components or high-temperature parts of the fusing unit, creating a risk of fire or electrical shock.

CLEANING THE BYPASS TRAY PAPER FEED ROLLER

If misfeeds occur frequently when feeding envelopes, thick paper, etc. through the bypass tray, wipe the paper feed roller at the feed slot of the bypass tray with a soft, clean cloth dampened with alcohol or water.
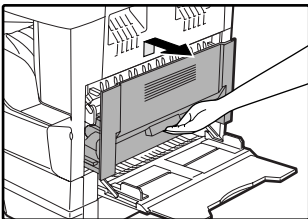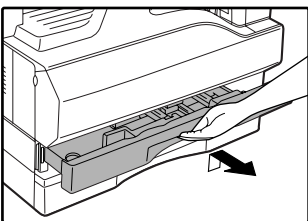
Paper feed roller
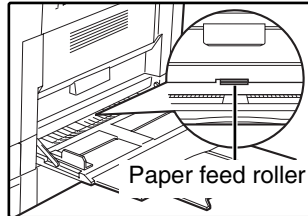
CLEANING THE TRANSFER CHARGER

If copies start becoming streaky or blotchy, the transfer charger may be dirty.
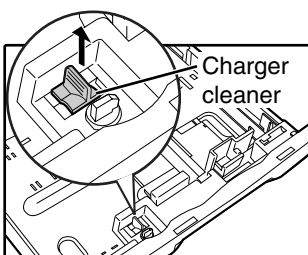Clean the charger using the following procedure.

1 **Turn the power switch off.**

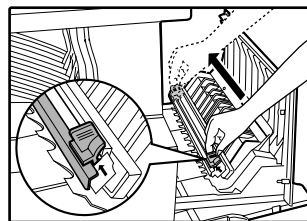**2** **Open the bypass tray. Lift the side cover slightly and slide it out until it stops.**

3 **Lift and pull out the upper paper tray.**

4 **Take the charger cleaner out by holding the tab.**

Charger cleaner

5 **Set the charger cleaner onto the transfer charger and slide the cleaner in the direction indicated by the arrow two or three times.**

If the white sheet metal is smudged with toner, wipe it with a soft, clean cloth.

Note Slide the charger cleaner from one end to the other end along the groove of the transfer charger. If the cleaner is stopped on the way, smudges on copies may occur.

6 **Return the charger cleaner to its original position. Close the upper paper tray. Close the side cover by pressing the handle on the cover.**
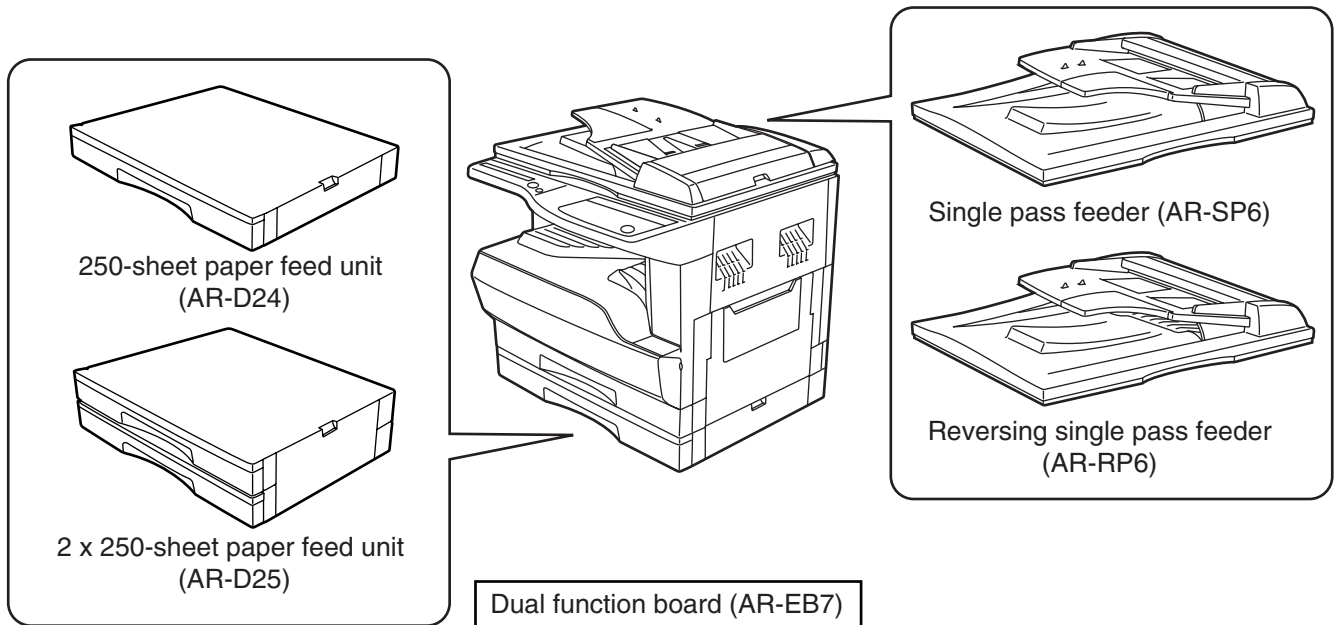
7
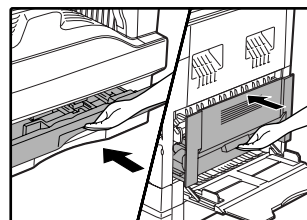
PERIPHERAL DEVICES

