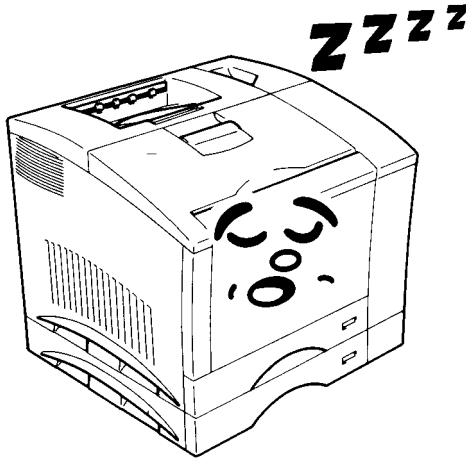




As an ENERGY STAR® Partner, we have determined that this machine meets the ENERGY STAR® Guidelines for energy efficiency.



### What is an ENERGY STAR® Printer ?

ENERGY STAR® Printers have a feature that allows them to automatically “go to sleep” after a period of inactivity. This auto-feature can reduce a machine’s annual electricity cost by 60 percent.

This manual explains the functions and operation of the **MINOLTA Color PagePro PS Plus** printer. It also gives some troubleshooting tips as well as general precautions to be observed when operating this printer.

To ensure the best performance and effective use of your printer, please read this manual carefully from cover to cover. After you have read through the manual, keep it near your printer for handy reference. It should help in solving any operational questions you may have.

## **Trademark acknowledgments**

Color PagePro is a trademark of Minolta in Europe, Japan and Asia. Minolta is a registered trademark of MINOLTA CO., LTD.

Adobe, the AdobePS, and PostScript are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions.

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All other brand or product names are trademarks or registered trademarks of their respective companies or organizations.

This printer contains an emulation of the Hewlett Packard PCL5C command language (recognized HP PCL5C commands) and processes these commands in a manner compatible with Hewlett Packard LaserJet printer products.

**Please follow the instructions given in this manual when handling your printer and do not touch any part of the machine which the manual does not cover. NEVER attempt to disassemble or remodel the printer.**

## **Safety Information**

- The printer should be plugged into an electrical outlet that is easily accessible.
- After installing the Expansion Memory and the Network Board, be sure to replace the cover and secure it with the screws provided.
- When moving the printer, two people are required to lift it carefully as explained in Chapter 1 of the instructions.

## **LASER SAFETY**

This is a page printer which operates by means of a laser. There is no possibility of danger from the laser, provided the printer is operated according to the instructions in this manual provided. Since radiation emitted by the laser is completely confined within protective housing, the laser beam cannot escape from the machine during any phase of user operation.

### **INTERNAL LASER RADIATION (For All Users)**

**Maximum Radiation power:  $1.0 \times 10^{-3}$  (W) Wavelength: 770- 810 (nm)**

This is a class IIIb Laser Diode Assy. that has an invisible laser beam. The printer head unit is NOT A FIELD SERVICE ITEM. Therefore, the printer head unit should not be opened under any circumstances.

## **LASER SAFETY**

### **For Users in Denmark**

#### **ADVERSEL**

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

Klass 1 laser produkt der opfylder IEC 825 sikkerheds Kravene.

### **For Users in Finland and Sweden**

LUOKAN 1 LASERLAITE  
KLASS 1 LASER APPARAT

#### **VEROITUS**

Laitteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

#### **VERNING**

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning som överskrider gränsen för laser klass 1.

#### **VARO!**

Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Äjä katso säteeseen.

#### **WARNING!**

Osynling laserstråling när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

## **LASER SAFETY**

### **For Users in Norway**

#### **ADVERSEL**

Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes for usynlig laserstråling som overskrider grensen for laser klasse 1.

Dette er en halvleder laser. Maksimal effekt til laserdiode er  $10 \times 10^{-3}$  W og bølgelengde er 770-810 nm.

### **For All Other Users**

#### **WARNING**

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is semiconductor laser. The maximum power of the laser diode is  $1.0 \times 10^{-3}$  W and the wavelength is 770-810 nm.

**WARNING**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

**For Users in Australia and New Zealand**

**WARNING**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

**USER INSTRUCTIONS**

**For All Users**

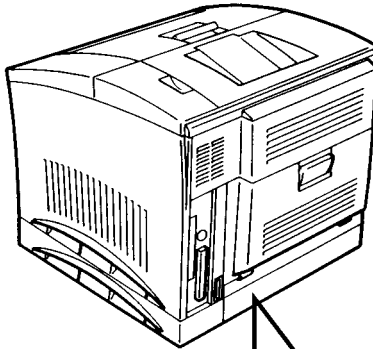
**WARNING**

This device must be used with shield interface cables. The use of non-shielded cable is likely to result in interference with radio communications and is prohibited under the EMC regulations of your country. Especially parallel interface cables must be used as Double-shield typed cables.

## OZONE RELEASE For All Users

During printer operation, a small quantity of ozone is released. This amount is not large enough to harm anyone adversely. However, be sure the room where the printer is being used has adequate ventilation, especially if you are printing a high volume of materials, or if the printer is being used continuously over a long period.

## WARNING LABEL



MODEL Color PagePro 220-240V~ 50Hz 4.5A SERIAL NO. 00000000000000000000	 FIM	 UL	 EMC EUR	 D	 FI	 S	 N	 CE	<p>-ONLY CONNECT THIS EQUIPMENT TO AN EARTHED SOCKET OUTLET. -APPARATET MÅ KUN TILKOBLES JØRDET STIKKONTAKT. -APPARATEN SKALL ANSLUTAS TILL JØRDET NÄTUTTAG. -LÄTT OCH LÄTTETTVÄR SUGO-RÄSLÅN.</p>	 MINOLTA CO.,LTD. MADE IN JAPAN	<p>CLASS 1 LASER PRODUCT LASER KLASSE 1 PRODUKT</p>
---	--	---	---	--	---	--	--	---	--	--	---

## **Features**

### **1. High quality printing**

- Clear text and excellent graphics with true 600 dpi
- Excellent graphics
- Super Fine Micro Toning (Fine-MT) developing system
- 8µm small particle toner
- Color matching technology
  - Apple ColorSync (PostScript only)
  - Windows 95/ Windows 98 ICM (PCL5C only)
  - Printer embedded color matching

### **2. Printer Description Language (PDL)**

- PCL5C emulation
- Adobe PostScript 3

### **3. High speed printing**

- Full color 3ppm, B/W 12ppm
- High performance RISC processor
  - Intel i960JF/ 33MHZ
- High speed data transfer
  - IEEE 1284 compliant interface
  - LocalTalk (PostScript only)
  - Network option (Ethernet)



**4. Versatile paper handling**

- Transparency, labels, thick paper, envelopes

**5. Compact size**

- Width 505mm/ 20"
- Depth 530mm/ 20-3/4"
- Height 403mm/ 15-3/4"

**6. Network ready with option**

- Ethernet

Server: UNIX, Windows NT, NetWare 3.X/ 4.X (Bindery & NDS)

Client: Windows 95/ 98/ 3.1, Windows NT Workstation 4.0, Macintosh

**7. Easy maintenance and operation**

- Easy maintenance with cartridge type supplies
- GUI driver

**8. Environmentally friendly**

- Ozone free
- Power save mode (Energy Star compliant)

## **Symbols and Terms**

This manual uses the following symbols and terms:

### **ATTENTION**

This symbol indicates that a specified course of action is required to avoid causing damage or injury. Please be sure to follow the instructions in this manual exactly, whenever you see this symbol.

This symbol is found at the following locations: “Changing the Oiling Roller”, “Changing the Fusing Unit and Image Transfer Roller Unit”, “Cleaning the Printer” and “Clearing a Paper Misfeed”.

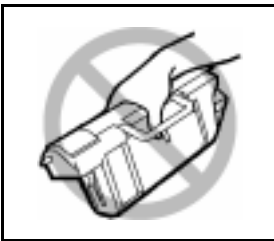
### **Note**

This indicator is used to identify sections that require special attention.

### **Action Prohibited**

This symbol is used over illustrations throughout this manual to indicate that a specified course of action must not be taken. Do not follow examples that are superimposed with this symbol.

**example:**



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*Chapter*

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*Introduction*

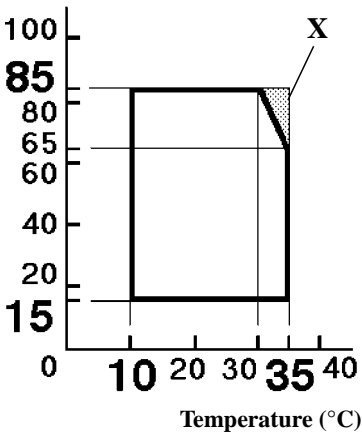
**1**

## Precautions for Use

### Operating Environment

The operating environmental requirements of the printer are as follows.

Humidity (%)



- **Temperature:** 10°C (50°F) to 35°C (86°F) with a fluctuation of 10°C (18°F) per hour.

- **Humidity:** 15% to 85% RH with a fluctuation of 20% per hour.

\* The environmental zone marked “X” on the left represents a critical environment in which the printer can be left to stand. However, the manufacturer does not ensure optimal paper passage performance and image production in this zone. Be sure to operate the printer within the operating environment identified within the bold line.

## Using the Printer

To ensure the optimum performance of the printer, follow the precautions listed below.

- **NEVER** open any printer door, or turn **OFF** the printer during operation.
- **NEVER** bring any magnetized object or flammable gas or liquid near the printer.
- **NEVER** pull on the power cord and **ALWAYS** hold the plug when unplugging it. A damaged cord could result in a fire or cause an electrical shock.
- **NEVER** attempt to unplug the power cord with a wet hand, as it could cause an electrical shock.
- **ALWAYS** unplug the power cord whenever attempting to move the printer. Moving the printer with the power cord plugged in can damage the cord, resulting in a fire or causing an electrical shock.
- **ALWAYS** unplug the power cord when the printer is not to be used for an extended period of time.
- **NEVER** remove any panel or cover unless the procedure is described in the user's manual. The printer contains a high-voltage component which can cause an electrical shock.
- **NEVER** alter the engineering or mechanics of the printer, as a fire or electrical shock could result.
- **NEVER** place a heavy object on the power cord nor pull or bend it, as a fire or electrical shock could result.
- **NEVER** rest the printer upon the power cord or communications cables of other electrical equipment and do not allow such cords or cables to become lodged into the printer's own mechanisms; equipment damage or fire could result.
- **NEVER** drop paper clips, staples, or other small pieces of metal through the vents or other openings of the printer, as a fire or electrical shock could result.

- **NEVER** place a vase or vessel containing water or other fluids on or near the printer as this can cause a fire or electrical shock. Should fluid or any foreign object get inside the printer, immediately turn it **OFF**, unplug the power cord, and call your technical representative. A fire or electrical shock could result if the printer is allowed to run without taking necessary action.
- **NEVER** leave the printer running should it become unusually hot, emit smoke, an unusual smell or noise. Should any of these occur, immediately turn **OFF** the printer, unplug it, and call your technical representative. A fire or electrical shock could result if the printer is allowed to run without taking necessary action.

### Note

= Locate the printer in a Well Ventilated Room =  
A negligible amount of ozone is generated during normal operation of this printer. An unpleasant odor may, however, be created in poorly ventilated rooms during extensive printer operations. For a comfortable, healthy, and safe operating environment, it is recommended that the room be well ventilated.

### Remarque

= Placer l'imprimante dans une pièce largement ventilée =  
Une quantité d'ozone négligable est dégagée pendant le fonctionnement de l'imprimante quand celle-ci est utilisée normalement. Cependant, une odeur désagréable peut être ressentie dans les pièces dont l'aération est insuffisante et lorsqu'une utilisation prolongée de l'imprimante est effectuée. Pour avoir la certitude de travailler dans des conditions de confort, santé et sécurité, il est préférable de bien aérer la pièce où se trouve l'imprimante.

## Care of Printer Supplies

Use the following precautions when handling the printer supplies (**toner cartridge**, **drum cartridge**, and paper).

- Avoid storing the supplies in any of the following places:
  - ✓ A place subject to direct sunlight (the **drum cartridge** should not be exposed to fluorescent light, either).
  - ✓ A hot place or near an open flame
  - ✓ A humid place
  - ✓ A dusty place
- Surplus paper, which has been removed from its protective packaging but not yet loaded into the printer tray, should be sealed in a plastic bag and stored in a cool, dark place.
- Use only the **toner cartridge** and toner specifically designed for use with this printer.
- Keep supplies out of the reach of children.
- If your hands should come into direct contact with the toner, wash them with soap and water immediately.

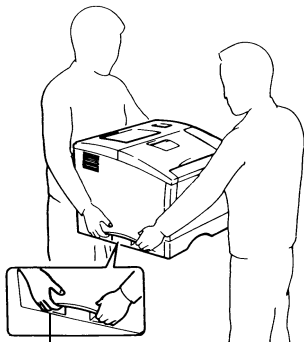
### Note

- |  |
|--|
| <ul style="list-style-type: none"><li>• When removing the <b>drum cartridge</b> from the printer, immediately wrap it in a thick cloth to protect it from light.</li></ul> |
|--|



## Moving the Printer

Observe the following precautions when moving the printer.



Grips

- Since the printer weighs approximately 35kg (77-1/4 lbs.), two people are required to lift it carefully.
- If you need to transport the printer over a long distance, consult your technical representative.

### **Note: Moving the printer with a third cassette unit (option)**

- The **third cassette unit** is attached to the printer through the coupling pins only. Moving the printer with the **third cassette unit** attached is not advised, as there is a strong possibility that the two pieces may separate and become damaged.



Be certain to move the printer and the **third cassette unit** separately.

*Chapter*

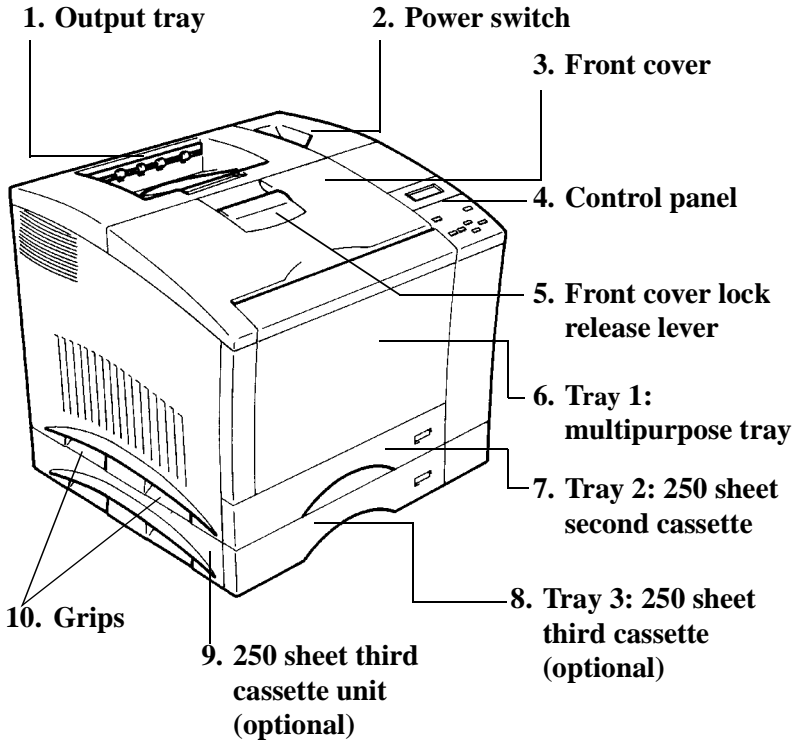
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*Using the Printer*

**2**

## **The Printer, Parts and Supplies**

### **Printer**



#### **1. Output tray**

The printed paper is output, face down onto this tray. The tray can hold up to 250 sheets of paper. (see page 2-48)

#### **2. Power switch**

Use to turn the printer ON and OFF. (see page 2-15)

**3. Front cover**

Open the cover by pulling the lever up and swinging the door down to replenish supplies such as the **toner cartridge**, or to clear a paper misfeed.

**4. Control panel**

- Allows the operator to make various settings.
- The LCD display shows the current status of the printer. For more details, see “Control Panel Keys.” (see page 2-9)

**5. Front cover lock release lever**

Pull down to unlock the **front cover**.

**6. Tray 1: multipurpose tray**

- Swing open toward you to load paper.
- Holds up to 150 sheets of paper. (see page 2-18)

**7. Tray 2: 250 sheet second cassette**

Holds up to 250 sheets of paper. (see page 2-18)

**8. Tray 3: 250 sheet third cassette (optional)**

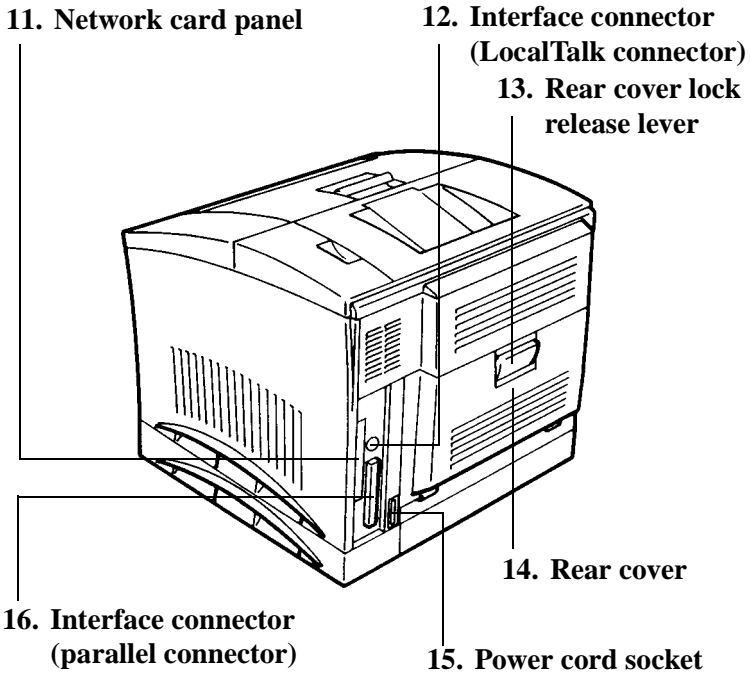
Holds up to 250 sheets of paper. (see page 2-18)

**9. 250 sheet third cassette unit (optional)**

Houses a third cassette, increasing paper capacity to 650 sheets when installed under the printer.

**10. Grips**

- Two grips are provided on each side of the printer (four in all). Use to carry the printer during installation or relocation.
- The printer requires two people to be lifted carefully. (see page 1-5)



**11. Network card panel**

Use to mount the optional **network card**.

**12. Interface connector (LocalTalk connector)**

Provides connection between the printer and host computer.

**13. Rear cover lock release lever**

Pull down to swing open the **rear cover**.

**14. Rear cover**

Swing open to change the **oiling roller** assembly or clear a paper misfeed.

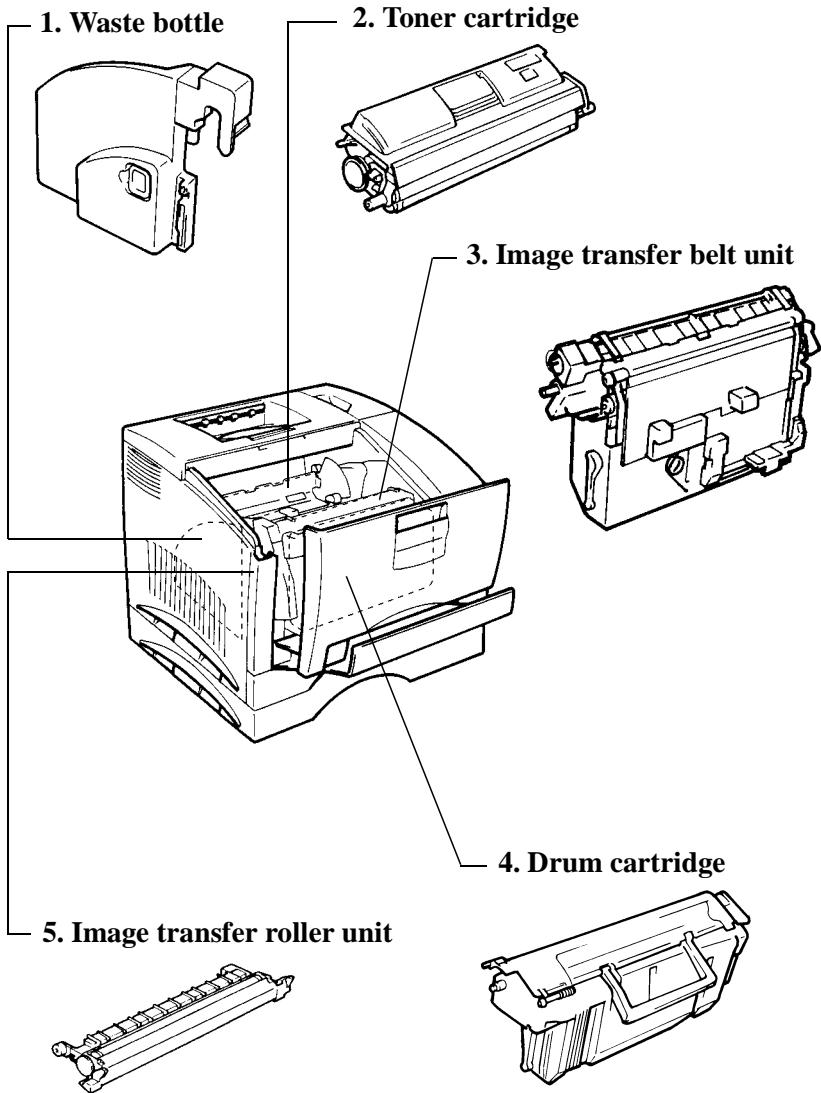
**15. Power cord socket**

Connect the **power cord** of the printer to this socket.

**16. Interface connector (parallel connector)**

Provides connection between the printer and host computer.

## Supplies and Units



**1. Waste bottle**

- Collects and contains unused toner.
- Replace this bottle with a new one when it is full. (see page 6-14)
- Dispose of the old container in a plastic bag or according to local regulations.

**2. Toner cartridge**

- There are four different **color toner cartridges**: Black, Yellow, Magenta (Red) and Cyan (Blue).
- Replace these cartridges with new ones when necessary. Dispose of old cartridges in a plastic bag or according to local regulations. (see page 6-1)

**3. Image transfer belt unit**

- Transfers the image created by the **drum cartridge** onto paper. Handle with care. (see page 6-32)
- Dispose of the old unit in a plastic bag or according to local regulations.

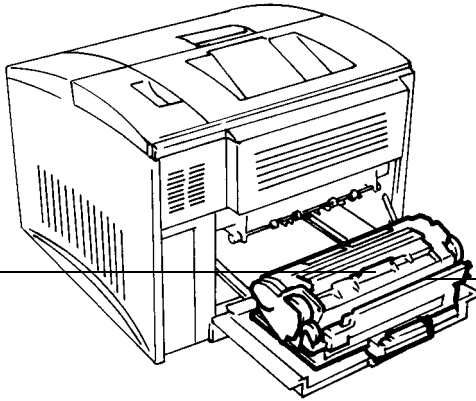
**4. Drum cartridge**

- Processes the image. Handle with care.
- Replace this cartridge with a new one when necessary. (see page 6-14)
- Dispose of the old cartridge in a plastic bag or according to local regulations.

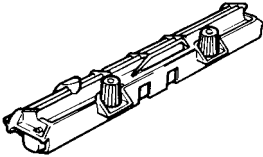
**5. Image transfer roller unit**

- Transfers the image created by the **drum cartridge** onto paper. Handle with care. (see page 6-25)
- Dispose of the old unit in a plastic bag or according to local regulations.

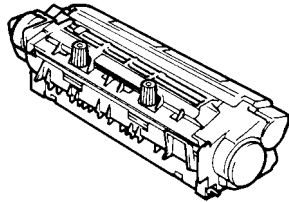




**6. Oiling roller**



**7. Fusing unit**



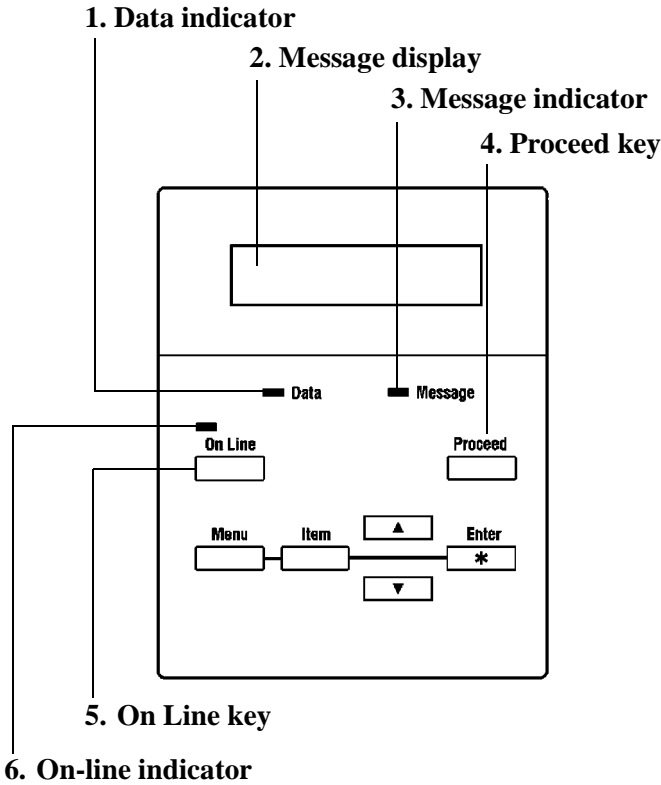
**6. Oiling roller**

- Oils and cleans the **fusing rollers**.
- Replace the **oiling roller** with a new one when necessary. (see page 6-14)
- Dispose of the old roller in a plastic bag or according to local regulations.

**7. Fusing unit**

- Permanently fixes the image onto paper. (see page 6-25)
- Dispose of the old unit in a plastic bag or according to local regulations.

## Control Panel Keys



### 1. Data indicator

- **Data indicator ON**

Indicates when data received from the host computer is stored in the printer's memory.

- **Data indicator OFF**

Indicates that no data is stored in the printer's memory; usually immediately after "power on" or "reset."

- **Data indicator flashing**

Indicates that the printer is receiving data from the host computer.

**2. Message display**

- Indicates the current status of the printer.
- Indicates the selected settings for the various functions of the printer.

**3. Message indicator**

- **Message indicator flashing**  
Indicates that an error has occurred.
- **Message indicator OFF**  
Normal.

**4. Proceed key**

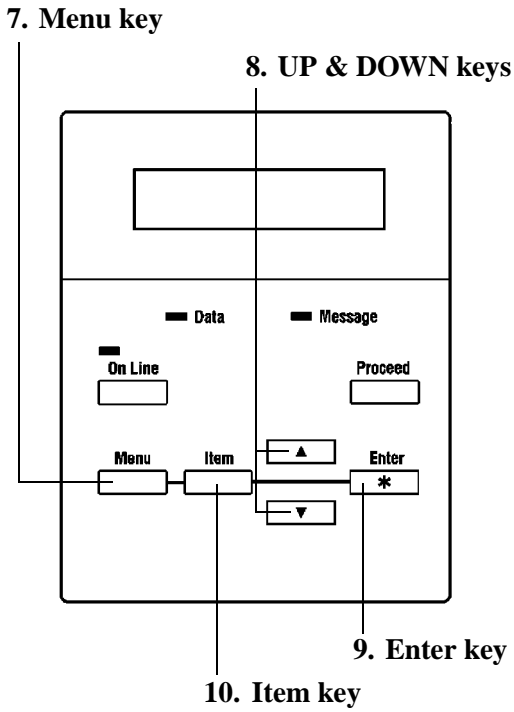
The **Proceed** key clears most recoverable errors and returns the printer back to **On-line**. The key overrides manual feed and paper size requests.

**5. On Line key** (see page 3-4)

The **On Line** key indicates whether or not the printer is on-line or off-line. If this key is pressed while in the **Menu mode**, the printer exits the menu and returns on-line. All keys except this key are valid during the off-line state.

**6. On-line indicator** (see page 2-46)

- **On-line indicator ON**  
Indicates that the printer can receive data from the host computer.
- **On-line indicator flashing**  
Indicates “power on self test” and “initialization”.
- **On-line indicator OFF**  
Indicates that the printer cannot receive data from the host computer.



**7. Menu key** (see page 3-4)

Initiates the print and configuration menus. The menus repeat in a loop until the **On Line** key is pressed.

**8. UP & DOWN keys** (see page 3-5)

These two keys display the next or the previous setting for the current menu item. If the **UP** or **Down** key is pressed continuously when **FONT NUMBER** or **FONT PITCH** are displayed on the LCD, their values can be rapidly increased/decreased.

**9. Enter key** (see page 3-5)

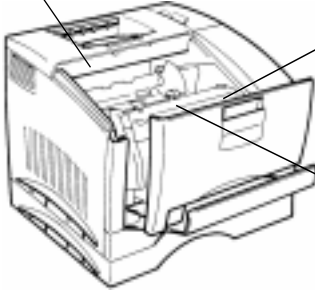
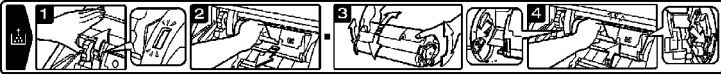
This key saves the menu settings while in the **Item** menu mode. An asterisk appears at the right of the LCD to indicate the current menu setting. Pressing the **Enter** key while **TEST PRINT MENU** is displayed will execute the appropriate **TEST PRINT MENU** including **PRINT CONFIG, PCL FONT LIST, PCL DEMO PAGE** and **PS DEMO PAGE**.

**10. Item key**

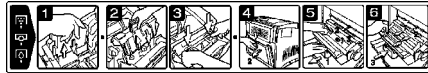
Accesses the item list after selecting a **Menu** and selects the menu item. This key must be pressed when **Menu** is selected, otherwise no action takes place while displaying “**Off Line**”. The items will repeat in a loop until the **On Line** key or the **Menu** key is pressed. When the **On Line** key is pressed, the printer returns to **On Line** and when the **Menu** key is pressed, the next **Menu** selection is displayed. (see page 3-5)

## Operation and Warning Labels

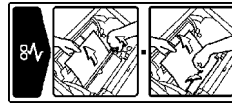
### 1. Installing the toner cartridge



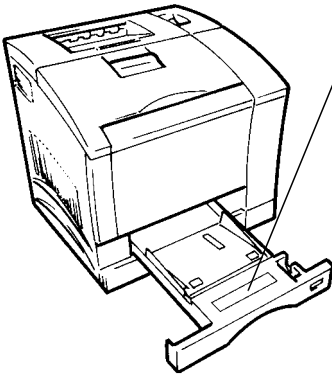
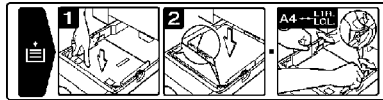
### 2. Changing the waste bottle, drum cartridge and oiling roller



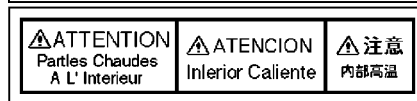
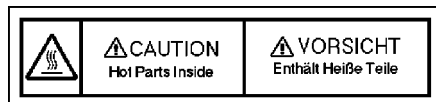
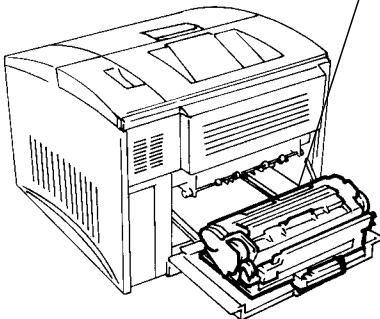
### 3. Clearing paper misfeeds



### 4. Loading paper



### 5. WARNING! HIGH TEMPERATURE



**1. Installing the toner cartridge**

- Describes how to replace the **toner cartridge**. ( For details, refer to page 6-1.

**2. Changing the waste bottle, drum cartridge and oiling roller**

- Describes how to replace the **waste bottle, drum cartridge and oiling roller**. (For details, refer to page 6-14.
- The **waste bottle, drum cartridge and oiling roller** are preset to be replaced simultaneously. Replace these three units at the same time.

**3. Clearing paper misfeeds**

- Describes how to clear the paper path after a misfeed.
- For details, refer to page 7-11.

**4. Loading paper**

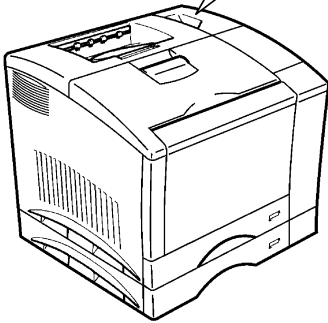
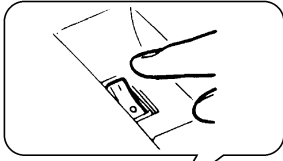
- Describes how to replenish the paper feed tray.
- For details, refer to “Loading Paper” on page 2-21.

**5. WARNING! HIGH TEMPERATURE**

- Alerts you to the high temperature surrounding the area where the label is applied on the **fusing unit**.  
Do not touch this area when you change the **oiling roller** or clear a misfeed.



## Turning the Printer ON and OFF



### Turning the printer ON

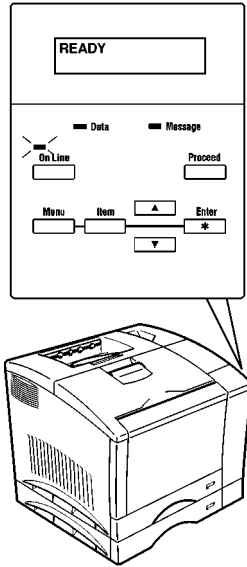
Press the **power switch** to the **I** (ON) position.

### Turning the printer OFF

Press the **power switch** to the **O** (OFF) position.

### When the printer is On

The printer is ready to print approximately 90 seconds after the **power switch** is turned ON.



### Note

- If no print commands are sent from the host computer to the printer within **60 min.**, the printer automatically enters the **Power save mode**.
- You can customize the setting of the **Power save mode**, or turn the mode **OFF** through the **CONFIG MENU**. For details, see **Chapter 3**.

# Paper

## Precaution

- This printer is designed to print on only the following types of paper.

## Type

Paper feeding port	Plain paper weighing: 60 to 90 g/m <sup>2</sup> 16 to 24 lbs.	Special paper						
		Recycled paper weighing: 60 to 90 g/m <sup>2</sup> 16 to 24 lbs.	Transparency sheet	Labels	Letter-head	Envelopes	J-Post (Postcard) size: 100 × 148 mm 4" × 5-3/4"	Thick paper* weighing: 90 to 157 g/m <sup>2</sup> 24 to 41-1/4 lbs.
Tray 1	○	○	○	○	○	○	○	○
Tray 2	○	○	○	None	None	None	None	None
Tray 3	○	○	○	None	None	None	None	None

\* Does not support Legal L size thick paper.

L: Lengthwise

## Size

### Standard size

Paper feeding port	A4 210×297 mm 8-1/4"×11-3/4"	JIS B5 182×257 mm 7-1/4"×10"	A5 148×210 mm 5-3/4"×8-1/4"	Legal * 8-1/2"×14" 216×356mm	Letter 8-1/2"×11" 216×279mm	Executive 7-1/4"×10-1/2" 184×267mm	Invoice 5-1/2"×8-1/2" 140×216mm
Tray 1	○	○	○	○	○	○	○
Tray 2	○	None	None	○	○	None	None
Tray 3	○	None	None	○	○	None	None

\* Does not support Legal L size thick paper.

L: Lengthwise

### Non-standard size (Tray 1 only)

Full color printing: Widths from 92 to 216mm (3-1/2" to 8-1/2"), lengths from 148 to 297mm (5-3/4" to 11-3/4").

Monochrome printing: Widths from 92 to 216mm (3-1/2" to 8-1/2"), lengths from 148 to 356mm (5-3/4" to 14").

## Capacity

Unit: sheets

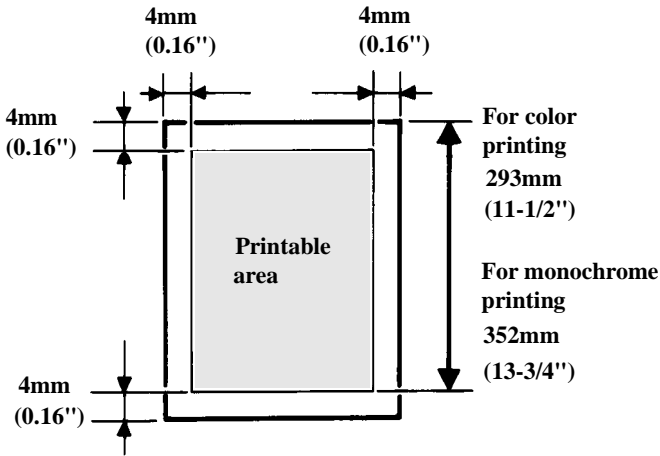
Paper feeding port	Plain paper weighing: <sup>2</sup> 60 to 90 g/m <sup>2</sup> 16 to 24 lbs.	Recycled paper weighing: <sup>2</sup> 60 to 90 g/m <sup>2</sup> 16 to 24 lbs.	Special Paper					Thick paper <sup>6</sup> weighing: <sup>2</sup> 90 to 157 g/m <sup>2</sup> 24 to 41-1/4 lbs.
			Trans- parency sheet	Labels	Letter- head	Enve- lopes	J-Post (Postcard) size: 100 × 148 mm 4" × 5-3/4"	
Tray 1	150	150	50	50	50	20	50	50
Tray 2	250	250	50	None	None	None	None	None
Tray 3	250	250	50	None	None	None	None	None

\* Does not support Legal L size thick paper.

L: Lengthwise

### Printable Area

- Monochrome (black and white) printing can be done on paper up to 352mm (13-3/4") in length, with the exception of four, 4mm (0.16") margins.
- Color printing can be done on paper up to 293mm (11-1/2") in length, with the exception of four, 4mm (0.16") margins.



### Paper Supplies

Use the following precautions when handling the paper.

- Avoid storing paper in any of the following places:
  - A place subject to direct sunlight.
  - A hot place or near an open flame.
  - A humid place.
  - A dusty place.
- Store paper, which has been removed from its wrapper but not loaded into the printer tray, in a sealed plastic bag in a cool, dark place.
- Keep paper supplies out of the reach of children.

**Note**

- Do not use legal size thick paper (the printer does not support legal size thick paper).
- Do not use the following types of paper to avoid reduced print quality, a misfeed or a print failure:
  - ✓ Paper already used in a thermal transfer printer or ink jet printer.
  - ✓ Paper that is too thin or too thick.
  - ✓ Paper folded, curled or torn.
  - ✓ Paper having binding holes or perforations.
  - ✓ Paper with surfaces that are too smooth or too rough or with varying surfaces.
  - ✓ Paper having special coatings on their surfaces such as carbon paper, heat-sensitive paper and pressure-sensitive paper.
  - ✓ Sheets of various sizes.
  - ✓ Paper not cut on right angles.
  - ✓ Paper bound by glue, staples or clips.
  - ✓ Paper affixed with labels which are easily removed.
  - ✓ Post cards that are warped or bent.
- Envelopes should meet the following requirements:
  - ✓ Sharp folds and edges.
  - ✓ General mailing envelopes without seals on the glued portion.
  - ✓ Those having flaps the full width of the envelope (unacceptable if the flap is glued).
  - ✓ Wrinkle-free, no fasteners.
- Generally, envelopes perform well, but some types may wrinkle. We strongly recommend testing any type of envelope before buying it in large amounts.
- The Following transparencies are recommended:
  - ✓ For color printing, Minolta CF-200 (D) or 3M CG3710
  - ✓ For monochrome printing, Minolta M-100 (D) or 3M PP2500
- For more information, refer to page 2-21.

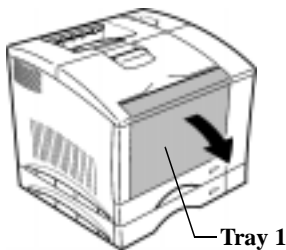
## Loading Paper

### Loading Plain Paper/ Recycled Paper

#### Caution

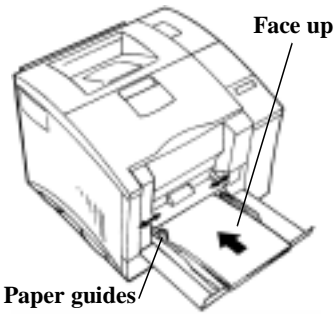
- Do not use the following types of paper as it may cause reduced print quality, a misfeed or a failure.
  - ✓ Paper already used in a thermal transfer printer or ink jet printer.
  - ✓ Paper that is too thin (under 60 g/m<sup>2</sup>, 16 lbs.) or too thick (over 157 g/m<sup>2</sup>, 41-1/4 lbs.).
  - ✓ Paper folded, curled or torn.
  - ✓ Paper having holes or perforations.
  - ✓ Paper of which surfaces are too smooth, too rough or of varying surfaces.
  - ✓ Paper with special coated surfaces such as carbon paper, heat-sensitive and pressure-sensitive paper.
  - ✓ Sheets of paper of varying sizes.
  - ✓ Paper not cut on right angles.
  - ✓ Paper bound by glue, staples or clips.

#### Tray 1 (multipurpose tray)



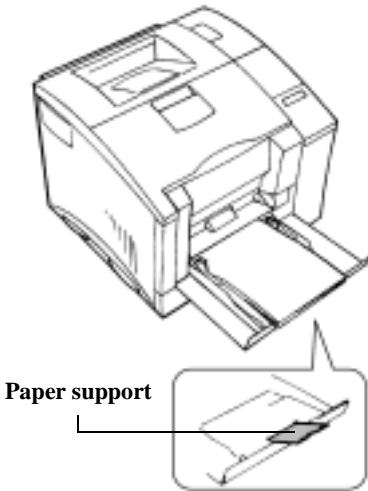
1. Swing open **Tray 1** (multipurpose tray).

## *Loading Paper: Loading Plain Paper/ Recycled Paper*



2. Adjust the **paper guides** to fit the size of the paper.

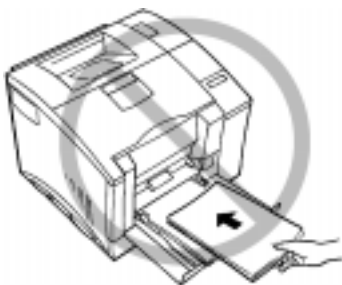
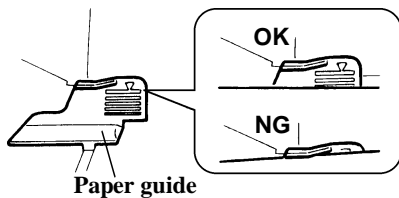
Load the paper stack on the tray, print side facing up.



3. When loading a long stack of paper, open the **paper support**.



### Note



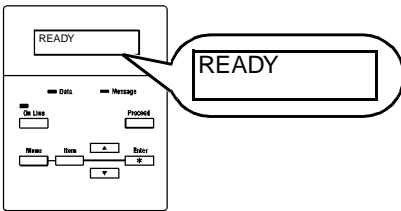
- The paper should be loaded no higher than the maximum according to the **level indicator**.
- When paper remains in the tray, do not stack more paper on top.
- Loading with force may cause a paper misfeed.
- To replenish the paper supply, take out the remaining paper from the tray and add it to the new supply. Fan the paper and load it.
- It is recommended that the paper supply be replenished only when the tray is empty.

### How to Set the Paper Size for Tray 1

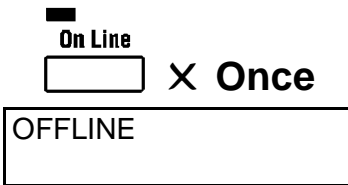
After loading the paper into **Tray 1**, set the corresponding paper size in the **control panel**.

The default setting for the paper size of **Tray 1** is Letter. It is not necessary to reset the menu provided that A4 size paper has been placed in **Tray 1**.

If the size of the paper that has been loaded into **Tray 1** does not correspond with the paper size setting of the printer, “LOAD XXXX TRAY 1” will appear in the **message display** and the printer will not print.



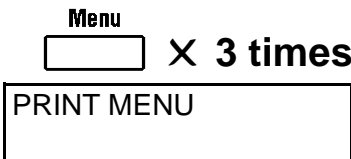
1. Make sure that “READY” is shown on the **message display** and that the **On Line** indicator is lit.



2. Press the **On Line** key on the **control panel**.

Check that “OFFLINE” appears on the **message display**.


Make sure that the **On Line** indicator goes out.



3. Press the **Menu** key three times.

Check that “PRINT MENU” appears on the **message display**.

## Loading Paper: Loading Plain Paper/ Recycled Paper

**Item**  
 **X Twice**

TRAY 1 PAPER  
A4 \*

**Example: Changing from  
A4 to EXECUTIVE**

 **X 6 times**

TRAY 1 PAPER  
EXECUTIVE

**Example: Changing from  
A4 to EXECUTIVE**

**Enter**  
 **X Once**

TRAY 1 PAPER  
EXECUTIVE \*

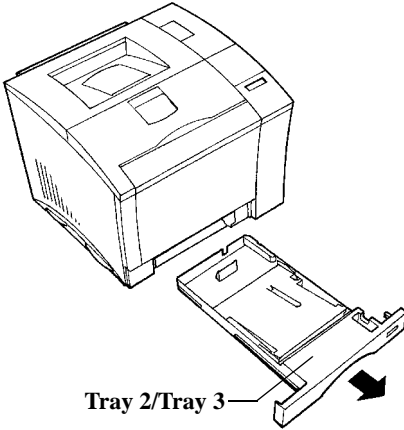


 **X Once**

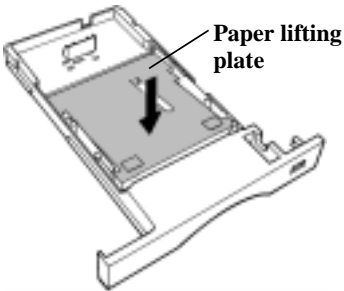
READY

4. Press the **Item** key on the **control panel** twice.  
Check that “TRAY 1 PAPER A4 \*” appears on the **message display**.
5. Press the **Up/Down** key on the **control panel** to select the paper size setting that corresponds to the size of the paper in **Tray 1**.  
<A4/ A5/ LETTER/  
INVOICE/ JIS B5/ LEGAL/  
EXECUTIVE/ COM10/ C5/  
DL/ MONARCH/ J-POST>
6. Press the **Enter** key.  
Check that an asterisk “\*” appears on the right end of the **message display**. The asterisk indicates that the setting has been confirmed.
7. Press the **On Line** key on the **control panel**.  
Check that “READY” appears on the **message display**.  
Make sure that the **On Line** indicator lights up.  
This completes the procedure for setting the paper size for **Tray 1**.

**Tray 2: second cassette / Tray 3: third cassette (optional)**

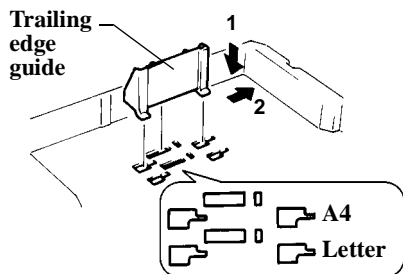


1. Slide out **Tray 2** (second cassette) or **Tray 3** (third cassette).



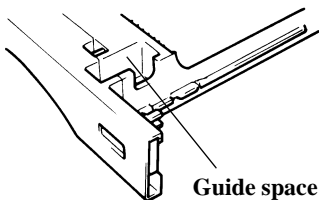
2. Press down on the **paper lifting plate** until it locks.

## Loading Paper: Loading Plain Paper/ Recycled Paper



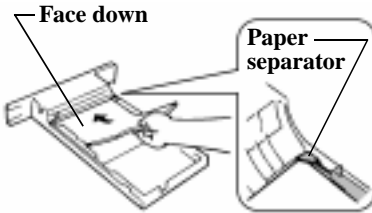
3. Install the **trailing edge guide** to fit the size of the paper to be loaded.

### Note



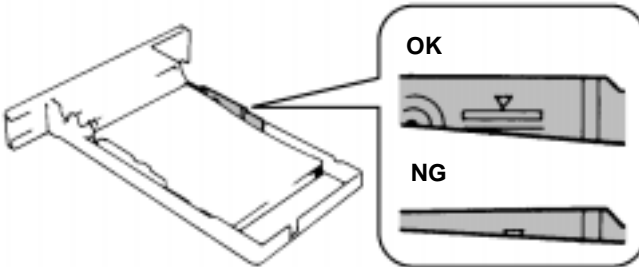
- When loading legal size paper, the **trailing edge guide** is not used. Return it to the guide space in the cassette.

## Loading Paper: Loading Plain Paper/ Recycled Paper

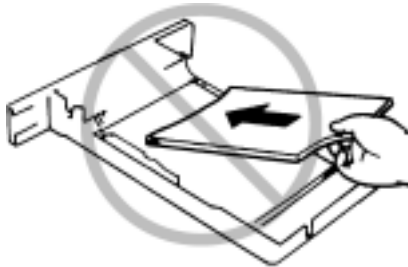


4. Load the paper stack into the cassette, print side down, under the **paper separator** and flush with the front side of the cassette.

### Note

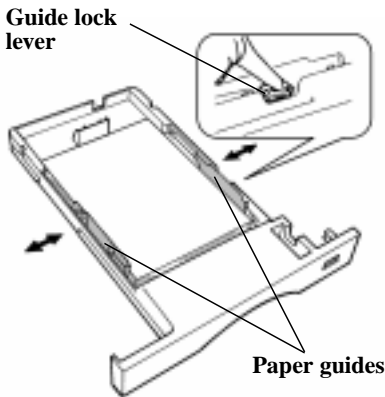


- The paper should be loaded no higher than the maximum on the **level indicator**.

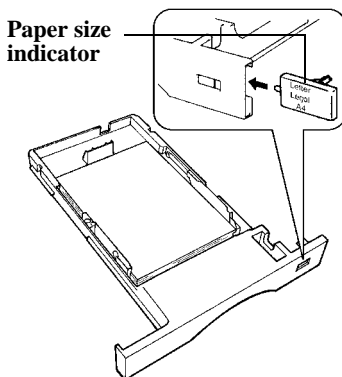


- Do not load additional paper on top of the remaining paper in the paper tray.
- Loading the paper with force may cause a paper misfeed.
- To replenish the paper supply, take out the remaining paper from the tray and add it to the new supply. Fan the paper and load.
- It is recommended that the paper supply be replenished only when the tray is empty.

## Loading Paper: Loading Plain Paper/ Recycled Paper



5. Pressing the **guide lock lever**, adjust the **paper guides** to fit the size of the paper.



6. Set the **paper size indicator** to the size of the paper used.

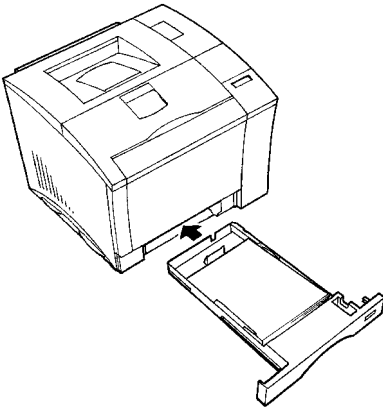
### Note

- If the **paper size indicator** is not reset to the corresponding size, the document may not print correctly. When you have changed the paper size, always reset the **paper size indicator**.

## *Loading Paper: Loading Plain Paper/ Recycled Paper*

---

7. Slide in the cassette.



### **Note**

- Make sure that **Tray 2** is completely loaded into the printer whenever you print from **Tray 3**. Printing from **Tray 3** is not possible if **Tray 2** is not completely loaded into the printer.



## **Loading Transparencies and Labels**

### **Precaution**

- Labels must be loaded onto **Tray 1** (multipurpose tray) only. Do not load them onto **Tray 2** (second tray) / **Tray 3** (third cassette).
- Wearing gloves is recommended when handling transparencies to protect them from becoming soiled with fingerprints and smears. Dirty transparencies may result in an unsatisfactory printed image.
- Do not use the following types of paper as they may cause reduced print quality, a misfeed or a failure.

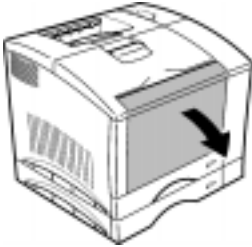
✓ Labels which are easily or partially peeled

✓ Labels which are leaking adhesives

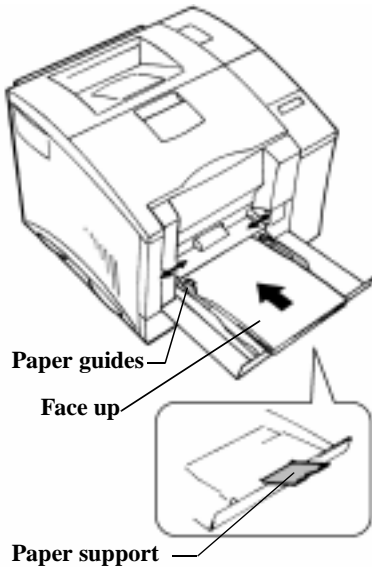
It is highly recommended to test any label's compatibility with the printer before purchasing it in large quantities.

- Multiple transparencies or labels can be printed continuously but the feeding capability may be affected by the materials used and the operating environment. It may be necessary to load them individually.
- It is necessary to change the media setting whenever transparencies or labels are printed (refer to pages 4-8, 4-29, 4-49, 5-7 and 5-7). Remember to change not only the printer driver settings but the media settings on the printer unit as well (please follow the instructions on page 2-34).
- The following transparency types are recommended:
  - ✓ For color printing, Minolta CF-200 (D) or 3M CG3710
  - ✓ For monochrome printing, Minolta M-100 (D) or 3M PP2500

**Tray 1 (multipurpose tray)**



1. Swing open **Tray 1** (multipurpose tray).

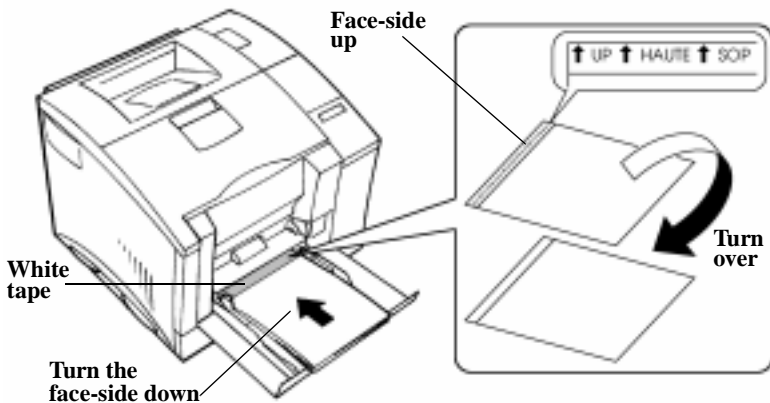


2. Adjust the **paper guides** to fit the size of the transparency or label sheets to be loaded.

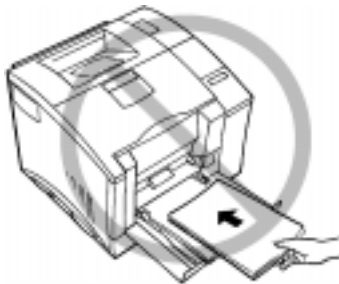
When loading a long stack of paper, open the **paper support**.

Load the transparency or label sheet stack on the tray, print side up.

**Note**



- Load the recommended transparencies (Minolta CF-200 (D), 3M CG3710, Minolta CF-100 (D) or 3M PP2500) into the tray so that their front sides are **face-side down**.



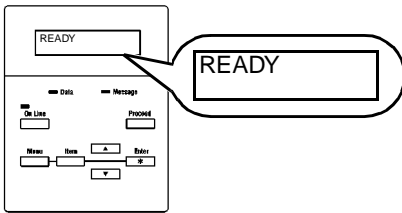
- Do not load more than 50 sheets on the tray.
- Do not load additional labels or transparencies on top of those remaining in the tray.
- Loading with force may cause a misfeed.
- To replenish the transparency or label sheets, take out those that remain in the tray and add them to the new supply. Fan the transparencies or labels and load them.
- It is recommended that the cassette be replenished only when it is empty.

### How to Set the Paper Size for Tray 1

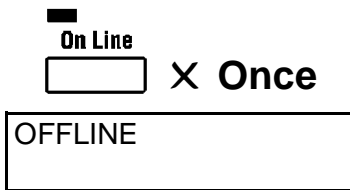
After loading the paper into **Tray 1**, set the corresponding paper size in the **control panel**. For detailed instructions on setting the paper size, refer to page 2-24.

### How to Set the Media type for Tray 1

The default setting for this option is “PLAIN PAPER”. Whenever transparencies or labels are to be used in **Tray 1**, it is necessary to make the printer setting changes for **TRAY 1 MEDIA**.

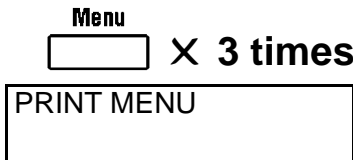


1. Make sure that “READY” is shown on the **message display** and that the **On Line** indicator is lit.



2. Press the **On Line** key on the **control panel**.  
Check that “OFFLINE” appears on the **message display**.

Make sure that the **On Line** indicator goes out.



3. Press the **Menu** key three times.  
Check that “PRINT MENU” appears on the **message display**.

Item  
 X 7 times

TRAY 1 MEDIA  
PLAIN PAPER \*

**Example: Changing from  
PLAIN PAPER to TRANSPARENCY**

X Once

TRAY 1 MEDIA  
TRANSPARENCY

### Note

- When printing labels, select either the “PLAIN PAPER” or “THICK PAPER” setting, depending upon the thickness of the labels to be used.

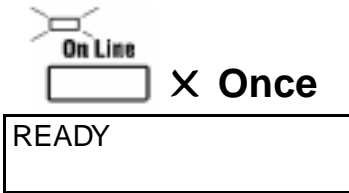
**Example: Changing from  
PLAIN PAPER to TRANSPARENCY**

Enter  
 X Once

TRAY 1 MEDIA  
TRANSPARENCY \*

4. Press the **Item** key on the **control panel** 7 times.  
Check that “TRAY 1 MEDIA PLAIN PAPER \*” appears on the **message display**.
5. Press the **Up/Down** key on the **control panel** to select the Media setting that corresponds to the type of media in **Tray 1**.  
<PLAIN PAPER/  
TRANSPARENCY/  
ENVELOPE/ THICK  
PAPER>

6. Press the **Enter** key.  
Check that an asterisk “\*” appears on the right end of the **message display**. The asterisk indicates that the setting has been confirmed.



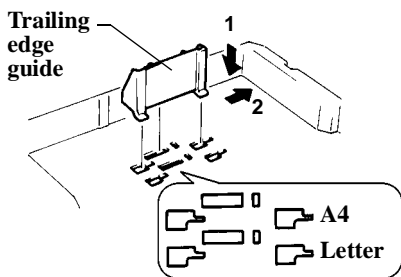
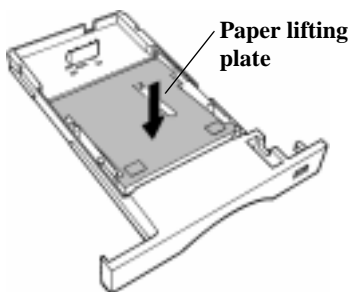
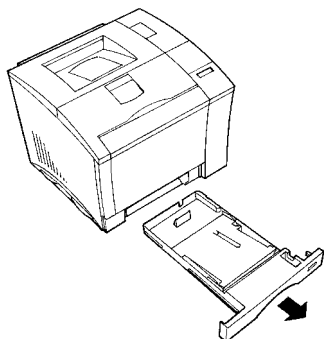
7. Press the **On Line** key on the control panel.

Check that "READY" appears on the **message display**.

Make sure that the **On Line** indicator lights up.

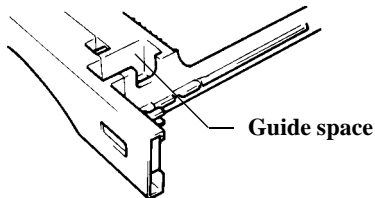
This completes the setting procedure for **Tray 1** (Media).

### Tray 2: second cassette / Tray 3: third cassette (optional)



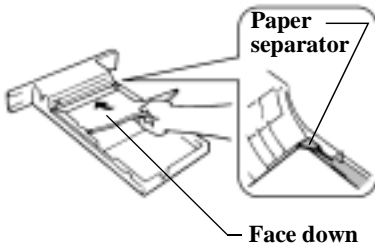
1. Slide out **Tray 2** (second cassette) or **Tray 3** (third cassette).
2. Press down on the **paper lifting plate** until it locks.
3. Install the **trailing edge guide** to fit the size of the transparencies to be loaded.

### Note



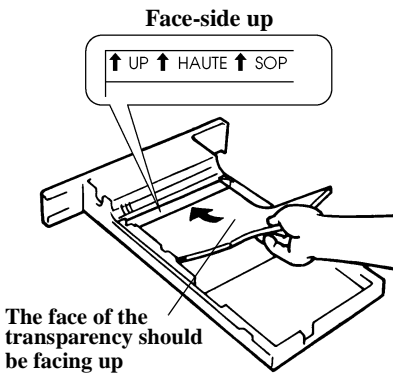
- When loading Legal-size transparencies, the **trailing edge guide** is not used. Return it to the guide space in the cassette.

## Loading Paper: Loading Transparencies and Labels

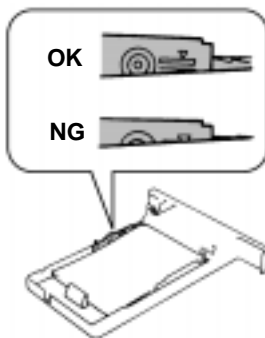


4. Load the transparency stack into the cassette, print side down, under the **paper separator**, and flush with the front side of the cassette.

### Note



- Load the recommended transparencies (Minolta CF 200-(D), 3MCG3710, Minolta CF-100 (D) or 3M PP2500) into the cassette so that their front sides are **facing up**.

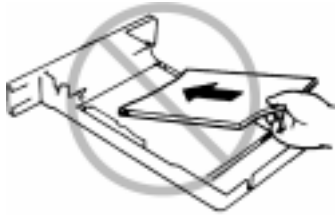


- The transparencies should be loaded no higher than the **maximum level indicator**.

- Do not load additional transparencies on top of those remaining in the tray.
- Loading the transparencies with force may cause a misfeed.



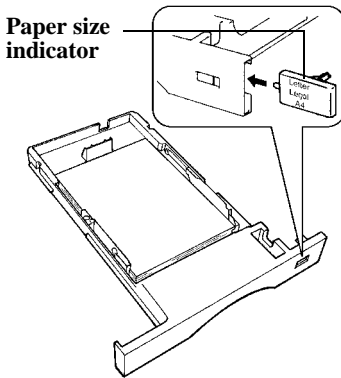
**Note**



- To replenish the transparencys, take out those that remain in the tray and add them to the new supply. Straighten the edges on a level surface.
- It is recommended that the cassette be replenished only when it is empty.



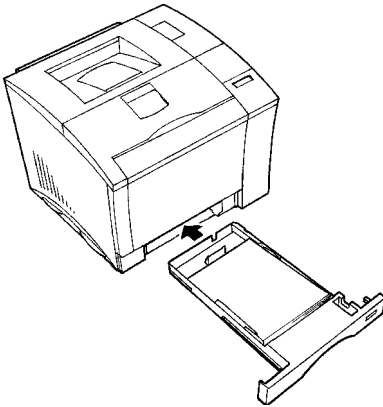
5. While pressing the **paper guide lock lever**, adjust the **paper guides** to the size of the transparencys.



6. Set the **paper size indicator** to fit the size of the transparencies to be used.

### Note

- If the **paper size indicator** is not reset to the corresponding size, the document may not print correctly. When you have changed the paper size, always reset the **paper size indicator**.



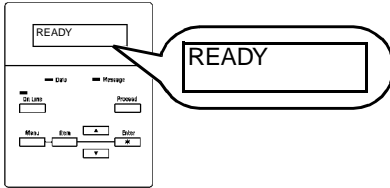
7. Slide in the cassette.

### Note

- Make sure that **Tray 2** is completely loaded into the printer whenever you print from **Tray 3**. Printing from **Tray 3** is not possible if **Tray 2** is not completely loaded into the printer.

## How to Set the Media type for Tray 2/Tray 3

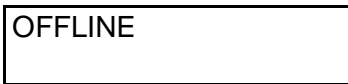
The default setting for **Tray 2/Tray 3** is “PLAIN PAPER”. Whenever transparencies are to be used with **Tray 2/Tray 3**, be sure to make the proper Media setting changes.



1. Make sure that “READY” is shown on the **message display** and that the **On Line** indicator is lit.

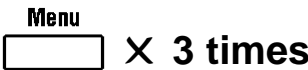


2. Press the **On Line** key on the **control panel**.

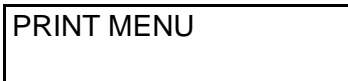


Check that “OFFLINE” appears on the **message display**.

Make sure that the **On Line** indicator goes out.

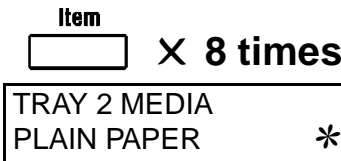


3. Press the **Menu** key three times.



Check that “PRINT MENU” appears on the **message display**.

**Example : TRAY 2 MEDIA**



4. Press the **Item** key on the **control panel** 8 or 9 times.

Check that “TRAY 2 MEDIA PLAIN PAPER \* or TRAY3 MEDIA PLAIN PAPER \*” appears on the **message display**.

### Note

- An asterisk will appear next to the selected media in the **message display**.
- “TRAY 3 MEDIA XXXX” appears only when a **250 sheet third cassette unit** is attached to the printer.

**Example: Changing from PLAIN PAPER to TRANSPARENCY**

 **× Once**

TRAY 2 MEDIA  
TRANSPARENCY

**Example: Changing from PLAIN PAPER to TRANSPARENCY**

Enter

 **× Once**

TRAY 2 MEDIA  
TRANSPARENCY \*



**× Once**

READY

5. Press the **Up/Down** keys on the **control panel** to select the Media setting that corresponds to the type of media in **Tray 1**.

<PLAIN PAPER/  
TRANSPARENCY>

6. Press the **Enter** key. Check that an asterisk “\*” appears on the right end of the **message display**. The asterisk indicates that the setting has been confirmed.

7. Press the **On Line** key on the **control panel**.

Check that “READY” appears on the **message display**.

Make sure that the **On Line** indicator lights up.

This completes the setting procedure for **Tray 2/Tray 3** (Media).

## **Loading Special Paper (Letterhead/ Envelopes/ Postcards/ Thick Paper)**

### **Precaution**

- Do not use legal L size thick paper (the printer does not support legal size thick paper).
- Do not use the following types of paper to avoid reduced print quality, a misfeed or a print failure.
  - ✓ Paper already used in a thermal transfer printer or ink jet printer.
  - ✓ Paper that is too thin or too thick.
  - ✓ Paper folded, curled or torn.
  - ✓ Paper having binding holes or perforations.
  - ✓ Paper with surfaces that are too smooth or too rough or with varying surfaces.
  - ✓ Paper having special coatings on their surfaces such as carbon paper, heat-sensitive paper and pressure-sensitive paper.
  - ✓ Sheets of various sizes.
  - ✓ Paper not cut on right angles.
  - ✓ Paper bound by glue, staples or clips.
  - ✓ Paper affixed with labels which are easy to peel.
  - ✓ Post cards that are warped or bent.
- Envelopes should meet the following requirements:
  - ✓ Sharp folds and edges.
  - ✓ General mailing envelopes without seals on the glued portion.
  - ✓ Those having flaps the full width of the envelope (unacceptable if the flap is glued).
  - ✓ Wrinkle-free, no fasteners.
- Generally, envelopes perform well, but some types may wrinkle. We strongly recommend testing any type of envelope before buying it in large amounts.
- Multiple documents can be printed continuously on specialty paper but the feeding capability may be affected by the materials used and the operating environment. It may be necessary to load them individually.

**Tray 1 (multipurpose tray)**



1. Swing open **Tray 1** (multipurpose tray).



2. Adjust the **paper guides** to fit the size of the paper.

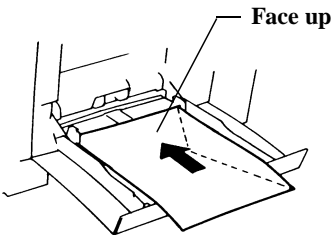
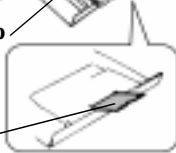
To load a long stack of paper, open the **paper support**.

Load the paper stack on the tray, print side facing up.

Paper guides

Face up

Paper support



3. When printing envelopes, fold their flaps securely and load them on the tray with their flap side down.

When printing letterhead, load it on the tray with the header at the take-up end.

**Note**

- Generally, envelopes take to printing well but some types may wrinkle. We strongly recommend testing any type of envelope with the printer before buying it in large quantities.

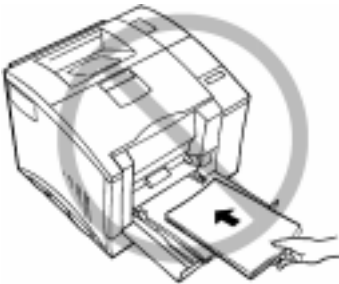
## Loading Paper: Loading Special Paper

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4. When printing paper, load it on the tray after smoothing any folds or wrinkles.
5. Specify the Media setting for **Tray 1**. (see page 2-34).

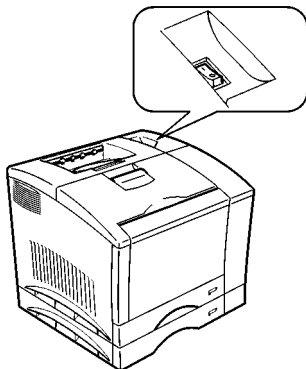
### Note



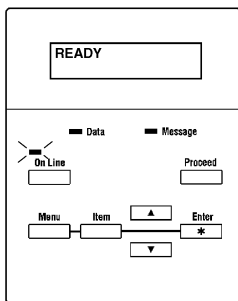
- Do not load more than 50 sheets on the tray at one time.
  - Do not load additional sheets of paper on top of those remaining in the tray.
  - If you load them forcibly, it may cause a misfeed.
- 
- To replenish the tray, take out the remaining paper and add it to the new supply. Fan the paper and load it into the cassette.
  - It is recommended that the cassette be replenished only when it is empty.

## Printing

Paper can be fed through the printer from either **Tray 1** (multi-purpose tray), **Tray 2** (second cassette) or **Tray 3** (third cassette). This will allow you to use the paper port that best suits your application.



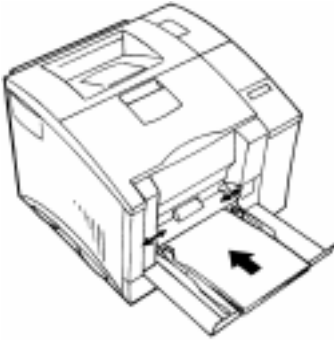
1. Turn the printer on.  
(see page 2-15)



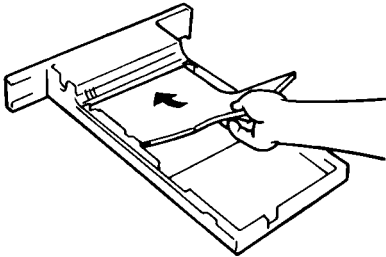
Check that “READY” is shown on the **message display**.

Check that the **On Line** indicator lights up.

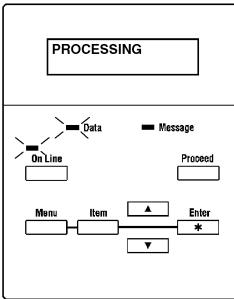




2. Load the paper.  
**Tray 1** (multipurpose tray)  
(see pages 2-21, 2-24, 2-32, 2-34, 2-43, 2-32)

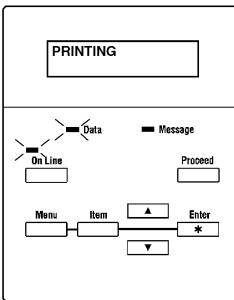


- “**Tray 2** (second cassette) / **Tray 3** (third cassette)”  
(see pages 2-26, 2-26, 2-41)



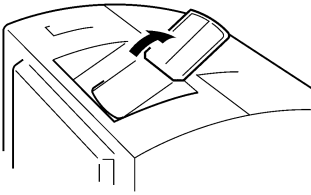
3. Input a print command from the host computer. The “READY” message will change to “PROCESSING” in the **message display**.

The **Data** indicator light will flash.

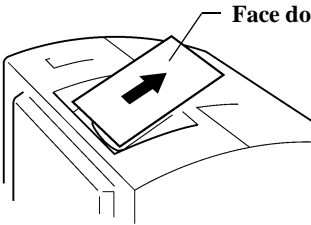


4. The **message display** will change from “PROCESSING” to “PRINTING”.

The **Data** indicator light will turn off.



5. To print long paper, open the **paper support** in the **output tray**.



6. Input the print command from the host computer. The printed paper feeds out onto the **output tray** with the image face down.

**Note**

- The output tray can hold up to 250 sheets of paper. Be careful not to exceed this limit when making multiple prints.



*Chapter*

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*Changing the Printer  
Settings*

**3**


## List of MENU Utilities

The **MENU** utilities are settings that you can change to suit your particular operating needs. There are a total of **34** features available in the **MENU** utilities. They are classified into the **nine** major groups below.

MENU	ITEM	SETTING
1. RESET MENU	1. JOB & MEMORY	ENTER to reset.
	2. MENU RESET	ENTER to reset.
2. TEST PRINT MENU	1. PRINT CONFIG	ENTER to print.
	2. PCL FONT LIST	ENTER to print.
	3. PS FONT LIST	ENTER to print.
	4. PCL DEMO PAGE	ENTER to print.
	5. PS DEMO PAGE	ENTER to print.
3. PRINT MENU	1. COPIES	1 to 999
	2. TRAY 1 PAPER	A4/ A5/ LETTER/ INVOICE/ JIS B5/ LEGAL/ EXECUTIVE/ COM10/ C5/ DL/ MONARCH/ J-POST
	3. MANUAL FEED	OFF / ON
	4. TRAY SWITCHING	ON / OFF
	5. PAPER SOURCE	TRAY1 / TRAY2 / *1TRAY3
	6. PAPER SIZE	A4/ A5/ LETTER/ INVOICE/ JIS B5/ LEGAL/ EXECUTIVE/ COM10/ C5/ DL/ MONARCH/ J-POST
	7. TRAY1 MEDIA	PLAIN PAPER / TRANSPARENCY/ ENVELOPE/ THICK PAPER
	8. TRAY2 MEDIA	PLAIN PAPER / TRANSPARENCY
	9. TRAY3 MEDIA *1	PLAIN PAPER / TRANSPARENCY

<b>MENU</b>	<b>ITEM</b>	<b>SETTING</b>
<b>3. PRINT MENU</b>	<b>10. ORIENTATION</b>	<b>PORTRAIT/ LANDSCAPE</b>
	<b>11. FORM LENGTH</b>	5 to 128 LINE ( <b>64 LINES</b> )
<b>4. CONFIG MENU</b>	<b>1. PERSONALITY</b>	<b>AUTOMATIC/ PCL/ POSTSCRIPT</b>
	<b>2. AUTO CONTINUE</b>	<b>ON / OFF</b>
	<b>3. I/O TIMEOUT</b>	OFF/ 5 SECONDS/ <b>15 SECONDS</b> / 30 SECONDS/ 1 MINUTE/ 3 MINUTES
	<b>4. POWER SAVE</b>	15 MINUTES/ 30 MINUTES/ <b>60 MINUTES</b> / OFF
	<b>5. DISPLAY LANGUAGE</b>	<b>ENGLISH/ DEUTSCH/ FRANCAIS/ ITALIANO/ NEDERLANDS/ ESPAÑOL/ DANSK/ CEŠTINA</b>
<b>5. IMAGE MENU</b>	<b>1. PRINT MODE</b>	<b>FULL COLOR/ MONOCHROME</b>
<b>6. MEMORY MENU</b>	<b>1. PCL CONTEXT SAVE</b>	<b>OFF/ ON</b>
	<b>2. PS CONTEXT SAVE</b>	<b>OFF/ ON</b>

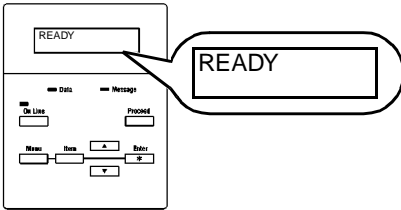
## List of MENU Utilities

MENU	ITEM	SETTING
<b>7. PCL MENU</b>	<b>1. FONT SOURCE</b>	<b>INTERNAL</b> / SOFT FONT
	<b>2. FONT NUMBER</b>	<b>INTERNAL: 0</b> to 52 (SOFT FONT: 0 to max. 999)
	<b>3. FONT PITCH</b>	0.44 to 99.99 ( <b>10.00</b> )
	<b>4. FONT POINT SIZE</b>	4.00 to 999.75 ( <b>12.00</b> )
	<b>5. SYMBOL SET</b>	ROMAN-8, ISO L1, ISO L2, ISO L5, <b>PC-8</b> , PC-8 D/N, PC-850, PC-852, PC-8 TK, WIN L1, WIN L2, WIN L5, DESKTOP, PS TEXT, VN INTL, VN US, MS PUBL, MATH-8, PS-MATH, VN-MATH, PI FONT, LEGAL, ISO-4, ISO-6, ISO-11, ISO-15, ISO-17, ISO-21, ISO-60, ISO-69, and WIN 3.0  p.B-6
<b>8. PS MENU</b>	<b>1. PRINT PS ERROR</b>	<b>OFF</b> / ON
<b>9. MAINTENANCE MENU</b>	<b>1. TOTAL PRINTOUTS</b>	
	<b>2. REPLACE TONER</b>	<b>BLACK</b> / CYAN/ MAGENTA/ YELLOW

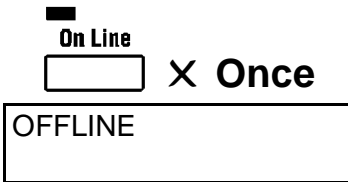
The items in bold represent settings of the printer that are set at the time of purchase.

\*1 : The range of items to choose from when the printer is equipped with a **250-sheet third cassette unit**.

## Setting the MENU Utilities



1. Make sure that “READY” is shown on the **message display** and that the **On Line** indicator is lit.



2. Press the **On Line** key on the **control panel**.

Check that “OFFLINE” appears on the **message display**.

Make sure that the **On Line** indicator goes out.

Menu key	Group
Once	RESET MENU
Twice	TEST PRINT MENU
3 times	PRINT MENU
4 times	CONFIG MENU
5 times	IMAGE MENU
6 times	MEMORY MENU
7 times	PCL MENU
8 times	PS MENU
9 times	MAINTENANCE MENU
10 times	Return to OFF LINE

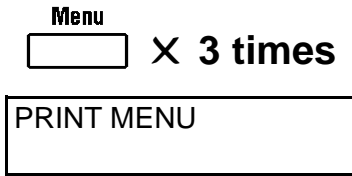
3. Press the **Menu** key on the **control panel** until the desired menu is found (refer to the menu table).



## Setting the MENU Utilities

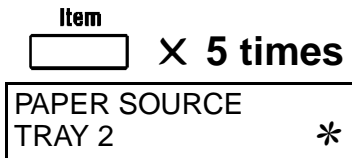
---

Example: PRINT MENU

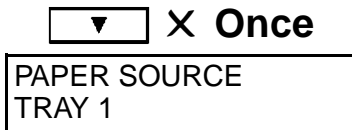


4. Press the **Item** key on the **control panel** until the desired item is found.

Example: PAPER SOURCE

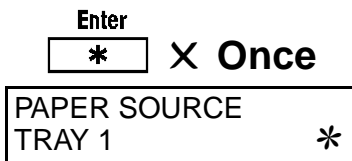


Example: Changing from  
TRAY2 to TRAY1

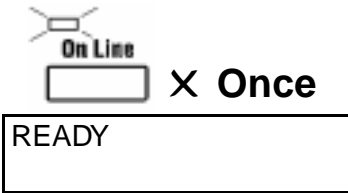


5. Press the **Up/Down** keys on the **control panel** to select the desired setting.

Example: Changing from  
TRAY2 to TRAY1



6. Press the **Enter** key. Check that an asterisk “\*” appears on the right end of the **message display**. The asterisk indicates that the setting has been confirmed.



7. Press the **On Line** key on the control panel.

Check that “READY” appears on the **message display**.

Make sure that the **On Line** indicator lights up.

The procedure for setting the MENU utilities is complete.

### Note

- To quit the MENU function (anytime between steps 3 through 5), press the **On Line** key.  
Pressing the **On Line** key cancels the MENU function and returns to the **On Line** mode.

## Outline of the MENU Utilities

### 1. RESET MENU

**RESET MENU** provides the **JOB & MEMORY** and **MENU RESET** utility functions. These functions allow the user to reset the parameters of the printer.

#### 1-1. JOB & MEMORY

- **JOB & MEMORY** will reset the printer when the **Enter** key is pressed, clearing all stored page data from memory. The printer resumes on-line.

#### 1-2. MENU RESET

- **MENU RESET** will reset the printer when the **Enter** key is pressed. The printer settings are reset to the Factory Defaults. All stored selections and stored page data are cleared from the printer's memory. The printer resumes on-line.
- **MENU RESET** does not affect the currently selected language.

### 2. TEST PRINT MENU

**TEST PRINT MENU** provides a series of test prints and font lists. Various print tests can be conducted while in this menu.

#### 2-1. PRINT CONFIG

- Select **PRINT CONFIG** to print the internal settings of the configuration menu.
- Pressing the **Enter** key when **PRINT CONFIG** is displayed activates the printout.

#### 2-2. PCL FONT LIST

- Select **PCL FONT LIST** to print the internal and any external fonts stored or accessible to the printer in PCL5C.

- Pressing the **Enter** key when **PCL FONT LIST** is displayed activates the printout.

### 2-3. PS FONT LIST

- Select **PS FONT LIST** to print the internal and any external fonts stored or accessible to the printer in PostScript.
- Pressing the **Enter** key when **PS FONT LIST** is displayed activates the printout.

### 2-4. PCL DEMO PAGE

- Select **PCL DEMO PAGE** to print the PCL demonstration page.
- Pressing the **Enter** key when **PCL DEMO PAGE** is displayed activates the printout.

### 2-5. PS DEMO PAGE

- Select **PS DEMO PAGE** to print the PS demonstration page.
- Pressing the **Enter** key when **PS DEMO PAGE** is displayed activates the printout.

## 3. PRINT MENU

**PRINT MENU** is a frequently used group of menu selections. It includes **COPIES**, **PAPER SIZE**, **ORIENTATION** and other settings.

### 3-1. COPIES

- Selects the number of **COPIES**. The setting loops from **1** to **999** and then back to **1** again. The default value is **1**.
- When the **UP** or **DOWN** key is pressed continuously, the setting value is rapidly increased or decreased.

### 3-2. TRAY1 PAPER

- The **paper size** of **TRAY 1 (Multipurpose Tray)** is selected.
- The settings are **A4, A5, Letter, Invoice, JIS-B5, Legal, Executive, COM 10, C5, DL, Monarch, and J-Post**.
- The factory default is **A4**.

### 3-3. MANUAL FEED

- The manual feed selection is **Off** or **On**. The factory default is **Off**.
- When the **Proceed** key is pressed while **LOAD XXX IN MANUAL** is shown, one page of a print job is printed using paper loaded from **TRAY 1 (Multipurpose Tray)**.
- When the **MANUAL FEED** function is set to **On**, a print cycle can only run from **TRAY 1 (Multipurpose Tray)**.

### 3-4. TRAY SWITCHING

- Enable or disable **TRAY SWITCHING** by selecting **ON** or **OFF**. The factory default is **ON**. If **ON** is selected, when either **TRAY 1 (Multipurpose Tray)**, **TRAY 2 (Second Cassette)** or **TRAY 3 (Third Cassette)** runs out of paper, the printer will automatically switch to the next tray if it contains the same size and type of paper.

### 3-5. PAPER SOURCE

- Indicates the default TRAY. The factory default is the **Second Cassette (TRAY2)**.
- The settings are **TRAY 1 (Multipurpose Tray)**, **TRAY 2 (Second Cassette)** and **TRAY 3 (Third Cassette)** with installed options.

### 3-6. PAPER SIZE

- Indicates the default **Paper Size**. The factory default is **A4**.
- The settings are **A4, A5, Letter, Invoice, JIS-B5, Legal, Executive, COM 10, C5, DL, Monarch, and J-post (Postcard)**.

### **3-7. TRAY1 MEDIA**

- Selects **TRAY 1 (Multipurpose Tray)** media type. The factory default is **PLAIN PAPER**.
- The settings are **PLAIN PAPER, TRANSPARENCY, THICK PAPER** and **ENVELOPE**.
- When both **TRANSPARENCY** and **FULL COLOR (PRINT MODE** ⇨ p. 3-12) are selected, the engine slows the machine's output to one-third for complete toner saturation.
- When **THICK PAPER** is selected, the engine slows the machine's output to one-third for complete toner saturation.

### **3-8. TRAY2 MEDIA**

- Selects **TRAY 2 (Second Cassette)** media type. The factory default media type is **PLAIN PAPER**.
- The settings are **PLAIN PAPER** and **TRANSPARENCY**.
- When both the **TRANSPARENCY** and **FULL COLOR (PRINT MODE** ⇨ p. 3-12) are selected, the engine slows the machine's output to one-third for complete toner saturation.

### **3-9. TRAY3 MEDIA**

- Selects **TRAY 3 (Third Cassette)** media type. The factory default media type is **PLAIN PAPER**.
- The settings are **PLAIN PAPER** and **TRANSPARENCY**.
- When both **TRANSPARENCY** and **FULL COLOR (PRINT MODE** ⇨ p. 3-12) are selected, the engine slows the machine's output to one-third for complete toner saturation.
- **TRAY3 MEDIA** does not appear unless the **250-Sheet Third Cassette** is installed under the printer.

### 3-10. ORIENTATION

- Selects the default direction of the printed page. **PORTRAIT** or **LANDSCAPE** can be selected.
- The factory default direction is **PORTRAIT**.

### 3-11. FORM LENGTH

- Selects the number of lines per page. The setting value loops from **5** to **128** and then back to **5** again.
- The factory default is **64 lines**.
- When the **UP** or **DOWN** key is pressed continuously, the setting is rapidly increased or decreased.

## 4. CONFIG MENU

**CONFIG MENU** is a normal usage setting group (excluding the network settings).

### 4-1. PERSONALITY

- The factory default is **AUTOMATIC**.

### 4-2. AUTO CONTINUE

- Selects the **AUTO CONTINUE** setting. When **AUTO CONTINUE** is “**ON**”, recoverable error messages appear on the LCD for 30 seconds. Then, the **READY** message reappears and the printer resumes printing.
- When **AUTO CONTINUE** is “**ON**”, printing will continue during the message “**LOAD PAPER SIZE**” as if the **Proceed** key is pressed.
- The factory default is **ON**.

#### 4-3. I/O TIMEOUT

- The time between the end of the print job to the idle mode. After this period has elapsed, the controller frees the port.
- The settings are **5 SECONDS**, **15 SECONDS**, **30 SECONDS**, **1 MINUTE**, **3 MINUTES** and **OFF**.
- The factory default is **15 SECONDS**.

#### 4-4. POWER SAVE

- Selects the default **power save** mode.
- The controller sends the power-down command to the printer after a certain period of idle time has passed. The printer will not go into **power save** mode if data still exists in the memory.
- The settings are **15 MINUTES**, **30 MINUTES**, **60 MINUTES** and **OFF**.
- The factory default is **60 MINUTES**.

#### 4-5. DISPLAY LANGUAGE

- Selects the default language of the panel.
- 8 languages are possible: **ENGLISH**, **DEUTSCH**, **FRANCAIS**, **ITALIANO**, **NEDERLANDS**, **ESPAÑOL**, **DANSK** and **CEŠTINA**.
- The factory default is **ENGLISH**.

### 5. IMAGE MENU

The **IMAGE MENU** determines the image printing mode.

#### 5-1. PRINT MODE

- The type of printed image is selected (full color, monochrome).
- When both **FULL COLOR** and **TRANSPARENCY** (TRAY 1, 2, 3 MEDIA ↗ p. 3-10) are selected, the engine slows the machine's output to one-third for complete toner saturation.
- The factory default is **FULL COLOR**.



## 6. MEMORY MENU

**MEMORY MENU** is a group that controls context saving (**ON**, **OFF**).

When the settings for **MEMORY MENU** are changed, the message “**CONTEXT SAVE CHANGE**” will appear on the display. Press the **Proceed** key when this message is displayed. When the message changes to “**READY**” the old settings have been replaced with the new ones.

### 6-1. PCL CONTEXT SAVING

- Saves downloaded fonts and macros in the memory and then switches to the other **EMULATION**.
- The factory default setting is **OFF**.

### 6-2. PS CONTEXT SAVING

- Saves downloaded fonts and macros in the memory and then switches to the other **EMULATION**.
- The factory default setting is **OFF**.

## 7. PCL MENU

**PCL MENU** is a frequently used group of menu selections.

### 7-1. FONT SOURCE

- Selects the font source (**Internal fonts**, **Soft fonts**).
- The printer’s internal memory (**INTERNAL**) stores many of the fonts that can be selected.
- The **SOFT FONT** setting refers to fonts that have been downloaded.
- The printer’s factory default setting is **INTERNAL**.