Optional equipment and supplies are explained in this chapter. To purchase optional equipment and supplies, contact SHARP service.

> **Note** As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

250-sheet paper feed unit
(AR-D24)

2 x 250-sheet paper feed unit
(AR-D25)

Dual function board (AR-EB7)

Single pass feeder (AR-SP6)

Reversing single pass feeder
(AR-RP6)

SINGLE PASS FEEDER/
REVERSING SINGLE PASS FEEDER

For the names of the parts of the SPF/RSPF, see "PART NAMES AND FUNCTIONS". (p.00)

Specifications

Name		Single pass feeder (AR-SP6)	Reversing single pass feeder (AR-RP6)
Originals that can be used	Weight	15 lbs. - 34.1 lbs. (56 g/m^2 - 90 g/m^2)	
	Size	11" x 17"- 5-1/2" x 8-1/2"	
	Capacity	Up to 40 sheets (Thickness 00" (4mm) and below)	
Original size detection		11" x 17", 8-1/2" x 14", 8-1/2" x 11", 8-1/2" x 11"R, 5-1/2" x 8-1/2"R	
Weight		0.0 lbs. (5.0 kg)	0.0 lbs. (5.4 kg)
Dimensions		00.0" (W) x 00.0" (D) x 00.0" (H) (583 mm (W) x 435 mm (D) x 133 mm (H))	

250-SHEET PAPER FEED UNIT/ 2 X 250-SHEET PAPER FEED UNIT

A 2 x 250-sheet or 250-sheet paper feed unit can be installed to provide additional paper trays and increase the number of paper sizes that can be loaded. Each tray can hold 250 sheets of 11" x 17", 8-1/2" x 14", 8-1/2" x 11" or 8-1/2" x 11" R paper. The 2 x 250-sheet paper feed unit has two trays and the 250-sheet paper feed unit has one tray.

Part names

AR-D24

Side cover

Tray

AR-D25

Side cover

Trays

<div style="text-align:right">**8**</div>
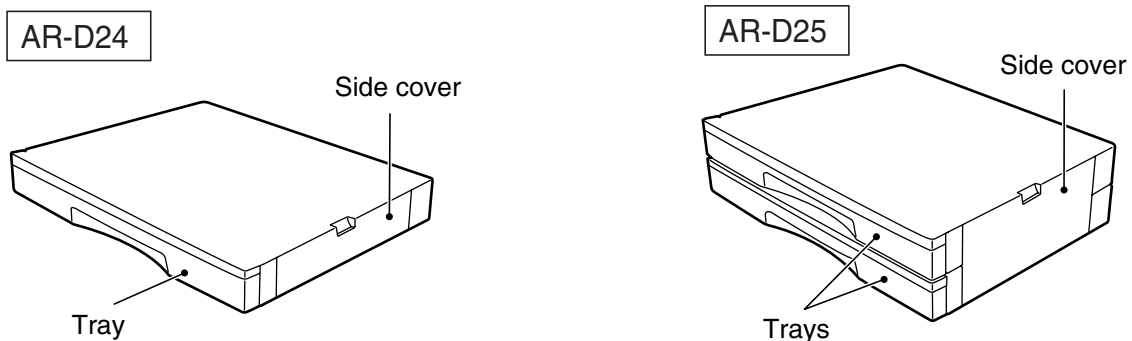
Specifications