## 7-2. FONT NUMBER

- Selects the default font number to be used.
- The default font is determined by both the **FONT SOURCE** setting and the **FONT NUMBER** setting.
- When the **FONT SOURCE/ INTERNAL** is selected, the menu value loops from **0** to **52** and then back to **0**.
- When **FONT SOURCE/ SOFT FONT** is selected, the menu value loops from **0** to **999** and then back to **0**.
- When the **UP** or **DOWN** key is pressed continuously, the value is rapidly increased or decreased.
- A **FONT LIST** can be printed by using **PCL FONT LIST** from the **TEST PRINT MENU**.  
Check the number of the desired **FONT** from the **FONT LIST**.
- The factory default setting is **0**.

## 7-3. FONT PITCH

- Selects the pitch of the default font.
- This menu item does not appear when the default font is not a mono-space scalable font. An example of a mono-space scalable, 45 Laser Jet compatible typeface is **COURIER**. When **COURIER** is selected as the default font, the factory default pitch is 10.00. The default setting is **10.00** pitch.
- When the **UP** or **DOWN** key is pressed continuously, the pitch value is rapidly increased or decreased.
- The settings loop from **0.44** to **99.99** and then back to **0.44**.

#### **7-4. FONT POINT SIZE**

- Selects the **font point size** of the default font.
- This menu item does not appear unless the default font is a proportional scalable font.
- The menu value loops from **4.00** to **999.75** and then back to **4.00** again.
- When the **UP** or **DOWN** key is pressed continuously, the value is rapidly increased or decreased.
- The factory default point setting is **12.00**.

#### **7-5. SYMBOL SET**

- Selects the default **symbol set**.
- The settings are **ROMAN-8, ISO L1, ISO L2, ISO L5, PC-8, PC-8 D/N, PC-850, PC-852, PC-8 TK, WIN L1, WIN L2, WIN L5, DESKTOP, PS TEXT, VN INTL, VN US, MS PUBL, MATH-8, PS-MATH, VN-MATH, PI FONT, LEGAL, ISO-4, ISO-6, ISO-11, ISO-15, ISO-17, ISO-21, ISO-60, ISO-69** and **WIN 3.0**.  
(☞ p. B-6)
- The factory default is **PC-8**.

## **Understanding Fonts**

### **Font**

A font is a specific group of characters that have common style and size characteristics. Your printer can store a variety of different fonts in its memory for printing. Since these fonts reside in printer memory, they are called resident fonts. This printer uses two types of resident fonts: scalable fonts and bitmap fonts. In addition to resident fonts, you can also download non-resident soft fonts for printing.

### **Scalable Fonts**

Scalable fonts (also called outline fonts) can be enlarged or reduced (scaled) to suit your printing needs. There are few limitations on the sizes that you can specify for scalable fonts.

### **Bitmap Fonts**

A bitmap font is stored in printer memory as a set of characters and symbols with a specific size and unique design. Each bit of the font is precisely mapped, so this type of font cannot be scaled to different sizes. This printer maintains 10 TrueType fonts and 35 Intellifont typefaces in memory (when in PCL mode).

### **Soft Font**

A soft font is downloaded from host computer to printer memory as is required. The selection of both scalable fonts and bitmap fonts available to the printer can be expanded using soft fonts.

## **8. PS MENU**

**PS MENU** is a group of menu selections which is used frequently.

### **8-1. PRINT PS ERROR**

- This function allows PostScript errors to be printed. It follows the standard Adobe PostScript sequence.
- The factory default is **OFF**.

## **9. MAINTENANCE MENU**

**MAINTENANCE MENU** is a group that displays the total print count and is used during toner replacement.

### **9-1. TOTAL PRINTOUTS**

- Displays the total number of prints output by the printer.

### **9-2. REPLACE TONER**

- Pressing the **Enter** key will bring the desired **toner cartridge** to the replacement position.
- See p. 6-1 for the replacement procedure for **toner cartridges**.

*Chapter*

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*PostScript Printer Software*

**4**

# Windows 95/ Windows 98

## Printer Software Overview

The PostScript printer driver was provided by Adobe systems Incorporated, and allows you take full advantage of your printer's features and capabilities using your computer running Windows 95 or Windows 98.

This section explains the software's features.

All of the onscreen images that appear in the following sections are examples of the PostScript Printer Software when installed in a Windows 95-based operating environment.

## Displaying the PostScript Printer Software Window

1. Click the **Start** button, **Settings**, and then **Printers** to display the **Printers** dialog box.
2. Click **Minolta Color PageWorks/Pro -ps** to highlight it, and then select **Properties** from the **File** menu.



### Tabs

You can move between the Printer Software screens by clicking on the tabs along the top of the window. These tabs let you check the status of your printer and make various changes in its settings. The following sections of this manual describe in detail about how to do this.

### Exiting the PostScript Printer Software

After you are finished using the PostScript Printer Software, you can exit it either by clicking the **OK** or **Cancel** button, or by clicking the window close button in the upper-right corner of the window.



## **Choosing Menu Settings**

The following standard Windows procedures can be used when making settings in the printer software's menu pages.

- Clicking an option button or name
- Clicking a check box
- Dragging the scroll box on a scroll bar
- Clicking a drop-down list box and then clicking on an item to select it
- Holding down the [Alt] key and typing the underlined character that represents a setting

See the documentation that comes with Windows 95/ Windows 98 for details on these and other operations.

## **Common Button Operations**

The following buttons appear at the bottom of all the driver menus.

### **OK**

Click this button to close the printer software window and send or save all the setting changes you made to the printer.

### **Cancel**

Click this button to close the printer software window without saving or sending any of the changes you have made.

### **Apply**

Click this button to send or save all the setting changes you made, without closing the printer software window.

### **Help**

Click the ? button in the upper-right corner, and then click the feature to display the detailed information about it.

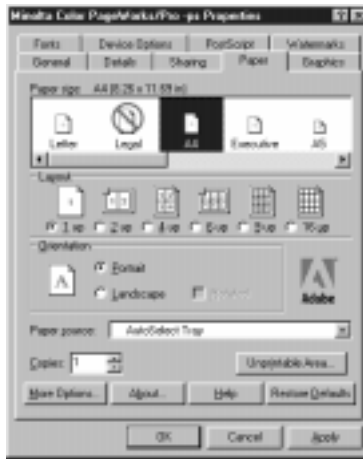
## Software Settings

This section describes all of the settings you can enable with this printer software.

### Note

- The **General**, **Details** and **Sharings** menus are features of both Windows 95 and Windows 98 while the **Color Management** menu appears in Windows 98 only. See the user's guide that came with your version of Windows for information if applicable.
- The **Sharings** tab is only available when the printer is shared in a network environment.

## Paper



### Paper size

These settings allow you to choose from various paper and envelope sizes that are supported by your printer. The left to right moving scroll bar at the bottom of the paper size window allows you to view the possible paper and envelope selections.

**Paper**

- Letter
- Legal
- A4
- Executive
- A5
- JIS B5
- Invoice
- J-Post

**Envelope**

- C5
- DL
- Monarch
- Com-10

**Note**

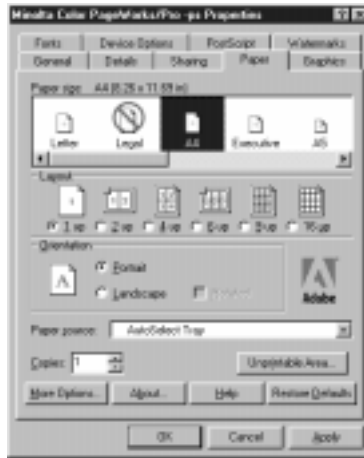
• Icons that are in a red circle with a line through the middle represent available paper/envelope sizes that require additional setting changes. Such setting changes might be possible through the current Paper dialog box, such as the paper tray setting.

• It is not possible to print legal size, color documents or legal size documents on thick paper.

• Generally, envelopes perform well, but some types may wrinkle. We strongly recommend testing any type of envelope before buying it in large amounts.

**Layout**

The Layout setting allows you to specify the number of documents to be printed onto a single sheet of paper. You can select to print from one document (1-Up), two documents (2-Up), four documents (4-Up), six documents (6-Up), nine documents (9-Up) or 16 documents (16-Up) onto one sheet of paper.



## Orientation

Allows you to determine how your document is positioned on the printed page. Possible settings include Portrait, Landscape and Landscape Rotated.

This setting can also tell you the measurements of your selected paper or envelope size. Click and hold on the paper icon to view dimensions, including the unprintable margins.

## Paper source:

This setting identifies the location inside of the printer of the paper to be used. The various paper source options will be different depending upon the type of printer and accessories used. Paper sources might include Auto Select Tray, Tray1, Tray2, Tray3 or Manual Feed. Paper sources that are not available to your printer are identified by a red circle with a line through the middle.

By setting the paper source to Auto Select Tray, the printer will automatically select the paper source according to the paper size of the document to be printed.

### Copies:

This setting selects the number of copies to be printed. Use the arrows to increase or decrease the number of copies from one to 999.

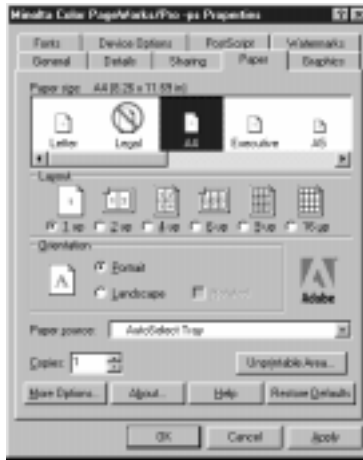
### Unprintable Area...



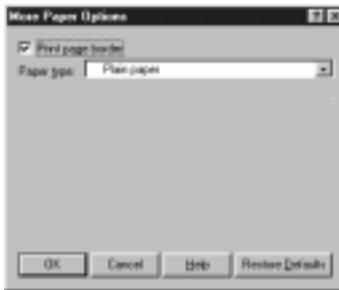
Margins can be modified by clicking on the **Unprintable Area** button and decreasing/increasing the left, right, top and bottom margin dimensions.

Use the “**Unit**” setting to select the measuring units of the Unprintable Area. Inches or millimeters can be selected.

Apply and save modifications by clicking **OK** at the bottom of the Unprintable Area dialog box. Click on **Cancel** to close the Unprintable Area dialog box and return to previous settings. You can restore the Unprintable Area settings to their original values by clicking the **Restore Defaults** button.



### More Options...



The **More Options** button opens a dialog box that allows you to select printing mediums that are not available from the Paper Size settings, including transparencies.

A black border placed around logical pages can also be specified here.

Apply and save modifications in this dialog box by clicking **OK**.

Click on **Cancel** to close the dialog box and return to previous settings. You can restore settings to their original values by clicking the **Restore Defaults** button.

### **Note**

- Be sure to apply media changes not only in Paper type but on the printer's control panel as well.  
Use the Menu button to select Print Menu. From the Print Menu, select from the TRAY1 MEDIA, TRAY2 MEDIA, or TRAY3 MEDIA options.
- When printing labels, select either "Plain Paper" or "Thick Paper" from the Paper Type setting menu depending upon the thickness of the labels to be used.

### **About...**

Click the **About** button for various copyright information.

### **Restore Defaults**

You can restore settings to their original values by clicking the **Restore Defaults** button.

## Graphics



### Resolution:

This setting allows you to adjust the printing resolution measured in Dots Per Inch (dpi). This printer generates documents at a resolution level of 600 dpi.

### Halftoning

Halftoning refers to the frequency (lines per inch) and angle of the lines that consist of a halftone pattern of a screen. The default settings should be sufficient for most users. To use the default settings, enable **“Use printer’s settings”** in the halftoning dialog box.

To customize the halftoning pattern, enable **“Use settings below”**. Use the arrows to increase/decrease the values of both the screen angle and frequency. To restore the settings to their original values, enable **“Use printer’s settings”**.



## **Special**

These settings allow you to reverse the design of your document to be printed. To reverse black and white values of the document, enable the **“Print as a negative image”** command. To produce a mirror image or reverse the left to right orientation of the document, enable **“Print as a mirror image”**.

## **Scaling:**

Enlarge or reduce a document to be printed using this setting. The maximum that a document can be enlarged is 400%, or four times its original size. The maximum that a document to be printed can be reduced is 25% of its original size.

## **Restore Defaults**

Resets all of the changes made in this dialog box to their original settings.

Apply and save modifications in this dialog box by clicking OK. Click on Cancel to close the dialog box and return values to their previous settings.

## Fonts



The printer provides the option to utilize TrueType font technology or defer to the built-in printer fonts. Built-in printer fonts allow for faster printing, however documents that are generated using TrueType fonts and are printed using built-in printer fonts may not print exactly as they appear on the screen. By using TrueType fonts, document printing may take longer, but the font styles will be consistent with other printers that use TrueType technology.

To save time and printer memory, specific TrueType fonts can be downloaded and substituted for printer fonts. Enable the **“Send TrueType fonts to printer according to the font Substitution Table”** button. Click the **“Edit the Table”** button to open the Font Substitution Table. Use the mouse to select fonts to be substituted.

The printer can be set to always use the built-in printer fonts. Documents printed using built-in printer fonts may not share common fonts with other printers. Documents will be printed with greater speed however. Enable **“Always use built-in fonts instead of TrueType fonts”** to use this setting.

Documents that are often shared or demand conformity can be printed with TrueType Fonts by enabling **“Always use TrueType fonts”**.

To set the format in which fonts are downloaded, click on the “**Send Fonts As...**” button. “**The Send Fonts As...**” dialog box allows fonts to be sent as an outline, bitmap, type 42 or not to be sent at all. Click on the arrow of the “Send True Type Fonts as” dialog to select one of the available types.



The threshold box controls the pixel rate at which the PostScript driver should start downloading TrueType fonts, either as bitmaps (Type 3) or outlines (Type 1). Click on the window to change the pixel rate if necessary.

When fonts that appear in both the computer and the printer are selected, a default to the printer font can be enabled by clicking on the Favor System box.

“**PostScript fonts**” determines whether or not PostScript fonts are downloaded to the computer. Select “**Native Format**” to download PostScript fonts before the document is printed. Enable “**Don’t Send**” to prevent PostScript fonts from being downloaded to your computer.

In the Font tab, click on the “Update Soft Fonts” button to update the list of installed PostScript fonts. This option applies only to PostScript Type 1 fonts.

## Device Options



### Available printer memory [in KB]:

Indicates the amount of memory used in PostScript. Usually, printer software automatically sets a recommended size for this memory depending on the amount of memory stored in the printer which is entered at **Installed Memory** of the **Installable Options**.

### Available font cache [in KB]:

You are not required to enter an Available font cache setting for this printer.

### Printer features

The settings in this dialog box allow you to fine-tune the general features of the printer to a particular document to be printed. To modify a feature, select one of the following Printer Feature categories: **Color Mode**, **Image Content**, **PS Color Matching**, and **Auto Tray switching**. Then, select from one of the corresponding options from the “**Change Setting for**” window. To restore the settings to their original values, click Restore Defaults.

### **Color Mode**

Use this setting to specify whether the document is to be printed in color or monochrome.

### **Image Content**

The optional settings of this feature determine the gloss levels, graphic imaging and black and gray tones used in the document to be printed.

#### ***General***

This setting supports ideal imaging standards for most graphics and photographs. Black tones will not contain the gloss of other Image Content settings however gray tones will print with an attractive shine.

#### ***Business Graphics***

This setting is best suited for graphs and charts that are commonly used for business. Blacks and grays are not glossy however documents print sharp and clear when compared with other settings.

#### ***Photographs***

The best mode for printing photographs. Produces black and gray tones with a glossy sheen.

### **PS Color Matching**

Adjusts color sharpness and contrast to produce printed documents that closely represent their on-screen images.

#### ***No Color Adjustment***

Documents are printed without using PS Color Matching.

#### ***Perceptual***

Best suited for printing photographs.

#### ***Saturation***

This setting produces vivid and sharp prints.

#### ***Relative***

This setting is also good for photographs and for generating images on paper as they appear on the computer monitor.



### **Accurate**

Use this setting to print documents as they appear on the computer monitor.

### **Blue Shift**

Reproduces colors, especially blues, that are very close to their onscreen images.

### **Auto Tray Switching**

This feature allows the printer to automatically switch trays during a print operation when paper from one tray runs out. The size of the paper in the tray that runs out must be the same size as the paper in the tray to be switched.

### **Installable options**

Lists possible setting changes to the printer options. Some options that appear in this dialog box may not necessarily be installed in your printer and will be listed as “Not Installed”. Use the “**Change Settings**” window to modify one of the installed options.

### **Tray3**

Registers whether or not the 250 Sheet Third Cassette Unit (Optional) has been installed.

### **Installed Memory**

Use this setting to tell the printer driver how much memory is installed in the printer. The driver will manage resources in accordance with the amount of memory available.

The printer comes with 20MB of installed memory from the factory. Purchase additional expansion memory according to your particular needs.

### **Restore Defaults**

You can restore settings to their original values by clicking the **Restore Defaults** button.

## PostScript



### PostScript output format:

Use this dialog box to select and activate the preferred format for PostScript files. For printing most documents, the **PostScript (optimize for speed)** setting is recommended. Other available PostScript settings include: **PostScript (optimize for portability-ADSC)**, **Encapsulated PostScript (EPS)**, **Archive format** and **PJL archive format**.

### Postscript header

The PostScript header dialog enables the printer to download and retain a header before printing. This setting will save time should the same header be used every time the printer generates a document. Enable the **“Assume header is downloaded and retained”** box to utilize this feature. If **“Download header with each print job”**, is enabled, the printer will not retain the header and it will be downloaded with every individual print job. To send header information to the printer, click **“Send Header Now”**.



### **Print PostScript error information**

Enable this feature to be notified when PostScript errors occur. PostScript Error information is not available in EPS format.

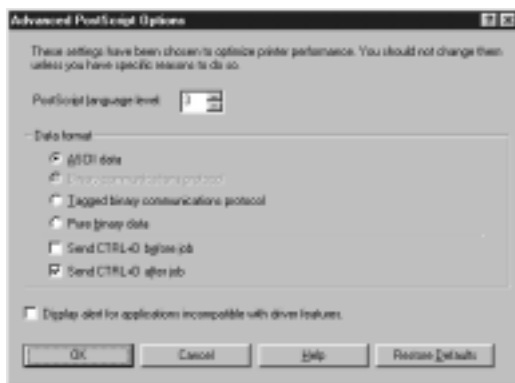
### **PostScript timeout values**

Specifies how long the printer will wait for a document to be downloaded from the computer. Setting “**Job timeout**” to 0 will format the printer to continue to attempt to print the document indefinitely.

“**Wait timeout**” will specify how long the printer will wait to receive PostScript information from the computer. Setting “**Wait timeout**” to 0 will enable the printer to wait indefinitely.

### **Advanced...**

Click the **Advanced...** button to open the “**Advanced PostScript Options**” window. These settings are provided to optimize printer performance, however the default settings should be sufficient for all general purposes of the printer.



### PostScript language level

This is a PostScript 3 printer. Select “3” as the language level for this printer.

### Data format

Select the format in which documents will be sent from the printer. Choose from: ASCII data, Binary communications protocol, Tagged binary communications protocol and pure binary data. Binary data tends to print faster than ASCII data. If you are using a local printer, the “Tagged binary communications” setting is recommended. If you are working with a network printer, the “Pure binary data” setting is optimal.

### Send CTRL+D before/after job

Use these settings to enable the printer to activate a reset either before or after a document has been printed.

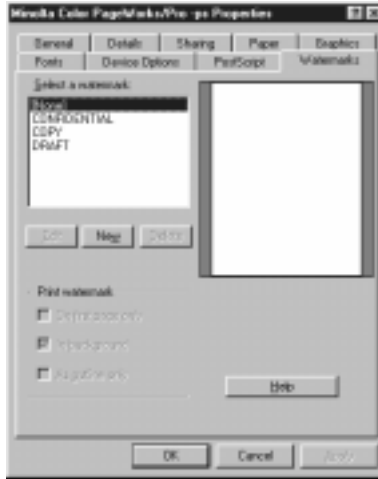
### Restore Defaults

Restore settings to their original values by clicking the Restore Defaults button.

### Display alert for applications incompatible with driver features

Check this box to show the alert messages if a running application might be incompatible with some driver features.

## Watermarks



The Watermarks dialog allows you to add text watermarks to the printed page.

### Select a watermark:

Use this list to specify the watermark from the list that you want to use.

### Edit

To edit a watermark, first select the watermark from the list and then click this button to open the Edit Watermark dialog (see page 4-22).

### New

Click this button to open the New Watermark dialog (see page 4-22), which displays various tools for creating new watermarks.

### Delete

Select the name of the watermark that you want to delete and click this button. Click **OK** to delete or **Cancel** to abort the operation.

*Edit Watermark / New Watermark dialog*



**Text**

Type the contents of the new watermark into this box.

**Font**

Specify the font that you want to use for the watermark.

**Size**

Specify the font size that you want to use for the watermark.

**Style**

Select the style that you want to use for the watermark from the drop-down list.

**Angle**

Use this box or the slide bar to specify the angle of the watermark on the page.

**Position**

“User defined” allows you to adjust the placement of the watermark relative to the X and Y values assigned to the page. The watermark can be placed in the center of the document by selecting “Automatically”.

**Color**

Determines the color in which the selected watermark is printed. Click the “Choose Color” button to display the Color dialog box and select a color for the watermark.

# Windows NT 4.0

## Printer Software Overview

The PostScript printer driver was provided by Adobe Systems Incorporated, and allows you take full advantage of your printer's features and capabilities using your computer running Windows NT 4.0.

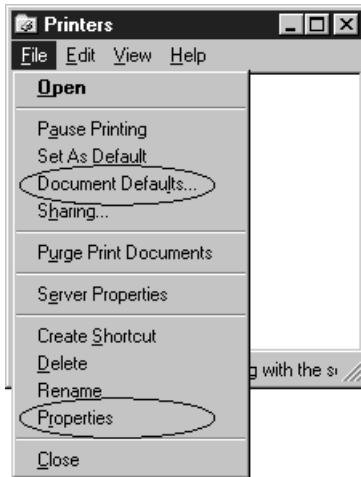
This section explains the software's features.

## Displaying the PostScript Printer Software Window

1. Turn on your computer and start up Windows NT 4.0.
2. On your computer, click **Start**, point to **Settings**, and then click **Printers** to display the Printers dialog.
3. On the Printers dialog, click the **Minolta Color PageWorks/Pro - ps** icon.



4. Click **Document Defaults** from the Printer dialog's **File** menu to open the Default Document Properties window (page 4-27). This window allows you to specify document settings. To change hardware settings, click the **Properties** item to open the Minolta Color PageWorks/Pro -ps Properties window (page 4-37).



## Exiting the PostScript Printer Software

After you are finished using the PostScript Printer Software, you can exit it either by clicking the **OK** or **Cancel** button, or by clicking the window close button in the upper-right corner of the window.



## Using PostScript Printer Driver Setup Dialog

### Default Document Properties Window



The two tabs that this dialog contains allow you to control the main settings of the printer driver.

The following sections describe specific settings you can make with this printer driver.

#### Common Buttons

The following buttons appear at the bottom of each tab.

##### **OK**

Click to exit the Properties dialog, saving any changes made.

##### **Cancel**

Click to exit the Properties dialog without saving any changes made.

##### **Help (?)**

Click the ? button in the upper-right corner, and then click the feature to get the information on each setting.

## Page Setup



The **Page Setup** tab allows you to control several parameters that determine the layout of your document.

### Paper Size

This item allows you to specify the sizes of paper and envelopes that you are using. The range of possible sizes is:

#### Paper

- Letter
- Legal
- Executive
- A4
- A5
- JIS B5
- Invoice
- J-Post

#### Envelope

- C5
- Com-10
- DL
- Monarch



### Paper Source

The Paper Source item specifies the tray from which paper is fed from the printer. To change this setting, just select the desired paper source from the drop-down list. Paper sources that are not available to your printer are identified by the  $\triangle$  mark. If the desired tray is displayed with the  $\triangle$  mark, make sure that it has been set to Installed in the Device Settings tab of the Properties window.

By setting the paper source to Automatically Select, the printer will automatically select a paper source that contains the paper size that is best suited for the data to be printed.

### Copy Count

This item specifies the number of copies to be printed. You can specify any value from 1 to 9999.

## **Orientation**

This setting allows you to determine how your document is positioned on the printed page.


### **Portrait**

Portrait documents are printed lengthwise (vertically), relative to the page.

### **Landscape**

Landscape documents are printed widthwise (horizontally), relative to the page.

## **Color Appearance**

Color and monochrome printing cannot be controlled using this setting. To change between color and monochrome printing, please go to the Color Mode item located under Printer Features on the Document Options branch of the **Advanced** tab.  p. 4-33

## Advanced Tab



The **Advanced** tab allows you to control and fine tune many of the advanced features of your printer driver. The features are organized in a tree format with three main branches: *Paper Output*, *Graphic* and *Document Options*.

The **Advanced** tab consists of two windows that allow you to specify and manage many of the advanced features of your printer driver. The top window displays the current settings. The bottom window allows you to change the settings. The contents of the bottom window are determined by the item that is selected in the top window.

For detailed information regarding the individual items of the **Advanced** tab, read the following section and consult the online help of the printer driver.

Click on any of the items of the tree to select them.

## AdobePS Minolta Color PageWorks/Pro -ps Document Settings

Click on this item to open a dialog that provides the following two options:

Revert to previous settings by clicking the **Undo Changed Option** button.

View copyright and version information about your printer driver by clicking the **About Adobe PostScript Printer Driver** button.

### Note

- All of the features of the **Page Setup** tab also appear in the **Advanced** tab (Paper Size, Paper Source, Copy Count, Orientation and Color Appearance). Control of these settings is possible through either tab. Setting changes that are made in the **Page Setup** tab are automatically reflected in the **Advanced** tab. Setting changes that are made in the **Advanced** tab are automatically reflected in the **Page Setup** tab.

### Paper/Output

This branch of the tab consists of five sub-branches: *Paper Size*, *Orientation*, *Paper Source*, *Media* and *Copy Count*.

#### Media

Specifies the type of media to be used for printing.

For detailed information regarding the other four items, refer to page 4-28 or the online help.

#### Graphic

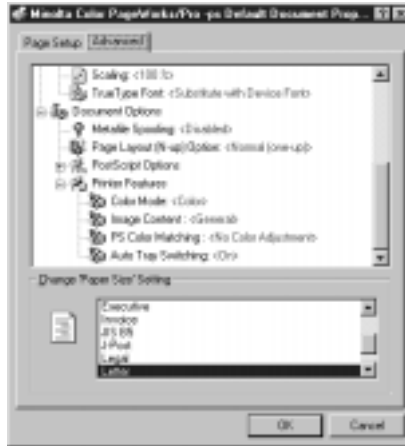
This branch manages settings that determine print quality.

#### Resolution

This item displays the resolution setting of the printer driver as measured in dots per inch (DPI).

#### Color Appearance

Color and monochrome printing cannot be controlled using this setting. To change between color and monochrome printing, please go to the Color Mode item located under Printer Features on the Document Options branch of the **Advanced** tab. ➔ p. 4-33



## Scaling

Enlarge or reduce a document to be printed using this setting. The maximum that a document can be enlarged is 1000%. The maximum that a document can be reduced is 1% of its original size. A scaling value of 100% indicates that the document will be printed without any relational enlargement or reduction.

## True Type Font

Use this item if your document has overlapping text and graphics. If you use a device font or a downloaded TrueType font when the document has overlapping text and graphics, the errors will occur.

## Document Options

This branch contains four items that help to determine the quality of your printed document: *Metafile Spooling*, *Page Layout (N-up) Option*, *PostScript Option*, and *Printer Features*.

### **Metafile Spooling**

The EMF, or metafile format, makes your program available for other tasks while you are waiting for your document to print. This default setting (**On**) is optimal for most applications. However, you can switch to the RAW format by disabling this feature (**Off**) if you experience any problems.

### **Page Layout (N-up) Option**

The N-up settings allow you to print multiple documents on a single page.

### **PostScript Options**

This branch contains six items to specify the available PostScript options: *PostScript Output Option*, *True Type Font Download Option*, *Post Script Language Level*, *Send PostScript Error Handler*, *Mirrored Output*, and *Negative Output*.

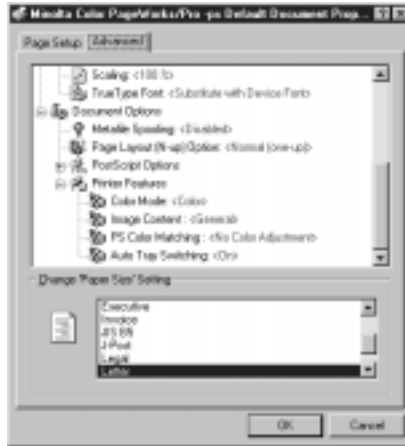
### **Printer Features**

This branch contains four items that allow you to fine-tune the general features of the printer to a particular document to be printed. To modify a feature, select one of the following Printer Feature categories: *Color Mode*, *Image Content*, *PS Color Matcing* and *Auto Tray Switcing*.

#### **Color Mode**

Use this setting to specify whether the document is to be printed in color or monochrome.





### Image Content

The optional settings of this feature determine the gloss levels, graphic imaging and black and gray tones used in the document to be printed.

#### **General**

This setting supports ideal imaging standards for most graphics and photographs. Black tones will not contain the gloss of other Image Content settings however gray tones will print with an attractive shine.

#### **Business Graphics**

This setting is best suited for graphs and charts that are commonly used for business. Blacks and grays are not glossy however documents print sharp and clear when compared with other settings.

#### **Photographs**

The best mode for printing photographs. Produces black and gray tones with a glossy sheen.

**PS Color Matching**

Adjusts color sharpness and contrast to produce printed documents that closely represent their on-screen images.

**No Color Adjustment**

Documents are printed without using PS Color Matching.

**Perceptual**

Best suited for printing photographs.

**Saturation**

This setting produces vivid and sharp prints.

**Relative**

This setting is also good for photographs and for generating images on paper as they appear on the computer monitor.

**Accurate**

Use this setting to print documents as they appear on the computer monitor.

**Blue Shift**

Reproduces colors, especially blues, that are very close to their onscreen images.

**Auto Tray Switching**

This feature allows the printer to automatically switch trays during a print operation when paper from one tray runs out. The size of the paper in the tray that runs out must be the same size as the paper in the tray to be switched.

## Properties Window



The following sections describes specific settings you can make with this printer driver.

### **Common Buttons**

The following buttons appear at the bottom of the window.

#### **OK**

Click to exit the dialog, saving any changes made.

#### **Cancel**

Click to exit the dialog without saving any changes made.

#### **Help (?)**

Click the ? button in the upper-right corner, and then click the feature to get the information on each setting.

## Device Settings



The **Device Settings** tab consists of two windows that allow you to specify and manage the options that have been installed on your printer. The top window displays the current settings. The bottom window allows you to change the settings. The contents of the bottom window are determined by the item that is selected in the top window. For detailed information regarding the individual items of the **Device Settings** tab, read the following section and consult the online help of the printer driver.

### AdobePS Minolta Color PageWorks/Pro -ps Document Settings

Click on this item to open a dialog that provides the following two options:

Revert to previous settings by clicking the **Undo Changed Option** button.

View copyright and version information about your printer driver by clicking the **About Adobe PostScript Printer Driver** button.



### Form to Tray Assignment

Paper Source and Paper Size settings must be entered through the Default Document Properties dialog. The printer will not recognize Paper Source and Paper Size settings that are entered through the Device Settings tab.

### Font Substitution Table

This branch contains the font-substitution table and options for changing the TrueType-to-PostScript font mapping.

### Available PostScript Memory

This item indicates the amount of memory used in PostScript. Usually, printer driver automatically sets a recommended size for this memory depending on the amount of memory stored in the printer which is entered at **Installed Memory** of the **Installable Options**.

### Output Protocol

Specify the protocol that the printer will use for print jobs.

### **Send CTRL-D Before Each Job**

Specify whether a CTRL+D character should be sent at the beginning of every PostScript document (its default is **No**). If your document fails to print when sent to a printer connected through parallel ports, change **No** to **Yes**.

### **Send CTRL-D After Each Job**

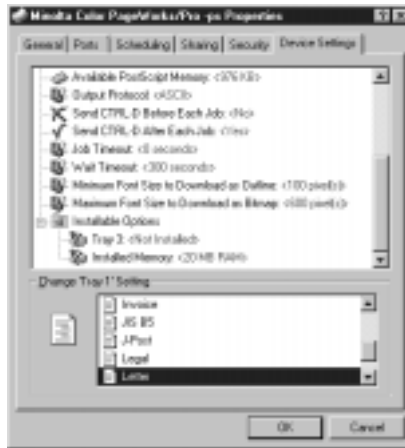
Specify whether a CTRL+D character should be sent at the end of every PostScript document (its default is **Yes**). If your document fails to print when sent to a network printer, change **Yes** to **No**.

### **Job Timeout**

Specify how long the printer will wait for a document to be downloaded from the computer.

### **Wait Timeout**

Specify how long the printer will wait to receive PostScript information from the computer.



### Minimum Font Size to Download as Outline

Specify the minimum font size (in pixels) for which the PostScript driver will download TrueType font as outline fonts.

### Maximum Font Size to Download as Bitmap

Specify the maximum font size (in pixels) for which the PostScript driver will download TrueType fonts as bitmap fonts.

### Installable Options

Lists possible setting changes to the printer options. Some options that appear in this window may not necessarily be installed in your printer and will be listed as "Not Installed". Use the **“Change Settings”** window to modify one of the installed options.

### Tray 3

Specify whether or not the optional **250-sheet third cassette unit** has been installed to your printer.

### Installed Memory

Specify the amount of memory installed to your printer.

# Windows 3.1

## Printer Software Overview

The PostScript printer driver was provided by Adobe Systems Incorporated, and allows you take full advantage of your printer's features and capabilities using your computer running Windows 3.1 or later.

This section explains the software's features.



## Displaying the PostScript Printer Software Window

1. Turn on your computer and start up Windows 3.1.
2. From the **Program Manager**, double-click **Main** to display the Main group, and then double-click **Control Panel** to display the Control Panel dialog box.
3. Double-click **Printers** to display the printers dialog box.
4. Select **Minolta Color PageWorks/Pro -ps** from the Installed printers and then click **Setup....**



### Tabs

You can move between the PostScript Printer Software screens by clicking on the tabs along the top of the window. These tabs let you check the status of your printer and make various changes in its settings. The following sections of this manual describe in detail about how to use these settings and features.

## Exiting the PostScript Printer Software

After you are finished using the PostScript Printer Software, you can exit it either by clicking the **OK** or **Cancel** button, or by clicking the window close button in the upper-left corner of the window.

## Choosing Menu Settings

The following standard Windows procedures can be used when making settings in the printer software's menu pages.

- Clicking an option button or name
- Clicking a check box
- Dragging the scroll box on a scroll bar
- Clicking a drop-down list box and then clicking on an item to select it
- Holding down the [Alt] key and typing the underlined character that represents a setting

See the documentation that comes with Windows 3.1 for details on these and other operations.

## Common Button Operations

The following buttons appear at the bottom of all the driver menus.

### **OK**

Use this button to close the dialog box while saving any changes you might have made.

### **Cancel**

Use this button to close the dialog box without saving any changes.

### **Help**

Use this button to view information regarding the immediate window and its function(s).

### **About**

Click the About button for various copyright information.

## Paper



This tab is the default for the Setup dialog box. Paper size, orientation (including portrait, landscape and rotated landscape), scaling, paper source and number of copies to be printed can all be specified through the Paper tab. This tab supports layout changes, determines how many documents to be printed per page and also provides a window for selecting Watermarks (see 4-56). Scaling and special effects can be controlled, as well as custom paper sizes, depending upon the options available on your printer. Many of the changes that are made in the Paper dialog can be immediately viewed in the “paper” icon window.

### Output Format:

This window displays the current output format selected for the printer. The window can also be used to change the currently selected output format from either PostScript for normal printing or Encapsulated PostScript for creating EPS files.

### Paper Source:

This window displays the currently selected source of paper for the printer. Click on the arrow to the right of the window to display the paper tray options or to change the currently selected paper source. Make sure that the selected tray contains the correct size of paper.

**Paper Size:**

This window shows the currently selected size of the paper being used for printing. The pull-down menu of possible paper sizes is displayed by clicking once on the arrow to the right of the window. Make sure that the selected tray contains the correct size of paper.

**Orientation**

Allows you to determine how your document is positioned on the printed page. Possible settings include Portrait, Landscape and Rotated Landscape.

**Scaling**

Enlarge or reduce a document to be printed using this setting. The maximum that a document can be enlarged is 400% or four times its original size. The maximum that a document can be reduced is 25% of its original size. A scaling value of 100% indicates that the document will be printed without any relational enlargement or reduction.

**Copies:**

This setting selects the number of copies to be printed. Use the arrows to increase or decrease the number of copies from 1 to 999.



### Special Effects

#### Watermarks:

Watermarks allow you to print a specific message onto your document such as COPY, DRAFT or CONFIDENTIAL. Click the "First Page Only" box to specify that only the first page of a multi-page document will contain the selected watermark. For more details regarding this function, click on the Watermark tab dialog.

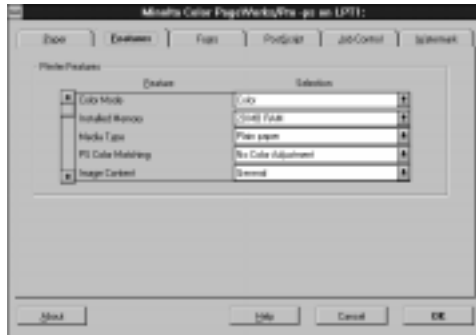
#### Layout:

The layout setting allows you to determine the number of documents to print per sheet of paper. The "1 page up/shoot" setting prints one document per sheet. "2 pages up" will print two documents per sheet, dividing the document in half. The printer is capable of printing up to 16 documents per sheet of paper. Borders can be placed on the page to separate the documents by clicking the "Print Page Border" box.

## Features

This tab is only available if your printer supports various features or accessories such as optional paper trays.

Whenever Media Type changes are made, it is necessary to properly set the printer's control panel for the selected media (MENU/PRINT MENU/TRAY1 MEDIA, TRAY2 MEDIA, TRAY3 MEDIA).



- **Color Mode**
- **Installed Memory**
- **Media Type**
- **PS Color Matching**
- **Image Content**
- **Tray 3**
- **Auto Tray Switching**

### Color Mode

Use this setting to specify whether the document is to be printed in color or monochrome.

### Installed Memory

Displays the currently installed memory of the printer. The printer comes with 20MB of available memory from the factory.

### Media Type

Specifies the type of media to be used for printing. For details, refer to PCL (Output Media) on page 5-7 and page 5-7.

#### Note

- Whenever Media Type changes are made, it is necessary to properly set the printer's control panel for the selected media (MENU/PRINT MENU/TRAY1 MEDIA, TRAY2 MEDIA, TRAY3 MEDIA).
- When printing labels, select either "Plain Paper" or "Thick Paper" media depending upon the thickness of the labels to be used.

### PS Color Matching

Adjusts color sharpness and contrast to produce printed documents that closely represent their on-screen images.

#### Note

- For best results when using the PS Color Matching feature, select the "General" or "Photographs" setting of the Image Content function (see page 4-50).

### No Color Adjustment

Documents are printed without using PS Color Matching.

### Perceptual

Best suited for printing photographs.

### Saturation

This setting produces vivid and sharp prints.

### Relative

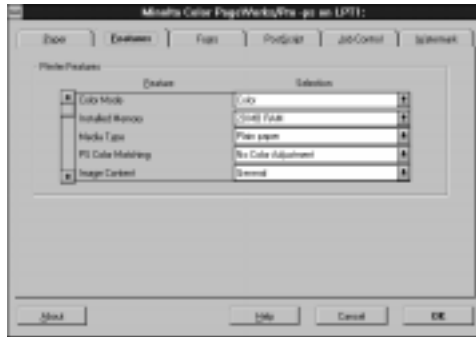
This setting is also good for photographs and for generating images on paper as they appear on the computer monitor.

### Accurate

Use this setting to print documents as they appear on the computer monitor.

### Blue Shift

Reproduces colors, especially blues, that are very close to their onscreen images.



## Image Content

The optional settings of this feature determine the gloss levels, graphic imaging and black and gray tones used in the document to be printed.

### General

This setting supports ideal imaging standards for most graphics and photographs. Black tones will not contain the gloss of other Image Content settings however gray tones will print with an attractive shine.

### Business Graphics

This setting is best suited for graphs and charts that are commonly used for business. Blacks and grays are not glossy however documents print sharp and clear when compared with other settings.

### Photographs

The best mode for printing photographs. Produces black and gray tones with a glossy sheen.

### Tray 3

Registers whether or not the 250 Sheet Third Cassette Unit (Optional) has been installed.

### Auto Tray Switching

This feature allows the printer to automatically switch trays during a print operation when paper from one tray runs out. The size of the paper in the tray that runs out must be the same size as the paper in the tray to be switched.



## Fonts



This tab allows you to manage the various TrueType and PostScript Fonts that are available to the printer. The Fonts tab allows you to specify whether to have PostScript versions of fonts exchanged for TrueType versions, or to have PostScript versions of TrueType fonts automatically downloaded to the printer. When using TrueType fonts, document printing may take longer, but the font styles will be consistent with other printers that use TrueType technology. To change from TrueType fonts to PostScript fonts, click the box titled “Substitute PostScript Fonts for TrueType Fonts on This Printer”.

Downloading specific TrueType fonts and substituting them for built-in printer fonts can save time and printer memory. You can select fonts to be substituted through the “TrueType Substitutions for All Printers” dialog. These substitutions can be activated as a default setting by clicking the “Use Defaults” button.

Delete and create font groups through this tab as well as download fonts to the printer through specific devices by using the Font Downloader button.

## PostScript



This tab controls the “PostScript Level” and “Binary” options of the printer. Other controls, such as the communication protocols and color printing options are also accessed through the PostScript tab. For printing most documents, the “PostScript (optimize for speed)” setting is recommended.

### Performance Options

Use this dialog to set the PostScript 3 Features and the Binary data mode.

Sending data in a binary format is generally faster than sending ASCII PostScript data. The default “Use PostScript Level 2 or 3 Features” and “Send Data in Binary” settings are recommended for most user applications.

### Margins

The “Default” setting is recommended for most print jobs. The “Default” setting automatically utilizes the standard printable area of the paper currently being used. The “None” setting tells the driver that the printable area encompasses the entire size of the paper being used for printing. This setting should be enabled only if your documents are missing bits of information or if printed images appear cropped.

### **Color Options**

This dialog controls the color printing features of the printer. Check the “Send Full Color Data” box in order to send documents that are to be printed in color to the printer. If you wish to print monochrome documents, do not check this box.

### **Note**

- The “Match Colors Across Printers” settings mentioned above cannot be specified for this printer. Please use the PS Color Matching settings in the Features tab in order to control the color matching-performance of this printer.

### **Protocol Options**

This feature controls how the printer driver communicates with the printer.

The “Default” option will support communication from the driver to the printer through a direct serial or parallel port connection or through any network connection other than AppleTalk. Select “None” only if your printer is receiving data through an AppleTalk connection.



## PostScript Timeout Values

The “Job Timeout” and “Wait Timeout” functions allow you to specify the maximum amount of time that a print job can take before cutting off. If your printer has a direct connection to the computer, a time value of zero will prevent the printer from timing out. If your computer shares a printer through a network, a timeout sequence should be considered to prevent dominating printer usage with lengthy print jobs.

A “Job Timeout” determines how much time the printer is allowed to print a document. A “Wait Timeout” determines how much time the printer waits to receive print data from the computer. Timeouts can be set anywhere between 0 to 999 seconds.

## PostScript Performance

Use this dialog to select PostScript performance for either portability or speed.

The “Optimize for Speed” setting will provide a higher printing speed but may demand more memory and may not be compatible with some network spoolers.

The “Optimize for Portability” option ensures print compatibility of a document over any other printer. The option uses less memory than the “Optimize for Speed” setting, however, documents may take longer to print.

## Job Control



This dialog controls the following printer settings.

### Printer Mode

The settings of this feature do not pertain to this printer.

### Error Handler

Checking the “Error Handler” box will enable the driver to print an error message report whenever a PostScript error occurs.

### PostScript Header

The PostScript Header carries instructions to the printer that are required to print a document correctly. There are three options for managing PostScript Headers.

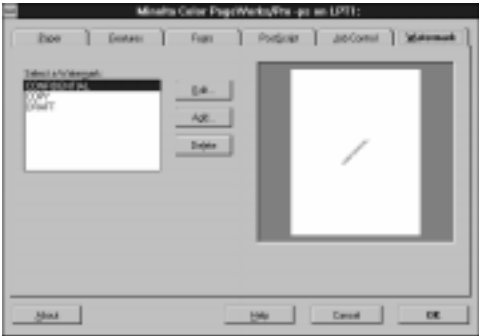
“Download Each Job” sends a PostScript Header with every document that is sent to the printer.

“Already Downloaded” will utilize a pre-existing PostScript Header. Use the “Download” button to download a PostScript Header so that the “Already Downloaded” feature can be set.

### Font Control

Enable the “Do Not Download Fonts” function in order to prevent downloading soft fonts to the printer.

## Watermarks



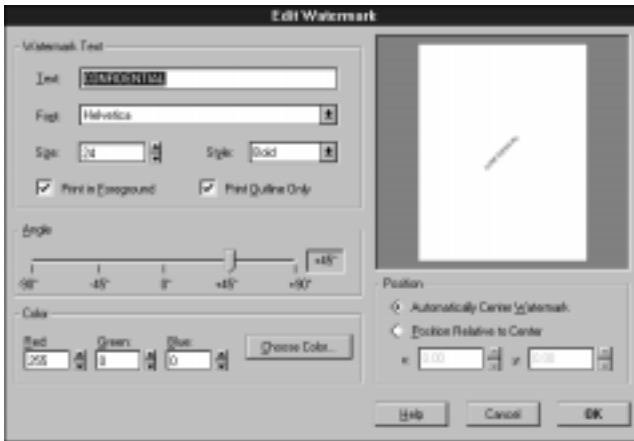
Use this dialog to customize, edit or create Watermarks. To customize or edit an existing Watermark, first select it from the “Select Watermark” window. Click the Edit button and open the “Edit Watermark” window to change the text, font, size, style, location, and or color of the watermark.

## Windows 3.1

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The same options for editing and customizing watermarks are applicable to original watermarks that can be created in the Add Watermark window which can be opened by clicking the “Add” button.

Watermarks can also be deleted from the “Select a Watermark” window. Simply select the watermark you want to delete and click the “Delete” button.



# Macintosh

## Introduction

The software allows you take full advantage of your printer's features and capabilities using a computer running the Mac OS.

This section explains the software's features.

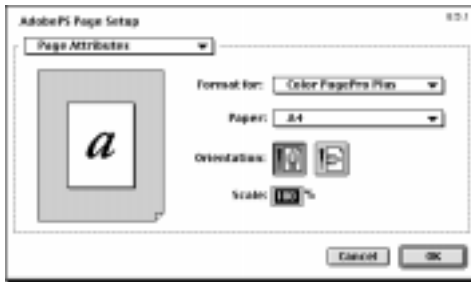


## Page Setup

This section describes the options that can be set through the Page Setup dialog box. Open the Page Setup dialog box by selecting Page Setup from the File menu of your application.

This dialog box provides tools used to specify the format and dimensions of a document before it is printed.

### Page Attributes



### Page Image

This box contains an overview image of the document to be printed and reflects changes as new settings are specified.

The “unprintable area”, or the margins, are separated from the working areas of the page by a dotted line.

The dimensions of the document can be viewed by clicking anywhere along the Page Image icon. Click once to view the dimension values in inches, twice for centimeters. Clicking a third time will return the Page Image icon to its original overview.

### Format for:

Make sure that **Color PagePro Plus** is selected.

**Paper:**

These settings allow you to choose from various paper sizes and document formats that are supported by the printer.

**Orientation:**

Allows you to determine how your document is positioned on the printed page. Possible settings include Portrait and Landscape.

**Scale:**

Enlarge or reduce a document to be printed using this setting. The maximum that a document can be enlarged is 400%, or four times its original size. The maximum that a document to be printed can be reduced is 25% of its original size. The default value for this setting is 100%.

**OK**

Use this button to close the dialog box while saving any changes you might have made.

**Cancel**

Use this button to close the dialog box without saving any changes.

## PostScript Options



The following visual effects and printer options can be enabled through this window:

### Visual Effects:

#### Flip Horizontal

Produces a mirror image of the document to be printed.

#### Flip Vertical

Turns the image upside down.

#### Invert Image

Reverses black and white values of the document.

### Image & Text:

#### Substitute Fonts

This option is set by default to replace similar or duplicate fonts.

#### Smooth Text

This option is set by default to improve the image quality of bitmapped fonts.

**Smooth Graphics**

This option is set by default to smooth the edges of graphic images to be printed.

**Precision Bitmap Alignment**

Adjusts and reduces bitmapped images to the resolution setting of the printer.

**Unlimited Downloadable Fonts in a Document**

Manages a large number of fonts on an “as needed” basis to preserve printer memory.

**OK**

Use this button to close the dialog box while saving any changes you might have made.

**Cancel**

Use this button to close the dialog box without saving any changes.

## Print Menu Settings

This section describes the print options that can be set through the Print dialog box. Open the Print dialog box by selecting Print from the File menu of your application.



### Printer:

Make sure that **Color PagePro Plus** is selected.

### Destination:

Select Printer or File to specify whether a document is printed as is or saved as a PostScript file, respectively. The default setting for this option is Printer.

### Print

Click this button to open the print menu to print a document.

### Cancel

Click this button to close the dialog box without saving any changes.

### Save Settings

Click this button to save any changes that you may have made without closing the dialog box.

## General



### Copies:

Enter the number of copies to be printed here.

### Pages:

Use this function to select specific pages of a sequence to be printed. The “All” default setting for this function automatically prints all pages of the document. To print a particular range of pages, enter the page numbers in the “From” and “To” boxes. The printer will print only the range of pages selected (first, last and in between).

### Paper Source

Select the source from which the paper will be fed to the printer. Check the “All pages from” button to be able to use any tray as it becomes necessary during printing.

The “All pages from” button enables the printer to utilize paper from all available trays. By checking the “First page from” button, one tray only will be specified as the paper source. The cassette window allows you to select from amongst the currently available cassette trays.

Select “All pages from” to print all documents using paper from the same tray.

Select “First page from” to print only the first page of a document from a specified tray.

To continue printing the following pages of the document from a tray other than the “First page from” tray, specify the desired tray from the “Remaining from” options.

## Background Printing

Select Foreground to send a print job directly without having it go through the spooler. Select Background to send the print job to the spooler before printing.

## Cover Page

Creates a cover page for the document to be printed. The default setting for this feature is “None”. To print a cover page with the document, turn off the default setting by selecting “Before” or “After Document” to specify where in the document the cover page should be placed.

## Color Matching



### Print Color:

Use this option to specify the colors of the document. The option allows you to select between black and white or color/grayscale printing. ColorSync color matching or PostScript color matching can also be specified through this dialog.

The black and white setting is for non-color prints. To reduce gloss or glare when printing in black and white, select Monochrome from the Color Mode drop-down list.

Color/Grayscale produces a document without utilizing any color matching features.

The ColorSync Color Matching feature manages the color matching of the document through the host computer. When using this feature, make sure that the option is selected from the Printer Profile drop-down list.

The PostScript Color Matching feature manages the color matching of the document through the printer. When using this feature, select either Minolta Color PageWorks/Pro Plus or Printer's Default from the Printer Profile drop-down list. If you choose the Printer's Default setting, be sure to select a color matching feature from the PS Color Matching drop-down list.

**Printer Profile:**

This dialog helps to set the color characteristics of the document when a Color Matching feature is used.

Along with the other feature settings that may be selected before printing, it is necessary to select either Printer's Default or Minolta Color PageWorks/Pro Plus from this drop-down list. If the Minolta Color PageWorks/Pro Plus option is not displayed in the Printer Profile drop-down list, reinstall the PostScript Printer Software for Macintosh according to the set-up instructions provided.



## Layout



### Pages per sheet:

This setting allows you to determine the number of documents to print per sheet of paper. The “1” default setting prints one document per sheet. “2” will print two documents per sheet dividing the sheet in half. “4”, “6”, “9” and “16” print the indicated multiple number of documents onto one sheet of paper. These settings can be applied to both Landscape and Portrait orientations.

### Layout Direction:

Specify the order of multiple documents that are being placed upon a single page. Options include ascending or descending-order patterns.

### Border:

You can place a border to separate multiple documents that have been placed on a single page. Choose the style of the border from the options available in the **Border** box.

## Error Handling

Sets protocols for reporting errors that occur during printing.

## Save as File

Allows you to specify a format type when saving files.

## Printer Specific Options



### Color Mode:

Use this setting to specify whether the document is to be printed in color or monochrome.

### Image Content:

The optional settings of this feature determine the gloss levels, graphic imaging and black and gray tones used in the document to be printed.

### Note

- For best results, set the Image Content function to the General or Photographs setting when using the ColorSync Color Matching or PostScript Color Matching functions.
- When printing documents using the Color/Grayscale function, the Image Content function may be set according to the desired affects for that specific print job.

### General

This setting supports ideal imaging standards for most graphics and photographs. Black tones will not contain the gloss of other Image Content settings however gray tones will print with an attractive sheen.

### Business Graphics

This setting is best suited for graphs and charts that are commonly used for business. Blacks and grays are not glossy however, documents print sharp and clear when compared with other settings.

### **Photographs**

The best mode for printing photographs. Produces black and gray tones with a glossy sheen.

### **PS Color Matching**

Adjusts color sharpness and contrast to produce printed documents that closely represent their on-screen images.

### **No Color Adjustment**

Documents are printed without using PS Color Matching.

### **Perceptual**

Best suited for printing photographs.

### **Saturation**

This setting produces vivid and sharp prints.

### **Relative**

This setting is also good for photographs and for generating images on paper as they appear on the computer monitor.

### **Accurate**

Use this setting to print documents as they appear on the computer monitor.

### **Blue Shift**

Reproduces colors, especially blues, that are very close to their onscreen images.

**Media Type:**

Use this drop-down list to specify **Plain Paper** (for standard paper), **Thick Paper**, **Transparency**, or **Envelope** as the output media you are printing to. The printer will automatically make adjustments to optimize printing according to your choice.

**Note**

- Thick paper and envelope cannot be fed from Tray 2 or Tray 3.
- Legal-sized thick paper cannot be used.
- Whenever Media Type changes are made, it is necessary to properly set the printer's control panel for the selected media (MENU/PRINT MENU/TRAY1 MEDIA, TRAY2 MEDIA, TRAY3 MEDIA).
- When printing labels, select either "Plain Paper" or "Thick Paper" media depending upon the thickness of the labels to be used.



*Chapter*

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*PCL5C Printer Software*

**5**

# Windows 95/ Windows 98

## Printer Software Overview

The PCL5C Printer Software lets you set up your printer to provide the type of printed output you want. Note also that the original data (number of colors, resolution, data format), the type of paper you are using, and the settings of your application software can also affect color printing results.

All of the onscreen images that appear in the following sections are examples of the PCL5C Printer Software when installed in a Windows 95-based operating environment.

## Displaying the PCL5C Printer Software Window

1. Click the **Start** button, **Settings**, and then **Printers** to display the **Printers** dialog box.
2. Click **Minolta Color PageWorks/Pro** to highlight it, and then select **Properties** from the **File** menu.



### Tabs

You can move between the PCL5C Printer Software screens by clicking on the tabs along the top of the window. These tabs let you check the status of your printer and make various changes in its settings. The following sections of this manual describe in detail about how to do this.

### Exiting the PCL5C Printer Software

After you are finished using the PCL5C Printer Software, you can exit it either by clicking the **OK** or **Cancel** button, or by clicking the window close button in the upper-right corner of the window.



## **Choosing Menu Settings**

The following standard Windows procedures can be used when making settings in the printer software's menu pages.

- Clicking an option button or name
- Clicking a check box
- Dragging the scroll box on a scroll bar
- Clicking a drop-down list box and then clicking on an item to select it
- Holding down the [Alt] key and typing the underlined character that represents a setting

See the documentation that comes with Windows 95/ Windows 98 for details on these and other operations.

## **Common Button Operations**

The following buttons appear at the bottom of all the software menus.

### **OK**

Click this button to close the printer software window and send or save all the setting changes you made to the printer.

### **Cancel**

Click this button to close the printer software window without saving or sending any of the changes you have made.

### **Apply**

Click this button to send or save all the setting changes you made to the printer, without closing the printer software window.

### **Help**

Click the ? button in the upper-right corner, and then click the feature to display the detailed information about it.

## Software Settings

This section describes all of the settings you can make with this printer software.

### Note

- The **General**, **Details** and **Sharings** menus are features of both Windows 95 and Windows 98 while the **Color Management** menu appears in Windows 98 only. See the user's guide that came with your version of Windows for information if applicable.
- The **Sharings** tab is only available when the printer is shared in a network environment.

## Paper



### Paper Source:

Pull down this list to specify the location from which paper should be fed for printing. The paper tray you select becomes highlighted in the printer illustration below this list. You can also select a paper tray by clicking on it in the illustration. Selecting **Auto Select** for the paper source tells the printer to automatically search all paper trays for the required paper size. Some applications override this setting with their own.

**Paper Source**

- Tray 1
- Tray 2
- Manual Feed
- Auto Select
- Tray 3 (option)

**Note**

- If you select **Manual Feed** for the paper source, your print job is stored in the memory of the Printer and the message “LOAD XXX IN MANUAL” appears on the Message Display of the printer. To start your print job, press the **Proceed** key on the Control Panel of the printer.

**Copies**

Use this setting to specify how many copies of the document should be printed within the range of 1 to 999. Some applications override this setting with their own.

**Orientation**

Select the paper orientation setting you want to use. Some applications override this setting with their own.



### Paper Size:

The settings in this area let you specify either paper or envelopes for printing, and the size of each. Some applications override this setting with their own. The options that appear depend on the setting you choose for **Paper Source**. The currently selected paper type and its size are also shown to the right of the **Paper Size** heading. The following is a list of available paper sizes:

#### Paper

- Letter
- Legal
- A4
- Executive
- A5
- Invoice
- J-POST
- JIS B5

#### Note

- You cannot use Legal-sized paper for color printing. Only Black and White printing can be allowed on Legal-sized paper.
- You cannot use Legal-sized thick paper.

**Envelopes**

- C5
- DL
- Mon (Monarch)
- #10 (Com-10)

**Note**

• Generally, envelopes perform well, but some types may wrinkle. We strongly recommend testing any type of envelope before buying it in large amounts.

**Output Media:**

Use this drop-down list to specify **Plain Paper** (for standard paper), **Thick Paper**, **Transparency**, or **Envelope** as the output media you are printing to. The printer will automatically make adjustments to optimize printing according to your choice.

**Note**

• Thick paper and envelope cannot be fed from Tray 2 or Tray 3.  
• Legal-sized thick paper cannot be used.  
• When printing labels, select either “Plain Paper” or “Thick Paper” media depending upon the thickness of the labels to be used.

## Color



### Color Options

This setting gives you a choice of methods for making color settings. **General** automatically selects the best color settings to print a document. **Business Graphics** generates sharp, clear documents without a glossy finish. **Manual Settings** enables the **Options...** button, which displays a **Color Options Properties** dialog box for manual control of color settings.

### Options...

Click this button (which is enabled only when **Manual Settings** is selected) to display a **Color Options Properties** dialog box for manual control of color settings. See below for details on the **Color Options Properties** dialog box.

### Color/Monochrome

Use these radio buttons to specify whether the pages should be printed in color or black and white.

### Color Options Properties Dialog Box

This dialog box appears when the **Color** tab's **Options...** button is clicked.



The three tabs of this dialog box let you control the color settings for photographs, graphics, and text. The **Photos** tab provides five settings for **Color Control**, while there are four **Color Control** settings in the **Graphics** and **Text** tabs.



## Color Control

This setting lets you specify how colors are produced by the printer. The following table describes each of the **Color Control** settings available.

Setting	Description
No Color Adjustment	Does not apply color matching for printing.
Image Color Matching*	Preserves the relative color values from the screen onto the printed page. Supports high-quality photographic output. (Windows 95/ Windows 98 feature)
Blue Shift	Reproduces colors, especially blues, that are very close to their onscreen images.
Screen Matched	Reproduces the precise characteristics of each color as closely as possible.
8 Primary Colors	Prints each color in the closest primary: white, black, red, green, blue, cyan, yellow, or magenta.

\* You can use this setting only for the **Photos** tab.



### **Halftone Type**

**Pattern** creates a regular, repeating halftone pattern for more uniform tones that may be preferable for computer-generated images.

**Diffused** creates a random, non-repeating distribution of color pixels for a more detailed image with finer variations between colors.

Although sharper detail can be achieved through the **Diffused** setting, you may notice an increase in printing time when **Diffused** is enabled. Note that this item is available on the **Photos** tab only.

### **Black Gloss Level**

You can make separate **Black Gloss Level** settings for photographs, graphics, and text. Select **High** for a shiny finish, which is usually best suited for photographs (bitmaps). Gray tones may appear glossier when **High** is enabled. If such an effect is not desired, select **Business Graphics** from the **Color Options** settings of the **Color** tab. **Low** produces a flat finish that is usually best for the black lines of text and graphics (Line Art).

### **Lightness:**

Slide this controller left or right to make printed colors darker or lighter. A positive value makes colors lighter and a negative value makes them darker. A value of zero prints colors without adjustment.

### **Saturation:**

Slide this controller left or right to make printed colors less intense (saturated) or more intense. A positive value makes colors more saturated and a negative value makes them less saturated. A value of zero prints colors without adjustment.

## Options



### Pages Per Sheet

The Pages Per Sheet setting allows you to determine the number of documents to print per sheet of paper. The default setting, one (1) prints one document per sheet. Two (2) will print two documents per sheet dividing the sheet in half. Four (4) divides the sheet into quarters, printing four documents on one sheet of paper. Twenty five (25) is the maximum number of documents that can be printed on the same sheet of paper. The setting changes, which can be applied to both landscape and portrait orientations, are graphically produced in the window to the right for evaluation before printing.

### Scaling

This setting enlarges or reduces a document to be printed. The maximum that a document can be enlarged is 400%, or four times its original size. The maximum that a document to be printed can be reduced is 25% of its original size. The default value for this setting is 100% for a standard, full size printed document.

## **Resolution**

Select the resolution at which you want to print. **600 x 600** provides highest quality printing. **300 x 300** may print with a lower level of quality, but will allow a job to print faster.

## **TrueType Options**

This setting controls the way TrueType fonts are stored and printed in the printer.

Normally, you should leave this setting at **Automatic**, which enables the printer software to select the best data format and usually provides the highest quality output and fastest printing speed.

**Bitmap Soft Fonts** enables a font to be downloaded to printer memory and stored as a soft font.

**Rasters** should only be used in the rare case when a TrueType font does not print exactly the way it appears on the screen. It can also be used when printing characters that need to be clipped, or when a document contains more soft fonts than will fit into printer memory. Note, however, that “Rasters” also causes slower printing.

## **Print to file**

Select this option when you want to save print data in a file instead of sending it to the printer.

## **Draft Mode**

This mode is designed to provide high-speed printing of trial documents. Printing time will be decreased when this mode is enabled, however graphics (bitmap data) will be printed as empty frames.

## Watermarks



The Watermarks dialog allows you to drag and click a selected watermark to a specified location and angle on the document to be printed. Additionally, there is a Count feature included in the dialog which allows you to place a watermark in multiple locations on a single document.

### Text

Lists the current menu of available watermarks. Any of the watermarks that appear in this dialog can be selected to edit or delete. The default setting for this dialog is None, meaning that no watermark will appear on the printed document.

### Page

A selected watermark is printed, by default, on every page of the document. This setting allows you to select specific pages of a document in which the watermark will be printed.

### **Count**

This feature specifies how many times a selected watermark will appear on the page to be printed. The maximum number of times that a watermark can be printed on a page is determined by the length of text inside of the watermark as well as the size of the font in which it is printed.

### **Top and Bottom**

This feature determines the placement of the watermark relative to the placement of text and graphics.

Top: this setting will shadow the watermark over the contents of the page.

Bottom: this setting will shadow the watermark beneath the contents of the page.

### **Separation**

Determines the spacing between watermarks. This feature is used with Counts greater than one (1). The default for this setting, as well as the other options available, are dependent upon the Count.

### **Font Name**

Determines the font or character style for the selected watermark.

### **Color**

Determines the color in which the selected watermark is printed.

### **Darkness**

This slider control determines the density of the halftones in which the watermark is printed.

### **Font Size**

Determines the point size of the selected watermark.



**Bold**

Specifies between a bold or regular text style in which the watermark can be printed.

**Italic**

Specifies between an italicized or regular style in which the watermark can be printed.

**Position**

“User Defined” allows you to adjust the placement of the watermark relative to the X and Y values assigned to the page. The watermark can be placed in the center of the document by selecting “Automatically”.

**Angle**

Determines the horizontal or vertical placement of the watermark. The initial setting for Angle is 40 degrees. The possible range of adjustment is from 0 to 360 degrees.

**Adjustment**

Specifies between the Move or Rotate modes for the “ Watermark sample” field.

**Show Layout**

Use this button to switch between the single page and the Layout display.

**New**

Use this button to create a new watermark.

**Delete**

Use this button to delete a watermark.

**Restore Defaults**

Restores watermark settings to their previously saved values.

## Overlay



The Overlay dialog allows you to layer graphics (bitmap data) underneath the printed text of a document. This feature is especially useful for placing a logo against the background of a document. Specify the file name to be used as well as its size, location, darkness (density), etc.

### File

Lists the current menu of available graphics. Any of the graphics that appear in this dialog can be selected. The default setting for this dialog is None, meaning that a graphic will not appear on the printed document.

### Page

By default, this setting will print a selected graphic on every page of the document. The settings that appear on the drop-down list will allow you to select specific pages of a document in which the graphic will be printed.



### **Select Bitmap...**

Click this button to select a bitmap file to be used in this dialog box. Once a bitmap file is selected, it is shown in the list of files.

### **Color**

Determines the color in which the selected graphic is printed. This box is only available for two-tone color graphics.

### **Darkness**

This slider control determines the density of halftones that are used to print a graphic.

### **Size**

The “User defined” setting allows you to adjust the size of a graphic by using the “Percent” box. The “Automatically” setting specifies sizing for graphics at 30%.

### **Position**

The “User defined” setting allows you to adjust the placement of a graphic relative to the X and Y values assigned to the page. The graphic can be placed in the center of the document by selecting “Automatically”.

### **Show Layout**

Use this button to switch between a single-page display and the Layout display. This button is available when multiple pages are specified in the Page Per Sheet option.

### **Restore Defaults**

Restores Overlay settings to their previously saved values.

## Setup



The Setup Dialog Box allows you to choose driver settings. The settings and options that are explained in the following pages are only available depending upon the configuration and installed options of your printer.

### Options

Use this setting to specify which options are installed. Click the name of the option in the **Available Options** list and then click **Add**. This moves the name of the option to the **Installed Options** list and changes the printer illustration on this tab to show the new option. To remove an option, click the name of the option in the **Installed Options** list and then click **Remove**.

### Installed Memory:

Use this setting to tell the printer software how much memory is installed in the printer. The driver will manage resources in accordance with the amount of memory available.

The printer comes with 20MB of installed memory from the factory. Purchase additional expansion memory according to your particular needs.

## **Printer Status and Configuration**

Printer status refers to the relay of information that is exchanged between the printer and the computer. As soon as the driver is launched, it begins to search for all of the printers that may be installed in the system. During this operation, a “searching” graphic will appear in the Status Window.

Once a printer is located, the Status Window will attempt to communicate with the printer. The resulting data that is generated during this bi-directional exchange between printer and Status Window is the Printer Status.

The following situations would prevent the driver from displaying data in the status window:

- When using a Network or serial port connection. Bi-directional communication is only possible over an IEEE 1284 parallel port.
- When using a Windows 3.x driver. The Windows 3.x driver does not support the Status Window.
- The Status Window will not detect printer status when the power to the printer is OFF.

### **Activating and Managing the Status Window**

The Status Window can be launched manually as you would any other application program or it can be set to launch whenever a document is sent to be printed.

The Status Window can be minimized as a tray icon on the Status Bar while active. Should a warning prompt or error message occur, a tooltip message can be received by simply placing the mouse pointer on top of the Status Window icon.

Use the **OK** button to minimize the Status Window while saving any changes you might have made.

Use the Cancel button to minimize the status window without saving any changes. To close the Status Window, click the close (“**x**”) button at the upper right corner of the screen. The Status Window can also be closed by clicking above its bar or directly on its icon and selecting **Close**.

The Print Status Window consists of six tabs: **Status, Configuration, Control, Settings, Alerts** and **About**. The following sections provide a detailed explanation for every function that appears on these tabs.

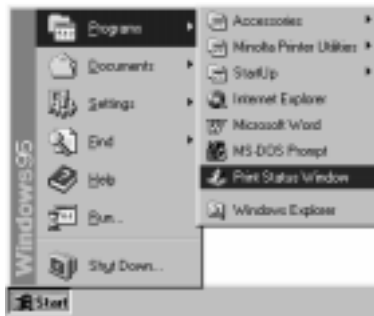
## Using the Printer Status Display

### Opening the Printer Status Display

Use the procedure below to open the Printer Status Display.

#### To open the Printer Status Display

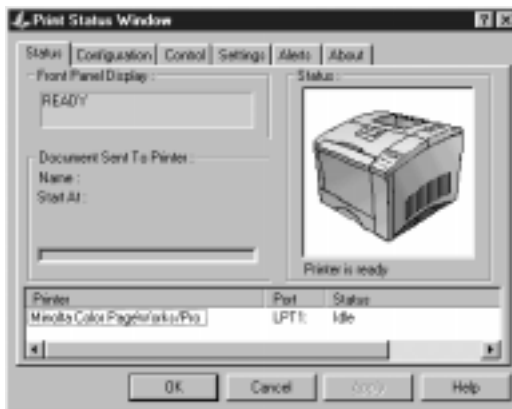
Click **Start**, point to **Programs**, and then click **Print Status Window**.



#### To close the Printer Status Display

On the Printer Status Display, click the close (“x”) button at the upper right corner of the screen.

### Printer Status



### **Front Panel Display**

The contents of this display reflect the same contents currently displayed on the printer console.

### **Document Name**

Displays the title of the current document to be printed.

### **Currently Printing Job: *job name, start time, total bytes in job, number bytes sent, progress bar***

Displays various information about the current document to be printed. The values for “Number bytes sent” and “Total bytes in job”, are displayed just above the progress bar.

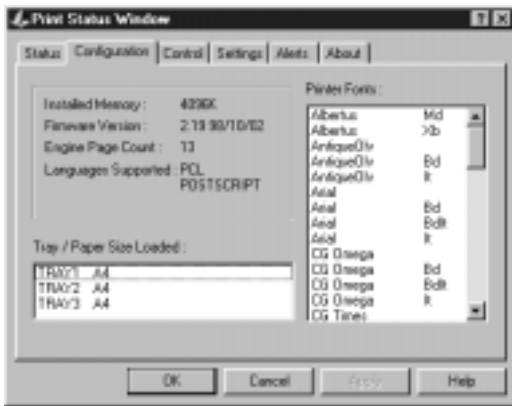
### **Printer Status Window**

This frame provides a graphic display of the current status of the printer. There is a message bar at the bottom of the frame that details the status of the printer as well as displays any error or warning messages that are indicated by a flashing yellow or red triangle.

### **Printer List**

Displays the printer or printers that were detected on the system by the driver. The current status of the printer that is selected from this list is displayed in the Print Status Window.

## Configuration



### Installed Memory

Displays the amount of memory currently installed in the printer.

### Firmware Version

The controller firmware version is displayed here.

### Engine Page Count

The total number of printed documents generated by the printer is displayed here.

### Languages Supported

PCL/PostScript compatibility is displayed here.

### Tray / Paper Size Loaded

Provides a list of all input trays and the size of paper that they currently contain.

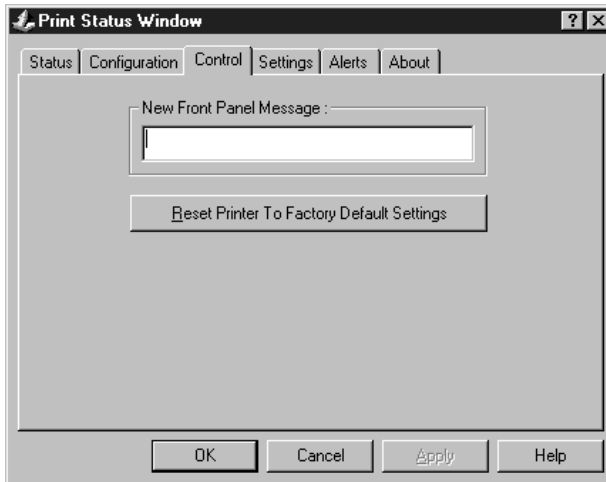
### Note

- If the information displayed in the **Tray/Paper Size Loaded** window is inaccurate, use the following procedure:  
From the **Setting** tab, deselect **Monitoring On** and click the **Apply** button. Next, reselect **Monitoring On** and click the **Apply** button again.

### Printer Fonts

A list of all of the printer's built-in ROM fonts is displayed here.

## Control



### New Front Panel Message

The front panel message display (control panel message display) can be customized by entering a new message into this field.

### Reset Printer To Factory Default Settings

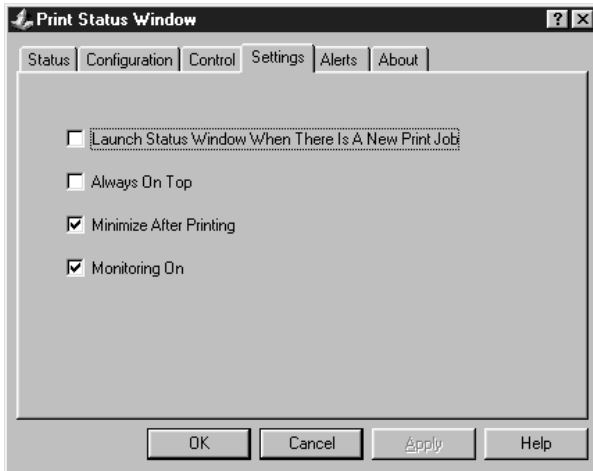
Reset the factory default settings by clicking this button.

#### Note

- If settings do not return to their default values, use the following procedure:  
Turn the power to the printer off and while pushing the **On Line** key on the printer's control panel, turn on the power to the printer.



## Settings



### **Launch Status Window When There is A New Print Job**

Enables the Status Window to automatically launch whenever a document is printed.

### **Always On Top**

Enables the Status Window to be displayed at the top of the display so that it may not be covered by other windows.

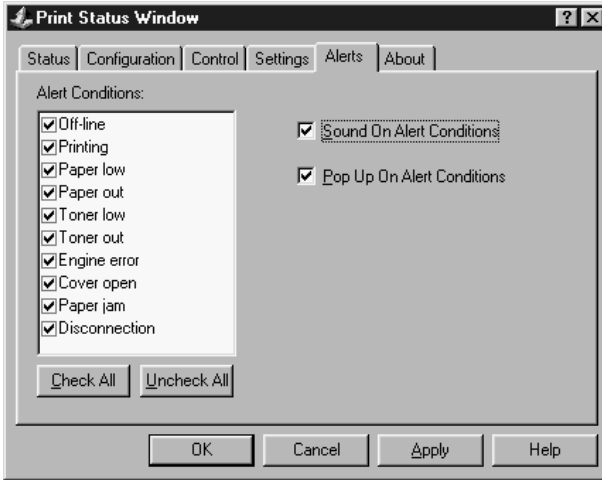
### **Minimize After Printing**

Automatically minimizes the Status Window after a job has finished printing.

### **Monitoring On**

Activates the Status Monitor or turns it off. The Status Monitor usually remains active in the background even when the Status Window is closed. The Status Monitor will cease to operate if this function is deselected.

## Alerts



### Alert Conditions

All of the printer's possible alert messages are listed in this display. Only the alert messages that are selected from this list will appear when applicable during operation.

### Check All

Enables all alert messages to appear when applicable during operation.

### Uncheck All

Prevents all alert messages from appearing during operation.

### Sound On Alert Conditions

Alerts are announced through a voice message when this box is checked.

### Pop Up On Alert Conditions

The Status Window is automatically enabled during an alert message when this box is checked.

# Windows NT 4.0

## Printer Software Overview

This printer software allows you to configure your printer for optimal performance. The printing quality of your documents will be determined by the settings of your application software, the original data (resolution, data format), and the quality of the paper that you use.

## Displaying the PCL5C Printer Software Window

1. Click the **Start** button, **Settings**, and then **Printers** to display the **Printers** dialog box.
2. Select the **Minolta Color PageWorks/Pro** printer icon by clicking on it with the mouse pointer. Next, open the **File** menu and click on the **Document Defaults...** item.



## Tabs

You can move between the five main screens of the printer software by clicking on the tabs along the top of the window. Through these screens, you can control the operation and features of your printer as well as makes changes to its settings. The following sections of this manual describe in detail how to do this.

## **Exiting the PCL5C Printer Software**

You can exit the printer application by clicking the **OK** or **Cancel** button at the bottom of any of the application's five main screens or by clicking the window close button (**X**) in the upper-right corner of the window.

## **Choosing Menu Settings**

The following standard Windows procedures can be used when making settings in the printer software's menu pages.

- Clicking an option button or name
- Clicking a check box
- Dragging the scroll box on a scroll bar
- Clicking a drop-down list box and then clicking on an item to select it

For details, refer to your user's documentation for operating Windows NT.

## **Common Button Operations**

### **OK**

Click this button to close the printer software window and send or save all of the setting changes that you made.

### **Cancel**

Click this button to close the printer software window without saving or sending any of the setting changes that you made.

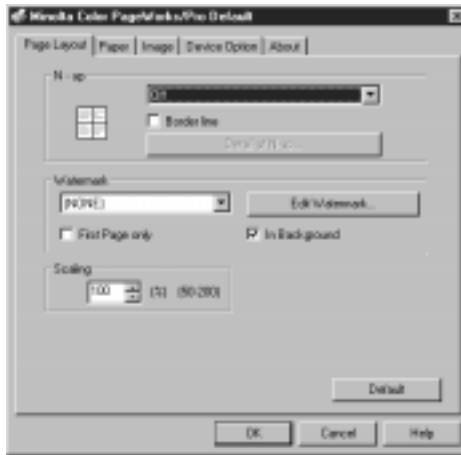
### **Help**

Click this button to display detailed information about the tab that is currently open.

## Software Settings

This section describes all of the setting options available through this software.

### Page Layout



## N-up



This feature allows you to print two (2-Up) or four (4-Up) documents on one page. Click the **Detail of N-up...** button to set the ascending or descending order of pages on your N-Up document. The pages can be arranged either horizontally or vertically by clicking on the title of the desired orientation.

To add borders to define your individual documents, click the **Border line** button.

## Watermark



Watermarks are useful for alerting the reader to the nature of your document's content (CONFIDENTIAL, URGENT, etc.). When you select to print a watermark, the default setting will shadow the watermark underneath the text of your document. Watermarks will be placed on only the first page of the document when the **First Page only** box is checked. You can click on the checked **In Background** box to disable the default setting and superimpose the watermark over the text of your document.

The drop-down list catalogs the watermarks that have been stored. The currently selected watermark is also displayed here. The default setting for this feature is NONE (no watermark). Click the **Edit Watermark...** button to open the **Watermark** window. The contents of the drop-down list are displayed here along with the following command buttons:

### Add Button

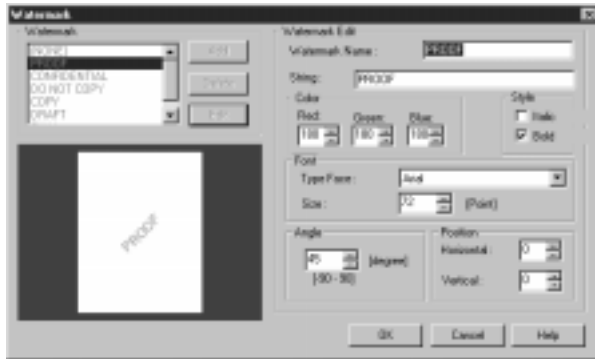
Click this button to add a new watermark to the Watermark list.

### Delete Button

Click this button to delete a selected watermark from the Watermark list.



**Edit Button**



Click this button to open the **Watermark Edit** dialog. The following settings are controlled here:

**Watermark Name**

The name that you wish to use to identify the watermark in the Watermark list is entered here.

**String**

The contents of the watermark that you wish to create are entered here.

**Color**

The RGB color value of the watermark is controlled here.

**Style**

These settings can be used to specify the style of the watermark's font.

**Font**

The typeface and the point size of the watermark are specified here.

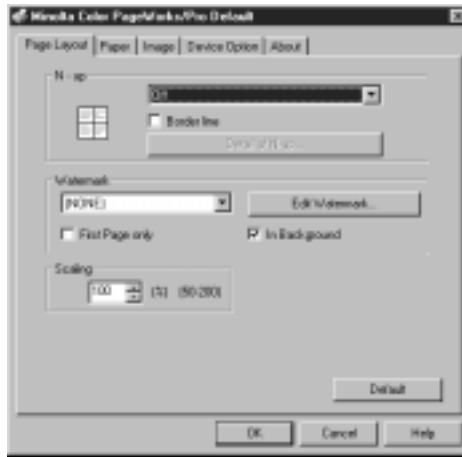
**Angle**

Rotate the angle of the watermark's placement through the value specified in this box.

**Position**

Adjust the vertical and horizontal values to position the watermark on the document.

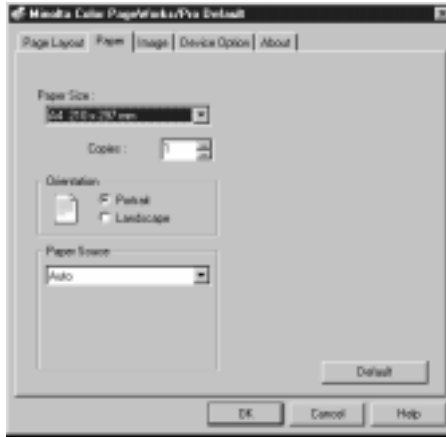
An example of the selected watermark will automatically appear in the sample window. The sample will simultaneously reflect setting changes to the watermark as you make them.



## Scaling

Enlarge or reduce a document to be printed using this setting. The maximum that a document to be printed can be enlarged is 200%, or twice its original size. The maximum that a document to be printed can be reduced is 50% of its original size. You can manually type in a value or use the arrow buttons to increase or decrease this setting.

## Paper



### Paper Size

This setting allows you to specify the size of paper or envelope(s) that will be used for printing. Some applications override this setting with their own. The following is a list of available paper sizes:

- **Letter**                      **8 1/2 × 11 in**
- **Legal**                        **8 1/2 × 14 in**
- **Invoice**                    **5 1/2 × 8 1/2 in**
- **Executive**                 **7 1/4 × 10 1/2 in**
- **A4**                             **210 × 297 mm**
- **A5**                             **148 × 210 mm**
- **JIS B5**                       **182 × 257 mm**
- **Env. #10**                   **4 1/8 × 9 1/2 in**
- **Env. DL**                     **110 × 220 mm**
- **Env. C5**                     **162 × 229 mm**
- **Env. Monarch**           **3 7/8 × 7 1/2 in**
- **J-Post**                       **100 × 148 mm**

To specify a size of paper or envelope for printing from the **Paper Size** list, click on the name of the paper size.

**Note**

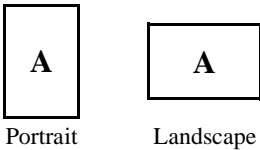
- You cannot use Legal-sized paper for color printing. Only Black and White printing can be allowed on Legal-sized paper.
- You cannot use Legal-sized thick paper.
- Generally, envelopes perform well, but some types may wrinkle. We strongly recommend testing any type of envelope before buying it in large amounts.

**Copies**

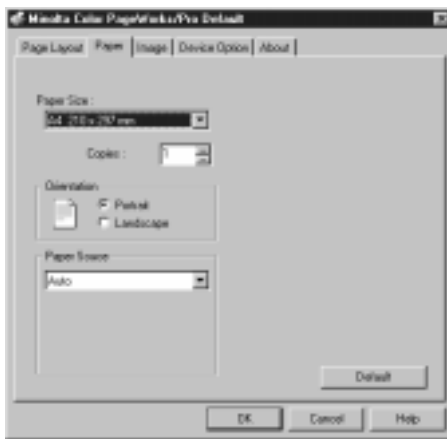
This setting specifies the number of copies of a document that will be output by the printer. You can enter a number from 1 to 999 by typing it into the **Copies** box or by clicking on the up and down scroll buttons. The factory default for this setting is one.

**Orientation**

This setting determines the direction of the text when it is printed on the page. A **Portrait**-oriented page is taller than it is wide when the printed text is viewed upright. A **Landscape**-oriented page is wider than it is tall when its text is viewed upright.



The factory default for the Orientation setting is **Portrait**.



### Paper Source

The **Paper Source** setting specifies the location of the paper and media to be used for printing to the printer. Click on the arrow button to view the possible options. Optional paper and media sources such as **Tray3** must be added in the **Device Option** tab before they will appear in the **Paper Source** menu.

Depending upon the optional paper sources installed on your printer, the following paper sources are available:

- **Auto**
- **Tray1**
- **Tray1 (Transparent)**
- **Tray1 (Thick paper)**
- **Tray1 (Envelope)**
- **Tray2**
- **Tray2 (Transparent)**
- **Tray3**
- **Tray3 (Transparent)**
- **Manual**
- **Manual (Transparent)**
- **Manual (Thick paper)**
- **Manual (Envelope)**

The factory default for this option is **Auto**.

### **Default Button**

Click the default button to restore all setting changes to their original values.

## Image



### Color

Click the **Color** box to enable the color printing of documents. The **Colors to Pattern** box becomes inactive when the **Color** box is checked.

#### Note

- Legal size documents cannot be printed in color.

### Colors to Patterns

Enabling this setting will print color images as monochrome patterns. This setting is convenient when printing color charts and graphs that will be sent via facsimile.

### Enhance Contrast

Enabling this setting enhances the contrast of documents that contain subtle tones and shadows.

### Color Adjustment

This setting sharpens colors to produce color documents that closely resemble their onscreen images.

## Black Gloss Level

These settings control the texture of black images and text.

### Low

This setting applies a flat, black finish to text as well as graphics and photos that contain black.

### Medium

This default setting produces a flat finish on graphics and text. This mode will produce a glossy finish on bitmap images.

### High

This setting applies a glossy, black finish to text as well as graphics and photos that contain black.

## Resolution

The resolution setting determines the **dots per inch** used when a document is printed. Documents printed in higher resolution will be sharper, however they may take longer to print.

### 600 dpi

This setting supports high-resolution printing.

### 300 dpi

This setting supports low-resolution printing.

## All raster

When **On** is specified in the **All raster** setting, all data is rasterized before it is sent to the printer.

When **Off** is specified, object data is sent to the printer as bitmaps, TrueType, etc., and the printer rasterizes remaining data as necessary.



### **Detail Button**

Click this button to open the **Graphics** dialog.



This dialog provides tools for fine tuning the clarity and appearance of the printed document. Use the view window to gauge the current settings and to monitor setting changes as you make them.

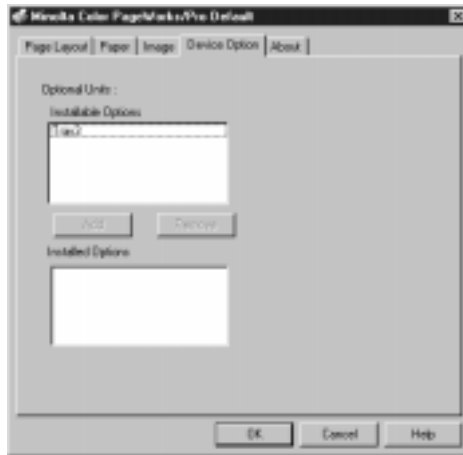
### **Adjustment**

The sliders can be used to control the tones and lighting of an image in terms of **Contrast**, **Brightness** and **Saturation**. To fine tune these settings, click and hold on the sliders in order to make left and right adjustments. Value changes are reflected in the view window as you make them.

**Saturation** can be set only when **All raster** is set to **On**.

The factory defaults for these settings are 10 for **Contrast**, 0 for **Brightness** and 10 for **Saturation**.

## Device Option



This tab manages the optional accessories and equipment that are either installed or available for installation to your printer.

### Installable Options

The auxiliary accessories that are available for installation appear in this window. To add an available option to the **Installed Options** list, select the option by clicking on it and then click **Add**.

### Installed Options

The optional accessories that have been added to your printer appear in this window.

### Add

Click this button to add a selected option from the **Installable Options** window to the **Installed Options** window.

## **Remove**

Click this button to remove an installed option from the **Installed Options** window.

### **Note**

- The **Add** button is active only when an option is selected from the **Installable Options** window.
- The **Remove** button is active only when an option is selected from the **Installed Options** window.

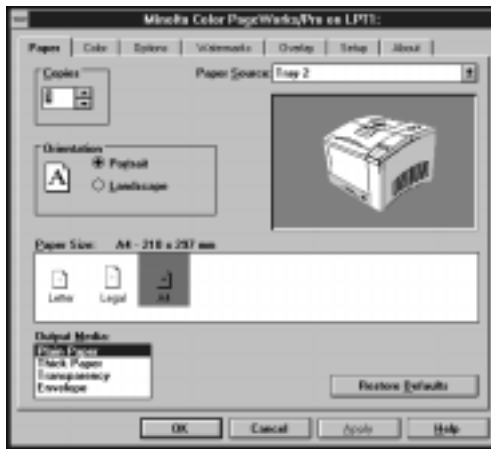
# Windows 3.1

## Printer Software Overview

The PCL5C Printer Software lets you set up your printer to provide the type of printed output you want. Note also that the original data (number of colors, resolution, data format), the type of paper you are using, and the settings of your application software can also affect color printing results.