Name	250-sheet paper feed unit (AR-D24)	2 x 250-sheet paper feed unit (AR-D25)
Paper size	11" x 17", 8-1/2" x 14", 8-1/2" x 11", 8-1/2" x 11" R	
Capacity	250 sheets x 1	250 sheets x 2
Paper weight	15 lbs. - 24 lbs. (56 g/m^2 - 90 g/m^2)	
Paper feed method	Roller feeding	
Power supply	Drawn from the machine	
Dimensions	00.0" (W) x 00.0" (D) x 00.0" (H) (590 mm(W) x 471 mm(D) x 88 mm(H))	00.0" (W) x 00.0" (D) x 00.0" (H) (590 mm(W) x 471 mm(D) x 103.5 mm(H))
Weight	0.0 lbs. (4.7 kg)	0.0 lbs. (9.1 kg)

DUAL FUNCTION BOARD

A Dual function board can be installed to add a variety of copy functions and enable use of the printer driver for the Dual function board, which features a faster printing speed than the standard printer driver. For copy functions that can be used, see "Convenient Copy Functions". (p. 00)

Specification

Name	Dual function board (AR-EB7)
Added functions	Electronic sort function (sort/group), 2 IN 1/4 IN 1 copying, rotation copy, border erase copying, center erase copying, margin copying, USB 2.0 port printer function for the Dual function board, ROPM function
Electronic sort compression method	JBIG
Electronic sort memory	16 MB
Electronic sort scannable pages	100 standard 8-1/2" x 11" originals
Memory expansion	1 DIMM memory slot; 256 MB max. module can be added

SUPPLY TYPES AND STORAGE

Supplies that can be replaced by the user are copy paper and the toner cartridge.
● For best results, use only paper recommended by SHARP.
● For more information, contact SHARP service.

SHARP
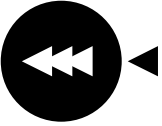
GENUINE SUPPLIES

For best copying results, be sure to use only SHARP Genuine Supplies which are designed, engineered and tested to maximize the life and performance of SHARP copiers. Look for the Genuine Supplies label on the toner package.

PROPER STORAGE

● **Store the supplies in a location that is:**
  clean and dry,
  at a stable temperature,
  not exposed to direct sunlight.

● **Store paper in the wrapper and lying flat.**
  Paper stored out of the wrapper or in packages
  standing on end may curl or get damp, resulting in
  paper misfeeds.

Chapter 9

APPENDIX

SPECIFICATIONS

Model	Digital Multifunction System AR-M160	Digital Multifunction System AR-M205
Machine type	Desktop	
Photoconductive type	OPC drum	
Document glass type	Fixed	
Reproduction method	Laser electrostatic reproduction	
Original types	Sheet media, books; maximum original size: 11" x 17"	
Copy/print size	5-1/2" x 8-1/2" to 11" x 17" (5-1/2" x 8-1/2" can only be used in paper tray 1 and in the bypass tray)	
Margins	Max. 5/32" (4 mm) from top and bottom edges, max. 00" (3 mm) from both sides	
Continuous copy speed	(100% ratio) 11" x 17" 9 cpm 8-1/2" x 14" 10 cpm 8-1/2" x 11"R 16 cpm 8-1/2" x 11" 12 cpm 5-1/2" x 8-1/2" 16 cpm	(100% ratio) 11" x 17" 10 cpm 8-1/2" x 14" 12 cpm 8-1/2" x 11"R 20 cpm 8-1/2" x 11" 15 cpm 5-1/2" x 8-1/2" 20 cpm
Number of copies	1 - 999 copies (decrement method)	
First copy time*	Approx. 7.2 sec.	
Warmup time*	Approx. 45 sec.	
Copy ratios	0.25 to 4.00; adjustable in increments of 0.01 for 376 ratios Includes the following preset ratios: 1:1±1%/1:1.210/1:1.290/1:1.410/ 1:2.000/1:0.950/1:0.770/1:0.640/1:0.500	
Paper feed method	One automatic feeding paper tray (250 sheets) + bypass tray (100 sheets)	Two automatic feeding paper trays (250 sheets each) + bypass tray (100 sheets)
Fusing method	Heater roller	
Developing method	Dry developing	
Light source	Cold negative electrode lamp	
Resolution	Scan: 600 x 300 dpi Output: 600 x 600 dpi (AUTO/TEXT mode) Scan: 600 x 600 dpi Output: 600 x 600 dpi (PHOTO mode)	
Halftones	Scanning: 256	
	Printing: 2 value	
Power source	100 V AC, 12 A, 50 Hz/60 Hz	
Maximum power consumption	1.2 kW	
Machine area	000" (W) x 000" (D) (590 mm (W) x 531 mm (D)) (including bypass tray)	
Weight	Approx. 000 lbs. (31.3 kg) (using document cover and including toner cartridge)	Approx. 000 lbs. (35.1 kg) using document cover and including toner cartridge)