## Displaying the PCL5C Printer Software Window

1. Turn on your computer and start up Windows 3.1.
2. From the **Program Manager**, double-click **Main** to display the Main group, and then double-click **Control Panel** to display the Control Panel dialog box.
3. Double-click **Printers** to display the printers dialog box.
4. Select **Minolta Color PageWorks/Pro** from the “Installed printers” and then click **Setup....**



### Tabs

You can move between the PCL5C Printer Software screens by clicking on the tabs along the top of the window. These tabs let you check the status of your printer and make various changes in its settings. The following sections of this manual describe in detail about how to do this.

## Exiting the PCL5C Printer Software

After you are finished using the PCL5C Printer Software, you can exit it either by clicking the **OK** or **Cancel** button, or by double-clicking the window close button in the upper-left corner of the window.

## Choosing Menu Settings

The following standard Windows procedures can be used when making settings in the printer software's menu pages.

- Clicking an option button or name
- Clicking a check box
- Dragging the scroll box on a scroll bar
- Clicking a drop-down list box and then clicking on an item to select it
- Holding down the [Alt] key and typing the underlined character that represents a setting

See the documentation that comes with Windows 3.1 for details on these and other operations.

## Common Button Operations

The following buttons appear at the bottom of all the software menus.

### **OK**

Click this button to close the printer software window and send or save all the setting changes you made to the printer.

### **Cancel**

Click this button to close the printer software window without sending or saving any of the changes you have made.

### **Apply**

Click this button to send or save all the setting changes you made to the printer, without closing the printer software window.

## Software Settings

This section describes all of the settings you can make with this printer software.

### Paper



#### Paper Source:

Pull down this list to specify the location from which paper should be fed for printing. The paper tray you select becomes highlighted in the printer illustration below this list. You can also select a paper tray by clicking on it in the illustration. Selecting **Auto Select** for the paper source tells the printer to automatically search all paper trays for the required paper size. Some applications override this setting with their own.

### Paper Source

- Tray 1
- Tray 2
- Manual Feed
- Auto Select
- Tray 3 (option)

### Note

- If you select **Manual Feed** for the paper source, your print job is stored in the memory of the printer and the message “LOAD XXX IN MANUAL” appears on the Message Display of the printer. To start your print job, press the **Proceed** key on the Control Panel of the printer.

### Copies

Use this setting to specify how many copies of the document should be printed within the range of 1 to 999. Some applications override this setting with their own.

### Orientation

Select the paper orientation setting you want to use. Some applications override this setting with their own.





### Paper Size:

The settings in this area let you specify either paper or envelopes for printing and their size. Some applications override this setting with their own. The options that appear depend on the setting you choose for **Paper Source**. The currently selected paper type and its size are also shown to the right of the **Paper Size** heading. The following is a list of available paper sizes.

#### Paper

- Letter
- Legal
- A4
- Executive
- A5
- Invoice
- J-POST
- JIS B5

#### Note

- You cannot use Legal-sized paper for color printing. Only Black and White printing is possible on Legal-sized paper.
- You cannot use Legal-sized thick paper.

**Envelopes**

- C5
- DL
- Mon (Monarch)
- #10 (Com-10)

**Note**

- Generally, envelopes perform well, but some types may wrinkle. We strongly recommend testing any type of envelope before buying it in large amounts.

**Output Media:**

Use this drop-down list to specify **Plain Paper** (for standard paper), **Thick Paper**, **Transparency**, or **Envelope** as the output media you are printing to. The printer will automatically make adjustments to optimize printing according to your choice.

**Note**

- Thick paper and envelopes cannot be fed from Tray 2 or Tray 3.
- You cannot use Legal-sized thick paper.
- When printing labels, select either “Plain Paper” or “Thick Paper” media depending upon the thickness of the labels to be used.

## Color



### Color Options

This setting gives you a choice of methods for making color settings. **General** automatically selects the best color settings to print a document. **Business Graphics** generates sharp, clear documents without a glossy finish. **Manual Settings** enables the **Options...** button, which displays a **Color Options Properties** dialog box for manual control of color settings.

### Options...

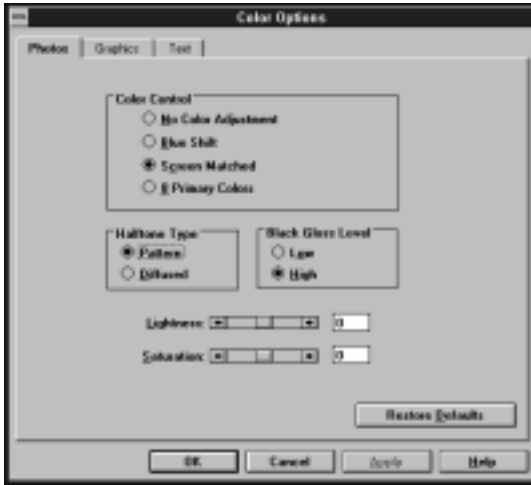
Click this button (which is enabled only when **Manual Settings** is selected) to display a **Color Options Properties** dialog box for manual control of color settings. See page 5-54 for details.

### Color/Monochrome

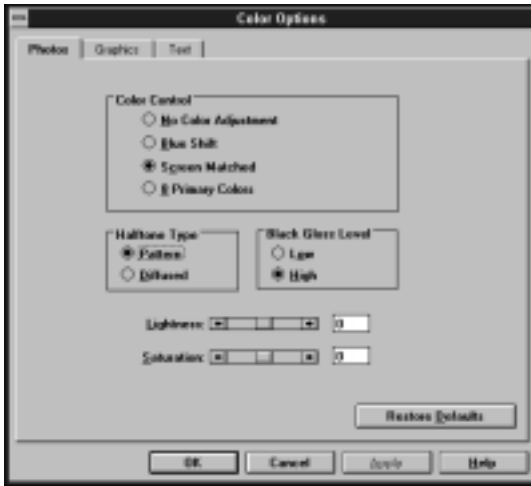
Use these radio buttons to specify whether the pages should be printed in color or black and white.

## Color Options Properties Dialog Box

This dialog box appears when the **Color** tab's **Options...** button is clicked.



The three tabs of this dialog box let you control the color settings for photographs, graphics, and text. There are four **Color Control** settings.



### Color Control

This setting lets you specify how colors are produced by the printer. The following table describes each of the **Color Control** settings available.

Setting	Description
No Color Adjustment	Does not apply color matching for printing.
Blue Shift	Reproduces colors, especially blues, that are very close to their onscreen images.
Screen Matched	Reproduces the precise characteristics of each color as closely as possible.
8 Primary Colors	Prints each color in the closest primary: white, black, red, green, blue, cyan, yellow, or magenta.

### Halftone Type

**Pattern** creates a regular, repeating halftone pattern for more uniform tones, that may be preferable for computer-generated images.

**Diffused** creates a random, non-repeating distribution of color pixels for a more detailed image with finer variations between colors.

Although sharper detail can be achieved through the **Diffused** setting, you may notice an increase in printing time when **Diffused** is enabled. Note that this item is available on the **Photos** tab only.

### Black Gloss Level

You can make separate **Black Gloss Level** settings for photographs, graphics, and text. Select **High** for a shiny finish, which is usually best suited for photographs (bitmaps). Gray tones may appear glossier when **High** is enabled. If such an effect is not desired, select **Business Graphics** from the **Color Options** settings of the **Color** tab. **Low** produces a flat finish that is usually best for the black lines of text and graphics (Line Art).

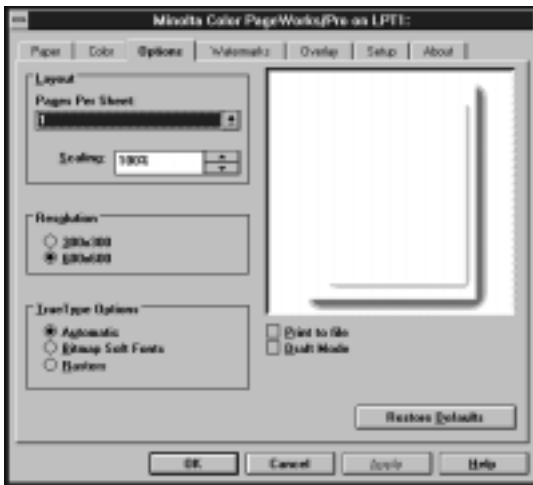
### Lightness:

Slide this controller left or right to make printed colors darker or lighter. A positive value makes colors lighter and a negative value makes them darker. A value of zero prints colors without adjustment.

### Saturation:

Slide this controller left or right to make printed colors less intense (saturated) or more intense. A positive value makes colors more saturated and a negative value makes them less saturated. A value of zero prints colors without adjustment.

## Options



### Pages Per Sheet

The Pages Per Sheet setting allows you to determine the number of documents to print per sheet of paper. The default setting, one (1) prints one document per sheet. Two (2) will print two documents per sheet dividing the sheet in half. Four (4) divides the sheet into quarters, printing four documents on one sheet of paper. Twenty five (25) is the maximum number of documents that can be printed on the same sheet of paper. The setting changes, which can be applied to both landscape and portrait orientations, are graphically produced in the window to the right for evaluation before printing.

### Scaling

This setting enlarges or reduces a document to be printed. The maximum that a document can be enlarged is 400%, or four times its original size. The maximum that a document to be printed can be reduced is 25% of its original size. The default value for this setting is 100% for a standard, full size printed document.

## Resolution

Select the resolution you want to print at. **600 x 600** provides highest quality printing. **300 x 300** may print with a lower level of quality, but will allow a job to print faster.

## TrueType Options

This setting controls the way TrueType fonts are stored and printed by the printer.

Normally, you should leave this setting at **Automatic**, which enables the printer software to select the best data format and usually provides the highest quality output and fastest printing speed.

**Bitmap Soft Fonts** enables a font to be downloaded to printer memory and stored as a soft font.

**Rasters** should only be used in the rare case when a TrueType font does not print exactly the way it appears on the screen. It can also be used when printing characters that need to be clipped, or when a document contains more soft fonts than will fit into printer memory. Note, however, that “Rasters” also causes slower printing.

## Print to file

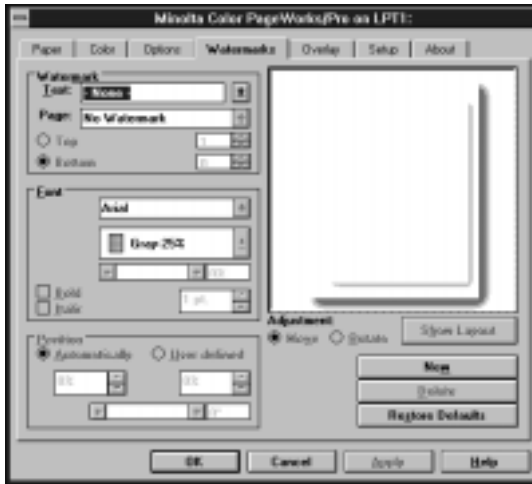
Select this option when you want to save print data in a file instead of sending it to the printer.

## Draft Mode

This mode is designed to provide high-speed printing of trial documents. Printing time will be decreased when this mode is enabled, however graphics (bitmap data) will be printed as empty frames.



## Watermarks



The Watermarks dialog allows you to drag and click a selected watermark to a specified location and angle on the document to be printed. Additionally, there is a Count feature included in the dialog which allows you to place a watermark in multiple locations on a single document.

### Text

Lists the current menu of available watermarks. Any of the watermarks that appear in this dialog can be selected to edit or delete. The default setting for this dialog is None, meaning that no watermark will appear on the printed document.

### Page

A selected watermark is printed, by default, on every page of the document. This setting allows you to select specific pages of a document in which the watermark will be printed.

## **Count**

This feature specifies how many times a selected watermark will appear on the page to be printed. The maximum number of times that a watermark can be printed on a page is determined by the length of text inside of the watermark as well as the size of the font in which it is printed.

## **Top and Bottom**

This feature determines the placement of the watermark relative to the placement of text and graphics.

Top: this setting will shadow the watermark over the contents of the page.

Bottom: this setting will shadow the watermark beneath the contents of the page.

## **Separation**

Determines the spacing between watermarks. This feature is used with Counts greater than one (1). The default for this setting, as well as the other options available, are dependent upon the Count.

## **Font Name**

Determines the font or character style for the selected watermark.

## **Color**

Determines the color in which the selected watermark is printed.

## **Darkness**

This slider control determines the density of the halftones in which the watermark is printed.

## **Font Size**

Determines the point size of the selected watermark.



### **Bold**

Specifies between a bold or regular text style in which the watermark can be printed.

### **Italic**

Specifies between an italicized or regular style in which the watermark can be printed.

### **Position**

“User Defined” allows you to adjust the placement of the watermark relative to the X and Y values assigned to the page. The watermark can be placed in the center of the document by selecting “Automatically”.

### **Angle**

Determines the horizontal or vertical placement of the watermark. The initial setting for Angle is 40 degrees. The possible range of adjustment is from 0 to 360 degrees.

**Adjustment**

Specifies between the Move or Rotate modes for the “Watermark sample” field.

**Show Layout**

Use this button to switch between the single page and the Layout display.

**New**

Use this button to create a new watermark.

**Delete**

Use this button to delete a watermark.

**Restore Defaults**

Restores watermark settings to their previously saved values.

## Overlay



The Overlay dialog allows you to layer graphics (bitmap data) underneath the printed text of a document. This feature is especially useful for placing a logo against the background of a document. Specify the file name to be used as well as its size, location, darkness (density), etc.

### File

Lists the current menu of available graphics. Any of the graphics that appear in this dialog can be selected. The default setting for this dialog is None, meaning that a graphic will not appear on the printed document.

### Page

By default, this setting will print a selected graphic on every page of the document. The settings that appear on the drop-down list will allow you to select specific pages of a document in which the graphic will be printed.

### **Select Bitmap...**

Click this button to select a bitmap file to be used in this dialog box. Once a bitmap file is selected, it is shown in the list of files.

### **Color**

Determines the color in which the selected graphic is printed. This box is only available for two-tone color graphics.

### **Darkness**

This slider control determines the density of halftones that are used to print a graphic.

### **Size**

The “User defined” setting allows you to adjust the size of a graphic by using the “Percent” box. The “Automatically” setting specifies sizing for graphics at 30%.

### **Position**

The “User defined” setting allows you to adjust the placement of a graphic relative to the X and Y values assigned to the page. The graphic can be placed in the center of the document by selecting “Automatically”.

### **Show Layout**

Use this button to switch between a single-page display and the Layout display. This button is available when multiple pages are specified in the Page Per Sheet option.

### **Restore Defaults**

Restores Overlay settings to their previously saved values.

## Setup



### Options

Use this setting to specify which options are installed. Click the name of the option in the **Available Options** list and then click **Add**. This moves the name of the option to the **Installed Options** list and changes the printer illustration on this tab to show the new option. To remove an option, click the name of the option in the **Installed Options** list and then click **Remove**.

### Installed Memory:

Use this setting to tell the printer software how much memory is installed in the printer. The driver will manage resources in accordance with the amount of memory available.

The printer comes with 20MB of installed memory from the factory. Purchase additional expansion memory according to your particular needs.

*Chapter*

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*Maintaining Your Printer*

6



## Changing Cartridges



### Changing the Toner Cartridge

- There are four **color toner cartridges**: Black, Yellow, Magenta (Red) and Cyan (Blue). When any of the **color toner cartridges** run out, replace them with new ones.
- When any **color toner cartridge** begins to run short of toner, “**TONER LOW**” is displayed. Remove the corresponding cartridge, shake it several times, and reload it into the printer (this will evenly distribute the toner remaining in the cartridge). Prepare a new cartridge as a replacement.
- When any **color toner cartridge** runs out of toner, “**TONER EMPTY**” is displayed and the printing functions of the printer will cease to operate. You can still print by pressing the **Proceed** key for each copy however, the image density will become lighter and lighter. It is recommended that you change the **toner cartridge** as soon as possible.

When using the **Proceed** key, the **TONER EMPTY** indicator will not be displayed. Change the **toner cartridge** as soon as possible.

Change the appropriate cartridge by using the following procedure:

- The **toner cartridges** can be changed in either the **Auto mode** or **Manual mode** of the Maintenance Menu. Each mode demands a specific procedure. Use the correct procedure according to the selected mode. ➔ pp. 6-2, 6-10
- Dispose of the old cartridge in a plastic bag according to your local regulations, or return it to your dealer.



### Changing the Toner Cartridge (Auto Mode)

The Auto Mode automatically enables the carriage that holds the **toner cartridges** inside of the printer to rotate to the exact position for proper **toner cartridge** replacement. The **printer cover** must be closed when using the Auto Mode. The following section describes the procedure for replacing the **toner cartridges**.

READY



X Once

OFFLINE

Example: Color Toner Cartridge Magenta (Red)

TONER EMPTY  
MAGENTA

MAINTENANCE MENU

1. Make sure that “READY” is shown on the **message display** and the **On Line** indicator is lit.

Press the **On Line** key on the **control panel**.

Make sure that “OFFLINE” appears on the **message display**.

Make sure that the **On Line** indicator goes out.

Or make sure that “TONER EMPTY” is shown on the **message display**.

2. Press the **Menu** key on the **control panel** seven to nine times until “MAINTENANCE MENU” appears on the **message display**.

## Changing Cartridges

Item



X Twice

REPLACE TONER  
BLACK

3. Press the **Item** key on the **control panel** twice.  
Check that “REPLACE TONER, BLACK” appears on the **message display**.

Down key	Up key	Color
—	4 times	BLACK
Once	3 times	YELLOW
Twice	Twice	MAGENTA (Red)
3 times	Once	CYAN (Blue)
4 times	—	BLACK

4. Press the **Up/Down** keys on the **control panel** to select the cartridge to be replaced.

**Example: Color Toner Cartridge Magenta (Red)**



X Twice

REPLACE TONER  
MAGENTA

Enter



5. Press the **Enter** key on the **control panel**.

**Example: Color Toner Cartridge Magenta (Red)**

PLEASE WAIT  
MAGENTA

Check that “PLEASE WAIT XXXXX” appears on the **message display**.

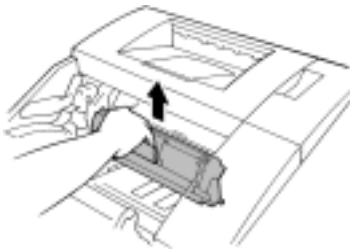
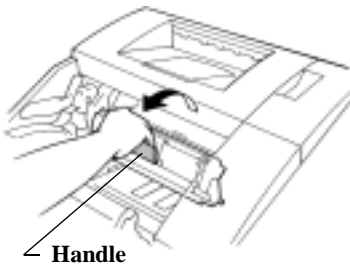
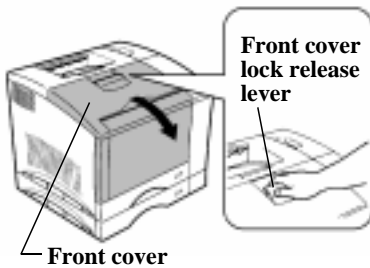
You will hear the sound of the printer operating.

The **Message** indicator starts blinking.



### Example: Color Toner Cartridge Magenta (Red)

READY TO REPLACE  
MAGENTA



6. Make sure that the sound of printer operation has stopped, indicating that the printer has finished cycling.

Wait for “READY TO REPLACE XXXXX”

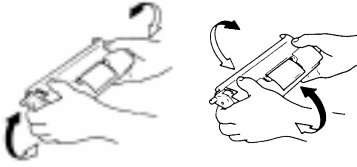
The **Message** indicator will start to blink.

7. Grasp and pull down the **front cover lock release lever** to swing open the **front cover**.

8. Hold the handle of the used **toner cartridge** and pull it toward you.

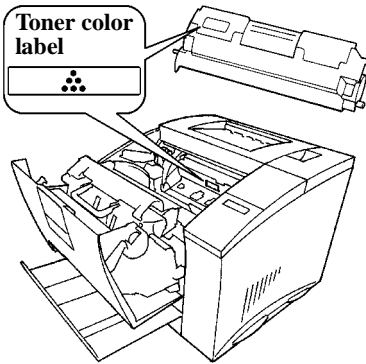
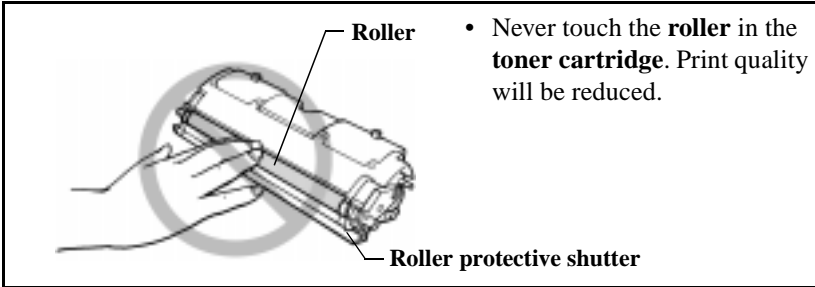
9. Raise the left side of the **toner cartridge** first, then the right.

## Changing Cartridges

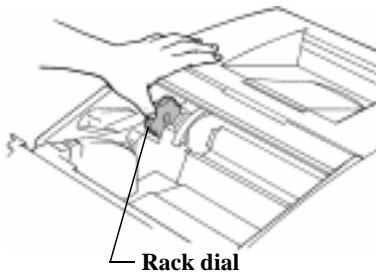


10. Remove the new **toner cartridge** from its carton and holding the cartridge as shown, shake it well.

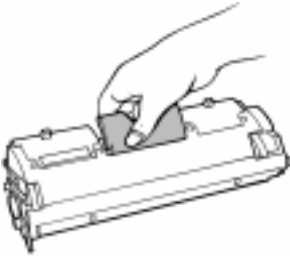
### Note



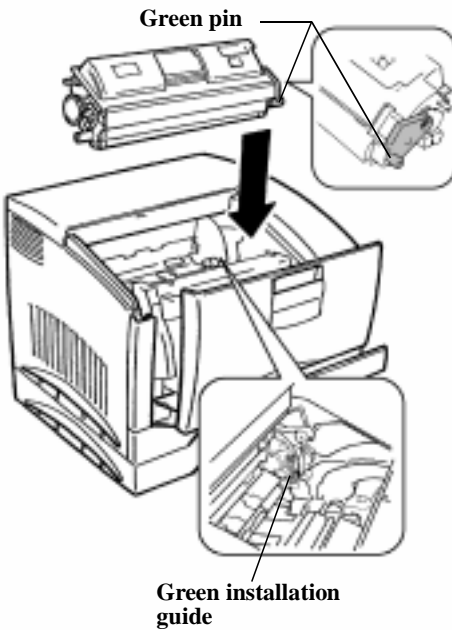
11. Make sure that the label on the **toner cartridge rack** is the same color as the **toner cartridge**.



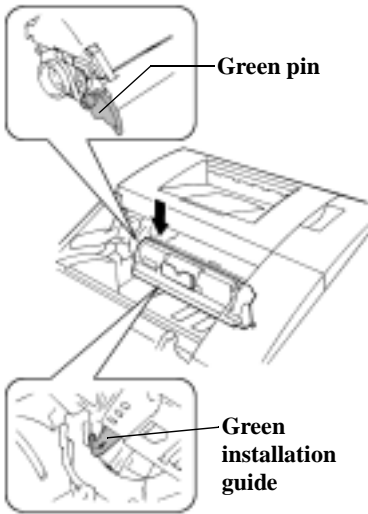
12. When installing the cartridge, hold the **rack dial** with your hand to prevent the rack from rotating.



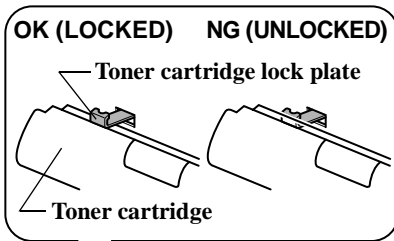
13. Holding the new cartridge as shown, insert the **green pin** on the right side of the cartridge into the **green installation guide** of the rack.



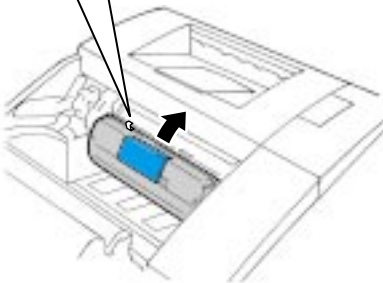
## Changing Cartridges

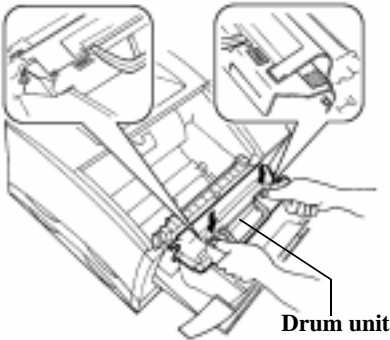


14. Insert the **green pin** on the left side of the cartridge into the **green installation guide** of the rack.



15. Firmly press the **cartridge** into the rack until it clicks into place. Make sure that the **toner cartridge** is installed properly and is held in position by the **toner cartridge lock plate** (refer to the illustration).

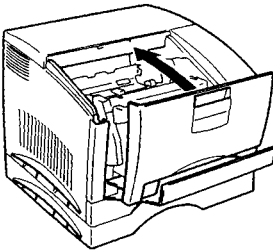




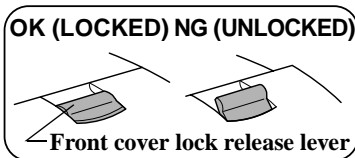
16. Once the **toner cartridge** has been installed, secure the **drum unit** into place by applying pressure at its top where the “**Press**” label is affixed. The **drum unit** will lock into place when it has been correctly inserted into the printer.

### Note

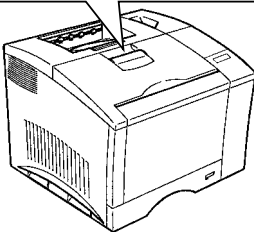
- Before shutting the printer’s exterior cover, make sure that the **drum unit** is securely installed by applying pressure at its top where the “**Press**” label is affixed.



17. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.



18. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.





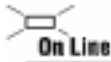
## Changing Cartridges

---

**Example: Color Toner  
Cartridge Magenta (Red)**

REPLACE TONER  
MAGENTA

■ **Message**



On Line



**X Once**

READY

19. Wait until the sound of printer operation has stopped, indicating that the printer is ready.

“REPLACE TONER  
XXXXX” will appear.

Make sure that the **Message** indicator light is Off.

20. Press the **On Line** key on the control panel.

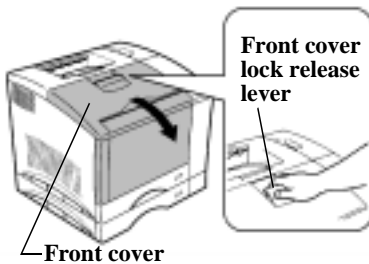
Check that “READY” appears on the **message display**.

Make sure that the **On Line** indicator lights up.

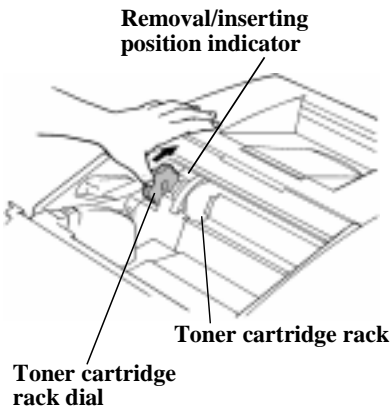


### Changing the Toner Cartridge (Manual Mode)

The **toner cartridge dial** inside of the **printer** allows you to manually rotate the **toner cartridge rack** for **toner** replacement. Refer to page 6-2 for instructions on how to replace **toner cartridges** using the Auto Mode.



1. Grasp and pull down on the **front cover lock release lever** to swing open the **front cover**.

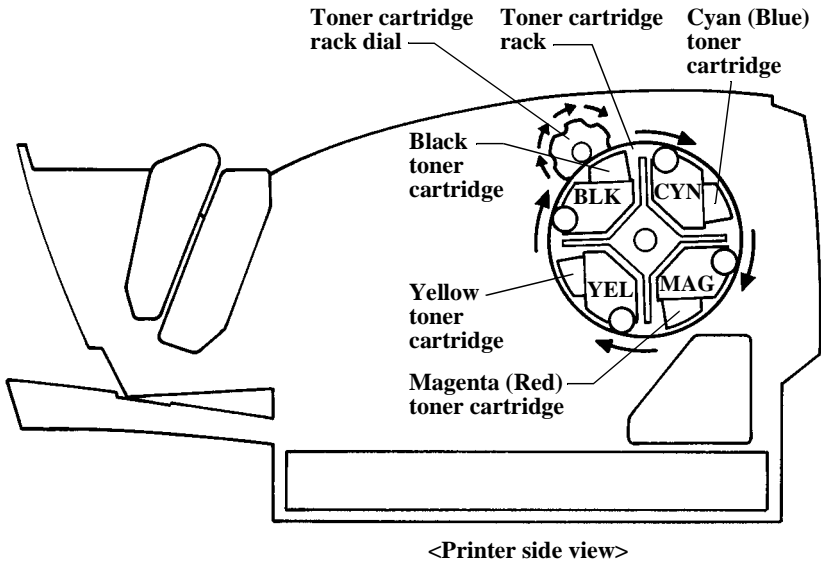


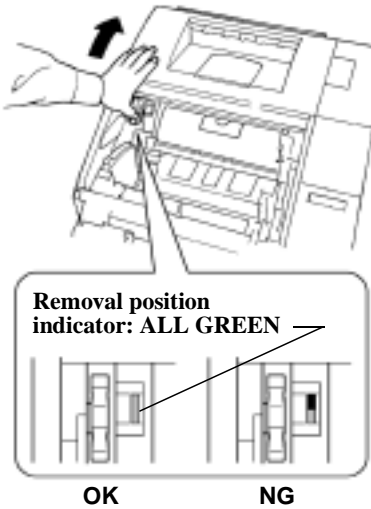
2. Turn the **toner cartridge rack dial** clockwise to turn the **toner cartridge rack** (the dial will not rotate counter-clockwise).

The **toner cartridges** are attached to the rack in the order of Black, Yellow, Magenta (Red) and Cyan (Blue). Turn the rack to the particular cartridge to be changed.

## Changing Cartridges

You will feel the dial tighten while turning it.  
This is the position for removing the cartridge.





- To confirm the rack is positioned for removing the cartridge, use the **position confirmation window** beside the dial. The **removal position indicator** will alert the user to the proper removal position.

### Note

- Before installing or removing the **toner cartridge**, always make sure that the rack is in the proper position. Never install or remove the **toner cartridge** if the rack is not properly positioned.

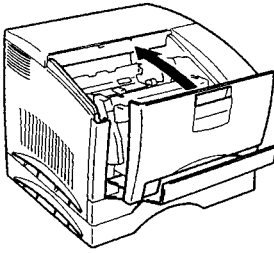
- For further instructions on replacing the **toner cartridge**, refer to steps 8 to 16 on page 6-4.

### Note

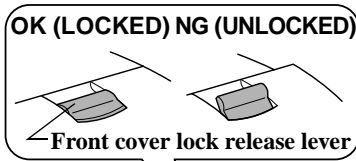
- Before shutting the printer's exterior cover, make sure that the **drum unit** is securely installed by applying pressure at its top where the "Press" label is affixed.

## Changing Cartridges

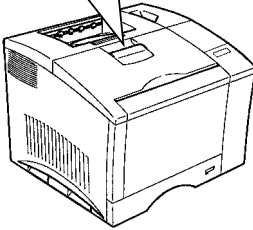
---



5. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.



6. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.



READY

7. Wait until the sound of the printer operation has stopped, indicating that the printer is ready.

Check that “READY” appears on the **message display**.

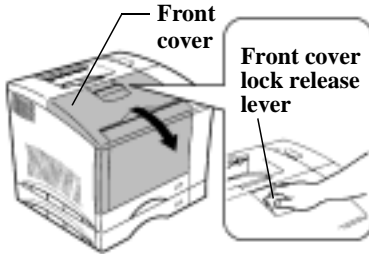


## Changing the Drum Cartridge, Waste Bottle and Oiling Roller

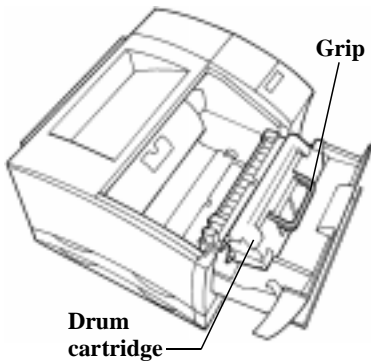
- The **drum cartridge** can provide up to 20,000 images of A4/letter-size prints. One image is equal to one cycle of the **drum cartridge**. The **drum cartridge** operates once (one image) to provide one monochrome print. In comparison, the **drum cartridge** operates four times (four images) to provide one color print.
- When 20,000 images is calculated as color prints, around 5,000 sheets can be printed. (This value will vary according to the color-to-monochrome print ratio, image conditions, etc.)
- Change the **drum cartridge** together with the **waste bottle** and **oiling roller** (these parts are preset to be replaced at the same time).
- When the **waste bottle** is filled with toner, “**REPLACE WASTE BOTTLE**” is displayed. Change the **drum cartridge**, **waste bottle** and **oiling roller** according to the following procedure.
- When the **drum cartridge** is almost ready to be replaced, “**DRUM ALMOST USED**” is displayed. This message indicates that it is now time to prepare a new **drum cartridge**.
- A “**REPLACE DRUM UNIT**” display indicates that it is now necessary to replace the **drum cartridge**. Change the **drum cartridge**, **waste bottle** and **oiling roller** according to the following procedures.
- Dispose of the old **drum cartridge**, **waste bottle** and **oiling roller** in plastic bags according to your local regulations, or return them to your dealer.



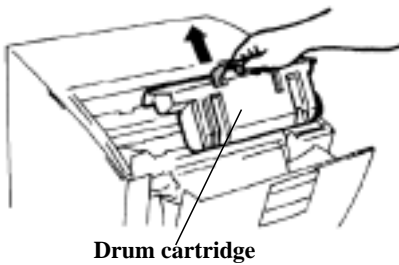
### Changing the Drum Cartridge



1. Grasp and pull down the **front cover lock release lever** and swing open the **front cover**.

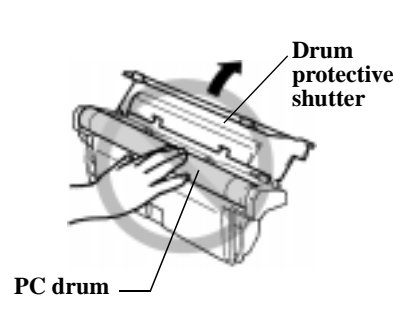


2. Holding onto the grip, pull out the **drum cartridge**.

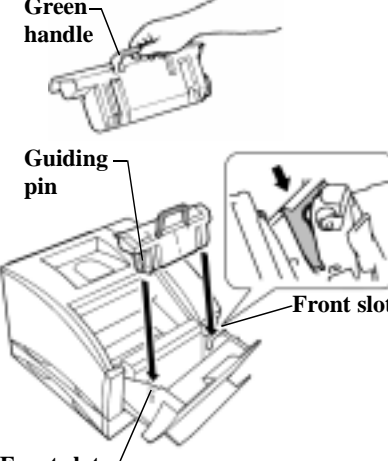


3. Take the new **drum cartridge** out of its carton.

**Note**



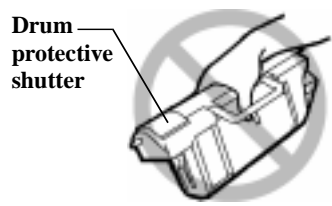
- Do not touch the **drum protective shutter** of the **drum cartridge**. Also, never touch the **internal PC drum**. This will reduce print quality.
- If the **drum cartridge** will not be immediately installed in the printer, be sure to cover it with a cloth to shield it from light.



4. HOLD THE GREEN HANDLE of the **drum cartridge** when installing it into the printer.

Install the **drum cartridge** into the printer by aligning its **pins** with the **slots** inside the **printer frame**.

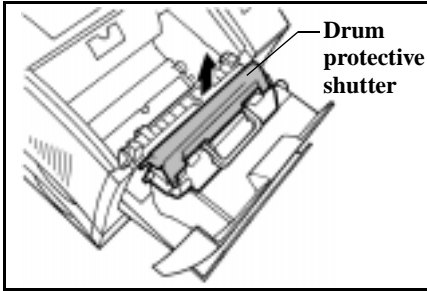
**Note**



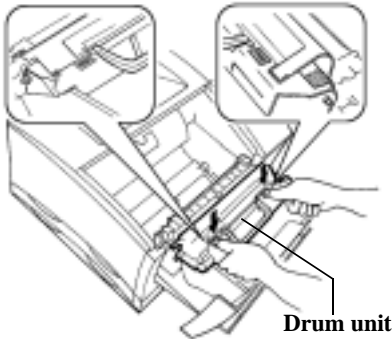
- DO NOT GRASP or handle the **drum protective shutter** during installation. This may damage the **transfer belt unit**.



### Note

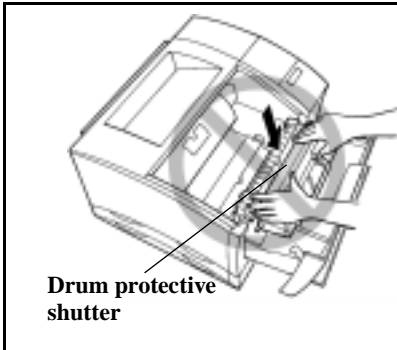


- When the **drum cartridge** is correctly installed into the printer, the **drum protective shutter** will automatically open. Be careful not to disturb or apply pressure to the shutter.



5. Finally, insert the **drum unit** as far as it will go into the printer by applying pressure at its top where the “**Press**” label is affixed. The **drum unit** will lock into place when it has been correctly inserted into the printer.

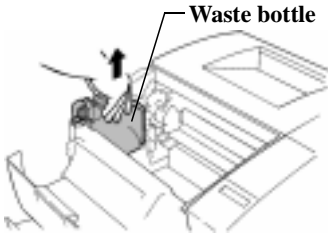
### Note



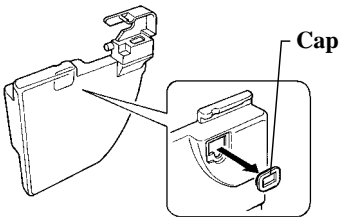
- **DO NOT PRESS** on the **drum protective shutter** during installation. This may damage the **drum cartridge**.



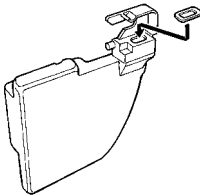
## Changing the Waste Bottle



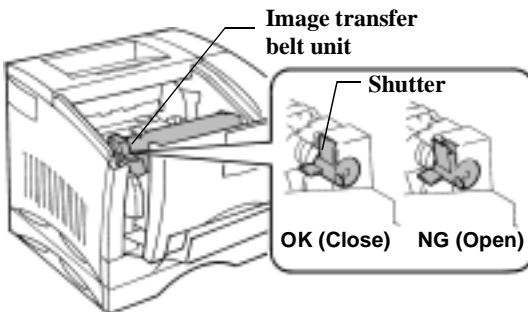
6. Remove the old **waste bottle** from the printer.



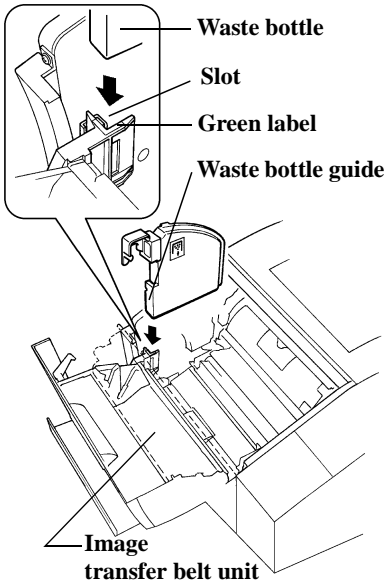
7. Remove the cap from the old toner **waste bottle** and place it into the mouth of the old bottle to prevent spills.



8. Make sure that the shutter of the **image transfer belt unit** is closed.

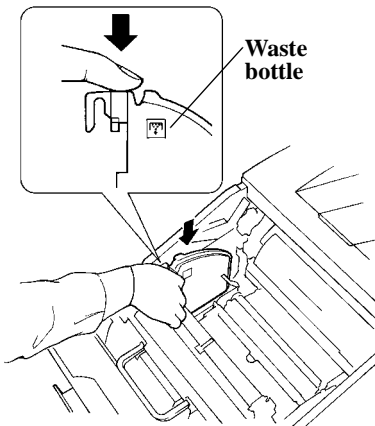


## Changing Cartridges

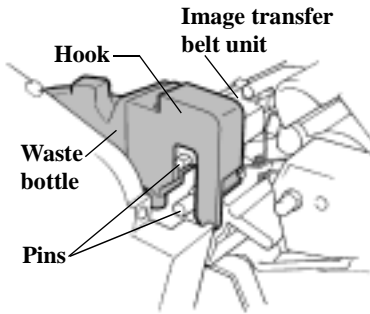


9. Slide the **waste bottle** into the slot located behind the **image transfer belt unit** on the left side of the printer.

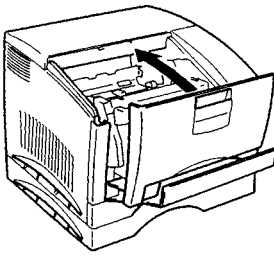
Install the **waste bottle** behind the **image transfer belt unit** (drawn in the diagram with dash marks) inside of the printer.



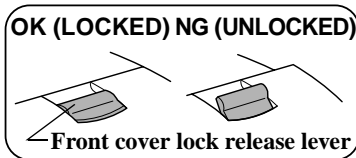
10. Press down on the **waste bottle** until it clicks into place.



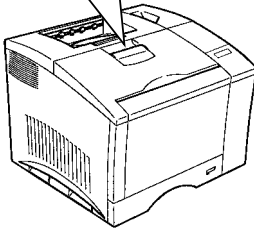
11. Make sure that the hook of the **waste bottle** is engaged securely by the pins of the **image transfer belt unit**.



12. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.

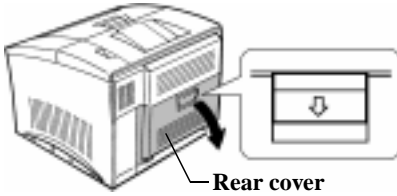


13. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.

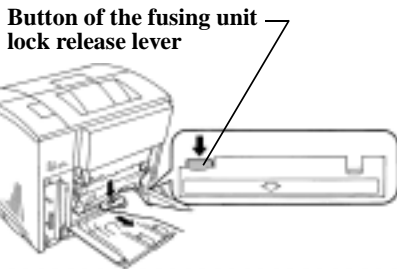




### Changing the Oiling Roller



14. Swing open the **rear cover**.

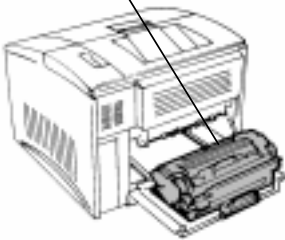


15. Push and hold the button of the **fusing unit lock release lever** and pull out the **fusing unit**.

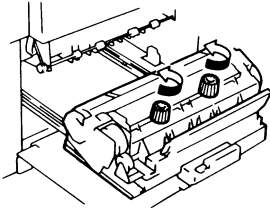


### ATTENTION

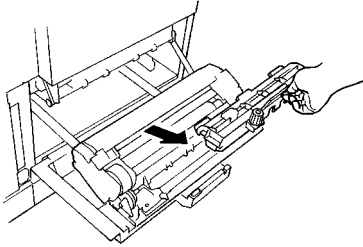
**WARNING! HIGH TEMPERATURE label**



- The **fusing unit** is hot. Be careful not to touch the area surrounding the **WARNING! HIGH TEMPERATURE label**.
- Before changing the **oiling roller**, wait until the surface temperature of the **fusing unit** cools to a safe level.

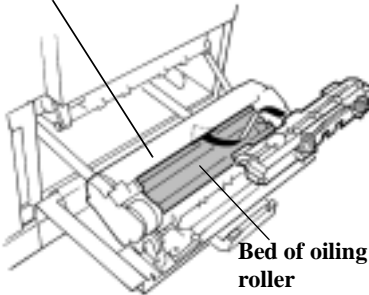


16. Loosen both of the **oiling roller's installation screws**.



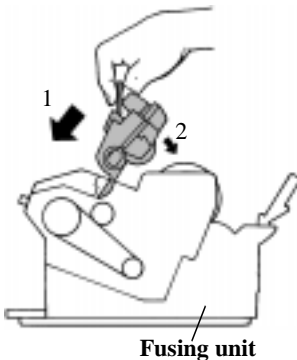
17. Holding onto the grip, take out the **oiling roller**.

**Fusing unit**



18. Remove the new **oiling roller** from its carton.

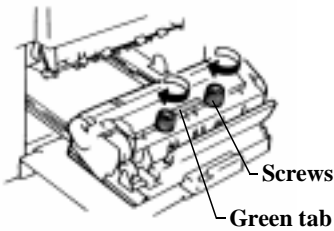
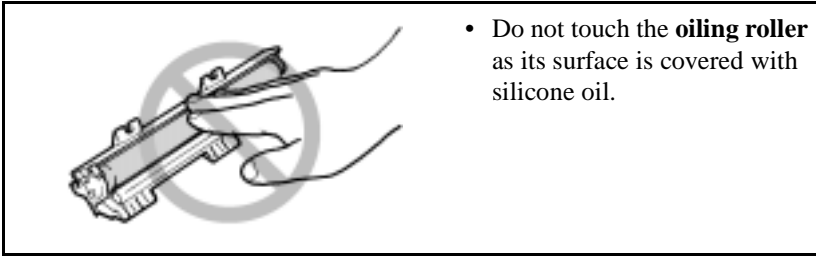
Install the new **oiling roller** by inserting the tabs on its front end under the edge of the **fusing unit**.



## Changing Cartridges

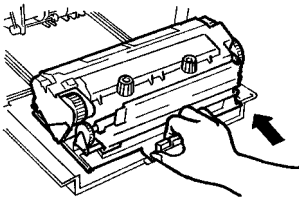
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### Note

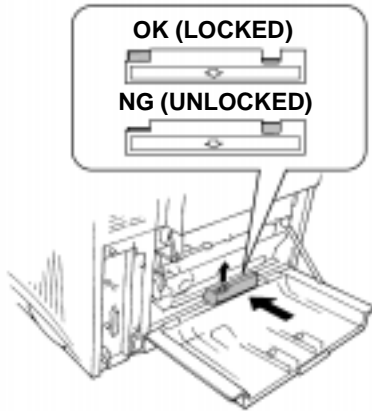


19. Tighten both of the **oiling roller's installation screws**.

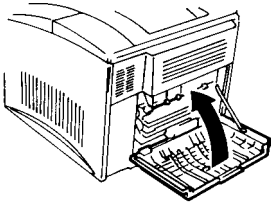
Gently press down on the **green tab** while tightening the screws of the **oiling roller**. Tighten the screws so that the spring action of the cover is completely closed.



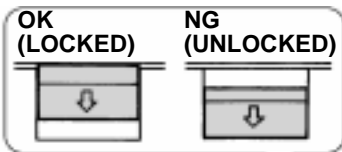
20. Holding the **lock release lever**, insert the **fusing unit** until it clicks into place.



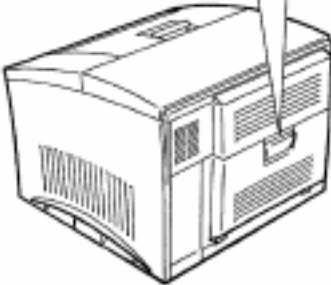
21. Make sure that the button of the **fusing unit lock release lever** is pushed up as shown.



22. Close the **rear cover** until it clicks, locking into place.



23. Make sure that the **rear cover lock release lever** is pushed up as shown.

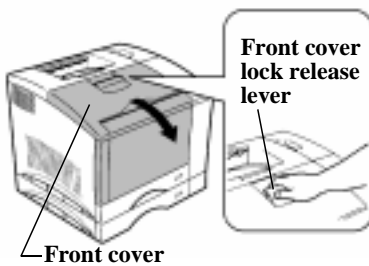




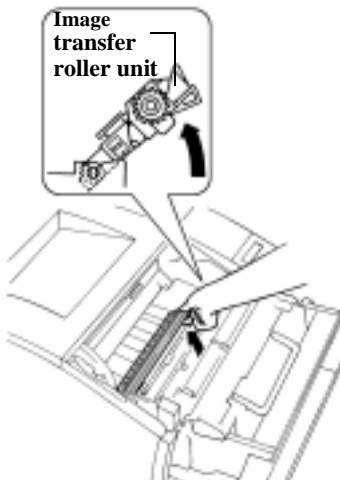
### Changing the Fusing Unit and Image Transfer Roller Unit

- The **image transfer roller unit** and **fusing unit** can provide up to 100,000 A4/ letter-size prints (this value will vary with the color to monochrome print ratio, image conditions, etc).
- Change the **fusing unit** and **image transfer roller unit** at the same time.
- Dispose of the old **fusing unit** and **image transfer roller unit** in plastic bags, according to your local regulations or return them to your dealer.

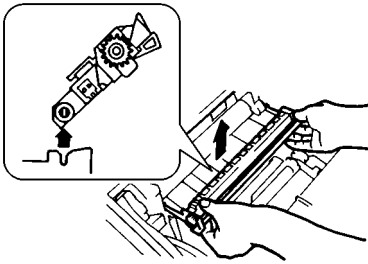
### Changing the Image Transfer Roller Unit



1. Grasp and pull down the **front cover lock release lever** and swing open the **front cover**.



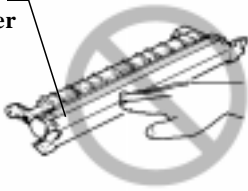
2. Lift the **image transfer roller unit** to the position shown.



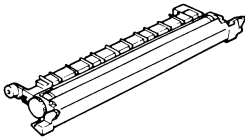
3. Pull out the **image transfer roller unit**.

### Note

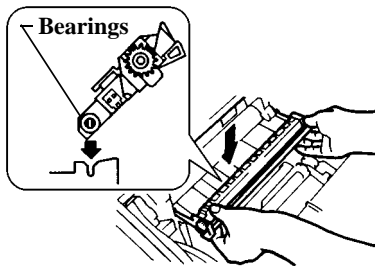
Image transfer roller



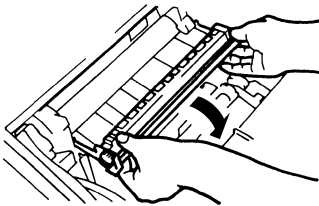
- Do not touch the surface of the **image transfer roller** as this may lead to reduced print quality.



4. Remove the new **image transfer roller unit** from its carton.

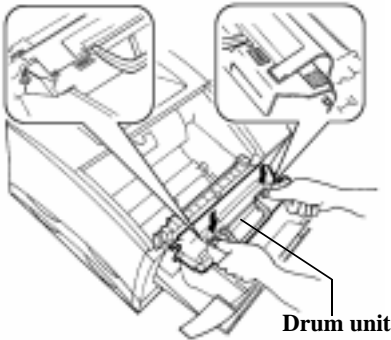


5. Insert both bearings of the **image transfer roller unit** into the shafts as shown.



6. Install the **image transfer roller unit**.

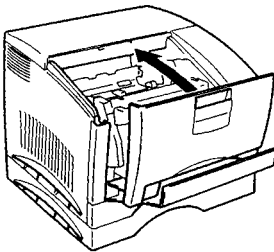
## Changing Cartridges



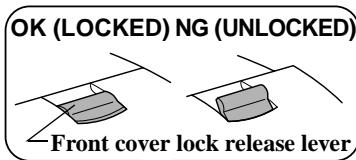
7. Once the **image transfer roller unit** has been installed, secure the **drum unit** into place by applying pressure at its top where the “**Press**” label is affixed. The **drum unit** will lock into place when it has been correctly inserted into the printer.

### Note

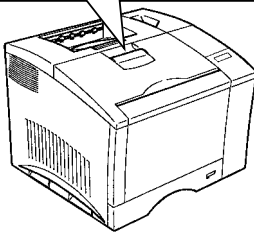
- Before shutting the printer’s exterior cover, make sure that the **drum unit** is securely installed by applying pressure at its top where the “**Press**” label is affixed.



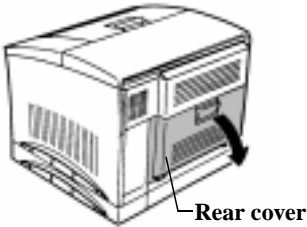
8. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.



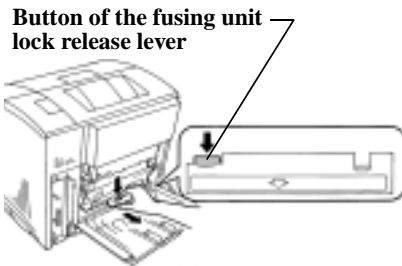
9. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.



## Changing the Fusing Unit



10. Open the **rear cover**.

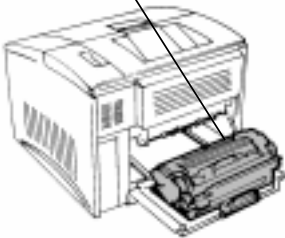


11. Push and hold the button of the **fusing unit lock release lever** and slide out the **fusing unit**.



### ATTENTION

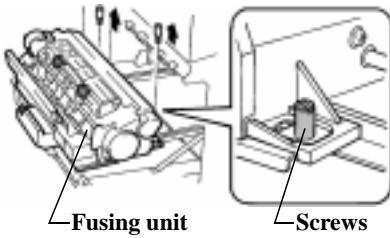
**WARNING! HIGH TEMPERATURE**  
label



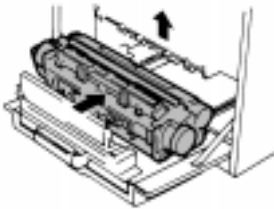
- The **fusing unit** is hot. Be careful not to touch the area surrounding the **WARNING! HIGH TEMPERATURE** label.
- Before changing the **fusing unit**, wait until its surface cools to a safe level.

## Changing Cartridges

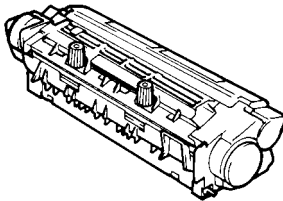
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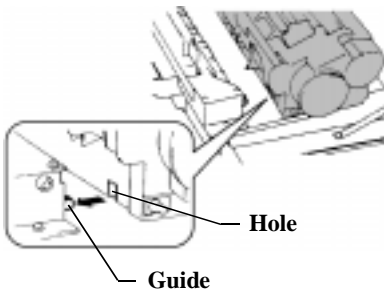
12. Remove both screws of the **fusing unit**.



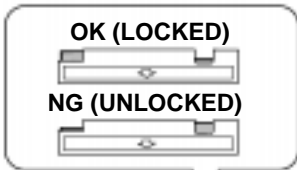
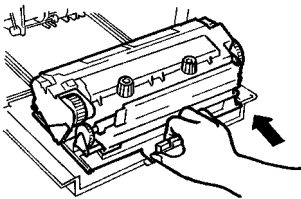
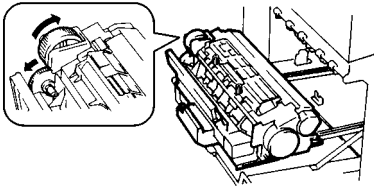
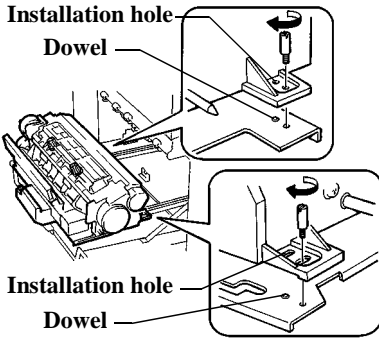
13. Slide out the **fusing unit** in the direction shown.  
Remove the **fusing unit** from its mount.



14. Remove the new **fusing unit** from its carton.



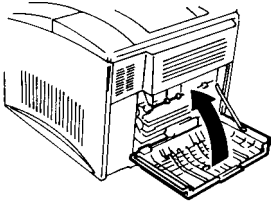
15. Insert the guide of the **fusing unit** mount into the **installation hole** of the new **fusing unit** as shown.



16. Install the **fusing unit** by inserting the **dowel** of the mount into the **fusing unit's installation hole**.
17. Secure the **fusing unit** with the **installation screws**.
18. Turn the **misfeed clearing dial** of the **fusing unit** counterclockwise and make sure that the white gear shown rotates smoothly.
19. Holding the **lock release lever**, insert the **fusing unit** until it clicks into place.
20. Make sure that the button of the **fusing unit lock release lever** is pushed up as shown.

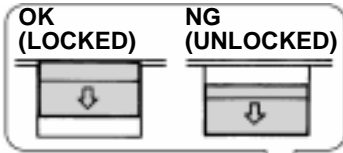
## Changing Cartridges

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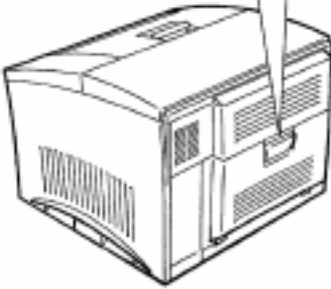


21. Close the **rear cover**.

The **rear cover** will click when it is closed completely.

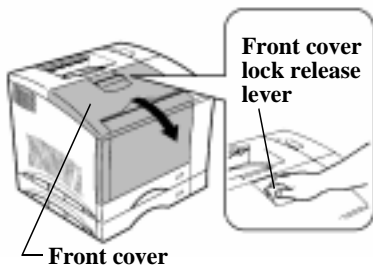


22. Make sure that the button of the **rear cover lock release lever** is pushed up as shown.

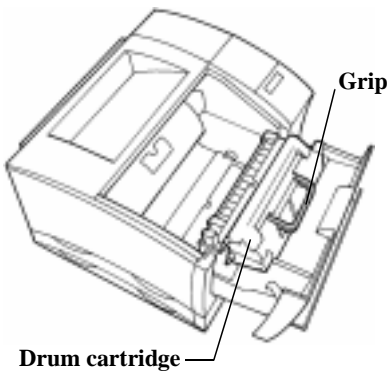


## Changing the Image Transfer Belt Unit

- The **image transfer belt unit** provides A4/letter-size prints of up to about 150,000 images. One image is equal to one cycle of the **transfer belt**. The **image transfer belt unit** operates once (one image) per monochrome print. In comparison, the **image transfer belt unit** operates four times (four images) per color print.
- When 150,000 images are calculated in terms of color prints, about 37,500 sheets can be printed. (This value will vary according to the color-to-monochrome print ratio, image conditions, etc.)
- Dispose of the old **image transfer belt unit** in a plastic bag, according to your local regulations or return it to your dealer.

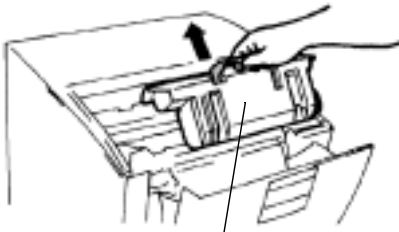


1. Grasp and pull down the **front cover lock release lever** and swing open the **front cover**.





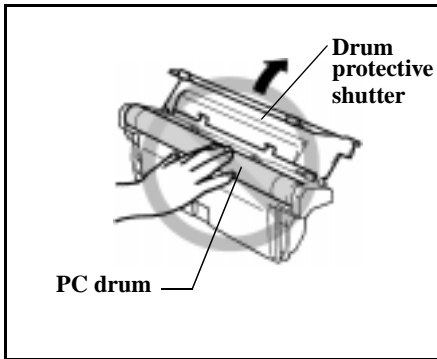
## Changing Cartridges



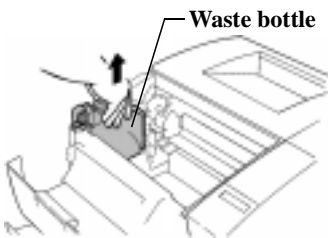
Drum cartridge

2. Holding the grip, pull out the **drum cartridge**.

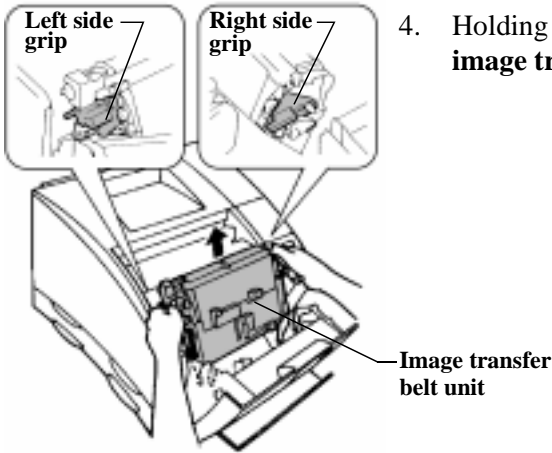
### Note



- Do not touch the **drum cartridge's protective shutter**. Also, never touch the **internal PC drum**; to do so will reduce print quality.
- If the **drum cartridge** will not be immediately installed in the printer, be sure to cover it with a cloth to shield it from light.



3. Remove the **waste bottle** from the printer.



4. Holding the grips, pull out the **image transfer belt unit**.

5. Take the new **image transfer belt unit** out of its carton.

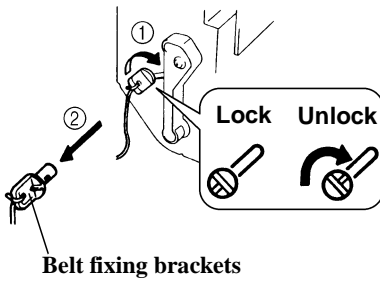
**Note**

Left side grip

Right side grip

Image transfer belt shutter

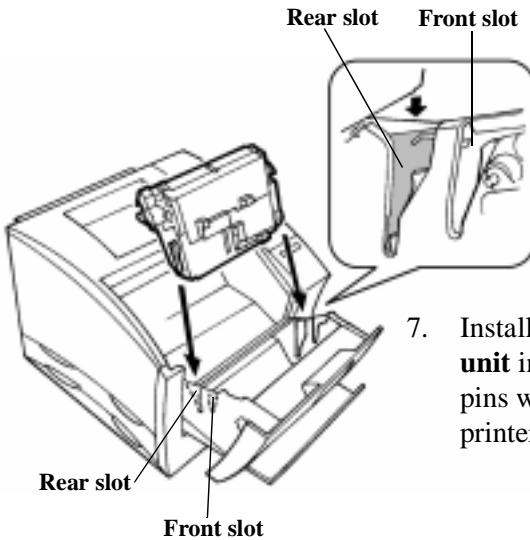
- When installing the **image transfer belt unit**, be sure to hold onto the grips. NEVER handle the shutter, to avoid damaging the **image transfer belt**.



6. The **belt fixing brackets** come locked like a key into both sides of the **image transfer belt unit**.

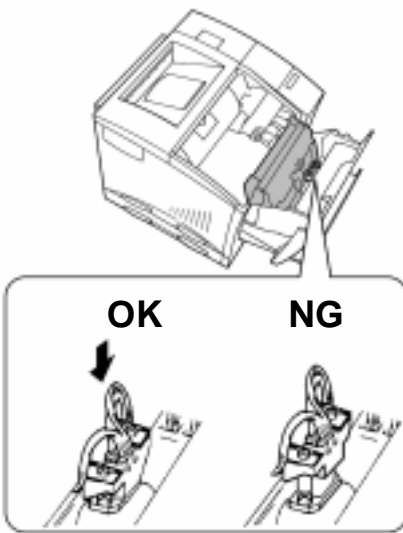
- 1 Turn the **belt fixing bracket** on the left side of the **image transfer belt unit** to the position shown to unlock the bracket.
- 2 Pull out the **belt fixing bracket**.

Unlock and pull out the **belt fixing bracket** from the right side of the **image transfer belt unit** following the same procedure as used for the left side.

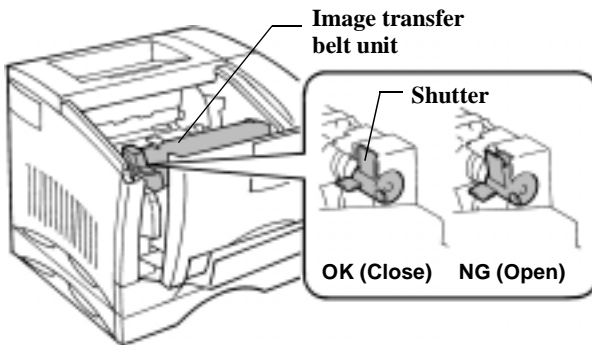


7. Install the **image transfer belt unit** in the printer, aligning its pins with the slots inside the printer's frame.

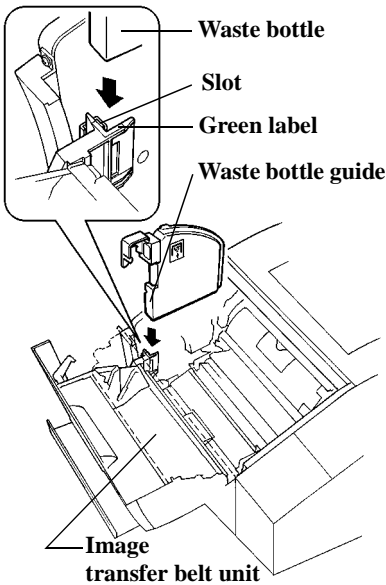
8. Check that the connector from the **image transfer belt unit** is securely connected to the printer's connector.



9. Make sure that the shutter of the **image transfer belt unit** is closed.

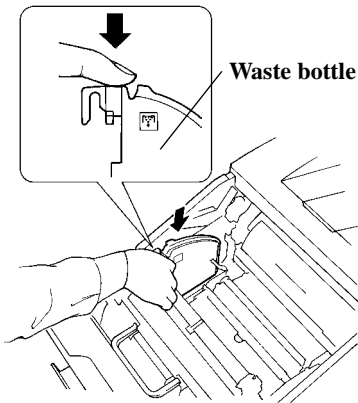


## Changing Cartridges

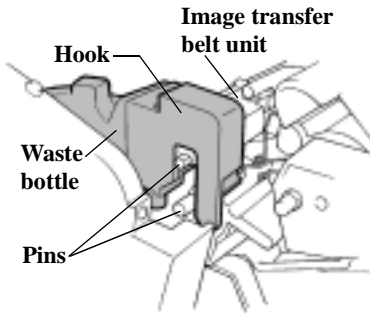


10. Slide the **waste bottle** into the slot located behind the **image transfer belt unit** on the left side of the printer.

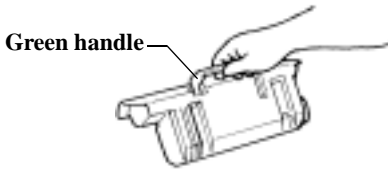
Install the **waste bottle** behind the **image transfer belt unit** (drawn in the diagram with dash marks) inside of the printer.



11. Press down on the **waste bottle** until it clicks into place.



12. Make sure that the hook of the **waste bottle** is engaged securely by the pins of the **image transfer belt unit**.



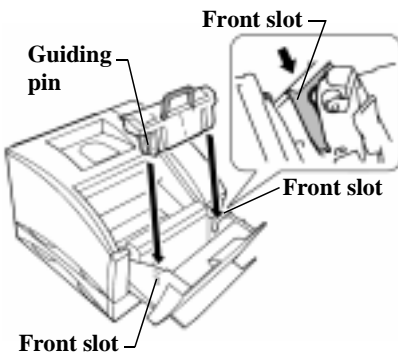
13. **HOLD THE GREEN HANDLE** of the **drum cartridge** when installing it into the printer.

### Note

Drum protective shutter

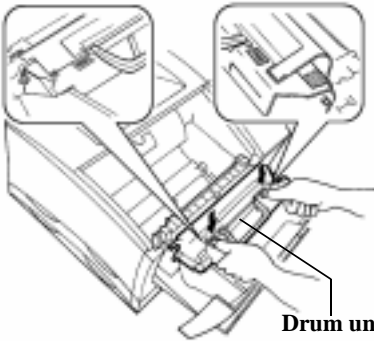


- **DO NOT HANDLE** the **drum protective shutter** during installation to avoid damaging the **transfer belt unit**.



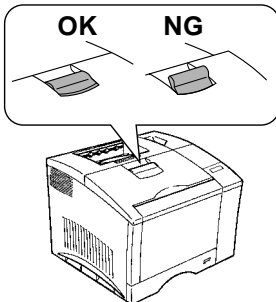
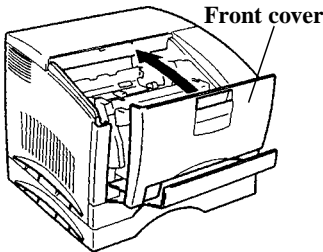
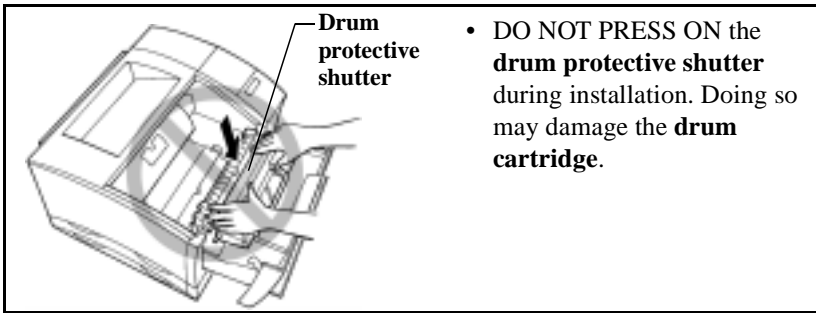
14. Align the **drum cartridge's pins** with the slots inside the printer for easy installation.

## Changing Cartridges



15. APPLY PRESSURE ONLY TO THE GREEN SQUARES on the top face of the **drum cartridge** until it locks into place.

### Note



16. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.
17. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.

## Cleaning the Printer

Dust, dirt, and paper debris on the outer surfaces and inside the printer can interfere with printer performance. Clean the printer regularly.

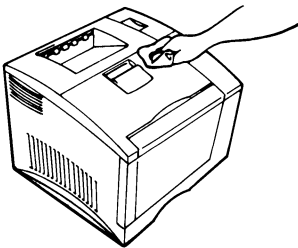
### Note

- Before cleaning, be sure to turn OFF the power switch and unplug the power cord from the outlet.
- Use a soft cloth for cleaning. Do not use abrasives or corrosive detergents.

### ATTENTION

The **fusing unit** inside the **rear cover** can become very hot during operation. To avoid burning yourself, avoid touching the area or the **fusing unit**.

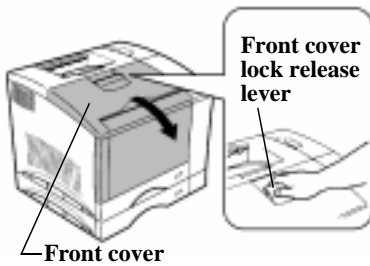
## Cleaning the Outside



1. Using a soft cloth and a mild dishwashing detergent, wipe the outside of the printer.



## Cleaning the Inside



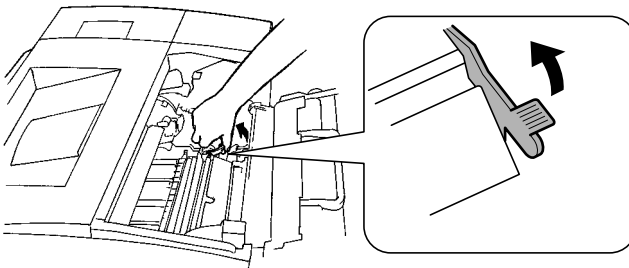
1. Grasp and pull down the **front cover lock release lever** to swing open the **front cover**.

### Note

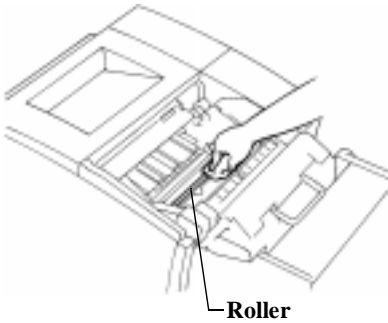
A line drawing of a printer with a cloth draped over its front cover.

- Whenever the printer is open, drape the **front cover** with a cloth so that the **drum cartridge** is not exposed to light.

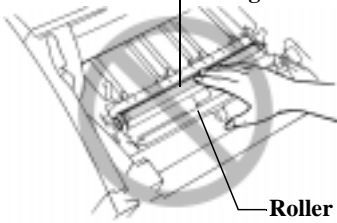
2. Lift the **misfeed clearing lever**.



- Using a soft cloth, wipe dirt and paper debris off the **roller** as shown.

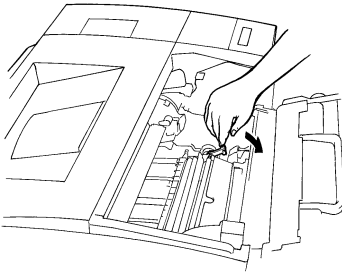


### Note

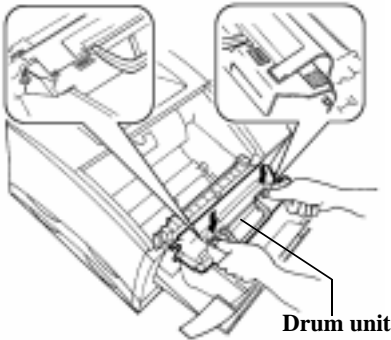
A line drawing of the printer's internal mechanism, focusing on the image transfer roller and a standard roller. A label 'Image transfer roller' points to the upper roller, and a label 'Roller' points to the lower roller. A large 'X' is drawn over the image transfer roller, indicating that it should not be touched.

- Do not touch the surface of the **image transfer roller** as it may cause reduced print quality.

- Return the **misfeed clearing lever** to the “down” position.



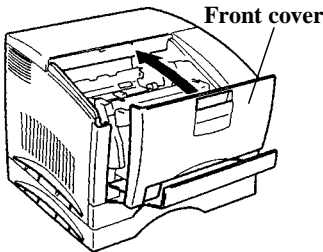
## Cleaning the Printer



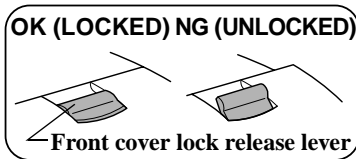
5. Before closing the **front cover**, secure the **drum unit** into place by applying pressure at its top where the “**Press**” label is affixed. The **drum unit** will lock into place when it has been correctly inserted into the printer.

### Note

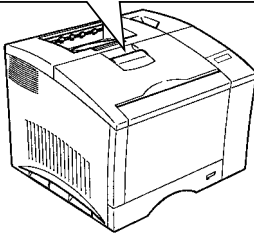
- Before shutting the printer’s exterior cover, make sure that the **drum unit** is securely installed by applying pressure at its top where the “**Press**” label is affixed.



6. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.



7. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.



*Chapter*

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*Troubleshooting*

7

# How to Troubleshoot

Use this section as a reference for solving routine problems before calling your technical representative. Many of these troubleshooting tips provide quick and easy remedies to some common situations. If the problems persist however, please contact your dealer.

## Diagnosing Your Printer

Different steps of action should be taken for different trouble symptoms. First, find out which one of the following categories your printer's symptom fits into, then go to the corresponding action pages.

### Troubleshooting the Data Transfer Cycle

Typical symptoms include:

- **The printer does not turn ON.**

See p. 7-3.

### Troubleshooting the Print Cycle

The printer fails to print data that has been received from the host computer.

Typical symptoms include:

- **The printer does not accept the data.**
- **An error occurs, disabling the printer.**
- **A paper problem such as a misfeed occurs, disabling the printer.**

See p. 7-5.

## **Improving Print Quality**

Typical symptoms include:

- **Poor print quality.**
- **Print results are not consistent with settings.**
- **The printer requires excessive time in order to complete the print cycle.**

See p. 7-26.

## **Problems During the Data Transfer and Print Cycle**

### **Troubleshooting the Data Transfer Cycle**

<b>Symptom</b>	<b>Cause</b>	<b>Action</b>
The printer power is not turned ON.	The power cord is unplugged or loose.	Plug the power cord into the printer and outlet.
	The power outlet may be faulty.	Plug another electrical appliance into the outlet to test if it works properly.
The LCD display is blank and the printer makes no sound but the printer can be turned ON.	The voltage of the printer does not match the power outlet voltage.	Check the power outlet for correct voltage.

## Troubleshooting the Print Cycle

Symptom	Cause	Action
The Data indicator does not light up and the printer does not start a print cycle.	The interface cable is unplugged.	Connect it securely. ☞ “Set-up Guide”
	The interface cable may not be compatible with the specifications of the computer and/or printer.	Check the model code and specifications of the interface cable and make sure that they are compatible with the specifications of the computer and printer. ☞ “Set-up Guide”
The Message indicator lights up and the print cycle does not start.	The printer has detected an error. The details of the error are shown on the message display.	Determine the necessary remedy. ☞ p. 7-6
The print cycle cannot be interrupted (the Data indicator remains on).	Data is stored in the printer’s memory.	Press the On Line key to take the printer off line. From the Reset Menu run “Job & Memory” to reset the data stored in the memory. Details, ☞ Chapter 3
Personality does not change.	“Personality” in the “Config Menu” is not set to “Automatic.”	Press the On Line key to take the printer off line. Change the “Personality” setting in the Config Menu to “Automatic.” Details, ☞ p. 3-11



## Problems During the Data Transfer and Print Cycle

Symptom	Cause	Action
A paper misfeed.	<p>Possible causes include:</p> <ul style="list-style-type: none"><li>• Paper does not meet specifications required.</li><li>• Transparencies have not been fanned thoroughly before loading.</li><li>• Paper is not loaded properly in the tray.</li><li>• The optional third cassette unit is not installed properly.</li><li>• The fusing unit requires replacement.</li></ul>	<p>Once you have identified the cause of the problem, use the corresponding reference pages listed below and follow the instructions provided.</p> <ul style="list-style-type: none"><li>• Types of paper that can be used, ☞ p. 2-17</li><li>• Reload the transparencies/paper. ☞ p. 2-31</li><li>• Clear a paper misfeed, ☞ p. 7-11</li><li>• Reinstall the third cassette unit. ☞ “Set-up Guide”</li><li>• Change the fusing unit. ☞ p. 6-25</li></ul>
Double feed.	Multiple sheets are output together.	Fan the paper stack thoroughly and reload it.

## Messages

LCD Message	Description	Action
<b>WARMING UP</b>	The printer is warming up.	Wait a few moments for the printer to warm up.
<b>OFFLINE</b>	Printer cannot receive data from host computer.	Press the On Line key to take the printer on line.
<b>PROCESSING</b>	<ul style="list-style-type: none"><li>• Receiving data from the host computer.</li><li>• The printer is processing a print image.</li></ul>	Wait for a few moments.
<b>DATA COMPRESSION</b>	Compressing data from the host computer.	Wait for a few moments.
	Data is compressed when more data is being processed than can be managed by the amount of memory installed in your printer. The level of image quality of the compressed data may be declined when it is output by the printer.	The installation of additional memory into the printer can raise the image quality level of printed documents.
<b>TRAY X PAPER LOW</b>	Tray 2 or Tray 3 is almost out of paper.	Prepare more paper to replenish the tray.



## Problems During the Data Transfer and Print Cycle

LCD Message	Description	Action
<b>LOAD XXX TRAY X</b>	The specified cassette does not contain the right size of paper.	Change the paper size in the cassette. ☞ p.2-17
		Printing can continue with the currently selected paper by pressing the Proceed key or if an Auto-continue Time-out occurs.
<b>LOAD XXX IN MANUAL</b>	Print Menu is set to Manual Feed. ☞ p. 3-8	Load the paper of the specified size into Tray 1 (multipurpose tray). Then, press the Proceed key. This action will print one page only.
<b>TRAY X EMPTY</b>	Tray 1, Tray 2 or Tray 3 is empty.	Add paper. ☞ p. 2-21
<b>TONER LOW XXXXX</b>	The toner is low but can still print.	Ready a new toner cartridge for replacement.
<b>TONER EMPTY XXXXX</b>	The toner is empty.	You can still print one copy at a time by pressing the Proceed key, however the image density will gradually become lighter. It is recommended that you change the toner cartridge as soon as possible. ☞ p. 6-1
		Change the toner cartridge. ☞ p. 6-1

## *Problems During the Data Transfer and Print Cycle*

LCD Message	Description	Action
<b>PLEASE WAIT XXXXX</b>	The toner cartridge is moving into the replacement position.	Wait for a few moments.
<b>DRUM ALMOST USED</b>	The drum cartridge is almost ready to be replaced.	The drum cartridge, waste bottle, and oiling roller are on the same replacement cycle. Prepare to replace them at the same time.
<b>REPLACE DRUM UNIT</b>	The drum cartridge requires replacement.	The drum cartridge, waste bottle, and oiling roller are on the same replacement cycle. Replace all three units together. ☞ p. 6-14
<b>REPLACE WASTE BOTTLE</b>	The waste bottle is full.	
<b>REMOVED XXXXX TONER</b>	One or more of the toner cartridges is missing.	Load the toner cartridge. ☞ p. 6-1
<b>REMOVED DRUM UNIT</b>	The drum cartridge is missing.	Load the drum cartridge. ☞ p. 6-15
<b>REMOVED WASTE BOTTLE</b>	The waste toner bottle is missing.	Insert the waste bottle. ☞ p. 6-18
<b>REMOVED OILING ROLLER</b>	The oiling roller or fusing unit is missing.	Load the oiling roller. ☞ p. 6-21
		Load the fusing unit. ☞ p. 6-28
<b>WARNING COVER OPEN</b>	The front cover or the rear cover of the printer are not closed correctly.	Close the front cover. ☞ p. 2-1
		Close the rear cover. ☞ p. 2-3

## Problems During the Data Transfer and Print Cycle

LCD Message	Description	Action
<b>WARNING PAPER JAM 1</b>	A paper jam occurred near the paper in-take section.	Remove the misfed sheet of paper. Details,  p. 7-11
<b>WARNING PAPER JAM 2</b>	A paper jam occurred between the paper in-take and the fusing section.	
<b>WARNING PAPER JAM 3</b>	A paper jam occurred between the fusing section and the paper exit section.	
<b>RESET TO SAVE</b>	During the printing cycle, one or more printer settings were changed.	If you want the current printing cycle to use the new setting, stop the printing cycle using the JOB & MEMORY function. When printing has stopped, initiate a new printing cycle.  pp. 3-1, 3-4, 3-7
		If you do not want the current printing cycle to use the new setting, press the Proceed key to resume the current printing cycle. The new setting will be used in the following printing cycle.

## *Problems During the Data Transfer and Print Cycle*

LCD Message	Description	Action
<b>CONTEXT SAVE CHANGE</b>	The setting for PCL CONTEXT SAVING or PS CONTEXT SAVING has been changed.	Press the Proceed key. When "READY" appears on the display, the new setting for CONTEXT SAVING will be entered. ☞ p. 3-13.
<b>MEMORY OVERFLOW</b>	The printer has received more data than can be processed into its internal memory.	Press the Proceed key. The printer returns on line. Run the print cycle again.
<b>BUFFER FULL</b>	A buffer full error occurred.	
<b>DATA TOO COMPLEX</b>	Data received cannot be processed because it is too complex.	
<b>INTERFACE ERROR PARALLEL PORT</b>	A parallel port error occurred.	Turn OFF the power switch. Then, turn it ON again. The printer returns On Line. Run the print cycle again.
<b>INTERFACE ERROR LOCALTALK PORT</b>	A Localtalk port error occurred.	
<b>INTERFACE ERROR NETWORK</b>	A network interface error occurred.	
<b>INSUFFICIENT RAM NEED MORE RAM</b>	Currently installed amount of RAM is insufficient.	Install optional expansion memory.
<b>FATAL ERROR #XX</b>	The printer has malfunctioned and is unable to run a print cycle.	Turn OFF the power switch and turn it ON again.
		Contact your dealer and provide the malfunction code (#XX) shown on the screen.

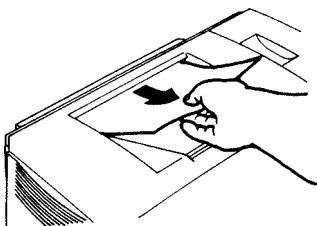
### Clearing a Paper Misfeed

When a paper misfeed occurs in the printer, remove the paper according to the following procedure.

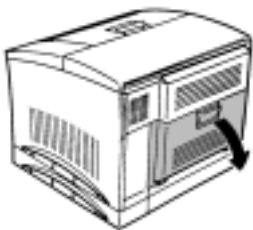


#### ATTENTION

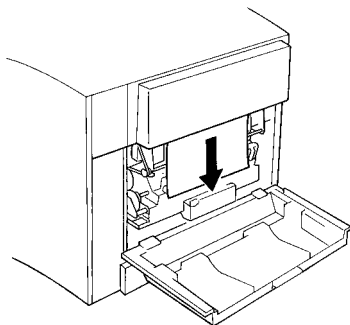
- The **fusing unit** inside the **rear cover** can become very hot during operation. Do not touch the area to avoid injury.



1. Pull the paper from the **paper exit port** out toward you.



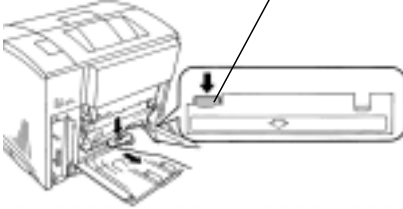
2. Swing open the **rear cover**.



3. Pull down the paper from the **paper-exit port**.

## Problems During the Data Transfer and Print Cycle

Button of the fusing unit lock release lever

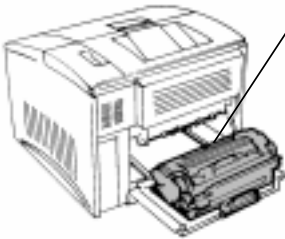


4. Push and hold the **fusing unit lock release lever button** and slide out the **fusing unit**.

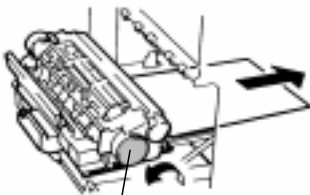


### ATTENTION

**WARNING! HIGH TEMPERATURE label**



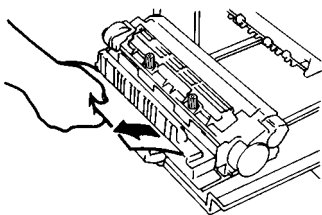
- The **fusing unit** is hot. Be careful not to touch the area surrounding the **WARNING! HIGH TEMPERATURE** label.



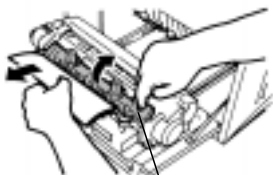
Misfeed clearing dial

5. While turning the **misfeed clearing dial** of the **fusing unit** counterclockwise, pull out the paper from the **fusing unit**.



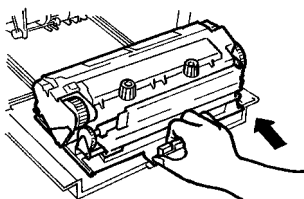


6. Pull out the paper from the **fusing unit**.

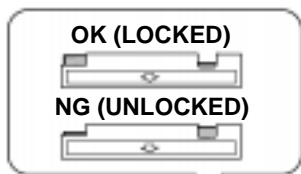


Misfeed clearing guide

7. Lift the **misfeed clearing guide** of the **fusing unit** and pull out the paper.



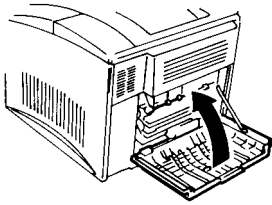
8. Hold the **lock release lever button** and push in the **fusing unit** until it locks back into position.



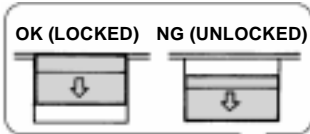
9. Make sure that the button of the **lock release lever** is pushed up as shown.



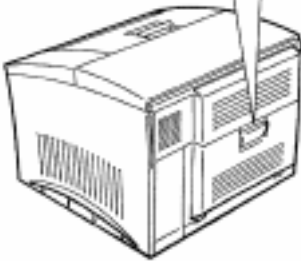
## Problems During the Data Transfer and Print Cycle



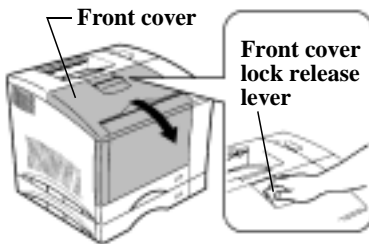
10. Close the **rear cover**, locking it into place.



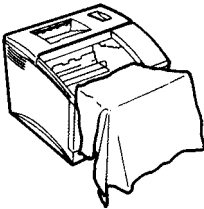
11. Make sure that the button of the **lock release lever** is pushed up as shown.