Dimensions	000" (W) x 000" (D) x 000" (H) (590 mm (W) x 545 mm (D) x 470 mm (H)) (using document cover and including toner cartridge)	000" (W) x 000" (D) x 000" (H) (590 mm (W) x 545mm (D) x 555mm(H))) (using document cover and including toner cartridge)
Operating conditions	Temperature: 00°F - 00°F (15°C- 30°C) Humidity: 20% - 85%	
Noise level	Sound power level L$_{WA}$(1B=10dB) In operation: 6.3[B] On standby: 3.9[B] Sound pressure level L$_{PA}$ (bystander position) In operation: 49[dB(A)] On standby: 24[dB(A)] Sound pressure level L$_{PA}$ (operator position) In operation: 00[dB(A)] On standby: 00[dB(A)] Measured according to ISO7779	
Emission concentration (measured according to RAL-UZ62)	Ozone: 0.02 m$_G$/m^3 or less, Particulate matter: 0.075 m$_G$/m^3 or less Styrene: 0.07 m$_G$/m^3 or less	
Optional equipment	Dual function board (AR-EB7) 250-sheet paper feed unit (AR-D24) 2 x 250-sheet paper feed unit (AR-D25) Single pass feeder (AR-SP6) Reversing single pass feeder (AR-RP6)	

* The first copy time and warmup time may vary depending on the power source voltage, temperature, and other environmental conditions.

Printer Function

Print speed	16 ppm (21 ppm when ROPM enabled, Dual function board must be installed)
First print*	7.2 sec.
Resolution	600 dpi
IMC memory	16 MB
Two-sided printing function	Yes (AR-M205)
Paper feed method	Same as for copying
Offset function	Offsets each print job
Supported operating systems	Windows 95/98/Me, Windows NT 4.0 Workstation, Windows 2000 Professional Windows XP Home Edition/Professional (Detailed information can be found in the SOFTWARE SETUP GUIDE)
Emulation	SHARP GDI
Expansion memory	Up to 256 MB can be added by installing a 32 MB, 64 MB, 128 MB or 256 MB expansion memory module (168-pin SDRAM DIMM) in one DIMM expansion slot (Dual function board must be installed) Maximum of 272 MB including IMC memory.
Port	IEEE1284 parallel port/ USB port (USB1.1), USB port (USB2.0, Dual function board must be installed)

Interface cables	[Parallel cable]
	  Shielded bi-directional (IEEE1284) cable (max. length 3 m)
	  Please purchase a commercially available parallel cable.
	[USB cable (only for connection to USB 1.1 port)]
	  Shielded twisted pair cable (max. length 3 m)
	[USB cable (only for connection to USB 2.0 port)]
	  Shielded twisted pair cable (max. length 3 m, must support USB 2.0)
	  Please purchase a commercially available USB cable.

* The first print time and warmup time may vary depending on the power source voltage, temperature, and other environmental conditions.

Scanner Function

Type	Flatbed scanner
Scanning method	Document glass / SPF/RSPF
Light source	Cold negative electrode lamp
Resolution*	Basic: 600 dpi, 1200 dpi Setting range: 50dpi - 9600dpi
Original types	Sheet media, books
Effective scanning area	00" x 00" (00 mm x 00 mm)
Scanning speed	00 scan per minute
Input Data	1 bit or 12 bit
Output Data	1 bit or 8 bit
Scanning colors	Black and white 2 value, Grayscale, Full color
Protocol	TWAIN / WIA (Windows XP only) / STI
Port	USB port (USB 1.1) USB port (USB 2.0, Dual function board must be installed)
Drop out color	Yes
Supported operating systems	Windows98/Me Windows 2000 Professional/Windows XP Home Edition/Professional (Detailed information can be found in the SOFTWARE SETUP GUIDE)
Void area	Top and bottom edges 00" (2.5 mm) due to scanner driver 00" (3.0 mm)

* The resolution may be enhanced by the scanner driver depending on the scanned area and amount of memory installed in the machine. Detailed information can be found in the scanner driver help file.

Note As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

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