12. Grasp and pull down the **front cover lock release lever** and swing open the **front cover**.

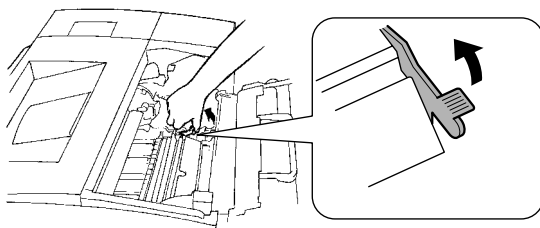


### Note

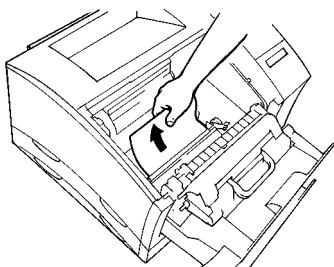


- Whenever the printer is open, drape the **front cover** with a cloth to protect the **drum cartridge** from light.

13. Lift the **misfeed clearing lever**.



14. Pull out the paper from the **rear rollers**.



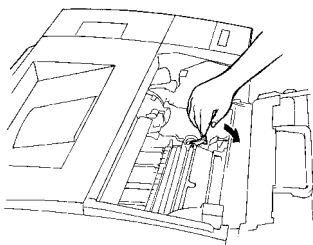
**Note**

• Do not touch the surface of the **image transfer roller**. It may lead to reduced print quality.

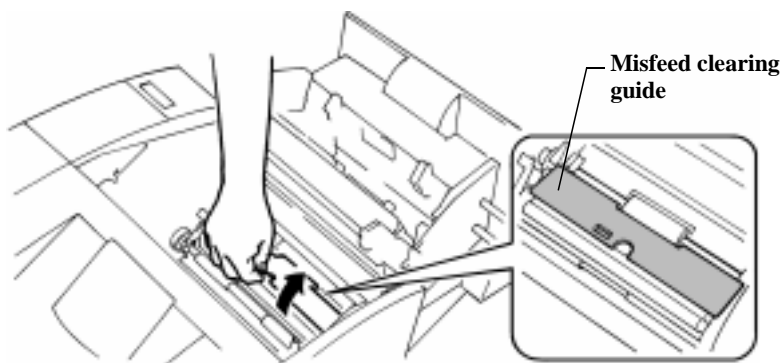
Image transfer roller

The diagram shows a close-up of the image transfer roller, which is a cylindrical component. A circular area around the roller is shaded with diagonal lines, and a black arrow points to it. The text 'Image transfer roller' is written below the diagram.

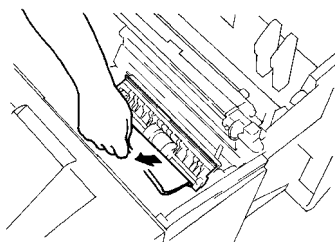
15. Push down on the **misfeed clearing lever**.



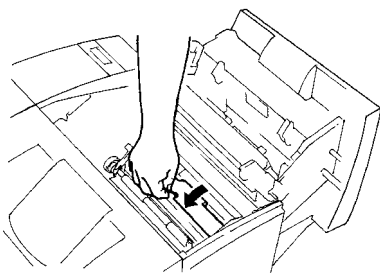
16. Lift the **misfeed clearing guide**.



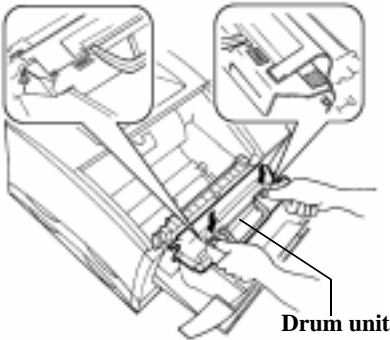
17. Pull out the paper from the **rollers** toward the top.



18. Close the **misfeed clearing guide**.



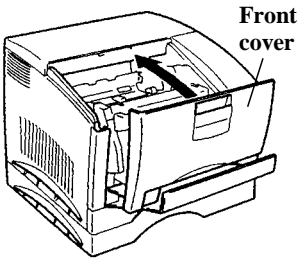
## Problems During the Data Transfer and Print Cycle



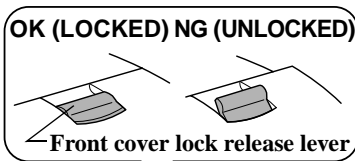
19. After clearing the misfeed, secure the **drum unit** into place by applying pressure at its top where the “**Press**” label is affixed. The **drum unit** will lock into place when it has been correctly inserted into the printer.

### Note

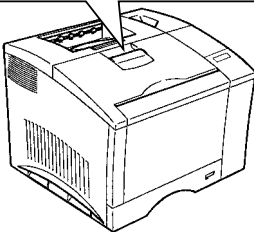
- Before shutting the printer’s exterior cover, make sure that the **drum unit** is securely installed by applying pressure at its top where the “**Press**” label is affixed.



20. Gently close the **front cover**. Do not slam the **front cover** to avoid causing damage to the printer.

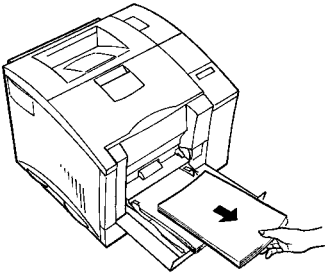


21. Make sure that the **front cover** is completely closed. You will hear the sound of the printer operating.

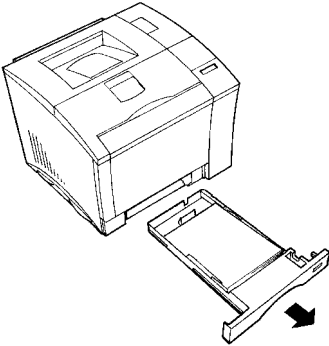


## *Problems During the Data Transfer and Print Cycle*

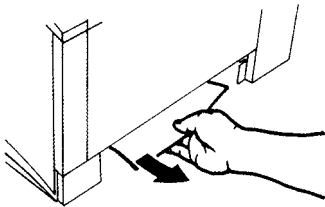
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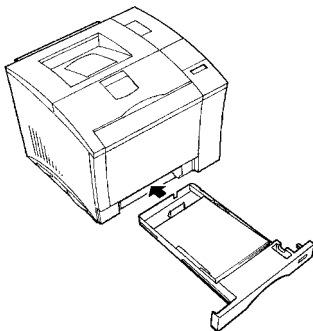
22. Pull out the paper misfed in **Tray 1**.



23. Slide out the second cassette.



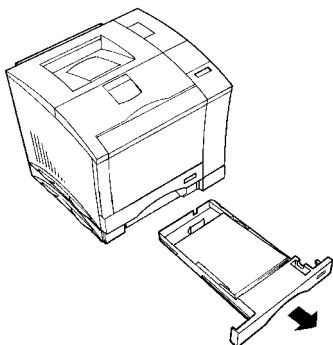
24. Pull out the paper from the paper path toward you.



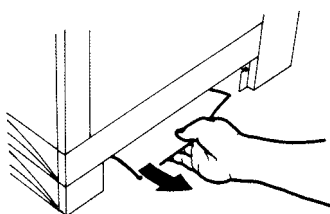
25. Replace the second cassette.

## *Problems During the Data Transfer and Print Cycle*

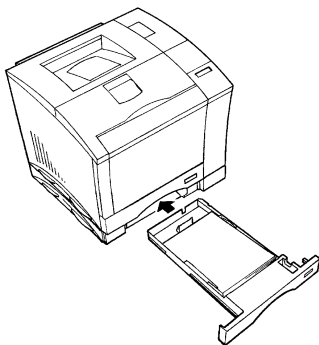
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26. Slide out the third cassette (option).

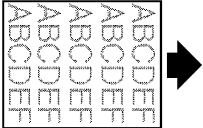


27. Pull out the paper from the paper path toward you.

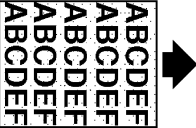
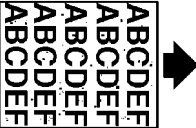


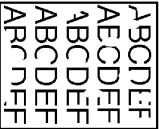
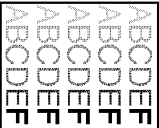
28. Replace the third cassette.

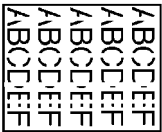
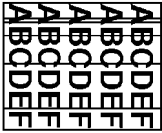

## Improving Print Quality

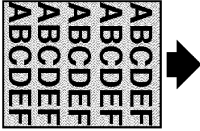


Symptom	Cause	Action
Image is too light 	The print density setting on the host computer is not set properly.	Adjust the print density setting on the host computer to the desired level.
	The paper loaded in the tray is damp.	Replace the old paper with fresh, dry paper. ☞ p. 2-21
	The toner cartridge is running out of toner.	Remove the toner cartridge and shake it to better distribute the toner. ☞ p. 6-1
		Replace the old toner cartridge with a new one. ☞ p. 6-1
	The toner cartridge may be defective.	Remove and check the cartridge for damage. Install a new cartridge if necessary. ☞ p. 6-1
	The image transfer roller unit requires replacement.	Change the image transfer roller unit. ☞ p. 6-25



Symptom	Cause	Action
Image is too dark 	The print density setting on the host computer is not set properly.	Adjust the print density setting on the host computer to the desired level.
	The toner cartridge may be defective.	Change the cartridges and/or the transfer belt unit. <ul style="list-style-type: none"> <li>• Toner Cartridge ☞ p. 6-1</li> <li>• Drum Cartridge ☞ p. 6-15</li> <li>• Image Transfer Belt Unit ☞ p. 6-32</li> </ul>
	The drum cartridge may be defective.	
	The image transfer belt unit may be defective.	
	The image transfer roller unit requires replacement.	Change the image transfer roller unit. ☞ p. 6-25
The toner smudges 	The toner cartridge may be defective.	Change the cartridges and/or the transfer belt unit. <ul style="list-style-type: none"> <li>• Toner Cartridge ☞ p. 6-1</li> <li>• Drum Cartridge ☞ p. 6-15</li> <li>• Image Transfer Belt Unit ☞ p. 6-32</li> </ul>
	The drum cartridge may be defective.	
	The image transfer belt unit may be defective.	
	The image transfer roller unit requires replacement.	Change the image transfer roller unit. ☞ p. 6-25
	The oiling roller requires replacement.	Change the oiling roller. ☞ p. 6-21

Symptom	Cause	Action
Partial void image 	The paper being used does not meet size specifications.	Paper specifications. ☞ p. 2-17
	The paper loaded in the tray is damp.	Replace the old paper with fresh dry paper. ☞ p. 2-21
	The toner cartridge may be defective.	Change the cartridges and/or the transfer belt unit. <ul style="list-style-type: none"> <li>• Toner Cartridge ☞ p. 6-1</li> <li>• Drum Cartridge ☞ p. 6-15</li> <li>• Image Transfer Belt Unit ☞ p. 6-32</li> </ul>
	The drum cartridge may be defective.	
	The image transfer belt unit may be defective.	
	The image transfer roller unit requires replacement.	Change the image transfer roller unit. ☞ p. 6-25
Inconsistent image density 	Toner is not distributed evenly inside the cartridge.	Remove the toner cartridge and shake it several times. ☞ p. 6-1
	The drum cartridge may be defective.	Change the drum cartridge. ☞ p. 6-15
	The image transfer roller unit requires replacement.	Change the image transfer roller unit. ☞ p. 6-25

Symptom	Cause	Action
White lines 	The toner cartridge may be defective.	Change the cartridges and/or the transfer belt unit. <ul style="list-style-type: none"> <li>• Toner Cartridge ☞ p. 6-1</li> <li>• Drum Cartridge ☞ p. 6-15</li> <li>• Image Transfer Belt Unit ☞ p. 6-32</li> </ul>
	The drum cartridge may be defective.	
	The image transfer belt unit may be defective.	
	The image transfer roller unit requires replacement.	
Black (or color) stripes 	The printer's internal paper path is dirty.	Run several prints to flush out the debris.
	The toner cartridge may be defective.	Change the cartridges and/or the transfer belt unit. <ul style="list-style-type: none"> <li>• Toner Cartridge ☞ p. 6-1</li> <li>• Drum Cartridge ☞ p. 6-15</li> <li>• Image Transfer Belt Unit ☞ p. 6-32</li> </ul>
	The drum cartridge may be defective.	
	The image transfer belt unit may be defective.	
	The image transfer roller unit requires replacement.	Change the image transfer roller unit.☞ p. 6-25
The oiling roller requires replacement.	Change the oiling roller.☞ p. 6-21	
Soiled back side 	The printer's internal paper path is dirty.	Run several prints to flush out the debris.
	The oiling roller requires replacement.	Change the oiling roller.☞ p. 6-21

Symptom	Cause	Action
Blurred background 	The toner cartridge may be defective.	Change the cartridges. • Toner Cartridge ☞ p. 6-1 • Drum Cartridge ☞ p. 6-15
	The drum cartridge may be defective.	
The Image is coarse.	Too much data. The printer cannot fully process the image with the present memory capacity.	Install the optional expansion memory.
Black pages 	The toner cartridge may be defective.	Change the cartridges. • Toner Cartridge ☞ p. 6-1 • Drum Cartridge ☞ p. 6-15
	The drum cartridge may be defective.	
Blank pages 	The drum cartridge may be defective.	Change the cartridges and/or the transfer belt unit. • Drum Cartridge ☞ p. 6-15 • Image Transfer Roller Unit ☞ p. 6-25 • Image Transfer Belt Unit ☞ p. 6-32
	The image transfer roller unit may be defective.	
	The image transfer belt unit may be defective.	
Paper wrinkles during printing.	Possible causes include: • Paper is not the proper size. • Paper is not loaded properly in the tray. • The fusing unit requires replacement.	Check these conditions closely and take necessary action. • Paper size ☞ p. 2-17 • Loading Paper ☞ p. 2-21 • Changing the Fusing Unit ☞ p. 6-28

## Improving Print Quality

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Symptom	Cause	Action
The print image is not fixed and easily smears.	The paper loaded in the tray is damp.	Replace the old paper with fresh dry paper. ☞ p. 2-21
	The paper being used is not compatible with the printer.	Compatible types of paper. ☞ p. 2-17
	The fusing unit requires replacement.	Change the fusing unit. ☞ p. 6-28
Incorrect image registration (lines are broken or characters are out of position).	The print parameters and paper settings of the application software are different from the settings on the control panel.	Make sure that the settings for the application software correspond with the control panel settings, especially the media options.
The print results do not represent the control panel settings.	The printer driver settings are different from the control panel settings.	Adjust the print settings through the printer driver.
		Make sure that the printer driver and control panel settings correspond. ☞ Chapter 3

<b>Symptom</b>	<b>Cause</b>	<b>Action</b>
The printer takes too long to output prints.	The printer was in Power Save mode when the print command was issued.	Turn off the Power Save setting if it is inconvenient. Press the On Line key to take the printer Off Line. Using the Config menu, change the Power Save setting to "OFF". Details, ☞pp. 3-2, 3-4, 3-11
	The printer setting was for color transparency (transparency sheet) or thick paper printing.	Wait a few moments.
		Change the TRAY X MEDIA setting or PRINT MODE setting if they do not correspond. Print menu ☞pp. 3-2, 3-4, 3-8 Image menu. ☞pp. 3-2, 3-4, 3-12
The amount of memory installed is not sufficient to process the print data.	Install the optional expansion memory, which will allow the print cycle to run faster.	



*Chapter*

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*Specifications*

8



## Specifications of Printer

- Type:** Desktop full color laser beam printer
- Printing system:** Electrostatic dry powdered imaging system
- Exposure system:** Laser diode and polygon mirror scanning
- Print density:** 600 dpi (dot/ inch)
- Paper feeding system:** 2-way system  
(TRAY 1: multipurpose tray,  
TRAY 2: 250-sheet second cassette)

### Paper size:

#### Standard size:

A4, A5, JIS B5, Letter 8-1/2" × 11", Legal 8-1/2" × 14",

Executive 7-1/4" × 10-1/2"

Invoice 8-1/2" × 5-1/2"

\*All paper sizes are lengthwise only.

Paper feeding port	A4	JIS B5	A5	Legal* <sup>1</sup>	Letter	Execu-tive	Invoice
Tray 1	○	○	○	○	○	○	○
Tray 2	○	None	None	○	○	None	None
Tray 3 * <sup>2</sup>	○	None	None	○	○	None	None

\* 1 Does not support legal size thick paper.

\* 2 Optional 250-sheet third cassette unit

**Non-standard size (Tray 1 only):**

- Monochrome print: Width 92mm to 216mm (3-1/2" to 8-1/2") Length 148mm to 356mm (5-3/4" to 14")
- Full color print: Width 92mm to 216mm (3-1/2" to 8-1/2") Length 148mm to 297mm (5-3/4" to 11-3/4")

**Paper types:**

Plain paper 60 to 90 g/m<sup>2</sup> (16 to 24 lbs.),  
 Recycled paper 60 to 90 g/m<sup>2</sup> (16 to 24" lbs.),  
 Thick paper 90 to 157 g/m<sup>2</sup> (24-1/4 to 41-3/4 lbs.),  
 Transparencies sheet, Labels, Letterhead, Envelopes,  
 J-Post (postcard 100 × 148 mm, 4" × 5-3/4")

Paper feeding port	Plain-paper	Special paper						
		Recycled paper	Transparency sheet	Labels	Letter-head	Envelopes	J-Post (Post-card)	Thick paper <sup>*3</sup>
Tray 1	○	○	○	○	○	○	○	○
Tray 2	○	○	○	None	None	None	None	None
Tray 3 <sup>*4</sup>	○	○	○	None	None	None	None	None

\*3 Does not support legal size thick paper.

\*4 Optional 250-sheet third cassette unit

**Paper capacity:**

Paper feeding port	Plain-paper	Special paper						
		Recycled paper	Transparency sheet	Labels	Letter-head	Envelopes	J-Post (Post-card)	Thick paper <sup>*5</sup>
Tray 1	150	150	50	50	50	20	50	50
Tray 2	250	250	50	None	None	None	None	None
Tray 3 <sup>*6</sup>	250	250	50	None	None	None	None	None

\*5 Does not support legal size thick paper.

\*6 Optional 250-sheet third cassette unit

## Specifications of Printer

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**Paper exit system:** Face down exit system (Plain Paper 250 print maximum)

**System speed:** 77 mm/ seconds

**First printing time:**

<b>print type</b> \ <b>paper size</b>	<b>A4/ Letter</b>	<b>Legal</b>
Monochrome (plain paper)	32 seconds or less	38 seconds or less
Monochrome (thick paper)	58 seconds or less	<b>None</b>
Full color (plain paper)	42 seconds or less	<b>None</b>
Full color (transparency sheet)	72 seconds or less	<b>None</b>

**Multi printing time:**

<b>print type</b> \ <b>paper size</b>	<b>A4/ Letter</b>	<b>Legal</b>
Monochrome (plain paper)	12.0 s/m or more	6.0 s/m or more
Monochrome (thick paper)	1.3 s/m or more	<b>None</b>
Full color (plain paper)	3.0 s/m or more	<b>None</b>
Full color (transparency sheet)	0.97 s/m or more	<b>None</b>

Unit: sheets/minute

**Warm-up time:** Within 90 seconds (when power is supplied at 23°C / 73.4° F)

**Developing system:** Fine Micro Toning system

**PC drum:** OPC (Organic Photoconductor)

**PC charging system:** Rotation brush charging system

**Image transfer system:** Belt image transfer system, and roller image transfer system

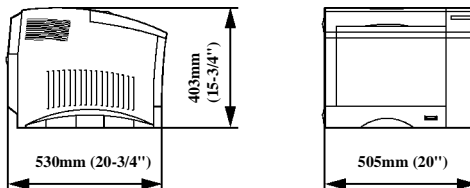
**PC drum cleaning system:** Cleaning blade system

<b>Paper separating System:</b>	Curvature separating system and charge neutralizing pin
<b>Fusing system:</b>	Heat belt fusing system
<b>Acoustic noise:</b>	39 dB (A) or less (idle state)/ 55 dB (A) or less (during operation)
<b>Power supply:</b>	AC 220 - 240 V 50/60Hz
<b>Power consumption:</b>	During operation 800W or less/ during idle state (average), 45W or less (when the heater lamp is OFF)
<b>Emulations:</b>	PCL5C Emulation PostScript 3
<b>CPU:</b>	Intel i960JF, 33MHz
<b>Memory:</b>	<ul style="list-style-type: none"><li>• ROM 4MB</li><li>• RAM 20MB. Expansion up to 68MB is possible with options.</li></ul>
<b>Interface:</b>	<ul style="list-style-type: none"><li>• Parallel (IEEE 1284 Type B connector)</li><li>• LocalTalk (RS-422)</li><li>• Ethernet (IEEE 802.3) TCP/IP, SPX/IPX, EtherTalk, NetBIOS. For use only with a network card.</li></ul>
<b>Font:</b>	<ul style="list-style-type: none"><li>• Agfa Intelifont : 35 fonts for PCL5C</li><li>• TrueType Font : 10 fonts for PCL5C</li><li>• Bitmap Font : 1 font for PCL5C</li><li>• PostScript 3 Font: 136 fonts for PostScript</li></ul>
<b>Host Computer OS:</b>	Windows 95, Windows 98, Windows 3.1, Windows NT Workstation 4.0 (for PCL5C Emulation) Windows 95, Windows 98, Windows 3.1, Windows NT Workstation 4.0, Mac OS 7.1 or later (for PostScript)
<b>Features:</b>	Power saving mode for Energy Star application

### Supply replacement:

- Drum cartridge :  
Monochrome prints : after 20,000 sheets  
(when the black-to-white ratio is 5% on multi prints)  
Full color prints : after 5,000 sheets  
(when the color-to-white ratio is 20% on multi prints)
- Black toner cartridge : after 4,500 sheets  
(when the black-to-white ratio is 5% on multi prints)
- Color toner cartridge (Yellow/ Magenta/ Cyan) : after 3,500 sheets  
(when the color-to-white ratio is 20% on multi prints)
- Waste bottle :  
Monochrome prints to 20,000 sheets  
(when the black-to-white ratio is 5% on multi prints)  
Full color prints to 5,000 sheets  
(when the color-to-white ratio is 20% on multi prints)
- Oiling roller :  
Monochrome prints to 20,000 sheets  
(when the black-to-white ratio is 5% on multi prints)  
Full color prints to 5,000 sheets  
(when the color-to-white ratio is 20% on multi prints)
- Image transfer belt unit : after 150,000 images
- Image transfer roller unit : after 100,000 prints
- Fusing unit : after 100,000 prints

**Dimensions:** Width 505 mm (20"), Depth 530 mm (20-3/4"), Height 403 mm (15-3/4")

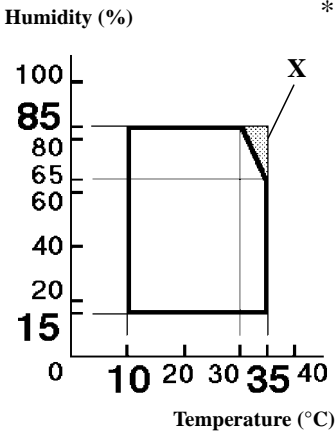


**Weight:** Approximately 40 kg (77-1/4 lbs.) including the drum cartridge and toner cartridge

**Operating environment:**

**Temperature:** 10°C (50°F) to 35°C (86°F) with a fluctuation of 10°C (18°F) per hour.

**Humidity:** 15% to 85% RH with a fluctuation of 20% per hour.



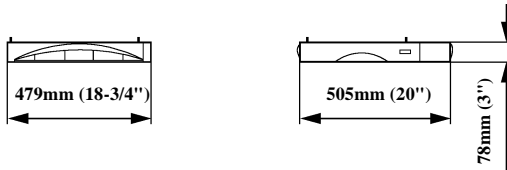
\*The environmental zone marked by “X” on the left represents a critical environment in which the printer can be left to stand. However, the manufacturer does not ensure optimal paper passage performance and image production in this zone. Be sure to operate the printer within the operating environment identified within the bold line.

**Options:**

- 250-sheet third cassette unit
- Network card
- Expansion memory  
72pin SIMMs, fast page type, no parity, access time: less than 70ns  
4MB/ 8MB/ 16MB/ 32MB DRAM  
Modules (2 slots available)

## Specifications of 250-sheet Third Cassette Unit

- Paper feeding system:** 1-way system
- Paper types:** Plain paper, recycled paper 60-90 g/m<sup>2</sup> (16 to 24 lbs.), transparency sheet
- Paper size:** A4, letter 8-1/2" × 11",  
legal 8-1/2" × 14"  
\*All paper sizes are lengthwise only
- Paper capacity:** Plain and recycled paper/250 sheets,  
transparency sheet/50 sheets
- Power supply:** Supplied from the printer
- Dimensions:** Width 505 mm (20"), Depth 479 mm (18-3/4")



- Weight:** Approx. 6.2 kg (13-3/4 lbs.) including the Cassette

*Appendix*

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*Glossary*

**A**



## Glossary

The following definitions apply specifically to Minolta Color PagePro PS Plus Printers.

### **Bitmap fonts**

A font in which the character images are defined by bit maps. With bitmapped fonts, a separate set of definitions is required for each point size. For example, Times 10 point and Times 12 point are considered separate fonts. See also Scalable fonts.

### **Black gloss level**

The gloss levels for the color black between shiny and flat (when in PCL5C mode). Photographs often look best printed with a shiny black. Text is usually best printed with a flat, non-reflective black. The black gloss level can be adjusted in the Image Content dialog (when in PostScript mode).

### **CMY**

Cyan, magenta, and yellow. These color toners are used to create the subtractive system array of printed colors.

### **ColorSync**

The Macintosh standard color control features used to produce the highest color output for photographs.

### **Default**

A setting automatically used when you or your application software do not make a selection. The settings that are in effect when you turn on or reset the printer are called power-on defaults. See also Factory default.

### **Drum**

The part of the printer mechanism where the image is formed.

### **Factory default**

The settings that are programmed into a printer at the factory. The printer uses these settings unless they are replaced by user settings selected from the control panel or through application software.

**Font**

A complete set of characters and symbols in one size, typeface, and style. Size refers to the character height and is usually measured in points (1/72 inch). Typeface refers to the character design, such as Courier, Times, or Helvetica. Style refers to the character's appearance, such as Italic or Bold. Typical examples of fonts are 12-point Courier Bold and 10-point Times Italic.

**Fusing unit**

The internal part of a page printer that bonds the toner to the paper. It consists of heat and pressure rollers that the paper passes through after toner has been applied.

**Grayscale**

Grayscale tones, or halftones, are used when color data is printed in monochrome.

**Halftoning**

An image made up of patterns of black and white dots that simulate the gray shades of the grayscale image from which it was converted.

**Image Color Matching**

The Windows standard color control features used to produce the highest quality color output for photographs.

**Image Transfer unit**

The part inside of a page printer that transfers the image from the photoconductive drum to the paper.

**Interface**

The means by which information is transferred from one part of a system to another. Refers to the format and procedure for transmitting data as well as the hardware used to enable the transmission.

**Interface connector**

The part used to connect a kind of cable for data transfer from another system.

### **Lightness (Brightness)**

The lightness or darkness of an image. Decreasing brightness darkens the overall image. Increasing brightness lightens the overall image.

### **Local printer**

A printer that is directly connected to your computer, as opposed to a remote or network printer.

### **Media**

Materials upon which data is printed, such as envelopes, plain paper, thick paper, and transparency film.

### **Memory**

The capacity of your computer to store information, or the devices in which information is stored, usually measured in bytes. While you are working on a file, it is stored in random-access memory (RAM) chips, but is lost when you reset or turn off your computer. When you save a file, it is stored on floppy or hard disks or other storage devices. Basic information about the computer is permanently stored in read-only memory (ROM), which cannot be changed.

### **Network card**

A part that is installed in the computer in order for the computer to be connected to a network environment.

### **Orientation**

The direction of print on a page. Printing such that the shorter edges of the paper are at the top and bottom is called portrait orientation. Printing such that the longer edges of the paper are at the top and bottom is called landscape orientation.

### **Page description language**

A set of codes that describe the placement of text and graphics on a page. PCL and PostScript are examples of page description languages.

**Parallel cable**

A data cable which transfers multiple bits of information simultaneously along each of its wires from the computer to the printer.

**Parallel interface**

This term is used to describe the connection between a computer and a peripheral device such as a printer. Through this type of connection, the synchronized transfer of multi-bit data is enabled via multiple wires over a limited distance. The Centronics interface is a typical example of a parallel interface.

**PCL5C printer software**

The program that enables a computer to send a print job in PCL5C.

**Port**

A connection through which the computer sends information to other devices. Parallel ports send data eight bits at a time and are usually used for printers; Windows and MS-DOS designates them “LPT1:” through “LPT9:”. Windows Printing System does not allow printing through serial ports, which send data one bit at a time and are often used for modems.

**PostScript printer software**

The program that enables a computer to send a print job in PostScript.

**Power Save**

This is a setting which is used to conserve energy by enabling the printer to operate in a “power save mode” during a specified period.

**Printable area**

The area of the page in which the printer is able to print. Page printers have a nonprint margin typically about 0.2 inch (5 mm) wide on each edge of the paper. The printable area is the space within these margins. See also Margin.

### **Printer software**

A set of instructions in application software that translates formatting choices into printer commands. When installing the application, the user identifies the type of printer being used so that the application knows which printer software to use.

### **Print job**

A document that a application has processed and sent either directly to the printer or to the print queue.

### **RAM**

Random Access Memory. The portion of the printer's memory used as a buffer and for storing user-defined characters. All data stored in RAM is lost when the printer is turned off.

### **Reset**

Clears the print buffer and places the printer on-line. Unlike initialization, reset leaves the currently selected settings in effect. Reset does not restore the power-on defaults. See also Initialization.

### **Resolution**

Refers to printing clarity. Resolution depends on the number of dots per inch. High resolution (more dots) is finer and more precise than low resolution, which is coarser with rougher edges.

### **ROM**

Read Only Memory. A portion of memory that can only be read and cannot be used for data storage. ROM retains its contents when you turn off the printer.

### **Saturation**

The level of color vividness.

### **Scalable fonts**

A font capable of being printed in any point size.

**Serial Interface**

A connection between the computer and a peripheral device such as a printer, by which data is transferred sequentially over a single wire. Currently, this is a faster alternative to the parallel interface of which the USB interface is an example.

**Soft fonts**

The non-resident fonts that can be downloaded from the computer to the printer memory.

**Spooling**

Sending a document to the print queue rather than directly to the printer. Windows 95/98/NT 4.0 stores the print queue on the hard disk and then sends the print jobs to the printer in the order received. Spooling frees the application you are using for other tasks.

**Symbol set**

The set of characters used in a font. Most symbol sets contain standard letters, numbers, and punctuation. Symbol sets differ in the accented characters, line drawing characters and special symbols that they contain. ASCII, Roman-8 and PC-8 are examples of symbol sets.

**TrueType fonts**

Scalable outline fonts that use a single outline for both screen display and printing. TrueType fonts can be scaled to any point size and print exactly as they appear on the screen with higher resolution.



*Appendix*

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*Quick Reference*

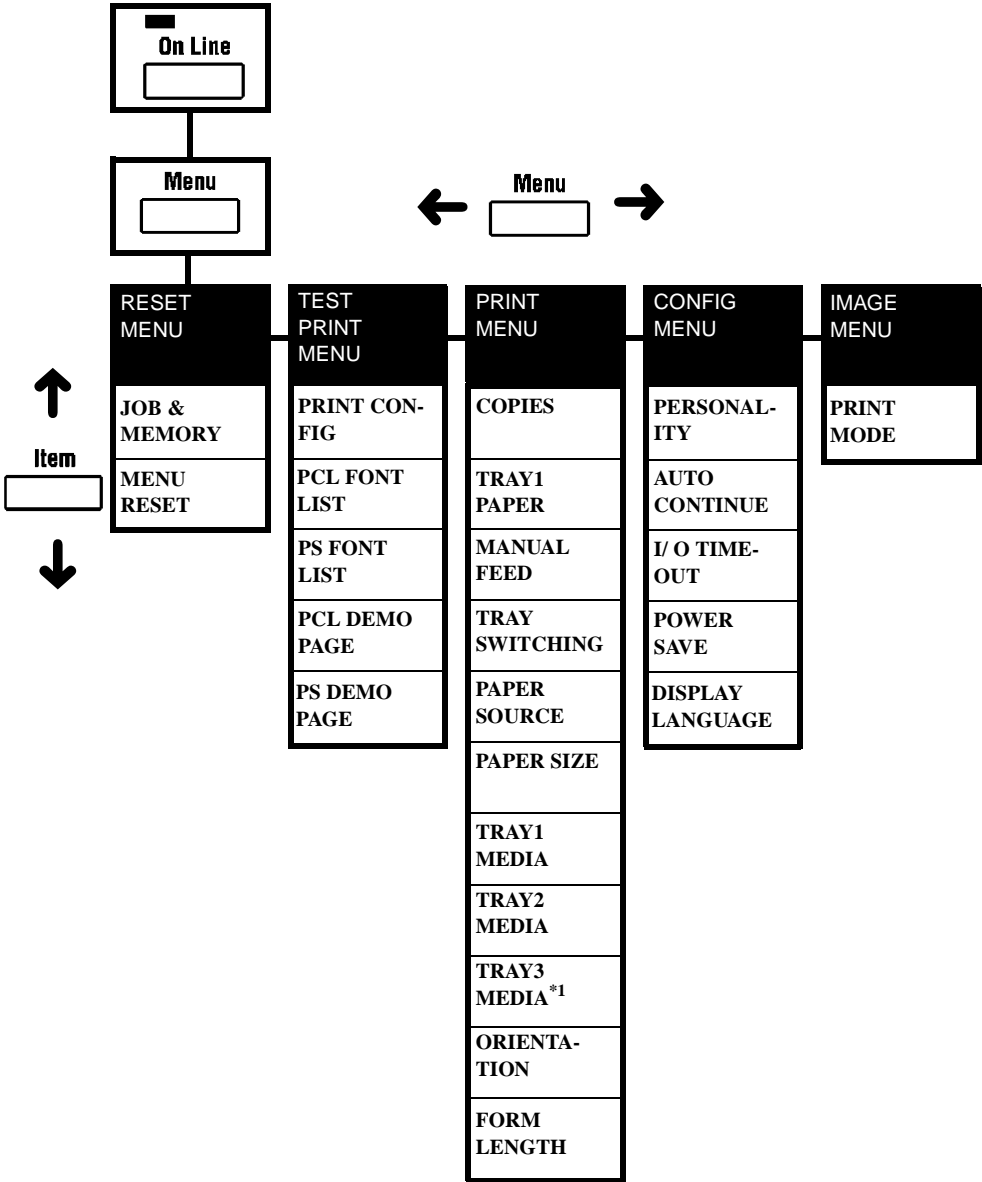
**B**

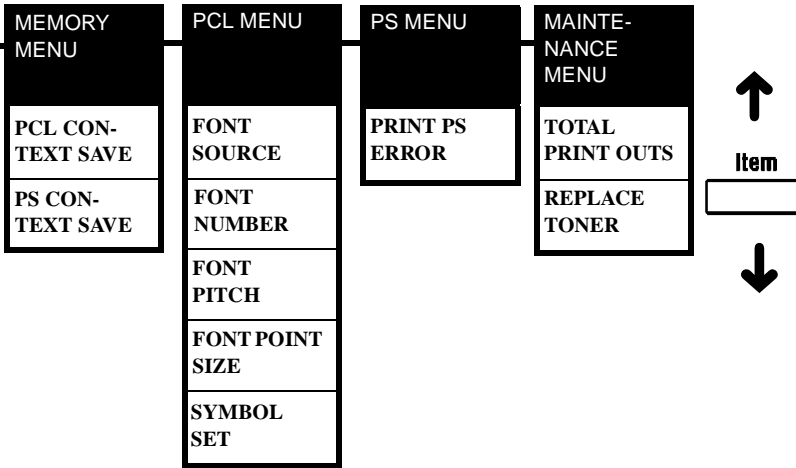
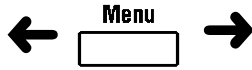


# Printer Menus

Appendix B

Quick Reference





**Note**

\*1 The range of items to choose from when the printer is equipped with a 250-sheet third cassette unit.

List of MENU Utilities

MENU	ITEM	SETTING
1. RESET MENU	1. JOB & MEMORY	ENTER to reset.
	2. MENU RESET	ENTER to reset.
2. TEST PRINT MENU	1. PRINT CONFIG	ENTER to print.
	2. PCL FONT LIST	ENTER to print.
	3. PS FONT LIST	ENTER to print.
	4. PCL DEMO PAGE	ENTER to print.
	5. PS DEMO PAGE	ENTER to print.
3. PRINT MENU	1. COPIES	1 to 999
	2. TRAY 1 PAPER	A4/ A5/ LETTER/ INVOICE/ JIS B5/ LEGAL/ EXECUTIVE/ COM10/ C5/ DL/ MONARCH/ J-POST
	3. MANUAL FEED	OFF / ON
	4. TRAY SWITCHING	ON / OFF
	5. PAPER SOURCE	TRAY1 / TRAY2 / *1 TRAY3
	6. PAPER SIZE	A4/ A5/ LETTER/ INVOICE/ JIS B5/ LEGAL/ EXECUTIVE/ COM10/ C5/ DL/ MONARCH/ J-POST
	7. TRAY1 MEDIA	PLAIN PAPER / TRANSPARENCY/ ENVELOPE/ THICK PAPER
	8. TRAY2 MEDIA	PLAIN PAPER / TRANSPARENCY
	9. TRAY3 MEDIA *1	PLAIN PAPER / TRANSPARENCY
	10. ORIENTATION	PORTRAIT/ LANDSCAPE
	11. FORM LENGTH	5 to 128 LINE (64 LINES)

## List of MENU Utilities

MENU	ITEM	SETTING
<b>4. CONFIG MENU</b>	<b>1. PERSONALITY</b>	<b>AUTOMATIC/ PCL/ POSTSCRIPT</b>
	<b>2. AUTO CONTINUE</b>	<b>ON / OFF</b>
	<b>3. I/O TIMEOUT</b>	OFF/ 5 SECONDS/ <b>15 SECONDS</b> / 30 SECONDS/ 1 MINUTE/ 3 MINUTES
	<b>4. POWER SAVE</b>	15 MINUTES/ 30 MINUTES/ <b>60 MINUTES</b> / OFF
	<b>5. DISPLAY LANGUAGE</b>	<b>ENGLISH/ DEUTSCH/ FRANCAIS/ ITALIANO/ NEDERLANDS/ ESPAÑOL/ DANSK/ CEŠTINA</b>
<b>5. IMAGE MENU</b>	<b>1. PRINT MODE</b>	<b>FULL COLOR/ MONOCHROME</b>
<b>6. MEMORY MENU</b>	<b>1. PCL CONTEXT SAVE</b>	<b>OFF/ ON</b>
	<b>2. PS CONTEXT SAVE</b>	<b>OFF/ ON</b>
<b>7. PCL MENU</b>	<b>1. FONT SOURCE</b>	<b>INTERNAL / SOFT FONT</b>
	<b>2. FONT NUMBER</b>	<b>INTERNAL: 0</b> to 52 (SOFT FONT: 0 to max. 999)
	<b>3. FONT PITCH</b>	0.44 to 99.99 ( <b>10.00</b> )
	<b>4. FONT POINT SIZE</b>	4.00 to 999.75 ( <b>12.00</b> )
	<b>5. SYMBOL SET</b>	ROMAN-8, ISO L1, ISO L2, ISO L5, <b>PC-8</b> , PC-8 D/N, PC-850, PC-852, PC-8 TK, WIN L1, WIN L2, WIN L5, DESKTOP, PS TEXT, VN INTL, VN US, MS PUBL, MATH-8, PS-MATH, VN-MATH, PI FONT, LEGAL, ISO-4, ISO-6, ISO-11, ISO-15, ISO-17, ISO-21, ISO-60, ISO-69, and WIN 3.0 ➡ p.B-6

## List of MENU Utilities

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MENU	ITEM	SETTING
<b>8. PS MENU</b>	<b>1. PRINT PS ERROR</b>	<b>OFF/ ON</b>
<b>9. MAINTENANCE MENU</b>	<b>1. TOTAL PRINTOUTS</b>	
	<b>2. REPLACE TONER</b>	<b>BLACK/ CYAN/ MAGENTA/ YELLOW</b>

The items in bold represent settings of the printer that are set at the time of purchase.

\*1 : The range of items to choose from when the printer is equipped with a **250-sheet third cassette unit**.

**Symbol Sets**

No.	Display Name	Symbol Set Name	Page No.
5	ROMAN-8	Roman-8	B-7
6	ISO L1	ISO 8859/1 Latin 1	B-8
7	ISO L2	ISO 8859/2 Latin 2	B-9
8	ISO L5	ISO 8859/9 Latin 5	B-10
9	PC-8	PC-8: Code Page 437	B-11
10	PC-8 D/N	PC-8 Danish/Norwegian	B-12
11	PC-850	PC-850 Multilingual	B-13
12	PC-852	PC-852 Latin 2	B-14
13	PC8-TK	PC-Turkish	B-15
14	WIN L1	Windows 3.1 Latin 1	B-16
15	WIN L2	Windows 3.1 Latin 2	B-17
16	WIN L5	Windows 3.1 Latin 5	B-18
17	DESKTOP	DESKTOP	B-19
18	PS TEXT	PS Text	B-20
19	VN INTL	Ventura International	B-21
20	VN US	Ventura US	B-22
21	MS PUBL	Microsoft Publishing	B-23
22	MATH-8	Math-8	B-24
23	PS MATH	PS Math	B-25
24	VN MATH	Ventura Math	B-26
25	PI FONT	Pi Font	B-27
26	LEGAL	Legal	B-28
27	ISO-4	ISO 4: United Kingdom	B-29
28	ISO-6	ISO 6: ASCII	B-30
29	ISO-11	ISO 11: Swedish	B-31
30	ISO-15	ISO 15: Italian	B-32
31	ISO-17	ISO 17: Spanish	B-33
32	ISO-21	ISO 21: German	B-34
33	ISO-60	ISO 60: Norwegian V1	B-35
34	ISO-69	ISO 69: French	B-36
35	WIN 3.0	Windows 3.0 Latin 1	B-37

# List of MENU Utilities

## 1. Roman-8 <ROMAN-8>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	'	p				ˆ	â	À	Á	Þ
	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	!	1	A	Q	a	q			À	Ý	ê	î	Ã	þ
	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	"	2	B	R	b	r			Â	ý	ô	Ø	ã	·
	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	#	3	C	S	c	s			È	°	û	Æ	Ð	μ
	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	\$	4	D	T	d	t			Ê	Ç	á	â	ð	¶
	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	%	5	E	U	e	u			Ë	ç	é	í	Í	¾
	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	&	6	F	V	f	v			Ï	Ñ	ó	ø	ì	—
	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	'	7	G	W	g	w			Ï	ñ	ú	æ	Ó	¼
	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	(	8	H	X	h	x			ˆ	ı	à	Ä	Ò	½
	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Y	i	y			ˆ	ı	è	ì	Õ	ª
	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	*	:	J	Z	j	z			ˆ	ı	ò	Ö	õ	º
	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	;	K	[	k	{			ˆ	ı	ù	Ü	š	«
	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	L	\	l				ˆ	ı	ä	É	š	■
	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	-	=	M	]	m	}			Û	§	ë	ı	Ú	»
	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	.	>	N	^	n	~			Û	f	ö	ß	ÿ	±
	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	/	?	O	ˆ	o	☒			£	ç	ü	Ó	ÿ	
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

2. ISO 8859/ 1 Latin 1 <ISO L1>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	`	p				°	À	Ð	à	ð
1	1	17	33	1	A	Q	a	q			ı	±	Á	Ñ	á	ñ
2	2	18	34	2	B	R	b	r			ç	²	Â	Ë	â	ë
3	3	19	35	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4	4	20	36	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5	5	21	37	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6	6	22	38	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7	7	23	39	7	G	W	g	w			§	·	Ç	×	ç	÷
8	8	24	40	8	H	X	h	x			¨	¸	È	Ø	è	ø
9	9	25	41	9	I	Y	i	y			©	ı	É	Ù	é	ù
A	10	26	42	*	:	J	Z	j	z		ª	º	Ê	Ú	ê	ú
B	11	27	43	+	;	K	[	k	{		«	»	Ë	Û	ë	û
C	12	28	44	,	<	L	\	l			¬	¼	Ì	Ü	ì	ü
D	13	29	45	-	=	M	]	m	}		-	½	Í	Ý	í	ý
E	14	30	46	.	>	N	^	n	~		®	¾	Î	Þ	î	þ
F	15	31	47	/	?	O	_	o	☒		-	¿	Ï	ß	ï	ÿ
						95		111	127							



List of MENU Utilities

3. ISO 8859/ 2 Latin 2 <ISO L2>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

Appendix B

Quick Reference

4. ISO 8859/ 9 Latin 5 <ISO L5>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	À 192	Ā 208	à 224	ā 240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	ı 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	ç 162	² 178	Â 194	Ò 210	â 226	ò 242
3	3	19	#	3 51	C 67	S 83	c 99	s 115	131	147	£ 163	³ 179	Ã 195	Ó 211	ã 227	ó 243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	¨ 168	ˆ 184	È 200	Ø 216	è 232	ø 248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	© 169	˚ 185	É 201	Ù 217	é 233	ù 249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	ª 170	º 186	Ê 202	Ú 218	ê 234	ú 250
B	11	27	+	; 59	K 75	[ 91	k 107	{ 123	139	155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
C	12	28	,	< 60	L 76	\ 92	l 108	 124	140	156	¬ 172	¼ 188	Ï 204	Ü 220	ï 236	ü 252
D	13	29	-	= 61	M 77	] 93	m 109	} 125	141	157	- 173	½ 189	Í 205	İ 221	ı 237	ı 253
E	14	30	.	> 62	N 78	^ 94	n 110	~ 126	142	158	® 174	¾ 190	Î 206	Ş 222	î 238	ş 254
F	15	31	/	? 63	O 79	¯ 95	o 111	⊞ 127	143	159	- 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

List of MENU Utilities

5. PC-8: Code Page 437 <PC-8>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	► 16	0 32	@ 48	P 64	˘ 80	p 96	Ç 112	É 128	á 144	⋮ 160	⌌ 176	⌌ 192	⌌ 208	α 224	≡ 240
1	☺ 1	◄ 17	! 33	1 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	⊞ 177	⌌ 193	≡ 209	β 225	± 241
2	☺ 2	↕ 18	" 34	2 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	⊞ 178	⌌ 194	⌌ 210	Γ 226	≥ 242
3	♥ 3	!! 19	# 35	3 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	179	⌌ 195	⌌ 211	π 227	≤ 243
4	♦ 4	¶ 20	\$ 36	4 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	⌌ 180	— 196	⌌ 212	Σ 228	∫ 244
5	♣ 5	§ 21	% 37	5 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	≡ 181	⌌ 197	⌌ 213	σ 229	J 245
6	♠ 6	— 22	& 38	6 54	F 70	V 86	f 102	v 118	á 134	û 150	ª 166	⌌ 182	⌌ 198	⌌ 214	μ 230	÷ 246
7	● 7	↕ 23	' 39	7 55	G 71	W 87	g 103	w 119	ç 135	ù 151	º 167	⌌ 183	⌌ 199	⌌ 215	τ 231	≈ 247
8	◼ 8	↑ 24	( 40	8 56	H 72	X 88	h 104	x 120	ê 136	ÿ 152	ı 168	≡ 184	⌌ 200	⌌ 216	φ 232	° 248
9	○ 9	↓ 25	) 41	9 57	I 73	Y 89	i 105	y 121	ë 137	Ö 153	ƒ 169	≡ 185	⌌ 201	⌌ 217	Θ 233	· 249
A	☉ 10	→ 26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	Ü 154	ƒ 170	≡ 186	⌌ 202	⌌ 218	Ω 234	· 250
B	♂ 11	← 27	+ 43	; 59	K 75	[ 91	k 107	{ 123	ï 139	ç 155	½ 171	≡ 187	⌌ 203	■ 219	δ 235	√ 251
C	♀ 12	⌌ 28	, 44	< 60	L 76	\ 92	l 108	124	î 140	£ 156	¼ 172	≡ 188	⌌ 204	■ 220	∞ 236	∞ 252
D	♪ 13	↔ 29	- 45	= 61	M 77	] 93	m 109	} 125	ì 141	¥ 157	ı 173	≡ 189	⌌ 205	■ 221	φ 237	² 253
E	♫ 14	▲ 30	. 46	> 62	N 78	^ 94	n 110	˘ 126	Ä 142	Pt 158	« 174	≡ 190	⌌ 206	■ 222	€ 238	■ 254
F	☼ 15	▼ 31	/ 47	? 63	O 79	˘ 95	o 111	◊ 127	Å 143	f 159	» 175	⌌ 191	⌌ 207	■ 223	∩ 239	■ 255

Appendix B

Quick Reference

6. PC-8 Danish/Norwegian <PC-8 D/N>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	▶ 16	32	0 48	@ 64	P 80	` 96	p 112	Ç 128	É 144	á 160	☐ 176	⌞ 192	⌚ 208	α 224	≡ 240
1	☺ 1	◀ 17	! 33	1 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	☒ 177	⌞ 193	≡ 209	β 225	± 241
2	☹ 2	↕ 18	" 34	2 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	☒ 178	⌞ 194	⌞ 210	Γ 226	≥ 242
3	♥ 3	!! 19	# 35	3 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	179	⌞ 195	⌞ 211	π 227	≤ 243
4	♦ 4	¶ 20	\$ 36	4 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	⌞ 180	⌞ 196	⌞ 212	Σ 228	∫ 244
5	♣ 5	§ 21	% 37	5 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	⌞ 181	⌞ 197	⌞ 213	σ 229	∫ 245
6	♠ 6	▬ 22	& 38	6 54	F 70	V 86	f 102	v 118	å 134	û 150	õ 166	⌞ 182	⌞ 198	⌞ 214	μ 230	÷ 246
7	● 7	↑ 23	' 39	7 55	G 71	W 87	g 103	w 119	ç 135	ù 151	Õ 167	⌞ 183	⌞ 199	⌞ 215	τ 231	≈ 247
8	■ 8	↑ 24	( 40	8 56	H 72	X 88	h 104	x 120	ê 136	ÿ 152	ı 168	⌞ 184	⌞ 200	⌞ 216	Φ 232	° 248
9	○ 9	↓ 25	) 41	9 57	I 73	Y 89	i 105	y 121	ë 137	Ö 153	ā 169	⌞ 185	⌞ 201	⌞ 217	Θ 233	· 249
A	◼ 10	→ 26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	Ü 154	Ã 170	⌞ 186	⌞ 202	⌞ 218	Ω 234	· 250
B	♂ 11	← 27	+ 43	; 59	K 75	[ 91	k 107	{ 123	ï 139	ø 155	ℓ 171	⌞ 187	⌞ 203	■ 219	δ 235	√ 251
C	♀ 12	⌞ 28	, 44	< 60	L 76	\ 92	l 108	124	î 140	£ 156	'n 172	⌞ 188	⌞ 204	■ 220	∞ 236	n 252
D	♪ 13	↔ 29	- 45	= 61	M 77	] 93	m 109	} 125	ì 141	Ø 157	ı 173	⌞ 189	⌞ 205	■ 221	φ 237	² 253
E	♫ 14	▲ 30	. 46	> 62	N 78	^ 94	n 110	˘ 126	Ä 142	L 158	³ 174	⌞ 190	⌞ 206	■ 222	€ 238	■ 254
F	☼ 15	▼ 31	/ 47	? 63	O 79	˘ 95	o 111	△ 127	Å 143	† 159	□ 175	⌞ 191	⌞ 207	■ 223	∩ 239	255

# List of MENU Utilities

## 7. PC-850 Multilingual <PC-850>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	▶ 16	32	0 48	@ 64	P 80	˘ 96	p 112	Ç 128	É 144	á 160	☒ 176	⌞ 192	ð 208	Ó 224	- 240
1	☺ 1	◀ 17	! 33	1 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	☒ 177	⌞ 193	Ð 209	β 225	± 241
2	☺ 2	↓ 18	" 34	2 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	☒ 178	⌞ 194	Ê 210	Ô 226	2̄ 242
3	♥ 3	!! 19	# 35	3 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	179	⌞ 195	Ë 211	Ò 227	¾ 243
4	♦ 4	¶ 20	\$ 36	4 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	⌞ 180	⌞ 196	È 212	õ 228	¶ 244
5	♣ 5	§ 21	% 37	5 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	Á 181	⌞ 197	ì 213	Õ 229	§ 245
6	♠ 6	- 22	& 38	6 54	F 70	V 86	f 102	v 118	â 134	û 150	ª 166	Â 182	ã 198	í 214	μ 230	÷ 246
7	● 7	↑ 23	' 39	7 55	G 71	W 87	g 103	w 119	ç 135	ù 151	º 167	À 183	Ã 199	î 215	þ 231	¿ 247
8	■ 8	↑ 24	( 40	8 56	H 72	X 88	h 104	x 120	ê 136	ÿ 152	ı 168	© 184	⌞ 200	ï 216	ƒ 232	° 248
9	○ 9	↓ 25	) 41	9 57	I 73	Y 89	i 105	y 121	ë 137	ÿ 153	® 169	≡ 185	⌞ 201	⌞ 217	Ú 233	¨ 249
A	◼ 10	→ 26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	ÿ 154	¬ 170	≡ 186	≡ 202	⌞ 218	Û 234	· 250
B	♂ 11	← 27	+ 43	; 59	K 75	[ 91	k 107	{ 123	ï 139	ø 155	½ 171	⌞ 187	⌞ 203	■ 219	Ü 235	¹ 251
C	♀ 12	⌞ 28	, 44	< 60	L 76	\ 92	l 108	124	î 140	£ 156	¼ 172	≡ 188	≡ 204	■ 220	Ý 236	³ 252
D	♪ 13	↔ 29	- 45	= 61	M 77	] 93	m 109	} 125	ì 141	∅ 157	ı 173	ç 189	≡ 205	221	Ÿ 237	² 253
E	♫ 14	▲ 30	. 46	> 62	N 78	^ 94	n 110	˘ 126	Ä 142	× 158	« 174	¥ 190	≡ 206	ÿ 222	- 238	■ 254
F	☼ 15	▼ 31	/ 47	? 63	O 79	˘ 95	o 111	△ 127	Å 143	f 159	» 175	⌞ 191	□ 207	■ 223	´ 239	² 255

8. PC-852 Latin 2 <PC-852>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	▶	0	@	P	`	p	Ç	É	á	⌘	⌘	đ	Ó	-	240
	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	☺	◀	!	1	A	Q	a	q	ü	Í	í	⌘	⌘	Đ	ß	˘
	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	☹	↓	"	2	B	R	b	r	é	Í	ó	⌘	⌘	Ď	Ô	˘
	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	♥	!!	#	3	C	S	c	s	â	ô	ú			Ë	Ñ	˘
	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	♦	¶	\$	4	D	T	d	t	ä	ö	À	†	—	đ	ń	˘
	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	♣	§	%	5	E	U	e	u	ű	L	a	Á	+	Ń	ň	§
	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	♠	—	&	6	F	V	f	v	é	í	Ž	Á	Ā	Í	Š	÷
	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	●	↑	'	7	G	W	g	w	ç	Š	ž	È	ă	Î	ș	˘
	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	■	↑	(	8	H	X	h	x	ı	ś	Ę	Ś	Ł	é	Ŕ	°
	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	○	↓	)	9	I	Y	i	y	ë	Ö	e	≡	≡	┘	Ú	˘
	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	◼	→	*	:	J	Z	j	z	Ő	Ü			≡	┘	í	˘
	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	♂	←	+	:	K	[	k	{	ő	Ť	ž	≡	≡	■	Ů	ú
	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	♀	⌘	,	<	L	\	l		î	ť	Č	≡	≡	■	ý	Ř
	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	♪	↔	-	=	M	]	m	}	Ž	Ł	ś	Ž	=	┘	Ý	ř
	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	♪	▲	.	>	N	^	n	˘	Ä	×	«	ž	≡	Ů	ı	■
	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	☼	▼	/	?	O	o	o	△	Ć	č	»	┘	■	˘		
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

List of MENU Utilities

9. PC-Turkish <PC8-TK>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	▶ 16	0 32	@ 48	P 64	˘ 80	p 96	Ç 112	É 128	á 144	⋮ 160	⋮ 176	⌒ 192	⌒ 208	α 224	≡ 240
1	☺ 1	◀ 17	! 33	1 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	⊞ 177	⊞ 193	⊞ 209	β 225	± 241
2	☹ 2	↕ 18	" 34	2 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	⊞ 178	⊞ 194	⊞ 210	Γ 226	≥ 242
3	♥ 3	!! 19	# 35	3 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	179	195	⌒ 211	π 227	≤ 243
4	♦ 4	¶ 20	\$ 36	4 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	⊞ 180	— 196	⌒ 212	Σ 228	∫ 244
5	♣ 5	§ 21	% 37	5 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	≡ 181	⊞ 197	⊞ 213	σ 229	∫ 245
6	♠ 6	— 22	& 38	6 54	F 70	V 86	f 102	v 118	â 134	û 150	Ğ 166	⊞ 182	⊞ 198	⊞ 214	μ 230	÷ 246
7	● 7	↑ 23	' 39	7 55	G 71	W 87	g 103	w 119	ç 135	ù 151	ğ 167	⊞ 183	⊞ 199	⊞ 215	τ 231	≈ 247
8	■ 8	↑ 24	( 40	8 56	H 72	X 88	h 104	x 120	ê 136	Í 152	ı 168	≡ 184	⌒ 200	≡ 216	Φ 232	° 248
9	○ 9	↓ 25	) 41	9 57	I 73	Y 89	i 105	y 121	ë 137	Ö 153	ƒ 169	≡ 185	⊞ 201	⊞ 217	Θ 233	· 249
A	☼ 10	→ 26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	Ü 154	⊞ 170	⊞ 186	⊞ 202	⊞ 218	Ω 234	· 250
B	♂ 11	← 27	+ 43	; 59	K 75	[ 91	k 107	{ 123	ï 139	ç 155	½ 171	⊞ 187	⊞ 203	■ 219	δ 235	√ 251
C	♀ 12	⌒ 28	, 44	< 60	L 76	\ 92	l 108	124	î 140	£ 156	¼ 172	⊞ 188	⊞ 204	■ 220	∞ 236	n 252
D	♪ 13	↔ 29	- 45	= 61	M 77	] 93	m 109	} 125	ı 141	¥ 157	ı 173	⊞ 189	⊞ 205	■ 221	φ 237	² 253
E	♫ 14	▲ 30	. 46	> 62	N 78	^ 94	n 110	~ 126	Ä 142	Ş 158	« 174	⊞ 190	⊞ 206	■ 222	ε 238	■ 254
F	☼ 15	▼ 31	/ 47	? 63	O 79	˘ 95	o 111	△ 127	Å 143	ş 159	» 175	⊞ 191	⊞ 207	■ 223	∩ 239	255

10. Windows 3.1 Latin 1 <WIN L1>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112				° 176	À 192	Ð 208	à 224	ð 240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113		´ 145	ı 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	,	’ 146	² 162	³ 178	Â 194	Ò 210	â 226	ò 242
3	3	19	#	3 51	C 67	S 83	c 99	s 115	f	“ 147	£ 163	³ 179	Ã 195	Ó 211	ã 227	ó 243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	”	” 148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	…	• 149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	†	– 150	 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	‡	— 151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	^	˘ 152	¨ 168	˙ 184	È 200	Ø 216	è 232	ø 248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	‰	™ 153	© 169	ı 185	É 201	Ù 217	é 233	ù 249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	Š	š 154	ª 170	º 186	Ê 202	Ú 218	ê 234	ú 250
B	11	27	+	; 59	K 75	[ 91	k 107	{ 123	<	> 155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
C	12	28	,	< 60	L 76	\ 92	l 108	 124	Œ	œ 156	¬ 172	¼ 188	Ì 204	Ü 220	ì 236	ü 252
D	13	29	-	= 61	M 77	] 93	m 109	} 125		- 141	- 157	½ 173	Í 189	Ý 205	í 221	ý 237
E	14	30	.	> 62	N 78	^ 94	n 110	~ 126		® 142	® 158	¾ 174	Î 190	Þ 206	î 222	þ 238
F	15	31	/	? 63	O 79	¯ 95	o 111	☒ 127		ÿ 143	ÿ 159	— 175	Ï 191	ß 207	ï 223	ÿ 239



11. Windows 3.1 Latin 2 <WIN L2>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	0	@	P	`	p			°	Ř	Đ	ř	đ
					64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	33	49	A	Q	a	q		‘	˘	±	Á	Ň	á	ň
					65	81	97	113	129	145	161	177	193	209	225	241
2	2		"	2	B	R	b	r	,	’	˘		Â	Ň	â	ň
					66	82	98	114	130	146	162	178	194	210	226	242
3	3		#	3	C	S	c	s		“	Ł	ł	Ă	Ó	ă	ó
					67	83	99	115	131	147	163	179	195	211	227	243
4	4		\$	4	D	T	d	t	”	”	□	´	Ä	Ô	ä	ô
					68	84	100	116	132	148	164	180	196	212	228	244
5	5		%	5	E	U	e	u	...	•	À	μ	Í	Ő	í	ő
					69	85	101	117	133	149	165	181	197	213	229	245
6	6		&	6	F	V	f	v	†	–		¶	Č	Ö	č	ö
					70	86	102	118	134	150	166	182	198	214	230	246
7	7		'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
					71	87	103	119	135	151	167	183	199	215	231	247
8	8		(	8	H	X	h	x		”	”	”	Č	Ř	č	ř
					72	88	104	120	136	152	168	184	200	216	232	248
9	9		)	9	I	Y	i	y	%c	™	©	ą	É	Û	é	ű
					73	89	105	121	137	153	169	185	201	217	233	249
A	10		*	:	J	Z	j	z	Š	š	Ş	ş	È	Ú	è	ú
					74	90	106	122	138	154	170	186	202	218	234	250
B	11		+	;	K	[	k	{	<	>	«	»	Ě	Ů	ě	ů
					75	91	107	123	139	155	171	187	203	219	235	251
C	12		,	<	L	\	l		Š	ś	¬	Ł	Ě	Ü	ě	ü
					76	92	108	124	140	156	172	188	204	220	236	252
D	13		-	=	M	]	m	}	Ť	ť	-	˘	Í	Ý	í	ý
					77	93	109	125	141	157	173	189	205	221	237	253
E	14		.	>	N	^	n	~	Ž	ž	®	ł	Î	Ť	î	ł
					78	94	110	126	142	158	174	190	206	222	238	254
F	15		/	?	O	o	o	Ž	ž	Ž	ž	Ž	Đ	ß	đ	·
					79	95	111	127	143	159	175	191	207	223	239	255

12. Windows 3.1 Latin 5 <WIN L5>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	16	32	0 48	@ 64	P 80	` 96	p 112		128	144	160	176	192	208	224	240
1	1	17	33	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	34	"	2 50	B 66	R 82	b 98	r 114	,	130	'	146	162	178	194	210
3	3	19	35	#	3 51	C 67	S 83	c 99	s 115	f	131	"	147	163	179	195	211
4	4	20	36	\$	4 52	D 68	T 84	d 100	t 116	"	132	"	148	164	180	196	212
5	5	21	37	%	5 53	E 69	U 85	e 101	u 117	...	133	•	149	165	181	197	213
6	6	22	38	&	6 54	F 70	V 86	f 102	v 118	†	134	-	150	166	182	198	214
7	7	23	39	'	7 55	G 71	W 87	g 103	w 119	‡	135	—	151	167	183	199	215
8	8	24	40	(	8 56	H 72	X 88	h 104	x 120	^	136	~	152	168	184	200	216
9	9	25	41	)	9 57	I 73	Y 89	i 105	y 121	‰	137	™	153	169	185	201	217
A	10	26	42	*	: 58	J 74	Z 90	j 106	z 122	Š	138	š	154	170	186	202	218
B	11	27	43	+	; 59	K 75	[ 91	k 107	{ 123	<	139	>	155	171	187	203	219
C	12	28	44	,	< 60	L 76	\ 92	l 108	 124	Œ	140	œ	156	172	188	204	220
D	13	29	45	-	= 61	M 77	] 93	m 109	} 125		141	-	157	173	189	205	221
E	14	30	46	.	> 62	N 78	^ 94	n 110	~ 126		142	®	158	174	190	206	222
F	15	31	47	/	? 63	O 79	o 95	o 111	☒ 127		143	ÿ	159	175	191	207	223

13. DESKTOP <DESKTOP>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

14. PS Text <PS TEXT>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	' 96	p 112	128	144	160	176	192	— 208	224	240
1	1	17	33	! 49	A 65	Q 81	a 97	q 113	129	145	i 161	- 177	` 193		Æ 225	æ 241
2	2	18	34	" 50	B 66	R 82	b 98	r 114	130	146	c 162	† 178	´ 194			226 242
3	3	19	35	# 51	C 67	S 83	c 99	s 115	131	147	£ 163	‡ 179	^ 195		ª 227	243
4	4	20	36	\$ 52	D 68	T 84	d 100	t 116	132	148	/ 164	· 180	~ 196			228 244
5	5	21	37	% 53	E 69	U 85	e 101	u 117	133	149	¥ 165		~ 197			ı 245
6	6	22	38	& 54	F 70	V 86	f 102	v 118	134	150	f 166	¶ 182	ˇ 198			230 246
7	7	23	39	' 55	G 71	W 87	g 103	w 119	135	151	§ 167	• 183	· 199			231 247
8	8	24	40	( 56	H 72	X 88	h 104	x 120	136	152	¤ 168	‚ 184	¨ 200		Ł 232	ł 248
9	9	25	41	) 57	I 73	Y 89	i 105	y 121	137	153	‘ 169	” 185	· 201		Ø 233	ø 249
A	10	26	42	* 58	J 74	Z 90	j 106	z 122	138	154	“ 170	” 186	· 202		Œ 234	œ 250
B	11	27	43	+ 59	K 75	[ 91	k 107	{ 123	139	155	« 171	» 187	· 203		° 235	ß 251
C	12	28	44	, 60	L 76	\ 92	l 108	 124	140	156	< 172	… 188				236 252
D	13	29	45	- 61	M 77	] 93	m 109	} 125	141	157	> 173	% 189	ˆ 205			237 253
E	14	30	46	. 62	N 78	^ 94	n 110	~ 126	142	158	fi 174		˘ 206			238 254
F	15	31	47	/ 63	O 79	~ 95	o 111		127	143	fl 175	ı 191	ˇ 207			239 255

15. Ventura International <VN INTL>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	'	p			„	%	â	Á	À	Œ
				48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	!	1	A	Q	a	q			À	“	ê	î	Ã	œ
				49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	"	2	B	R	b	r			Â	”	ô	Ø	ã	¶
				50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	#	3	C	S	c	s			È	°	û	Æ		†
				51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	\$	4	D	T	d	t			Ê	Ç	á	å		‡
				52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	%	5	E	U	e	u			Ë	ç	é	í	Í	—
				53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	&	6	F	V	f	v			Ï	Ñ	ø	ï	—	-
				54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	'	7	G	W	g	w			Ï	ñ	ú	æ	Ó	
				55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	(	8	H	X	h	x			©	ı	à	Ä	Ò	
				56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Y	i	y			®	ı	è	ì	Û	ª
				57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	*	:	J	Z	j	z			™	ı	ò	Ö	õ	º
				58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	;	K	[	k	{			<	£	ù	Û	Š	«
				59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	L	\	l				>	¥	ä	É	š	•
				60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	-	=	M	]	m	}			Û	§	ë	ï	Ú	»
				61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	.	>	N	^	n	~			Û	f	ö	ß	ÿ	
				62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	/	?	O	ˆ	o	˜			ç	ü	Û	ÿ	...	
				63	79	95	111	127	143	159	175	191	207	223	239	255

16. Ventura US <VN US>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	16	32	0 48	@ 64	P 80	' 96	p 112	128	144	160	% 176	192	208	224	240	
1	1	17	!	1 33	A 49	Q 65	a 81	q 97	113	129	145	161	" 177	193	209	225	241
2	2	18	"	2 34	B 50	R 66	b 82	r 98	114	130	146	162	" 178	194	210	226	242
3	3	19	#	3 35	C 51	S 67	c 83	s 99	115	131	147	163	° 179	195	211	227	243
4	4	20	\$	4 36	D 52	T 68	d 84	t 100	116	132	148	164	180	196	212	228	244
5	5	21	%	5 37	E 53	U 69	e 85	u 101	117	133	149	165	181	197	213	229	—
6	6	22	&	6 38	F 54	V 70	f 86	v 102	118	134	150	166	182	198	214	230	—
7	7	23	'	7 39	G 55	W 71	g 87	w 103	119	135	151	167	183	199	215	231	247
8	8	24	(	8 40	H 56	X 72	h 88	x 104	120	136	152	168	° 184	200	216	232	248
9	9	25	)	9 41	I 57	Y 73	i 89	y 105	121	137	153	° 169	185	201	217	233	249
A	10	26	*	: 42	J 58	Z 74	j 90	z 106	122	138	154	™ 170	186	202	218	234	250
B	11	27	+	; 43	K 59	[ 75	k 91	{ 107	123	139	155	171	187	203	219	235	251
C	12	28	,	< 44	L 60	\ 76	l 92	 108	124	140	156	172	188	204	220	236	• 252
D	13	29	-	= 45	M 61	] 77	m 93	} 109	125	141	157	173	§ 189	205	221	237	253
E	14	30	.	> 46	N 62	^ 78	n 94	~ 110	126	142	158	174	190	206	222	238	254
F	15	31	/	? 47	O 63	¯ 79	o 95	... 111	127	143	159	© 175	191	207	223	239	... 255

17. Microsoft Publishing <MS PUBL>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

18. Math-8 <MATH-8>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	∴	Π	∴	π			—	⊕	∆	Γ	⌈	⌋
	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	✓	1	A	P	α	ρ			↑	∇	⊙	⊖	⌊	⌋
	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	"	2	B	Σ	β	σ			→	∃	⊗	⊢	{	}
	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	°	3	Γ	T	γ	τ			↓	⊤	⊖	⊥	{	}
	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	∞	4	Δ	T	δ	υ			←	⊥	⊖	∃	⌊	⌋
	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	÷	5	E	Φ	ε	φ			↑	∪	∧	∫	∫	
	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	∞	6	Z	X	ζ	χ			⇒	∩	∨	∫	φ	
	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	'	7	H	Ψ	η	ψ			↓	∈	∇	∠	⌋	⌋
	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	(	8	Θ	Ω	θ	ω			≡	⊃	⊖	∇	∩	∩
	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	∇	ι	∂			↑	∉	○	≠	∥	>
	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	×	e	K	∂	κ	φ			↔	⊂	·	⊃	∠	∟
	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	ε	Λ	ζ	λ	ω			↕	⊃	•	∋	/	\
	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	M	≤	μ	≈			↔	∄	•	⊆	—	<
	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	—	=	N	≠	ν	≡			↔	∂	○	⊆	=	≠
	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	.	>	Ξ	≥	ξ	≠			↔	∩	†	⊆	*	±
	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	/	≈	O	≡	o	☒			—	⊃	⊆	⊆	≡	≡
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255



19. PS Math <PS MATH>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	≅	Π	π				°	∞	∠	◇		
	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	!	1	A	Θ	α	θ			T	±	∫	∇	<	>
	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	√	2	B	P	β	ρ			'	"	℔	®	®	∫
	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	#	3	X	Σ	χ	σ			≤	≥	∅	©	©	∫
	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	∃	4	Δ	T	δ	τ			/	×	⊗	™	™	
	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	%	5	E	Y	ε	ν			∞	α	⊕	∏	Σ	∫
	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	&	6	Φ	ϕ	φ	π			f	∂	∅	√	∫	∫
	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	∃	7	Γ	Ω	γ	ω			♣	•	∩	·		
	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	(	8	H	Σ	η	ξ			♦	÷	∪	∩		
	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Ψ	ι	ψ			♥	≠	∩	∧	∫	∫
	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	*	:	∂	Z	φ	ζ			♠	≡	⊇	∨		
	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	;	K	[	κ	{			↔	≈	∩	↔	∫	∫
	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	Λ	∴	λ				←	...	∩	≡	∫	∫
	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	-	=	M	]	μ	}			↑		⊆	↑	{	}
	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	.	>	N	⊥	ν	~			→	-	∈	⇒		∫
	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	/	?	O	̄	o				↓	←	∉	↓	∫	∫
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

Appendix B

Quick Reference

20. Ventura Math <VN MATH>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	≅	Π	—	π			◇	®	≤	↓	∣	∏
	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	!	1	A	Θ	α	θ			√	⊃	◆	←	·	™
	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	√	2	B	P	β	ρ			∣	⊇	≥	®	∠	⇐
	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	#	3	X	Σ	χ	σ			∟	∩	∂	"	∩	⇔
	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	∃	4	Δ	T	δ	τ			∣		∞	f		∇
	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	%	5	E	Y	ε	ν			∟	♣	'	∫	}	Σ
	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	&	6	Φ	ϕ	φ	π			∣	⊕	ℝ	©	∫	™
	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	∃	7	Γ	Ω	γ	ω			∣	⊗	∅	±	}	∣
	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	(	8	H	Ξ	η	ξ			↑	⊆	∞	→		∣
	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Ψ	ι	ψ			⇒	∪	♠	↑	¬	∅
	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	*	:	∂	Z	φ	ζ			↓	—	∞	≠	∇	∩
	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	;	K	[	κ	{			∅	...	•	≡	∩	∈
	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	Λ	∴	λ				∩	∣	/	°	∣	©
	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	—	=	M	∣	μ	}			∣	∧	♥	↔	∣	∉
	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	.	>	N	⊥	ν	~			∣	←	×	∩	∩	∣
	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	/	?	O	̄	o				}	≈	∩	∩	∩	∣
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

21. Pi Font <PI FONT>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
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1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

22. Legal <LEGAL>


	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	° 96	p 112	128	144	160	176	192	208	224	240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	#	3 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	+	; 59	K 75	[ 91	k 107	§ 123	139	155	171	187	203	219	235	251
C	12	28	,	≠ 60	L 76	® 92	l 108	¶ 124	140	156	172	188	204	220	236	252
D	13	29	-	= 61	M 77	] 93	m 109	† 125	141	157	173	189	205	221	237	253
E	14	30	.	¢ 62	N 78	© 94	n 110	™ 126	142	158	174	190	206	222	238	254
F	15	31	/	? 63	O 79	̄ 95	o 111	☒ 127	143	159	175	191	207	223	239	255

*List of MENU Utilities*

**23. ISO 4: United Kingdom <ISO-4>**

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112	128	144	160	176	192	208	224	240
1	1	17	33	! 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	34	" 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	35	£ 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	36	\$ 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	37	% 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	38	& 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	39	' 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	40	( 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	41	) 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	42	* 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	43	+ 59	K 75	[ 91	k 107	{ 123	139	155	171	187	203	219	235	251
C	12	28	44	, 60	L 76	\ 92	l 108	 124	140	156	172	188	204	220	236	252
D	13	29	45	- 61	M 77	] 93	m 109	} 125	141	157	173	189	205	221	237	253
E	14	30	46	. 62	N 78	^ 94	n 110	~ 126	142	158	174	190	206	222	238	254
F	15	31	47	/ 63	O 79	_ 95	o 111	⊞ 127	143	159	175	191	207	223	239	255

24. ISO 6: ASCII <ISO-6>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	' 96	p 112	128	144	160	176	192	208	224	240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	#	3 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	+	; 59	K 75	[ 91	k 107	{ 123	139	155	171	187	203	219	235	251
C	12	28	,	< 60	L 76	\ 92	l 108	 124	140	156	172	188	204	220	236	252
D	13	29	-	= 61	M 77	] 93	m 109	} 125	141	157	173	189	205	221	237	253
E	14	30	.	> 62	N 78	^ 94	n 110	~ 126	142	158	174	190	206	222	238	254
F	15	31	/	? 63	O 79	<u>95</u>	o 111	 127	143	159	175	191	207	223	239	255

25. ISO 11: Swedish <ISO-11>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	É	P	é	p	128	144	160	176	192	208	224	240
1	1	17	!	1	A	Q	a	q	129	145	161	177	193	209	225	241
2	2	18	"	2	B	R	b	r	130	146	162	178	194	210	226	242
3	3	19	#	3	C	S	c	s	131	147	163	179	195	211	227	243
4	4	20	¤	4	D	T	d	t	132	148	164	180	196	212	228	244
5	5	21	%	5	E	U	e	u	133	149	165	181	197	213	229	245
6	6	22	&	6	F	V	f	v	134	150	166	182	198	214	230	246
7	7	23	'	7	G	W	g	w	135	151	167	183	199	215	231	247
8	8	24	(	8	H	X	h	x	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Y	i	y	137	153	169	185	201	217	233	249
A	10	26	*	:	J	Z	j	z	138	154	170	186	202	218	234	250
B	11	27	+	;	K	Ä	k	ä	139	155	171	187	203	219	235	251
C	12	28	,	<	L	Ö	l	ö	140	156	172	188	204	220	236	252
D	13	29	-	=	M	Å	m	å	141	157	173	189	205	221	237	253
E	14	30	.	>	N	Ü	n	ü	142	158	174	190	206	222	238	254
F	15	31	/	?	O	̄	o	☒	143	159	175	191	207	223	239	255

26. ISO 15: Italian <ISO-15>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	§	P	ù	p	128	144	160	176	192	208	224	240
1	1	17	!	1	A	Q	a	q	129	145	161	177	193	209	225	241
2	2	18	"	2	B	R	b	r	130	146	162	178	194	210	226	242
3	3	19	£	3	C	S	c	s	131	147	163	179	195	211	227	243
4	4	20	\$	4	D	T	d	t	132	148	164	180	196	212	228	244
5	5	21	%	5	E	U	e	u	133	149	165	181	197	213	229	245
6	6	22	&	6	F	V	f	v	134	150	166	182	198	214	230	246
7	7	23	'	7	G	W	g	w	135	151	167	183	199	215	231	247
8	8	24	(	8	H	X	h	x	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Y	i	y	137	153	169	185	201	217	233	249
A	10	26	*	:	J	Z	j	z	138	154	170	186	202	218	234	250
B	11	27	+	;	K	°	k	à	139	155	171	187	203	219	235	251
C	12	28	,	<	L	ç	l	ò	140	156	172	188	204	220	236	252
D	13	29	-	=	M	é	m	è	141	157	173	189	205	221	237	253
E	14	30	.	>	N	^	n	ì	142	158	174	190	206	222	238	254
F	15	31	/	?	O	̄	o	☒	143	159	175	191	207	223	239	255



27. ISO 17: Spanish <ISO-17>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	§ 64	P 80	` 96	p 112	128	144	160	176	192	208	224	240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	£	3 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	+	; 59	K 75	ı 91	k 107	° 123	139	155	171	187	203	219	235	251
C	12	28	,	< 60	L 76	Ñ 92	l 108	ñ 124	140	156	172	188	204	220	236	252
D	13	29	-	= 61	M 77	ç 93	m 109	ç 125	141	157	173	189	205	221	237	253
E	14	30	.	> 62	N 78	^ 94	n 110	~ 126	142	158	174	190	206	222	238	254
F	15	31	/	? 63	O 79	̄ 95	o 111	⊞ 127	143	159	175	191	207	223	239	255

28. ISO 21: German <ISO-21>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	§ 64	P 80	` 96	p 112	128	144	160	176	192	208	224	240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	#	3 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	+	; 59	K 75	Ä 91	k 107	ä 123	139	155	171	187	203	219	235	251
C	12	28	,	< 60	L 76	Ö 92	l 108	ö 124	140	156	172	188	204	220	236	252
D	13	29	-	= 61	M 77	Ü 93	m 109	ü 125	141	157	173	189	205	221	237	253
E	14	30	.	> 62	N 78	^ 94	n 110	ß 126	142	158	174	190	206	222	238	254
F	15	31	/	? 63	O 79	¯ 95	o 111	☒ 127	143	159	175	191	207	223	239	255

29. ISO 60: Norwegian V1 <ISO-60>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	^ 96	p 112	128	144	160	176	192	208	224	240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	#	3 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	+	: 59	K 75	Æ 91	k 107	æ 123	139	155	171	187	203	219	235	251
C	12	28	,	< 60	L 76	Ø 92	l 108	ø 124	140	156	172	188	204	220	236	252
D	13	29	-	= 61	M 77	Å 93	m 109	å 125	141	157	173	189	205	221	237	253
E	14	30	.	> 62	N 78	^ 94	n 110	— 126	142	158	174	190	206	222	238	254
F	15	31	/	? 63	O 79	95	o 111	127	143	159	175	191	207	223	239	255

30. ISO 69: French <ISO-69>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	à 64	P 80	µ 96	p 112	128	144	160	176	192	208	224	240
1	1	17	!	1 49	A 65	Q 81	a 97	q 113	129	145	161	177	193	209	225	241
2	2	18	"	2 50	B 66	R 82	b 98	r 114	130	146	162	178	194	210	226	242
3	3	19	£	3 51	C 67	S 83	c 99	s 115	131	147	163	179	195	211	227	243
4	4	20	\$	4 52	D 68	T 84	d 100	t 116	132	148	164	180	196	212	228	244
5	5	21	%	5 53	E 69	U 85	e 101	u 117	133	149	165	181	197	213	229	245
6	6	22	&	6 54	F 70	V 86	f 102	v 118	134	150	166	182	198	214	230	246
7	7	23	'	7 55	G 71	W 87	g 103	w 119	135	151	167	183	199	215	231	247
8	8	24	(	8 56	H 72	X 88	h 104	x 120	136	152	168	184	200	216	232	248
9	9	25	)	9 57	I 73	Y 89	i 105	y 121	137	153	169	185	201	217	233	249
A	10	26	*	: 58	J 74	Z 90	j 106	z 122	138	154	170	186	202	218	234	250
B	11	27	+	; 59	K 75	° 91	k 107	é 123	139	155	171	187	203	219	235	251
C	12	28	,	< 60	L 76	ç 92	l 108	ù 124	140	156	172	188	204	220	236	252
D	13	29	-	= 61	M 77	§ 93	m 109	è 125	141	157	173	189	205	221	237	253
E	14	30	.	> 62	N 78	^ 94	n 110	¨ 126	142	158	174	190	206	222	238	254
F	15	31	/	? 63	O 79	¯ 95	o 111	☒ 127	143	159	175	191	207	223	239	255

31. Windows 3.0 Latin 1 <WIN 3.0>

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	`	p				°	À	Ð	à	ð
			48	64	80	96	112	128	144	160	176	192	208	224	240	
1	1	17	!	1	A	Q	a	q			ı	±	Á	Ñ	á	ñ
			33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	"	2	B	R	b	r			ç	²	Â	Ò	â	ò
			34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
			35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	\$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
			36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
			37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	&	6	F	V	f	v				¶	Æ	Ö	æ	ö
			38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	'	7	G	W	g	w			§	·	Ç	×	ç	÷
			39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	(	8	H	X	h	x			¨	˙	È	Ø	è	ø
			40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Y	i	y			©	ı	É	Ù	é	ù
			41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
			42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	;	K	[	k	{			«	»	Ë	Û	ë	û
			43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	L	\	l				¬	¼	Ï	Ü	ï	ü
			44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	-	=	M	]	m	}			-	½	Í	Ý	í	ý
			45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	.	>	N	^	n	~			®	¾	Î	Þ	î	þ
			46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	/	?	O	~	o	☒			-	¿	Ï	ß	ï	ÿ
			47	63	79	95	111	127	143	159	175	191	207	223	239	255

*Appendix*

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## **7. RISOLUZIONE DEL CONTRATTO**

Potete porre termine alla vostra licenza in qualsiasi momento distruggendo il Software e tutte le vostre copie, oppure come altrimenti descritto in questi termini.

Minolta può porre termine alla vostra licenza in caso mancate di rispettare questi termini. Resta inteso che all'atto di tale termine, voi distruggerete tutte le vostre copie del Software.

## **8. FORO COMPETENTE**

Il presente contratto verrà regolato dalle leggi del Paese in cui è stata effettuata la consegna al cliente originale.

## **9. UTENTI FINALI GOVERNATIVI**

Se state acquistando il Software per conto di qualsiasi ente od agenzia del Governo degli Stati Uniti, si applicano i seguenti provvedimenti. L'uso, la duplicazione o la divulgazione da parte del Governo sono soggetti alle restrizioni stabilite nella clausola "Rights in Technical Data" e in "Computer Software" in FAR 252.227-7013, sottodivisione (b)(3)(ii) o sottoparagrafo (c)(1)(ii) rispettivamente. Ulteriore uso, duplicazione o divulgazione sono soggetti alle restrizioni applicabili ai limitati diritti di software stabiliti nel FAR 52.227-19(c)(2).

PRENDETE ATTO CHE AVETE LETTO IL PRESENTE ACCORDO, CHE LO AVETE COMPRESO, E CHE CONCORDATE DI ESSERE LEGATI DA QUESTI TERMINI E CONDIZIONI. NESSUNA DELLE PARTI SARA' LEGATA DA ALCUNA DICHIARAZIONE O RAPPRESENTAZIONE NON CONTENUTA NEL PRESENTE CONTRATTO. NESSUN CAMBIAMENTO NEL PRESENTE CONTRATTO SARA' EFFETTIVO A MENO CHE NON VENGA SOTTOSCRITTO DAI RAPPRESENTANTI PROPRIAMENTE AUTORIZZATI DA CIASCUNA PARTE. APRENDO IL PRESENTE PACCHETTO, CONCORDATE DI ACCETTARE I TERMINI DEL PRESENTE CONTRATTO.

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# MINOLTA GUARANTEE CERTIFICATE

## 1. DEFINITIONS

„MINOLTA“:	MINOLTA GmbH Registered Office
„the Unit“:	the MINOLTA product for which this Users’s Manual is valid
„the Software“:	MINOLTA unit driver Software. In the case that software supplied by other manufacturers is added to or purchased with the MINOLTA unit, only the terms of guarantee by those original manufacturers are valid
„the Unit Guarantee Period“:	One year commencing the date of purchase of the Unit
„the Software Guarantee Period“:	Ninety (90) days commencing the date of purchase of the Software
„the Operating Instructions“:	Those instructions contained in the manuals supplied with both the Unit and the Software
„Valid Receipt“:	a receipt indicating the date of purchase, the location of purchase, the purchase price, the MINOLTA dealers’s address, the Unit and/or Software type and serial number

## 2. SCOPE OF GUARANTEE

### 2.1. UNIT

Subject to Clause 2.3 this Guarantee covers all material and production faults in the Unit which are notified by the purchaser to MINOLTA within the Unit Guarantee Period

### 2.2. SOFTWARE

Subject to Clause 2.3 this Guarantee covers all faults with the Software which are notified by the purchaser to MINOLTA within the Software Guarantee Period

### 2.3. EXCLUSIONS

This Guarantee does not cover damage to Units and Software resulting from, but not limited, to the following:

- dropping, impact, sand, moisture, misuse, unauthorized interference of third parties, chemical corrosion, non-observance of the Operating Instructions, damage in transit or force majeure;
- the use of accessories, units or material not produced, distributed licenced or authorised by MINOLTA; and
- repairs or alterations carried out by any workshop not authorised by MINOLTA

This Guarantee does not cover damage to Software resulting from the purchaser’s failure to install the Software in accordance with the Installation Instructions on a computer suitable for the intended purpose

## 3. REPAIR AND REPLACEMENT

### 3.1. UNIT

During the Unit Guarantee Period MINOLTA will either repair or replace faulty Units falling within Clause 2.1. MINOLTA will inform the purchaser as to the choice of remedy within a reasonable time of inspecting the faulty Unit

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### 3.2. SOFTWARE

During the Software Guarantee Period MINOLTA will replace faulty Software falling within Clause 2.2 within a reasonable time of inspecting the faulty Software

### 3.3 FAILURE

Should MINOLTA fail to repair or replace the faulty Unit or faulty Software within the time limit specified in Clauses 3.1 and 3.2 the purchaser shall be entitled to claim a refund of the purchase price once the purchaser returns the faulty Unit or Software to MINOLTA

## 4. VALIDITY OF GUARANTEE

This Guarantee is only valid for all new Units and new Software purchased from an authorised MINOLTA dealer

## 5. CLAIMS UNDER GUARANTEE

If a purchaser wishes to make a claim under this Guarantee he/she must present a Valid Receipt relating to the faulty Unit or faulty Software

MINOLTA reserves the right to verify the validity of the receipt

## 6. REIMBURSEMENT OF COSTS

If Units or Software presented to MINOLTA for repair or replacement show either no fault symptoms or fault symptoms resulting from any matter referred to in Clause 2.3 any costs incurred by MINOLTA are to be borne by the purchaser

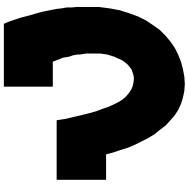
## 7. CONSEQUENTIAL LOSS

MINOLTA shall not be liable for any consequential or indirect loss suffered by the purchaser whether this loss arises from breach of duty in contract or tort in any otherway (including loss arising from MINOLTA's negligence). Non-exhaustive illustrations of consequential or indirect loss would be:

- a) loss of profit;
- b) loss of contracts;
- c) damage to property of the purchaser or anyone else;
- d) data loss; and
- e) personal injury to the purchaser or anyone else (but only so far as such injury is not caused by MINOLTA's negligence).

## 8. STATUTORY RIGHTS

This Guarantee does not affect the purchaser's statutory rights.



## **W**e do good service...

- Often you can find the quickest solution to a problem or malfunction in the User Kit. Please refer to the chapter Troubleshooting.
- From our internet website (<http://www.service.minolta.de>) you can get the latest printer driver updates and answers to various questions.
- Minolta's hotline (see pages 9 and 10 in chapter General Information) supports you with the solution to many problems.
- Your technical representative will help you as well.

Please note the date of purchase (.), the telephone hotline (&) and the serial number (#) on the sticker. In order to benefit from a quick and efficient support, you should always keep the sticker at hand, e.g. at the printerframe.